UNITED NATIONS
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2008 Review of Directive 2002/96 on

Waste Electrical and Electronic Equipment (WEEE)

Annex to the Final Report

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LIST OF ANNEXES

Annex 6.1.1 Population and GDP Overview

Population Overview			
Country	**2004**	**2005**	**2006**
Austria	8.140.100	8.206.500	8.188.806
Belgium	10.396.400	10.445.900	10.481.831
Cyprus	730.400	749.200	961.154
Czech Republic	10.211.500	10.220.600	10.211.609
Denmark	5.397.600	5.411.400	5.425.373
Estonia	1.351.100	1.347.000	1.339.157
Finland	5.219.700	5.236.600	5.260.970
France	60.200.000	60.561.200	61.004.840
Germany	82.531.700	82.500.800	82.515.988
Greece	11.040.700	11.073.000	11.275.420
Hungary	10.116.700	10.097.500	10.060.684
Ireland	4.027.700	4.109.200	4.065.631
Italy	57.888.200	58.462.400	59.115.261
Latvia	2.319.200	2.306.400	2.293.246
Lithuania	3.445.900	3.425.300	3.416.941
Luxembourg	451.600	455.000	459.393
Malta	399.900	402.700	385.308
Netherlands	16.258.000	16.305.500	16.386.216
Poland	38.190.600	38.173.800	38.115.814
Portugal	10.474.700	10.529.300	10.501.051
Slovakia	5.380.100	5.384.800	5.379.455
Slovenia	1.996.400	1.997.600	1.959.872
Spain	42.345.300	43.038.000	44.351.186
Sweden	8.975.700	9.011.400	9.076.757
UK	59.699.700	60.034.500	60.139.274
TOTALS (EU-25)	**457.188.900**	**459.485.600**	**462.371.237**
TOTALS (EU_15)	**383.047.100**	**385.380.700**	**388.247.997**

GDPs (Billion Dollars)			
Country	**2004**	**2005**	**2006**
Austria		293,4	
Belgium		350,3	
Cyprus		15,4	
Czech Republic		109,4	
Denmark		243,4	
Estonia		12,2	
Finland		184,2	
France		2055	
Germany		2730	
Greece		209,7	
Hungary		106,4	
Ireland		188,4	
Italy		1710	
Latvia		14,4	
Lithuania		23,5	
Luxembourg		31,8	
Malta		5,2	
Netherlands		581,3	
Poland		246,2	
Portugal		170,3	
Slovakia		43,1	
Slovenia		35,2	
Spain		1019	
Sweden		348,1	
UK		2228	
TOTALS (EU-25)		**12953,9**	
TOTALS (EU_15)		**12342,9**	

Table i: Population overview (Eurostat, CIA WorldFactbook, Internet World Stats) and GDP overview (CIA WorldFactbook)

GDP/capita (Dollars)			
Country	**2004**	**2005**	**2006**
Austria		32700	
Belgium		31400	
Cyprus		21500	
Czech Republic		19500	
Denmark		34600	
Estonia		16700	
Finland		30900	
France		29900	
Germany		30400	
Greece		22200	
Hungary		16300	
Ireland		41000	
Italy		29200	
Latvia		13200	
Lithuania		13700	
Luxembourg		55600	
Malta		19900	
Netherlands		30500	
Poland		13300	
Portugal		19300	
Slovakia		16100	
Slovenia		21600	
Spain		25500	
Sweden		29800	
UK		30300	

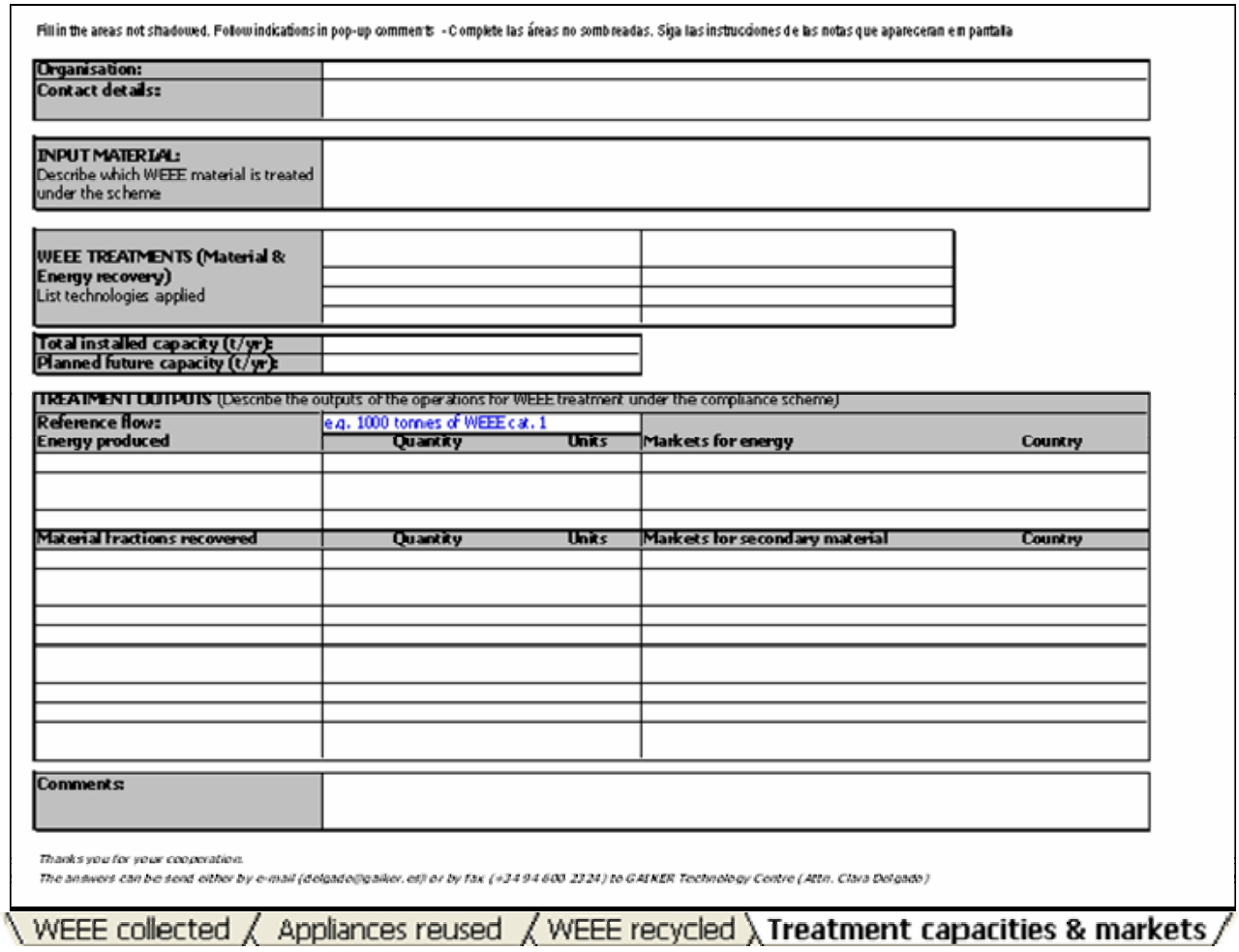
GDP growthrate (%)			
Country	**2004**	**2005**	**2006**
Austria		1,90%	
Belgium		1,50%	
Cyprus		3,80%	
Czech Republic		6,00%	
Denmark		3,40%	
Estonia		9,60%	
Finland		2,20%	
France		1,40%	
Germany		0,90%	
Greece		3,70%	
Hungary		4,10%	
Ireland		4,70%	
Italy		0,10%	
Latvia		10,20%	
Lithuania		7,50%	
Luxembourg		3,70%	
Malta		1%	
Netherlands		1,10%	
Poland		3,20%	
Portugal		0,30%	
Slovakia		5,50%	
Slovenia		3,90%	
Spain		3,40%	
Sweden		2,70%	
UK		1,80%	

Table ii: GDP overview per capita and GDP growthrate in % (CIA WorldFactbook)

Annex 6.1.3 Questionnaire Treatment Capacities

Preview of questionnaires sent out during the data gathering exercise (WEEE & WEEEP treatment capacities and secondary markets)

For FORM 1 – Association of compliance schemes, please see ANNEX 8, Questionnaire to EERA



Fill in the areas not shadowed. Follow indications in pop-up comments - Complete las áreas no sombreadas. Siga las instrucciones de las notas que aparecerán en pantalla

Organisation:	
Contact details:	

INPUT MATERIAL: Describe which WEEE material is treated under the scheme	

WEEE TREATMENTS (Material & Energy recovery) List technologies applied		

Total installed capacity (t/yr):	
Planned future capacity (t/yr):	

TREATMENT OUTPUTS (Describe the outputs of the operations for WEEE treatment under the compliance scheme)

Reference flow:	e.g. 1000 tonnes of WEEE cat. 1			
Energy produced	**Quantity**	**Units**	**Markets for energy**	**Country**
Material fractions recovered	**Quantity**	**Units**	**Markets for secondary material**	**Country**

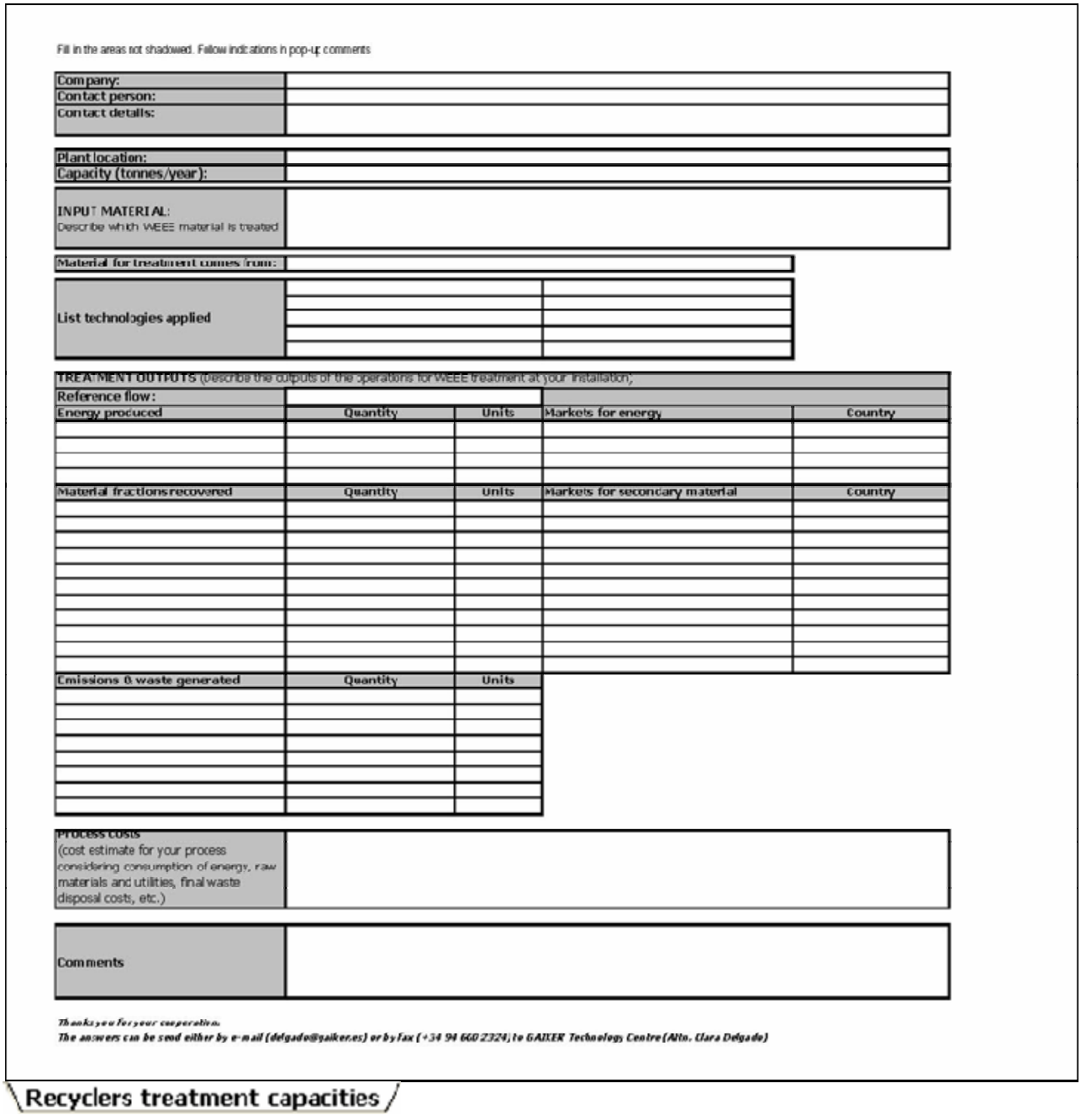
Comments:	

Thanks you for your cooperation.

The answers can be send either by e-mail (delgado@gaiker.es) or by fax (+34 94 600 2224) to GAIKER Technology Centre (Attn. Clara Delgado)

WEEE collected | Appliances reused | WEEE recycled | **Treatment capacities & markets**

Figure i: FORM 2 – National compliance schemes (individual system)



Fill in the areas not shadowed. Follow indications in pop-up comments

Company:	
Contact person:	
Contact details:	

Plant location:	
Capacity (tonnes/year):	
INPUT MATERIAL: Describe which WEEE material is treated	
Material for treatment comes from:	
List technologies applied	

TREATMENT OUTPUTS (describe the outputs of the operations for WEEE treatment at your installation;

Reference flow:				
Energy produced	Quantity	Units	Markets for energy	Country
Material fractions recovered	Quantity	Units	Markets for secondary material	Country

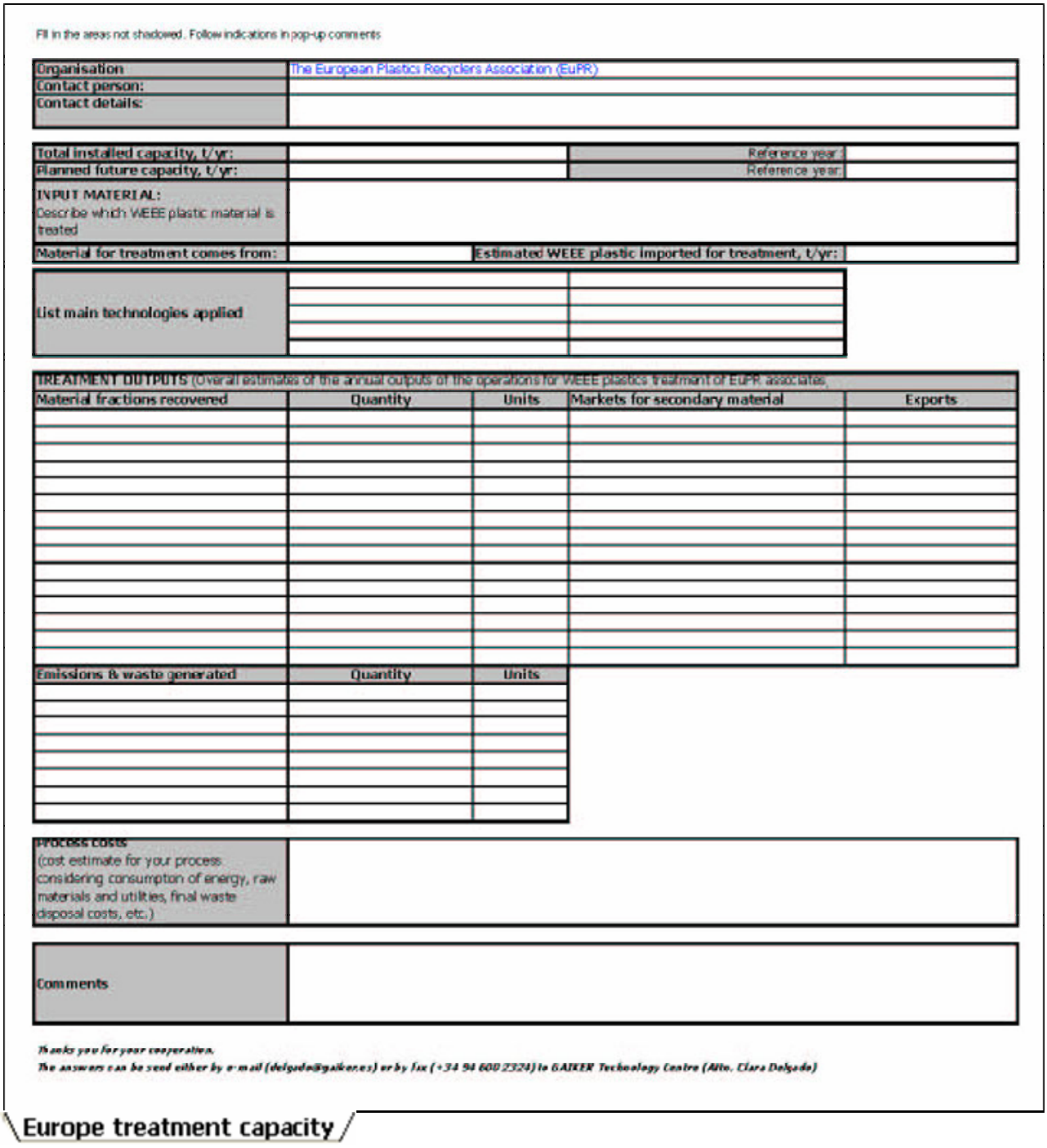
Emissions & waste generated	Quantity	Units

Process costs (cost estimate for your process considering consumption of energy, raw materials and utilities, final waste disposal costs, etc.)	
Comments	

Thank you for your cooperation.
The answers can be send either by e-mail (delgado@gaiker.es) or by Fax (+34 94 6602324) to GAIKER Technology Centre (Alto. Clara Delgado)

Recyclers treatment capacities

Figure ii: FORM 3 – WEEE recycler



Fill in the areas not shadowed. Follow indications in pop-up comments

Organisation	The European Plastics Recyclers Association (EuPR)
Contact person:	
Contact details:	

Total installed capacity, t/yr:		Reference year:	
Planned future capacity, t/yr:		Reference year:	
INPUT MATERIAL: Describe which WEEE plastic material is treated			
Material for treatment comes from:		Estimated WEEE plastic imported for treatment, t/yr:	

List main technologies applied		

TREATMENT OUTPUTS (Overall estimates of the annual outputs of the operations for WEEE plastics treatment of EUPR associates)

Material fractions recovered	Quantity	Units	Markets for secondary material	Exports

Emissions & waste generated	Quantity	Units

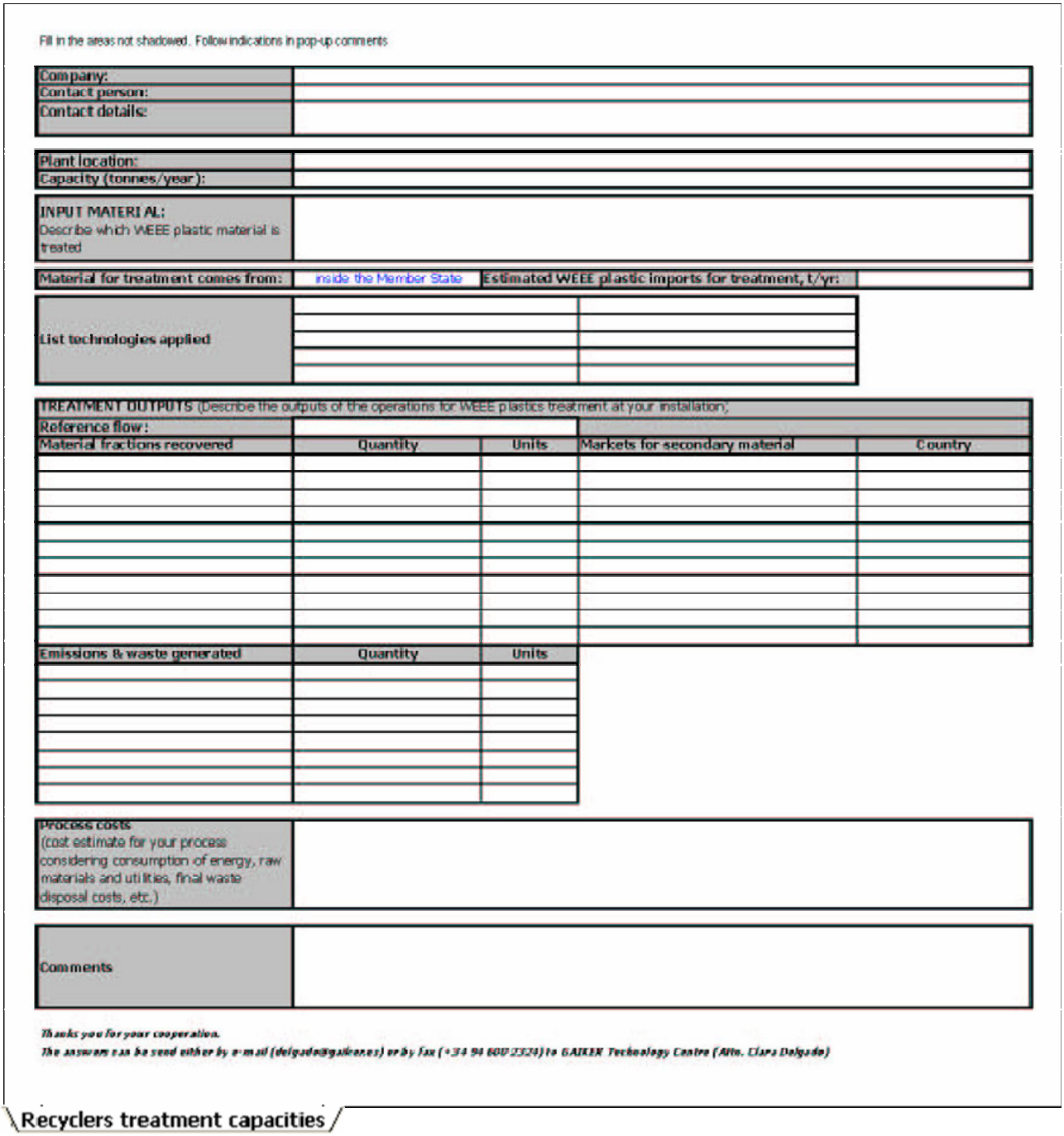
Process costs (cost estimate for your process considering consumption of energy, raw materials and utilities, final waste disposal costs, etc.)	

Comments	

Thanks you for your cooperation.
The answers can be send either by e-mail (delgado@gaiker.es) or by fax (+34 94 600 2324) to GAIKER Technology Centre (Attn. Clara Delgado)

Europe treatment capacity

Figure iii: FORM 4 – Plastic recyclers associations



Fill in the areas not shadowed. Follow indications in pop-up comments

Company:	
Contact person:	
Contact details:	

Plant location:	
Capacity (tonnes/year):	

INPUT MATERIAL: Describe which WEEE plastic material is treated	

Material for treatment comes from:	inside the Member State	Estimated WEEE plastic imports for treatment, t/yr:	

List technologies applied		

TREATMENT OUTPUTS (Describe the outputs of the operations for WEEE plastics treatment at your installation;

Reference flow:				
Material fractions recovered	Quantity	Units	Markets for secondary material	Country

Emissions & waste generated	Quantity	Units

Process costs (cost estimate for your process considering consumption of energy, raw materials and utilities, final waste disposal costs, etc.)	

Comments	

Thanks you for your cooperation.

The answers can be send either by e-mail (delgado@gaiker.es) or by fax (+34 94 6037324) to GAIKER Technology Centre (Attn. Clara Delgado)

Recyclers treatment capacities

Figure iv: FORM 5 - WEEE plastic recycler

Annex 6.2.1 Economic Evaluation

Annex 6.2.1a Questionnaire Administrative Burden

Question 1

Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc)?

Listed below couple of examples of activities related that may cause administrative burden:

- *Filling in registering form, or provide data according to specific needs (like unit, weight,..), clustering of equipments' type, split B2B/B2C...*
- *Hiring consultants and new employees, time requested to carry out specific needs.*
- *Gathering information requested to complete the applications form, where a kind of certification in order to register is needed (e.g. for Recyclers BAT certification).*

Answers (please cross the number)

1	☐	No, I don't have this activity to carry out
2	☐	No, I don't feel any administrative burden in carrying out this activity
3	☐	Yes, but I'm not able to specify or quantify the amount of burden
4	☐	Yes

If you answered 3 or 4, please answer the following further questions:

Q1a Please list the main activities/actions that are causing administrative burden

Q1b Do you think the activities/actions are fundamental?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Please specify *Why* Yes or No

Q1c Do you have enough resources in your entity/company to carry out the activities/actions?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Q1d If No, what is lacking?

Answers (please cross)

M	☐	Money
T	☐	Time
I	☐	Infrastructures

Question 2

Do you feel or experience an administrative burden in reporting put on market, take back performances, recycling targets?

Listed below couple of examples of activities related that may cause administrative burden:

- *Filling in registering form, or provide data according to specific needs (like unit, weight,..), clustering of equipments' type*
- *Hiring consultants, hiring new employees, time requested to carry out specific needs.*
- *Burden caused in assistance in inspection by control organization(s).*

Answers (please cross the number)

1	☐	No, I don't have this activity to carry out
2	☐	No, I don't feel any administrative burden in carrying out this activity
3	☐	Yes, but I'm not able to specify or quantify the amount of burden
4	☐	Yes

If you answered 3 or 4, please look at the following further questions:

Q1a Please list the main activities/actions that are causing administrative burden

Q1b Do you think the activities/actions are fundamental?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Please specify Why Yes or No

Q1c Do you have enough resources in your entity/company to carry out the activities/actions?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Q1d If No, what is lacking?

Answers (please cross)

M	☐	Money
T	☐	Time
I	☐	Infrastructures

Question 3

Do you feel or experience an administrative burden in informing the final users (incl labelling) and to recyclers?

Listed below couple of sample activities related that may cause administrative burden:

- *Time (cost) needed for design labelling (e.g translation in different languages, adjusting to different national requirements,..).*
- *Time (cost) needed for reproducing and labelling equipments put on market.*
- *Time (cost) needed for other PR activities (such TV or newspaper campaigns) to raise awareness in final users on WEEE regulations.*

Answers (please cross the number)

1	☐	No, I don't have this activity to carry out
2	☐	No, I don't feel any administrative burden in carrying out this activity
3	☐	Yes, but I'm not able to specify or quantify the amount of burden
4	☐	Yes

If you answered 3 or 4, please look at the following further questions:

Q1a Please list the main activities/actions that are causing administrative burden

Q1b Do you think the activities/actions are fundamental?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Please specify Why Yes or No

Q1c Do you have enough resources in your entity/company to carry out the activities/actions?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Q1d If No, what is lacking?

Answers (please cross)

M	☐	Money
T	☐	Time
I	☐	Infrastructures

Question 4

Do you feel or experience an administrative burden in monitoring & control enforcement?

Listed below couple of examples of activities related that may cause administrative burden:

- *Time (cost) needed to gather information requested for applications form (e.g. for Recyclers BAT certification); investments in technologies needed to get authorizations.*
- *Time (cost) needed to carry out inspections at recycling facilities, collection point or other stakeholders involved.*
- *Time (cost) needed to provide assistance to inspections by control organization(s).*

Answers (please cross the number)

1	☐	No, I don't have this activity to carry out
2	☐	No, I don't feel any administrative burden in carrying out this activity
3	☐	Yes, but I'm not able to specify or quantify the amount of burden
4	☐	Yes

If you answered 3 or 4, please look at the following further questions:

Q1a Please list the main activities/actions that are causing administrative burden

Q1b Do you think the activities/actions are fundamental?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Please specify WHY Yes or No

Q1c Do you have enough resources in your entity/company to carry out the activities/actions?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Q1d If No, what is lacking?

Answers (please cross)

M	☐	Money
T	☐	Time
I	☐	Infrastructures

Question 5

Do you feel or experience an administrative burden in setting up National Registers or Clearing Houses?

Listed below couple of examples of activities related that may cause administrative burden:

- *Time (cost) to set up National Register or Clearing house; hiring employees or consultants; buying IT infrastructures.*
- *Time (cost) needed to carry out inspections to stakeholders.*

Answers (please cross the number)

1	☐	No, I don't have this activity to carry out
2	☐	No, I don't feel any administrative burden in carrying out this activity
3	☐	Yes, but I'm not able to specify or quantify the amount of burden
4	☐	Yes

If you answered 3 or 4, please look at the following further questions:

Q1a Please list the main activities/actions that are causing administrative burden

Q1b Do you think the activities/actions are fundamental?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Please specify WHY Yes or No

Q1c Do you have enough resources in your entity/company to carry out the activities/actions?

Answers (please cross Y or N)

Y	☐	Yes
N	☐	No

Q1d If No, what is lacking?

Answers (please cross)

M	☐	Money
T	☐	Time
I	☐	Infrastructures

Question 6

According to some EC figures and the Impact Assessment on Waste Policy 0,5 to 1 % (on average) of employees are engaged on WEEE. Could you provide the number of employees in your entity/company fully engaged on WEEE?

Answers

	Number or ManHours (Please specify)
	Total employees your company/entity

If you have any comments or explanations

Annex 6.2.1b Questionnaire National Registers

National Register of Producers

	Units	
Register Set Up		
Register of Producers in place	[Yes, No]	
Name of the organization which holds the Register		
Website or Contact of the Register		
How many employees are engaged for managing the National Register?	[number or manhours]	
What are your companies expenses needed to carry out the activities of National Register?	[€ or €/year, please specify]	
Registering Obligations		
Deadline date for registering	[dd-mm-yyyy]	
Registering Fee (as joining fee to be paid only once)	[€]	
Does a Producer need a legal entity in the country for registering?	[Yes, No]	
Is annual renewal obligatory?	[Yes, No]	
Deadline date for annual renewal	[dd-mm-yyyy]	
Renewal or Annual Fee - indicate for which one you provide the fee	[€]	
How many producers are currently registerd in your country?	[number]	
Reporting EEE Put on Market Obligations		
What is the time frequency for reporting?	[Annually, Quarterly, Monthly,…]	
What is the current basis for reporting?	[weight, units, turnover, other]	
How are EEE put on market grouped?	[1-10 categories, Products,…]	
Is there a split into household (B2C)/non-household (B2B)?	[Yes/No]	

Table iii: Questionnaire National Register of Producers

Annexes 6.2.2 Data Calculations Environmental Evaluation

Annex 6.2.2a Compositions Data

Components	Components	Components
Anti-implosion belt	CRT-glass cone	Mains cord
Batteries, accumulators (average)	CRT-glass screen	Mask
Battery (Li-ion)	Degaussing	Motor (small)
Battery (NiCd)	Desktop PCs	NH3
Battery (NiMH)	Electrongun	Nickel sheet
Battery (R6)	FDD total (desktop PC)	Oil (Fridges)
Beryllium Copper sheet	Felt	OPU
Brass	Magnetic steel	OPU (80% Fe, 20% PC)
Cable flat (internal, data)	Flame retardants (halogenated)	PL/SL LCD backlight
Cable flat (internal, data) incl. connectors	Flame retardants (phosphorous)	Plug (mains cord)
Cable internal (general)	Fluorescent powder FDP	Power supply total (desktop PC)
Cable round (internal, power) incl.connectors	Fluorescent powder lamps	PVC for wiring
Capacitor (film, lacquered)	HDD standard 2006	Screws (steel, electrogalvanised)
CDROM total (desktop PC)	HDD average (desktop PC)	Speakers
Deflection coil	Heat conducting paste (Be, Ag free)	Stainless steel
Connector	Heat sink (aluminium)	Steel low alloyed
Connector pins	Hg switches and backlights	Steel sheet (electrogalvanised)
Connectors (external, for main cord)	Lacquering (metals)	Steel sheet (electrogalvanised, lacquered)
Connectors flat (internal data cable)	Lacquering (PS)	Steel sheet (tin-plated)
Connectors white (internal power cable)	LCD backlight foil	Transformers
Copper wire 1mm	LCD glassplate (mobiels)	Transistors
CRT rim (PbO)	LCD screens	Ventilators

Table iv: Compositions data

These components data have been received/anlysed over the years from a variety of producers and recycling tests. For these, due to confidentiality reasons, the exact chemical compositions cannot be disclosed. These data are used to calculate the overall chemical compositions per category. The average data for printed circuit board are disclosed in Chapter 8.0.5. The results for calculating the chemical composition are displayed in detail in Chapter 8.2. The data there forms the starting point of the calculations.

Annex 6.2.2b Transport and System Settings

Stage	Distance (km)	Way of transport
Consumer – Collection point	9.7	Car
Collection – storage	41	Truck 28t
Storage – Recyclers	158	Truck 40t
Incineration –e	114	Truck 40t
Incineration + e	145	Truck 40t
Landfill controlled	114	Truck 40t
Landfill uncontrolled	145	Truck 40t
Cement Killn	158	Truck 40t
Building Industry	250	Truck 40t
Ceramic Industry	313	Truck 40t
Battery recycling general	385	Truck 40t
Cu smelter	2,353	Truck 40t, oversea container transport
Al smelter	516	Truck 40t
Ferro smelter	350	Truck 40t
Glass recycling (mixed)	593	Truck 40t
Plastic Recycler	240	Truck 40t
Battery rec. Alkaline	613	Truck 40t
Battery rec. Li-ion	9,657	Truck 40t, oversea container transport
Battery rec. Li-polymer	9,657	Truck 40t, oversea container transport
Battery rec. NiCd	613	Truck 40t
Battery rec. NiMH	613	Truck 40t
Cone glass recycling	593	Truck 40t
Fluorescent lamp recycling	250	Truck 40t
Glass recycling (white)	512	Truck 40t
Plastic recycling FR	240	Truck 40t
Screen glass recycling	593	Truck 40t
Secondary Cu Pb Sn smelter	288	Truck 40t
Umicore	325	Truck 40t
MSW to landfill controlled	71%	
MSW to incineration +e.rec.	29%	

Table v: Transport and system settings

Annex 6.2.2c Life-Cycle Inventories

Emission data	Production values (primary materials)	Other processes and materials
Fe (in components)	ECCS steel sheet	Electricity, medium voltage, production UCTE, at grid/UCTE S
Magnetic steel	Cast iron, at plant/RER S	Electricity, medium voltage, production UCTE, at grid/UCTE S
Stainless steel	Steel, electric, chromium steel 18/8, at plant/RER S	Electricity, medium voltage, production NL, at grid/NL S
Steel low alloyed	Steel low alloy ETH U	Electricity, medium voltage, production NL, at grid/NL S
Cu	Copper, primary, at refinery/RER U	Transport, transoceanic freight ship/OCE S
Ag	Silver IVF	Delivery van <3.5t ETH S
Au	Gold IVF	Truck 16t ETH S
Pd	Palladium, at regional storage/RER U	Truck 28t ETH S
Pt	Platinum, at regional storage/RER S	Truck 40t ETH S
Al (general)	Aluminium, primary, at plant/RER S	Passenger car W-Europe ETH S
Al cast	Aluminium, primary, at plant/RER S	Transport, freight, rail/RER S
Al wrought	Aluminium 0% recycled ETH S	Sand ETH S
Mg	Magnesium, at plant/RER S	Heat, natural gas, at industrial furnace >100kW/RER S
As	Arsenic	Heat, natural gas, at industrial furnace >100kW/RER S
Be	Beryllium	Heat, heavy fuel oil, at industrial furnace 1MW/CH S
Bi	Bismuth PSM	Disposal, plastic, industr. electronics, 15.3% water, to municipal incineration/CH S
Cd	Cadmium (prim)	Heat gas B250
Co	Cobalt, at plant/GLO S	Heat from LPG FAL
Cr	Chromium, at regional storage/RER S	Glass 313 screen
Hg	Mercury, liquid, at plant/GLO S	CRT glass cone total
Li	Lithium WR	Heat, hard coal coke, at stove 5-15kW/RER S
Mn	Manganese, at regional storage/RER S	Feldspar, at plant/RER S
Mo	Molybdenum, at regional storage/RER S	Lead, concentrate, at beneficiation/GLO S
Ni	Nickel, 99.5%, at plant/GLO S	CRT glass complete
Pb	Lead, at regional storage/RER S	Heat, hard coal coke, at stove 5-15kW/RER S
Sb	Antimony WR	Fuel oil lowS stock Europe S
Sn	Tin, at regional storage/RER S	Lime, hydrated, packed, at plant/CH S
Zn	Zinc for coating, at regional storage/RER S	Steam, for chemical processes, at plant/RER S
Plastics general	ABS/PC WR	Truck (single) diesel FAL
Plastics FR	ABS/PC WR	ECCS steel 100% scrap
ABS	Acrylonitrile-butadiene-styrene copolymer, ABS, at plant/RER S	Steel, electric, chromium steel 18/8, at plant/RER S
ABS/PC	ABS/PC WR	Copper, secondary, at refinery/RER S
Epoxy	Epoxy resin A	Palladium, secondary, at refinery/RER S
other plastics	ABS/PC WR	Platinum, secondary, at refinery/RER S
PC (polycarbonate)	Polycarbonate, at plant/RER S	Aluminium, secondary, from old scrap, at plant/RER S
PE (polyethene, HD)	Polyethylene, HDPE, granulate, at plant/RER S	Lead (secondary)
PE (polyethene, LD)	Polyethylene, LDPE, granulate, at plant/RER S	Recycling plastics
PET	Polyethylene terephthalate, granulate, amorphous, at plant/RER S	Incin. ECCS steel 2000 B250
PMMA	Polymethyl methacrylate, beads, at plant/RER S	Incin. Aluminium 2000 B250
PP	Polypropylene, granulate, at plant/RER S	Disposal, plastic, industr. electronics, 15.3% water, to municipal incineration/CH S
PS (polystyrene, high impact)	Polystyrene, high impact, HIPS, at plant/RER S	Disposal, plastic, consumer electronics, 15.3% water, to municipal incineration/CH U
PUR (polyurethane, flexible foam)	Polyurethane, rigid foam, at plant/RER S	Disposal, rubber, unspecified, 0% water, to municipal incineration/CH S
PVC	Polyvinylidenchloride, granulate, at plant/RER U	Disposal, polyethylene, 0.4% water, to municipal incineration/CH S
Rubber (EPDM)	Synthetic rubber, at plant/RER U	Disposal, polyethylene terephtalate, 0.2% water, to municipal incineration/CH S
Ceramics	Ceramics ETH S	Disposal, polypropylene, 15.9% water, to municipal incineration/CH S
CRT rim (PbO)	Lead, at regional storage/RER S	Disposal, polystyrene, 0.2% water, to municipal incineration/CH S
CRT-glass complete	CRT glass complete	Disposal, polyurethane, 0.2% water, to municipal incineration/CH S
CRT-glass cone	CRT glass cone total	Disposal, wire plastic, 3.55% water, to municipal incineration/CH S
CRT-glass screen	Glass 313 screen	Disposal, rubber, unspecified, 0% water, to municipal incineration/CH S
Fluorescent powder	Zinc, concentrate, at beneficiation/GLO S	Slags per kg (process specific) S
Glass (white)	Glass, virgin/RER S	Incin. Cardboard 2000 B250
Glass (LCD)	Solar glass, low-iron, at regional storage/RER S	Incin. Paper 2000 B250
Other/ inerts	Corrugated board, fresh fibre, single wall, at plant/RER S	
Felt	Felt, at plant/RER S	
Paper	Paper, newsprint, 0% DIP, at plant/RER S	
Wood	Corrugated board, fresh fibre, single wall, at plant/RER S	
Flame retardants (halogenated)	Bisphenol A, powder, at plant/RER S	
Liquid Crystals	Ceramics ETH S	
Oil	Residual oil refinery Europe S	
Cyclopentane	Cyclopentane, at plant/RER S	
Br	Ceramics ETH S	
Cl	HCl (100%) B250	
Isobutaan	Butene, mixed, at plant/RER S	
CFC11	CFC 1	
CFC12	CFC 1	

Figure v: Life-cycle inventories

Available in SIMAPRO 7 LCA software with Eco-invent and IDEMAT databases. See www.pre.nl for details.

Annex 6.2.2d Key Technical Parameters Processes

Energy	kWh/ton	Incineration MSW	Air emission kg/kg	Water emission kg/kg	Soil emission kg/kg		Cement kiln	Air emission kg/kg	Uncontrolled landfill MSW	Water emission kg/kg
Coarse shredder, all fractions	20	Cu	0.00E+00	7.40E-07	2.05E-04		Be	3.00E-04	Hg	7.122E-05
Fine shredder, all fractions	45.6	As	1.00E-03	1.85E-06	2.75E-02		Hg	3.00E-03	Cd	2.646E-05
Disassembly, tools, sorting, electricity	0.5	Cd	5.00E-04	5.55E-04	4.62E-03		Cd	5.00E-03	As	2.212E-05
Building ind. (sand replacement)	10	Co	0.00E+00	7.40E-05	0.00E+00		As	1.00E-04	Cr	1.898E-05
Plastic recycling + extrusion	500	Cr	0.00E+00	7.40E-06	1.74E-04		Se	7.00E-04	Cu	4.527E-05
		Hg	4.22E-03	1.11E-05	5.68E-03		Cr	1.00E-04	Pb	1.572E-05
		Li	0.00E+00	0.00E+00	0.00E+00		Sb	1.00E-03	Zn	6.467E-06
		Mn	0.00E+00	0.00E+00	0.00E+00		Cu	2.00E-04	Cl	0.0143728
		Mo	0.00E+00	0.00E+00	0.00E+00		Pb	1.70E-03	Ni	3.989E-05
		Ni	0.00E+00	7.40E-05	1.84E-03		Zn	4.00E-04	Co	3.989E-05
		Pb	1.99E-03	1.11E-05	2.29E-04		Sn	1.29E-02		
		Sn	2.00E-03	3.70E-05	0.00E+00		Efficiencies	%		
		Zn	2.00E-03	7.40E-06	1.02E-03		Thermal eff.	95%		

Heating values	MJ/ kg	Cu-smelters	Recovery	Air emission kg/kg	Water emission kg/kg	Soil emission kg/kg	Building ind.	Soil emission kg/kg	Battery recycling	Recovery
PC (polycarbonate)	13	Cu	99%	6.26E-07	4.00E-04	0.00E+00	Hg	5.68E-02		
PE (polyethene, HD)	13.5	Ag	99%				Cd	7.50E-04	Fe	92%
PE (polyethene, LD)	13.5	Au	99%				As	2.86E-02	Ni	95%
PET	7.25	Pd	99%				Cr	1.78E-04	Cu	85%
PMMA	13	Pt	99%				Cu	2.05E-04	Li	0%
PP	10.35	As		9.09E-02	1.99E-02	0.00E+00	Pb	2.54E-04	Mn	73%
PS (polystyrene, high impact)	40	Bi	80%				Zn	1.13E-03	Al	93%
PUR (polyurethane, flexible foam)	13	Cd		6.50E-03			Ni	1.84E-03	Cu	96%
PVC	6.3	Cr		0.00E+00	0.00E+00	1.78E-04			Zn	97%
Rubber (EPDM)	13	Hg		4.54E-03	1.09E-02	0.00E+00			Cd	99%
Efficiencies	%	Ni	80%	0.00E+00	0.00E+00	1.84E-03				
Thermal eff.	50%	Pb	50%	1.26E-03	9.94E-04	0.00E+00				
Elect. Eff.	26%	Sb	80%	6.50E-04						
In Cu smelting:	**MJ/kg**	Sn	50%							
Fe	3.62	Zn	80%	8.66E-05						
Al	28.58									

Figure vi: Key technical parameters processes

Other data can be found in Huisman 2003a, 2004a,c,2005a, ANSEMS 2002a,b, VDZ, 2001, Goris 2004, RECHARGE 2006, Harant 2002, VERHOEF 2004, HEUKELOM 2005, Hageluken 2006, WRAP 2005a,b,2006a, MARK 2006, WOLLNY 2000, NVMP 2005, ELC 2006.

Annex 7.4.2 WEEE Plastic Treatment Technologies

MECHANICAL RECYCLING

Mechanical recycling of plastic means reprocessing the material by physical means into plastic end products or into flakes or pellets of consistent quality acceptable to manufacturers. Included within this category are all those methods to recover the inlet polymeric material as such (the process outputs are resins —either one polymer or a mixture of polymers—, but not basic polymer constituents) by "conventional" remelting; but also by other advanced technologies that incorporate purification or upgrading steps using solvents, that remove contaminants and impurities and extract the regenerated resins (e.g. Vinyloop® process for PVC) keeping the chemical structure of the polymer unchanged.

Markets for secondary raw materials determine the degree of sophistication and complexity of the mechanical recycling processes. The recycling of polymer alloys leads to not very elaborate low-added value recycled products. High-end applications require rigorous waste sorting and cleaning steps so that the recyclate meets stringent product specifications (technical and aesthetics).

One may distinguish two main strategies for mechanical recycling of sorted polymers: on the one hand recycling after (automated) identification of polymers and additives by sensors, and on the other hand separation of shredded streams by means of mechanical methods, either dry, wet or combination of both.

1. Identification with sensors

It is based on technologies in permanent evolution. The spectroscopic-based methods are the most reliable ones since they can recognise structure, composition and nature of the polymeric chains, and even identify blends, fillers and most of the additives, by comparing the unknown samples with reference libraries.

These methods may be classified in the infrared (NIR or SWIR, MIR, FT MIR, AOTF MIR), Raman (FT Raman, Dispersive Raman), laser induced (LI PS and LI TIR), Sliding Spark (SS) and X ray fluorescence (XRF) spectroscopy families.

Recognition with those methods is fast enough and can be automated. There are equipments relatively easy to operate and able to work in industrial environments, although operation costs are high. Identification with sensors has been utilised on whole plastic parts, coupled with manual or semi-automated sorting, to separate, e.g., BFR and non-BFR engineering resins (ABS, PS and PP mainly). WEEE recycling industry has traditionally used simple and fast recognition methods (solubility/insolubility in different solvents, Beilstein test, behaviour in a flame or ignition test…), which are slowly and non-automated techniques that depend on the worker experience and have low precision and accuracy. Furthermore, they can not identify blends, fillers and most of the additives. Due to these limitations, those groups of methods are used only as preliminary tests.

Last years' innovations are serving to improve the speed of spectroscopic measurement and to reduce the minimal size of the pieces reliably identified, thus allowing an increased quality of sorting and the automation applicable onto shredded plastic parts. Costs can be compensated with the value of the recovered plastics and higher process outputs (SUREPLAST 2001, COMBIDENT 2001, RECYCOMB 2005).

2. Mechanical separation (dry and wet processes)

Combinations of different dry and wet separation processes are used in the recycling industry to obtain from mixed shredded WEEP polymers streams of sufficient homogeneity and purity to be further reprocessed. Among those methods the following can be mentioned: size and gravity separation, triboelectric separation, thermal heating separation, sink/float separation, hydrocyclonic separation, flotation… (ECOLIFE 2003).

FEEDSTOCK RECOVERY

1. Depolymerisation methods (Chemical recycling)

Chemical recycling has developed little because, in the current context of the price of energy (oil), it is too expensive compared to mechanical recycling or energy recovery. Chemolysis processes require dismantling and separation of polymers, frequently with purity limits stricter than those required for mechanical recycling, which makes them suitable for recycling process scraps but not so apt for post-consumer plastic waste. After having devoted important R&D efforts to chemical recycling during the 90's, the industry seems today less interested in its development and has given up that via (for example, the Bayer company gave up the track of the polycarbonate methanolysis).

The glycolysis of the polyurethane to obtain polyol is commercially carried out on scraps and parts resulting from ELV (for example of the bumpers). It seems potentially applicable to the insulating panels of refrigerators and freezers and some trials have been run. (ISOPA 2001)

2. Use of WEEP as secondary raw material (thermochemical recovery)

Thermochemical recovery consists of adding up plastic waste to the feed of industrial processes as partial replacement of raw material and fuel. It is used in coke ovens (replacing coal partially to produce coke) and in iron and steel works and non-ferrous metal foundries (coke substitution as reducing agent and energy source). Its advantages are the flexibility in use, the dismantling costs reduction and environmental benefits (savings of fuel and coke and elimination of contaminants (e.g. flame retardants) present in plastic through the high operating temperatures). Additionally, in the smelters operation there is a strong synergy with the recovery of the precious metals in printed circuits. On the other hand, the cost of preparation of the input material is not negligible (Delavelle 2005).

In Japan such processes have been running for years in several industrial sites. In Europe few pilot tests and industrial practices are documented, e.g. use of WEEP in substitution of coke in steel mills (Stahlwerke Bremen (DE)) and use of electronics scrap with high plastic content in integrated metal smelters as feedstock and fuel substitute (Umicore plant at Hoboken (BE)).

At steel mills, iron ore, coke and auxiliary raw materials are fed into a blast furnace, and the iron ore is melted to produce pig iron. The coke is used as fuel to elevate the temperature in the furnace and also acts as a reducing agent of iron ore. Several reducing agents are available instead of coke. In the case of using plastic waste, both the C and the H present in the plastic help reducing the oxygen from the ore. Substitution of coke with plastic is limited to approximately 30-40% (mixed plastics with some limited amounts of refined SR). Injection of chlorine-contained plastics such as PVC in blast furnaces generates hydrogen chloride —due to the thermal decomposition of the plastic— that can cause corrosion of the equipment unless countermeasures are taken (dechlorination methods have been developed to allow feeding into blast furnace plastics that do contain PVC and avoid that the emission of hydrogen chloride can damage the furnace) (Tukker 1999, Hotta 2003).

Integrated metals smelter and refinery plants recover, separate and purify a wide range of precious metals, special metals, base metals, antimony and sulphur (as sulphuric acid). The recycling operations at the plants are based on complex lead/copper/tin/nickel pirometallurgy. Feed materials are various complex industrial by-products (drosses, slags, flue dusts, process sludges, filter cakes, leachates…) as well as consumer recyclables such as end-of-life automotive catalysts and printed circuit boards/electronic components. Smelter furnaces use coke as a reducing agent for the metals. Plastics or other organic substances, which are contained in the feed, can partially substitute the coke as a reducing agent and fuel as an energy source. 5-10% of WEEE plastic-rich waste (small appliances mixed or plastic parts resulting from dismantled equipment: in particular circuit boards and small electronic apparatus such as mobile phones, portable music players, calculators, telephones, modems and computer components....) can be added in the feed of metals smelters without affecting process stability and environmental emissions. The antimony contained in the feed as flame retardant is recovered and it can be assumed that organic compounds (such as brominated flame retardants TBBPA, DecaBDE, organic

phosphorus flame retardants, melamine compounds …) are essentially destructed at the high smelter operating temperature (>1100°C) and that the existing high-performance smelter off-gas cleaning systems for chlorinated dioxins/furan avoid pollution (no significant modification of emissions is observed) (Brusselaers 2006, Tange 2006).

3. Thermal and oxidative methods (pyrolysis, gasification and combinations)
As with chemolysis processes, many thermal and catalytic decomposition processes capable of treating WEEP have been discontinued or the scaling-up plans of demo plants have been stopped. Those are the cases of the Veba Combi Cracking process at KAB (DE) for the catalytic hydrogenation of mixed plastic waste (WEEP included) to syncrude, the BASF thermolysis process to basic petrochemicals (DE) and the NKT-Watech two-step pyrolysis pilot plant (DK). Japan is at a peak in this field with several processes that combine thermal treatment and combustion running successfully, such as Ebara TwinRec plants.

Gasification (partial oxidation at high temperature) of plastic waste resulting from WEEE is practised only in only one production facility in Europe, Sustec Schwarze Pumpe (SVZ) in Germany. Still this unit uses this waste only in small quantities. The costs of preparation and treatment are high, limiting the interest of this way of recovery to mixed plastic waste difficult to separate, even polluted. Moreover, the proportion of halogens in the feed should not exceed 10% in order to avoid the problems of corrosion. In January 2006 the State Ministry for Environment and Agriculture of Saxony recognized the treatment of plastics-rich waste from the pre-treatment of electrical and electronic appliances at SVZ as recycling. This decision is based on the results of a joint large-scale trial of SVZ, Tecpol and PlasticsEurope, whereby approx. 40,000 t/yr recycling capacities are available in the market for such waste (Tecpol 2006).

ENERGY RECOVERY

1. Co-combustion in MSWI with energy recovery
The thermal destruction of whole WEEE in special incinerators is adapted for equipment containing dangerous substances difficult to separate or disassemble and with high content of plastics, like miscellaenous small WEEE. The Co-combustion of the WEEE in MSWI was tested at pilot and industrial scales for the last 6-8 years. The results obtained show that the presence of BFR plastics is not a limiting factor from a technical point of view, provided that the content is under 3% in the input material (Delavelle 2005).

Trials conducted at the TAMARA pilot scale municipal solid waste combustion (MSWC) facility in the Forschungszentrum Karlsruhe (Karlsruhe Research Centre) have demonstrated that in modern MSWI plants equipped with suitable wet scrubbing systems, recycling of the bromine in plastics waste containing brominated flame retardants is technically feasible and, besides, different types of commercial bromine-based finished products can be produced, including bromine itself, hydrogen bromide or sodium bromide. Given suitable adaptation, sufficient MSWI capacity already exists in Europe to recycle all of the available brominated WEEE plastics. On the basis of previous work and the trials in the TAMARA facility reported, 2-3% of WEEE FR plastics can be safely added to MSWI feedstock. At this rate, the ratio of MSWI capacity to FR plastics added will range from 33:1 to 50:1 (Vehlow 2002).

Later large scale trials at Würzburg modern MSWI (DE) have demonstrated the successful addition of up to 26 wt% of ESR with WEEP (from SHHA, CE, IT&T) as well as the addition of shredder residue (SR) with a high metal content to the normal MSW feed, highlighting the positive role of MSWI in destroying dangerous organic compounds such as halogenated dioxins and furans (Mark 2006).

2. Use as secondary fuel (cement kiln, power plants)
The use of alternative fuels is a well proven and well established technology in most of the European cement industry and this has been the case for more than 20 years. On average, alternative fuels provide about 17% (up to 72% in some regions) of thermal energy consumption in European cement plants. Waste materials which the cement industry have utilised as alternative fuels include waste plastics. Most

alternative fuels are pre-treated (drying, homogenisation, grinding), as is the case for fossil fuels (CEMBUREAU 2007).

The potential amount of plastics as RDF has been calculated based on practical experience and technical limitations. 20% substitution potential is assumed for a cement kiln operation. Large differences exist with higher than 25% for specific operations in Switzerland, Belgium, France and other countries. Differences are more due to company strategy and installed type of kilns (Mark 2005). Limitations are set in content of chlorine and certain heavy metals and in particle size of mixed plastic waste from WEEE to be injected in the main burner (Urcelay 2006). Wastes that are fed through the main burner will be decomposed in the primary burning zone, at temperatures up to 2000°C. Waste fed to a secondary burner, preheater or precalciner will be burnt at lower temperatures, which not always is enough to decompose halogenated organic substances (EC 2001).

For power production the substitution of the hard coal demand with MPW is considered at 10 % (Mark 2005).

Process - supplier	Input material	Capacity	Outputs	Country	Comments	Ref.
NKT-Watech two-step pyrolysis:	PVC-rich waste streams (e.g. PVC cable sheathings) and electronic waste	pilot plant 1,2 tPVC/hr (300-400 tPVC/a)	$CaCl_2$ Heavy metal product (lead) Organic condensate as fuel or feedstock.	DK	no funding for scaling-up (estimated industrial scale: 15000 t/a)	(Kreißig 2003, NKT 2002, PVC 2002)
Combined hydrolisis-pyrolisis RGS-90 process	PVC cable waste	full-scale plant of 12 tPVC/hr (60 ktPVC/a).	Salt (industrial grade) for PVC industry or road salt Energy feedstock to heat sandblasting process (Oil fraction) Sandblasting product (mineral residue)	DK	full-scale plant on hold since too little PVC waste is collected on a national basis to make the plant operate economically.	(Kreißig 2003, PVC 2005, RGS 2005)
Battelle/FERCO process in Akzo Nobel steam gasification pilot plant	PVC-rich waste (cable scrap)	Small scale pilot plant (20-30 kg/hr)	Fuel gas, HCl for VCM manufacture	NL	large scale plant (50 kt/a) building plans stopped	(Tukker 1999)
ESR Co-incineration with MSW (MHKW) at Würzburg MSWI plant	ESR+ MSW (11-26% ESR, mixture of fine and coarse fractions)	large scale trial at MHKW incinerator (tests at 90% of grate capacity, equivalent to 26 t/h steam generation)	Energy option of metal recovery from grate ash	DE	Tests to demonstrate feasibility of MSW incinerators to treat WEEE	(Mark 2006)
BGL gasification at Sustec Schwarze Pumpe (SVZ) plant	MPW (mainly DSD material), including plastic fraction from shredded white goods and	industrial practice The capacity for plastic waste preparation is about 5 t/hr	synthesis gas for production of methanol and electricity	DE	SVZ seems to remain as the only major chemical recycling plant in Europe for MPW that is able to sustain the competition with cost-effective options like treatment in steelworks	(Tukker 1999, SVZ)

Process - supplier	Input material	Capacity	Outputs	Country	Comments	Ref.
	electronics (<8%).					
crushing facilities equipped with incinerators by Takuma Tech	four main appliance items: TV set, refrigerator, air conditioner and washing machine	??	plastic material left behind after separation can be turned into RDF and used as fuel for boilers	JP		(JSIM)
Ebara [TwinRec Fluidized Bed Gasification and Ash Melting]	A variety of wastes is treated, from waste plastics, SR, sludges, industrial waste, WEEE and MSW.	Various commercial plants, up to 20t/hr. A small percentage goes for waste plastic input. Mainly for ASR and MSW.	Energy. Metals like aluminium, copper and iron can be recycled as valuable products. Mineral dust and metal oxide powder is vitrified into the glass granulate.	JP	Successful technology but is more focused on metal recovery.	(Ando 2002, EBARA)
Von Roll Inova RCP (Recycling Clean Product) pyrolysis, & smelting	for applications with organic material, residual waste from recycling and ASR.	Plant at Bremerhaven designed to process 6 t/hr of MSW. ASR tests	electricity and heat raw material for the construction industry. copper and zinc	DE	Several years were required to bring the Bremerhaven facility (1996) up to full operation. A 50 kt-per-year plant fuelled by ASR was also planned for Switzerland. No information found on current status	(University of Califonia 2006, Livingston, Boerrigter 2000, von Roll)
Gibros PEC (Product and Energy Plant) pyrolysis &gasification & smelting process	ESR, ASR, MSW and others	first commercial installation is 25,000 t/yr	Synthesis or fuel gas (for combined heat and power), metals/metal mixtures (for recycling) and construction material (synthetic basalt).	DE	No information found of current situation	(Boerrigter 2000, Oudhuis)

Process - supplier	Input material	Capacity	Outputs	Country	Comments	Ref.
PU Glycolysis process by Regra	PU waste and scrap	demo plant	polyol	DE	Commercial plants available	(ISOPA 2001 a)
PU Adhesive pressing (PLATEC Plattenwerk GmbH)	Automotive PU flexible foam and PU rigid foam from domestic appliances	Current processing capacities exceed 10,000 t/yr	Boards for furniture and flooring	DE	Although this technology has been developed for polyurethanes, is able to accommodate a wide range of wastes	(ISOPA 2001b)
insulating mortar manufacture from PU Powder (ISOLA)	Briquets of rigid PUR waste from industrial production waste and post-consumer waste (end-of-life white goods e.g. refrigerators, freezers,…)		Panels (Thermogran Building Blocks®) for thermal and acoustic insulation	DE		(ISOPA 2001a, ISOPA 2005, ISOLA)
Creasolv	Studies are focused on EPS, electro waste (HIPS+ABS) mobile phones and PVB	complete pilot plant in small scale	cleanly sorted "second-hand" high quality plastic granulates, freeof pollutants.	DE	The pilot plant in Freising has demonstrated that this process is both eco-efficient and commercially viable. A demonstration plant with a capacity of 500 tonnes per year would be the expected next step.	(Mäurer 2004, CreaCycle)
Tamara (MSWC combustion plant)	plastics containing brominated flame retardants	200 – 250 kg/hr of preconditioned waste	Energy Recycled bromine	DE	TAMARA pilot scale municipal solid waste combustion (MSWC) facility have demonstrated that in modern MSWC plants equipped with suitable wet scrubbing systems, recycling of the bromine in plastics waste containing brominated flame retardants is technically feasible.	(Vehlow 2002, European Chemical Industry Council 2006)
Pyromaat (Two stage gasifier in instalation, by ECN)	plastics containing brominated flame retardants	Lab scale tests at 1.5-1.65 kg/hr	Energy Recycled bromine	NL	Test to determine feasibility. Br recovery from WEEE plastics with BFRs is technically, economically and ecologically feasible	(Boerrigter 2001)

Process - supplier	Input material	Capacity	Outputs	Country	Comments	Ref.
Umicore (Integrated metal smelters): use of plastic waste as reducing agent and fuel partially substituting coke	precious metals recycling facility. WEEE plastics	Full scale trial with 6% of WEEE plastics and 1% coke (250 t of mixed plastic rich material). The plant treated 250kt/yr. Plant capacity limit for plastic input: • 15,000 t/yr metal containing WEEP • or 45,000 t/yr PWB (which include ca. 25% plastic).	precious metals Recovered antimony (used in plastics' flame retardant formulation)	BE	The test used plastic rich fractions from WEEE with residual metals or small electronic devices as feed. The test analysed the smelter performance, concluding that it was not affected by plastic feeding. In practice, combinations of metal containing plastics from WEEE and PWB will be fed to furnace, driven by economic treatment conditions	(Tange, Brusselaers 2006)
Cementos Portland Valderrivas, S.A. – Lemona Plant (alternative fuel in cement kilns)	WEEE plastics (limited Cl and heavy metals content)	2,500 t used by mid 2006	Cement	ES	First trials in 1999. Industry practice since then.	(Urcelay 2006)
Stahlwerke Bremen (Reducing agent for iron ore in blast furnace)	Mixed plastic waste PU plastic rigid foam from domestic appliances after compacting for CFC recovery	Trials	Pig iron	DE	In development Other experiences: • In 1996 NKK (later JFE Steel Co.) commenced operations in Japan to convert plastic industrial waste (other than PVC) to blast furnace reducing agents. Plastic scrap was obtained from manufacturers of IT&T among others. 50,000 t of plastic waste was processed in 2003 that way. Another steel works processes as blast furnace feed the plastics recovered from adjacent WEEE (TV, refrigerator, washing machine, air conditioner)	(Tukker 1999, ISOPA 2001a, Hotta 2003)

Process - supplier	Input material	Capacity	Outputs	Country	Comments	Ref.
					recycling plant (800,000 units/yr). NKK has also developed a system to recover plastics from ESR fines and used them as blast furnace feed.	
MBA Polymers, Inc. and Mueller-Guttenbrunn GmbH in Kematen	WEEE and ELV highly mixed plastic-rich streams	40,000 t/yr	High grade granulates, compounds and flakes (ABS, HIPS, PP) with characteristics comparable to virgin	AT	Started in March 2006. Mechanical recycling process developed as fully automated separation steps to recover plastic fractions for manufacturing new durable goods	(MBA 2004, Slijkhuis 2006)

Table vi: Capacity treatment for WEEE plastic and applications of secondary materials: alternative options

Annex 8.0.1 Overview Environmental and Economic Questionnaires

CECED

Question 1 – Appliances put on market – Category 1A (Large Household)

Q1a) Can you indicate or estimate the total amount of appliances put on market?

Data estimated for the EU 27 (+/-2) as a whole

Y	☐	Yes
N	☐	No

Q1b) If yes, please specify:
(Please notice that we can treat more detailed data in an anonymous or aggregated form, and/ or that UN University can sign an NDA to ensure data confidentiality, please tick 'before sending information …' when that is the case.)

Category

☐ **Cat.1A:** Amounts put on market: **Large Household**
- ☐ I have attached such documents in the email reply
- ☐ Before sending information, contact me to agree on how sensitive data will be treated
- ☐ I have specified the information below:

Q1c) When specified here:

☐ Data represents 2005 or
☐ Data represents 2006

	Estimated number put on market (EU-27, x million)	Average number in households	Average weight (kg)	Typical lifetime (years)
Washing machine	M			
Tumble dryer	M			
Dish washer	M			
Microwave	M			
Electric cooker	M			
Washing machine	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			

Question 2 – Appliances put on market – Category 1B (Cooling - Freezing)

Q2a) Can you indicate or estimate the total amount of appliances put on market?

Data estimated for the EU 27 (+/-2) as a whole

Y	☐ Yes
N	☐ No

Q2b) If yes, please specify:
(Please notice that we can treat more detailed data in an anonymous or aggregated form, and/ or that UN University can sign an NDA to ensure data confidentiality, please tick 'before sending information …' when that is the case.)

☐ **Cat.1B**: Amounts put on market: **Cooling and freezing**
☐ I have attached such documents in the email reply
☐ Before sending information, contact me to agree on how sensitive data will be treated ☐ I have specified the information below:

Q2c) When specified here:

☐	Data represents 2005 or
☐	Data represents 2006

	Estimated number put on market (EU-27, x million)	Average number in households	Average weight (kg)	Typical lifetime (years)
Refrigerator	M			
Fridge/freezer	M			
Freezer	M			
Air-conditioner	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			

Question 3 – Appliances put on market – Category 2 (Small household)

Q3a) Can you indicate or estimate the total amount of appliances put on market?

Data estimated for the EU 27 (+/-2) as a whole

Y	☐ Yes
N	☐ No

Q3b) If yes, please specify:
(Please notice that we can treat more detailed data in an anonymous or aggregated form, and/ or that UN University can sign an NDA to ensure data confidentiality, please tick 'before sending information …' when that is the case.)

☐ **Cat.2**: Amounts put on market: **Small domestic**
☐ I have attached such documents in the email reply
☐ Before sending information, contact me to agree on how sensitive data will be treated ☐ I have specified the information below:

Q3c) When specified here:

☐ Data represents 2005 or
☐ Data represents 2006

	Estimated number put on market (EU-27, x million)	Average number in households	Average weight (kg)	Typical lifetime (years)
Vacuum cleaner	M			
Iron	M			
Kettle	M			
Toaster	M			
Food mixer	M			
Hair dryer	M			
Fryer	M			
Grinder	M			
Coffee machine	M			
Electric knive	M			
Elec. tooth brush	M			
Hair-cutter	M			
Clocks, watches	M			
Scale	M			
Electric heater	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			
Other:	M			

Question 4 – Product characteristics category 2

Q2a) Do you have detailed information on category 2 products?
Data may be estimated, the following is only used to get an indication of this category.

☐ Data represents 2005 or
☐ Data represents 2006

	Average product compositions or sampling data (tick if yes)	Annex II components incl. (f.i. batteries)	Documents are attached in reply email	Contact me first (sensitive information)
Vacuum cleaner	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Kettle	☐	☐	☐	☐
Toaster	☐	☐	☐	☐
Food mixer	☐	☐	☐	☐
Hair dryer	☐	☐	☐	☐
Fryer	☐	☐	☐	☐
Grinder	☐	☐	☐	☐
Coffee machine	☐	☐	☐	☐

Electric knive	☐	☐	☐	☐
Elec. tooth brush	☐	☐	☐	☐
Hair-cutter	☐	☐	☐	☐
Clocks, watches	☐	☐	☐	☐
Scale	☐	☐	☐	☐
Electric heater	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐

EERA

1. Please list the number of employees in your company (related to WEEE):
Number of employees (related to WEEE)
Number of employees (total)

2. Size of the company (WEEE related), turnover:
< 2 million € ☐
<10 million € ☐
< 50 million € ☐
> 50 million € ☐
other ☐ Please specify: million €

In which EU member states are you active?

	Activity	Collection	Transport	Recycling
AT	Austria	☐	☐	☐
BE	Belgium	☐	☐	☐
BG	Bulgaria	☐	☐	☐
CY	Cyprus	☐	☐	☐
CZ	Czech Republic	☐	☐	☐
DK	Denmark	☐	☐	☐
EST	Estonia	☐	☐	☐
FI	Finland	☐	☐	☐
FR	France	☐	☐	☐
DE	Germany	☐	☐	☐
GR	Greece	☐	☐	☐
HU	Hungary	☐	☐	☐
IRL	Ireland	☐	☐	☐
IT	Italy	☐	☐	☐
LV	Latvia	☐	☐	☐
LT	Lithuania	☐	☐	☐
LU	Luxembourg	☐	☐	☐
MA	Malta	☐	☐	☐
NL	Netherlands	☐	☐	☐
PL	Poland	☐	☐	☐
PO	Portugal	☐	☐	☐
SK	Slovakia	☐	☐	☐
RO	Romania	☐	☐	☐
SL	Slovenia	☐	☐	☐
SP	Spain	☐	☐	☐
SW	Sweden	☐	☐	☐
UK	UK	☐	☐	☐
NO	*Norway*	☐	☐	☐
CH	*Switzerland*	☐	☐	☐

Question 1 Administrative burden

see Annex 6.2.1

Question 2 Key WEEE figures and trends

Could you provide some key figures on WEEE related activities?

Q2a Please list the amount of WEEE treated per year

☐ Data represents 2005 or
☐ Data represents 2006

0-5 kton	5-10 kton	10-20 kton	20-50 kton	>50 kton	Please specify if>50	Cat.	**Amounts of WEEE treated per year total *(when applicable)***
☐	☐	☐	☐	☐		1a	Large Household
☐	☐	☐	☐	☐		1b	Cooling and freezing
☐	☐	☐	☐	☐		2	Small domestic
☐	☐	☐	☐	☐		3a	IT excl. CRT's
☐	☐	☐	☐	☐		3b	IT CRT's (monitors)
☐	☐	☐	☐	☐		4a	CE excl. CRt's
☐	☐	☐	☐	☐		4b	CE CRT's (TV's)
☐	☐	☐	☐	☐		*3c/4c*	*Flat panel displays*
☐	☐	☐	☐	☐		5	Lighting
☐	☐	☐	☐	☐		6	Tools and toys
☐	☐	☐	☐	☐		7	Toys
☐	☐	☐	☐	☐		8	Medical equipment
☐	☐	☐	☐	☐		9	Monitoring and control
☐	☐	☐	☐	☐		10	Automatic dispensers

If you have any comments or explanations

Q2b Can you specify or indicate the percentage (or specific amount)of WEEE treated per country

☐ Data represents 2005 or
☐ Data represents 2006

Cat.	**1a**	**1b**	**2**	**3a**	**3b**	**4a**	**4b**	***3c/4c***	**5**	**6**	**7**	**8**	**9**	**10**
EU 27+2	**LHHA**	**C&F**	**SHA**	**IT-CRT**	**IT+CRT**	**CE-CRT**	**CE+CRT**	***FPD***	**Lamps**	**Tools**	**Toys**	**Med**	**M&C**	**AD**
AT														
BE														
BG														
CY														
CZ														
DK														

EST														
FI														
FR														
DE														
GR														
HU														
IRL														
IT														
LV														
LT														
LU														
MA														
NL														
PL														
PO														
SK														
RO														
SL														
SP														
SW														
UK														
NO														
CH														

Q2c Do you think there is currently enough treatment capacity in the following countries

(Please only fill this in for the countries where being active or otherwise known)

Cat.	**1a**	**1b**	**2**	**3a**	**3b**	**4a**	**4b**	***3c/4c***	**5**	**6**	**7**	**8**	**9**	**10**
EU 27+2	**LHHA**	**C&F**	**SHA**	**IT-CR**	**IT+CR**	**CE-CR**	**CE+CR**	***FPD***	**Lamps**	**Tools**	**Toys**	**Med**	**M&C**	**AD**

				T	T	T	T							
AT	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
BE	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
BG	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
CY	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
CZ	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
DK	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
EST	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
FI	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
FR	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
DE	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
GR	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
HU	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
IRL	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
IT	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
LV	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
LT	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
LU	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
MA	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NL	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
PL	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
PO	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
SK	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
RO	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
SL	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
SP	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
SW	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
UK	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NO	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
CH	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q2d Please indicate/ estimate the developments in markets for the following secondary materials

Listed below are a couple of example items that could shortly be addressed:

- *How long do you think there will be a market for secondary CRT glass?*
- *What other options are available in the future for an useful reapplication for CRT glass?*
- *Will there be a further increase in plastics separation?*
- *Will the demand for secondary plastics from WEEE grow and how do you assess the developments for specific types of plastics or different material fractions (mixed, residue, flame-retardant plastics)*

Comments on developments for CRT glass (mixed, screen, cone)

Comments on developments for plastics (FR versus non-FR, per type, per fraction)

Comments on developments for other secondary materials (metals, alloys, etc.)

Question 3 Detailed figures

Could you provide some detailed figures on WEEE treatment?

Q3a Recycling percentages declared

☐ Data represents 2005 or
☐ Data represents 2006

Recycling%	Recovery%	Cat.	Cat. *(when applicable)*
%	%	1a	Large Household
%	%	1b	Cooling and freezing
%	%	2	Small domestic
%	%	3a	IT excl. CRT's
%	%	3b	IT CRT's (monitors)
%	%	4a	CE excl. CRt's
%	%	4b	CE CRT's (TV's)
%	%	*3c/4c*	*Flat panel displays*
%	%	5	Lighting
%	%	6	Tools and toys
%	%	7	Toys
%	%	8	Medical equipment
%	%	9	Monitoring and control
%	%	10	Automatic dispensers

Please indicate which definition of recycling/ recovery is used? (for instance REPTOOL)

Q3b Amounts of Annex II components removed (per year)

☐ Data represents 2005 or
☐ Data represents 2006

	Ton	a	Asbestos
	Ton	b	Batteries (external)
	Ton	c	Batteries (internal), (if applicable, otherwise state the amount under b.))
	Ton	d	Chlorofluorocarbons (CFC), hydro chlorofluorocarbons (HCFC) or hydro fluorocarbons (HFC)
	Ton	e	Hydrocarbons (HC) (if not separated from d., fill in "see d.")
	Ton	f	Components with radioactive substances
	Ton	g	CRT's
	Ton	h	Fluorescent coatings from CRT's (if not separated from g., fill in "see g.")
	Ton	i	Gas discharge lamps (not from LCD panels)
	Ton	j	Hg backlight lamps (from LCD panels or other flat panels)
	Ton	k	LCD panels (without Hg backlights or as complete panels when j. is empty)
	Ton	l	Other mercury containing components, such as switches, contacts, thermometers, thermostats and relays
	Ton	m	PCB's (Poly Chlorinated Biphenyls)/PCT's containing components
	Ton	n	Plastics with brominated flame retardants
	Ton	o	Printed circuit boards

	Ton	p	Refractory ceramic fibres (RCF's)
	Ton	q	Toner cartridges
	Ton	r	External electric cables
	Ton	s	Electrolytic capacitors
	Ton	t	Toner cartridges, liquid and pasty, as well as colour toner

If you have any comments or explanations

Q3c Are the following items removed manually from WEEE treated: Internal batteries, printed circuit boards, plastics with brominated flame-retardants, fluorescent coatings from CRT's, external electric cables, electrolytic capacitors

Y	☐	Yes
N	☐	No

Q3d Please indicate the average destination of the following material fractions:
Answers

Listed is an example answer:

- *CRT glass: x% to CRT glass (screen to screen, cone to cone), y% to smelters, z% to other: specify destination*
- *Mixed plastics: x% to plastic recycling, y& to incineration incl. energy recovery, z% to other: specify destination*
- *Sorted plastics: x% to plastic recycling, y& to incineration incl. energy recovery, z% to other: specify destination*

	CRT glass
	Mixed plastics
	Sorted plastics

If you have any comments or explanations

Q3e Please indicate 'technical costs' (when sensitive as a general range) per treatment category (total costs: including transport, treatment, revenues, R&D, disposal, excluding collection costs)

Listed is an example answer:

- *TV's: Total treatment costs are in between € 300 and € 500.*

When the below information is too sensitive: please fill in the alternative table with percentages

'Technical costs'			**Cat.**	**Cat.** ***(when applicable)***
Ranging from	till	€/ton	1a	Large Household
Ranging from	till	€/ton	1b	Cooling and freezing

Ranging from	till	€/ton	2	Small domestic
Ranging from	till	€/ton	3a	IT excl. CRT's
Ranging from	till	€/ton	3b	IT CRT's (monitors)
Ranging from	till	€/ton	4a	CE excl. CRt's
Ranging from	till	€/ton	4b	CE CRT's (TV's)
Ranging from	till	€/ton	*3c/4c*	*Flat panel displays*
Ranging from	till	€/ton	5	Lighting
Ranging from	till	€/ton	6	Tools and toys
Ranging from	till	€/ton	7	Toys
Ranging from	till	€/ton	8	Medical equipment
Ranging from	till	€/ton	9	Monitoring and control
Ranging from	till	€/ton	10	Automatic dispensers

Alternative table with percentages:

Technical cost as percentage **(treatment + disposal + transport + R&D, overhead =100%)**						
Treatment	Disposal	Transport	R&D, overhead	Revenues **(negative)**	**Cat.**	**Cat.** ***(when applicable)***
%	%	%	%	- %	1a	Large Household
%	%	%	%	- %	1b	Cooling and freezing
%	%	%	%	- %	2	Small domestic
%	%	%	%	- %	3a	IT excl. CRT's
%	%	%	%	- %	3b	IT CRT's (monitors)
%	%	%	%	- %	4a	CE excl. CRt's
%	%	%	%	- %	4b	CE CRT's (TV's)
%	%	%	%	- %	*3c/4c*	*Flat panel displays*
%	%	%	%	- %	5	Lighting
%	%	%	%	- %	6	Tools and toys
%	%	%	%	- %	7	Toys
%	%	%	%	- %	8	Medical equipment
%	%	%	%	- %	9	Monitoring and control
%	%	%	%	- %	10	Automatic dispensers

Question 4 Follow-up questions

Would you be able and willing to provide further detailed figures or supporting documents on WEEE treatment?

(Please notice that we can treat more detailed data in an anonymous or aggregated form, and/ or that UN University can sign an NDA to ensure data confidentiality)

Q4a Material fraction destinations:

- ☐ Amount of WEEE treated: sampling data on subcategories/ numbers and type of appliances per stream
- ☐ Expected/ estimated treatment capacities
- ☐ Developments in markets and applications of secondary materials CRT glass
- ☐ Developments in markets and applications of secondary materials plastics
- ☐ Compositions of (sub) streams or even individual products from: Large Household
- ☐ Compositions of (sub) streams or even individual products from: Cooling and freezing
- ☐ Compositions of (sub) streams or even individual products from: Small domestic

- ☐ Compositions of (sub) streams or even individual products from: IT excl. CRT's
- ☐ Compositions of (sub) streams or even individual products from: IT CRT's (monitors)
- ☐ Compositions of (sub) streams or even individual products from: CE excl. CRt's
- ☐ Compositions of (sub) streams or even individual products from: CE CRT's (TV's)
- ☐ Compositions of (sub) streams or even individual products from: *Flat panel displays*
- ☐ Compositions of (sub) streams or even individual products from: Lighting
- ☐ Compositions of (sub) streams or even individual products from: Tools and toys
- ☐ Compositions of (sub) streams or even individual products from: Toys
- ☐ Compositions of (sub) streams or even individual products from: Medical equipment
- ☐ Compositions of (sub) streams or even individual products from: Monitoring and control
- ☐ Compositions of (sub) streams or even individual products from: Automatic dispensers
- ☐ Amounts of Annex II components removed (all entries, besides the aforementioned)
- ☐ Recycling and recovery percentages per category
- ☐ Average destinations CRT glass fractions
- ☐ Average destinations mixed plastics
- ☐ Average destination of sorted plastics
- ☐ Split in technical costs into transport, treatment, revenues, R&D, disposal
- ☐ **Other relevant information namely:**

EICTA

Question 1 – Appliances put on market – Category 3 and 4 (IT+CE)

Q1a) Can you indicate or estimate the total amount of appliances put on market for this category or parts of this category?

Subcategories could be: CRT containing, flat-panel displays, printers, faxes, desktops, laptops, small IT, PC accessories, LCD and plasma TV, audio, video, copiers, servers, cellular phones, etc.
Data estimated for the EU 27 (+/-2) as a whole

☒ Y ☐ Yes
☒ N ☐ No

Q1b) If yes, please specify:
(Please notice that we can treat more detailed data in an anonymous or aggregated form, and/ or that UN University can sign an NDA to ensure data confidentiality, please tick 'before sending information …' when that is the case.)

Category

☐ **Cat.3:** Amounts put on market: IT
☐ **Cat.4:** Amounts put on market: CE
☐ I have attached such documents in the email reply
☐ Before sending information, contact me to agree on how sensitive data will be treated
☐ I have specified the information below:

Q1c) When specified here:

☐ Data represents 2005 or
☐ Data represents 2006

Please specify types of equipment (f.i. desktops, LCD TV's, etc…)	Estimated number put on market (EU-27, x million)	Average number in households	Average weight (kg)	Typical lifetime (years)
Desktop PC's	M			
Laptops	M			
PC accessories	M			
Cellular Phones	M			
CRT Monitors	M			
LCD Monitors	M			
Printers (laser)	M			
Printers (inktjet)	M			
Faxes, other office eq.	M			
Copiers	M			
Audio equipment	M			
LCD TV's	M			
Plasma TV's	M			
CRT TV's	M			
Video equipment	M			
Other:	M			
Other:	M			
Other:	M			

Other:	M			
Other:	M			
Other:	M			

Question 2 – Product characteristics category 3 and 4

Q2a) Do you have detailed information on category 2 products?

Data may be estimated, the following is only used to get an indication of this category.

☐ Data represents 2005 or
☐ Data represents 2006

	Average product compositions or sampling data (tick if yes)	Annex II components incl. (f.i. batteries, Hg backlights)	Documents are attached in reply email	Contact me first (sensitive information)
Desktop PC's	☐	☐	☐	☐
Laptops	☐	☐	☐	☐
PC accessories	☐	☐	☐	☐
Cellular Phones	☐	☐	☐	☐
CRT Monitors	☐	☐	☐	☐
LCD Monitors	☐	☐	☐	☐
Printers (laser)	☐	☐	☐	☐
Printers (inktjet)	☐	☐	☐	☐
Faxes, other office eq.	☐	☐	☐	☐
Copiers	☐	☐	☐	☐
Audio equipment	☐	☐	☐	☐
LCD TV's	☐	☐	☐	☐
Plasma TV's	☐	☐	☐	☐
CRT TV's	☐	☐	☐	☐
Video equipment	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐

OTHER RELEVANT DATA?

Please specify when you have any other relevant data available for the WEEE Review, like for instance data on other categories than 3 and 4, etc..?

ELC

WEEE Compliance Legislative Requirements

For Category Lighting only	Items	Units
SECTION 1 - Transposition Status		
Decree transposing WEEE Directive 2002/96/EC		[Yes, Draft, Incomlete]
National Reference		
Date Decree has been published		[dd-mm-yyyy]
Is there an English Version of Decree(s)		[Yes, No]
Starting date for take back obligation		[dd-mm-yyyy]
Date for other obligations (except registering)		[dd-mm-yyyy & Obligation]
SECTION 2 - Registering Obligations		
Register of Producers in place		[Yes, No]
Name of the organization who held the Register		
Website or Contact		
Deadline date for registering		[dd-mm-yyyy]
Registering Fee		[€]
Information for Registering		[List]
Annual renewal		[Yes, No]
Deadline date for annual renewal		[dd-mm-yyyy]
Renewal or Annual Fee		[€]
Information for renewal		[List]
SECTION 3 - Reporting Obligations		
Put on Market		
Do Producers have obligation to report B2C Equipment put on market to Control Organization		[Yes, No]
Could Obligation be fulfilled by Compliance Scheme		[Yes, No]
Obligation to report B2C put on market starts from		[dd-mm-yyyy]
Reporting Basis		[Unit, Weight, % Sales, Mixed, Other]
Time Frequency		[Annually, Quarterly, Monthly, Other]
Do Producers have obligation to report B2B Equipment put on market to Control Organization		[Yes, No]
Could Obligation be fulfilled by Compliance Scheme		[Yes, No]
Obligation to report B2B put on market starts from		[dd-mm-yyyy]
Reporting Basis		[Unit, Weight, % Sales, Mixed, Other]
Time Frequency		[Annually, Quarterly, Monthly, Other]

Take Back Performances

Do Producers have obligation to report B2C Equipments collected & treated to Control Organization	[Yes, No]
Could Obligation be fulfilled by Compliance Scheme	[Yes, No]
Obligation to report B2B collected & treated starts from	[dd-mm-yyyy]
Do Producers have obligation to report B2B Equipments collected & treated to Control Organization	[Yes, No]
Could Obligation be fulfilled by Compliance Scheme	[Yes, No]
Obligation to report B2B collected & treated starts from	[dd-mm-yyyy]

Recycling Performances

Do Producers have obligation to report B2C Recycling Performances	[Yes, No]
Could Obligation be fulfilled by Compliance Scheme	[Yes, No]
Obligation to report B2B collected & treated starts from	[dd-mm-yyyy]
Deadline Recycling & Recovery target (art. 7 Directive)	
Directive	[dd-mm-yyyy]
National Law	[dd-mm-yyyy]
Do Producers have obligation to report B2B Recycling Performances	[Yes, No]
Could Obligation be fulfilled by Compliance Scheme	[Yes, No]
Obligation to report B2B collected & treated starts from	[dd-mm-yyyy]

SECTION 4 - Compliance Scheme

Definition of Historical WEEE	[dd-mm-yyyy]
Options for Historical Waste	[Clearing House, Mandatory Scheme, Free Choice]
Option for New Waste	[Clearing House, Mandatory Scheme, Free Choice]

SECTION 5 - Financing mechanism ACCORDING TO LEGISLATION

Visible Fee (VF)

B2C

Historical	[Mandatory, Allowed, Prohibited]
New	[Mandatory, Allowed, Prohibited]
VF Decided by	[Law, Compliance Scheme(s), Producer(s), Others]

B2B

Historical	[Mandatory, Allowed, Prohibited]
New	[Mandatory, Allowed, Prohibited]
VF Decided by	[Law, Compliance

	Scheme(s), Producer(s), Others]
Financing separate collection (From Final User to Collection Point)	
Carried out by municipalities	[Yes, No, Containers, Others]
Carried out by Retailers	[Yes, No, %VF, Others]

SECTION 6 - Financial Guarantees (ref. Art 8 WEEE Directive)

B2C	[Required, Not Required]
Starting date for providing financial guarantees	[dd-mm-yyyy]
Assured by joining a Compliance Scheme	[Yes, No]
To be provided by other means (Like Blocked Bank Account, Insurance, Contracts Third Party…)	[List Options]
B2B	[Required, Not Required]
Starting date for providing financial guarantees	[dd-mm-yyyy]
Assured by joining a Compliance Scheme	[Yes, No]
To be provided by other means (Like Blocked Bank Account, Insurance, Contracts Third Party…)	[List Options]

SECTION 7 - Specific Non Household (B2B) Compliance Requirements

Obligation to report B2B contracts to Control Organization(s)	[Yes, No]
Financing Take Back of Historical WEEE	[Producer, Final User]
Producer is not responsible if	[Contract agreement, Non Equivalent AEE, Other, Always Responsible]
Financing Take Back of New WEEE	[Producer, Final User]
Producer is not responsible if	[Contract agreement, Non Equivalent AEE, Other, Always Responsible]

WEEE Organisational Issues

For Category Lighting only	Items	Units
Organizational Structure		**Per category**
a. Collective/Individual Scheme(s) authorized		[listing]
b. Collection and treatment: Breakdown into categories, B2B/B2C	Like 'large household, cooling and freezing, IT, lighting, small household, CRT containing)	[listing]
c. Collection structures	i. Number and type of Collection Points, Logistic providers, Recyclers, Historical/present flows breakdown	[type and number of collection points (municipalities, retailers, other, …) logistic partners and recyclers]

d. Acceptance criteria products	Who could use the channel/ how are the flows collected	[Old for new (1:1, any:any), fees?]
e. Who pays collection?	Municipalities, retailers, producers, government, compliance schemes, other	[listing and amount in €/piece, kg or ton]

Amounts and Trends

For Category Lighting only	Items	Units
WEEE treatment amounts and capacities	**Per (sub) category**	
a. Quantities of EEE put on the Market	Per types of equipment, split by B2C and B2B, average weight per piece	[pieces, tons]
b. Quantities of WEEE arising, now and future	Per types of equipment, split by B2C and B2B, average weight per piece	[pieces, tons]
c. Quantities of WEEE separately collected	Per types of equipment, split by B2C and B2B, average weight per piece	[pieces, tons]
d. Amounts of whole appliances re-used/refurbished	Per types of equipment, split by B2C and B2B, average weight per piece	[pieces, tons]
e. Amounts of WEEE recycled/reprocessed	Per types of equipment, split by B2C and B2B, average weight per piece	[pieces, tons]
f. Treatment capacities	List technologies applied: Per category, or material fraction, inside/ outside own MS, What plans do you have for future treatment capacity	[listing, pieces, tons per country]
g. Markets for secondary materials	Per material fraction, (metals, glass, plastics)	[pieces, tons per country]
h. Typical lifetimes of EEE	By types of equipment	[pieces, tons]

Technical Costs

For Category Lighting only	Items	Units
Technical costs		**Per category**
a. Separate collection (see also 2.e.), sortine	Per collection route: Municipalities, retailers, producers, government, compliance schemes, other	[listing and amount in €/piece, kg or ton, sorting costs in €/ton]
b. Transport	From collection point to recyclers, from recyclers to processors	per route: [in €/ton]
c. Treatment	i. Handling, ii. Sorting, iii. Disassembly, iv. Shredding, v. Sorting materials stream	Technical costs only, not prices! [€/ton]
d. Revenues	i. Second Raw Materials, ii. Components (?) , iii. ReUse (?)	when available [€/ton]
e. Disposal	i. landfill, ii. Incineration, iii haz.waste disposal	[€/ton] and [%] of processed input
f. R&D	Technical, economic and environmental developments	[€] and total treated [ton/yr]

Environmental

For Category Lighting only	Items	Units
Environmental impacts (per WEEE or collection category)		
a. Collection amounts	Number and weight	[pieces, kg, ton]
b. Compositions	Number of substances: different lists of sophistication)	[%,ppm,kgs, kgs total]
c. Amounts of Annex II components removed	(per Annex II entry) quantification of removal operations	[kg, ton, concentration]
d. Material fraction destinations	When possible list of technologies used and also exported amounts of fractions	[listing destination, tons]
e. Reported recycling and recovery percentages, amounts of recovered materials	Definition/ tool used, amounts recovered	[listing rec.%, recov.%, ton]
f. Fractions send to final waste disposal	Specify incineration, landfill and when possible, compositions	[listing, tons]
g. Availability secondary processing options	F.i. in listing: metal smelting, glass and plastic recycling, etc.	[listing, tons]
h. Other (energy, transport, auxiliary substances)	List when possible, transport distances, energy consumed, substances or fuel used	[listing, kms, MJ, tons]

Table vii: Questionnaire ELC

ERP and WEEE Forum

Question 3 Key WEEE figures and trends
Could you provide some key figures on WEEE related activities?

Please copy this slide and fill it in for every available year

Q3a Please list the amount of WEEE treated per year

	Data represents 2005 or	2005																												
	Data represents 200x	200x																												
	Amounts of WEEE treated per year total *(when applicable)*	In tons/ year	AT	BE	BG	CY	CZ	DK	EST	FI	FR	DE	GR	HU	IRL	IT	LV	LT	LU	MA	NL	PL	PO	SK	RO	SL	SP	SW	UK	*NO*	*CH*
1a	Large Household																													
1b	Cooling and freezing																													
2	Small domestic																													
3a	IT excl. CRT's																													
3b	IT CRT's (monitors)																													
4a	CE excl. CRt's																													
4b	CE CRT's (TV's)																													
3c/ 4	*Flat panel displays*																													
5	Lighting																													
6	Tools																													
7	Toys																													
8	Medical equipment																													
9	Monitoring and control																													
10	Automatic dispensers																													

The same table applies for Recovery & Recycling percentages.

Figure vii: Questionnaire ERP & WEEE Forum. Amounts and Recovery & Recycling percentages

Question 4 Technical costs estimates

Data for systems operational before 2002

Data represents 2005 or	2005														
Data represents 200x	200x	1a	1b	2	3a	3b	4a	4b	3c/ 4c	5	6	7	8	9	10
Amounts of WEEE treated per year total *(when applicable)*	In €/ ton	Large Household	Cooling and freezing	Small domestic	IT excl. CRT's	IT CRT's (monitors)	CE excl. CRt's	CE CRT's (TV's)	Flat panel displays	Lighting	Tools	Toys	Medical equipment	Monitoring and control	Automatic dispensers
Collection costs															
Costs for containers															
Transport costs															
Treatment costs															
Disposal costs															
Other costs															

The same table applies for other periods (systems operational between 2002 and 2005, systems operational after 2005).

Figure viii: Questionnaire ERP & WEEE Forum

Orgalime

Question 1 – Change of Scope: inclusion/ exclusion of equipments (This is a COUNTRY SPECIFIC question)

Q1a) Is a clear, unique, stated by national law, definition of appliances *in or out* of the scope available in your Member State?

Y	☐	Yes
N	☐	No

Please, if you answered yes, provide the list or the criteria (decision tree, other instruments) used to define appliances in or out of the scope of the WEEE Directive.

☐ I have attached such documents and sent them along by email
☐ The information can be found here: (specify website or contact details)

Question 2 – Change of Scope: B2B versus B2C (This is a COUNTRY SPECIFIC question)

Q3a) What is the definition of household (B2C) and non-household (B2B) equipments?

According to national transposition of WEEE Directive. Please check FOR YOUR COUNTRY if definitions in the attached documents (DEFINITIONS.DOC) are correct.

When information is not correct or present: please state as appropriate:

☐ National Reference (Law name, number) where the definitions are stated:

Correct definitions:
☐ Definition of Producer (please paste English text or translate):

☐ Definition of Put on Market (please paste English text or translate):

☐ Definition B2C (please paste English text or translate):

☐ Definition B2B (please paste English text or translate):

☐

Q3b) Is any of the 1-10 categories excluded from a B2B/B2C split according to your national transposition?

If NO, tick 'No exclusion'
If YES, tick one of the options in the last four columns

Cat.	Category	No exclusion (Tick if 'NO')	Tick if 'YES' and tick only one option:			
			All B2C	All B2B	No differences	Other
1a	Large Household	☐	☐	☐	☐	☐
1b	Cooling and freezing	☐	☐	☐	☐	☐
2	Small domestic	☐	☐	☐	☐	☐
3a	IT excl. CRT's	☐	☐	☐	☐	☐
3b	IT CRT's (monitors)	☐	☐	☐	☐	☐
4a	CE excl. CRt's	☐	☐	☐	☐	☐
4b	CE CRT's (TV's)	☐	☐	☐	☐	☐
3c/4c	*Flat panel displays*	☐	☐	☐	☐	☐
5	Lighting	☐	☐	☐	☐	☐
6	Tools and toys	☐	☐	☐	☐	☐
7	Toys	☐	☐	☐	☐	☐
8	Medical equipment	☐	☐	☐	☐	☐
9	Monitoring and control	☐	☐	☐	☐	☐
10	Automatic dispensers	☐	☐	☐	☐	☐

Question 4 – Appliances put on market

Q4a) Can you indicate or estimate the total amount of appliances put on market?

Data may represent the EU 27 (+/-2) as a whole, EU regions (south, central, east, etc.) or specific Member States.

(Please notice that we can treat more detailed data in an anonymous or aggregated form, and/ or that UN University can sign an NDA to ensure data confidentiality, please tick 'before sending information …' when that is the case.)

Category

☐ **Cat.1A:** Amounts put on market: **Large Household**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.1B**: Amounts put on market: **Cooling and freezing**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.2**: Amounts put on market: **Small domestic**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.3A**: Amounts put on market: **IT excl. CRT's**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.3B**: Amounts put on market: **IT CRT's (monitors)**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.4A**: Amounts put on market: **CE excl. CRT's**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.4B**: Amounts put on market: **CE CRT's (TV's)**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.3C/4C**: Amounts put on market: ***Flat panel displ.***

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.5**: Amounts put on market: **Lighting**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.6**: Amounts put on market: **Tools**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.7**: Amounts put on market: **Toys**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.8**: Amounts put on market: **Medical**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.9**: Amounts put on market: **Monitoring & control**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.10**: Amounts put on market: **Aut. dispensers**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

Question 5 Compositions

Can you provide further detailed figures or supporting documents on compositions?

(Please notice that we can treat more detailed data in an anonymous or aggregated form, and/ or that UN University can sign an NDA to ensure data confidentiality, please tick 'before sending information …' when that is the case.)

☐ **Cat.1A:** Compositions of (sub) categories or even individual products: **Large Household**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.1B**: Compositions of (sub) categories or even individual products: **Cooling and freezing**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.2**: Compositions of (sub) categories or even individual products: **Small domestic**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.3A**: Compositions of (sub) categories or even individual products: **IT excl. CRT's**

- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.3B**: Compositions of (sub) categories or even individual products: **IT CRT's (monitors)**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.4A**: Compositions of (sub) categories or even individual products: **CE excl. CRT's**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.4B**: Compositions of (sub) categories or even individual products: **CE CRT's (TV's)**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.3C/4C**: Compositions of (sub) categories or even individual products: ***Flat panel displ.***
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.5**: Compositions of (sub) categories or even individual products: **Lighting**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.6**: Compositions of (sub) categories or even individual products: **Tools**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.7**: Compositions of (sub) categories or even individual products: **Toys**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.8**: Compositions of (sub) categories or even individual products: **Medical**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.9**: Compositions of (sub) categories or even individual products: **Monitoring & control**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

☐ **Cat.10**: Compositions of (sub) categories or even individual products: **Aut. dispensers**
- ☐ I have attached such documents in the returned email
- ☐ Before sending information, contact me to agree on how sensitive data will be treated

Annex 8.0.2 Key Social Data

Annex 8.2.2a Overview Social Impacts Questionnaire & SME Panel

Question	Questionn.	SME Panel	Total
A. Employment and Labour Market			
1. Does the implementation of the WEEE Directive facilitate new job creation in your company/organisation?			
Yes	23	158	181
No	8	4	12
5. Does the implementation of the WEEE Directive facilitate loss of jobs in your company/organisation?			
Yes	5	39	44
No	25	10	35
B. Health and Safety Standards			
8. Does the implementation of the WEEE-Directive result in any new measures in your company/organisation affecting health and safety standards (e.g. safety regulations, introduction of technologies…)?			
Health and Safety Standards			
Yes	7	76	83
No	23	10	33
C. Training/Capacity Building and Awareness Rising			
12. Does the implementation of the WEEE-Directive result in new need for WEEE training or information measures in your company/organisation (e.g. informative staff meetings, training workshops, publishing of brochures on health and safety standards, placement of information on the intranet …)?			
Yes	25	---	25
No	6	---	6
Additional qualifications			
Yes	---	170	170
No	---	17	17
facilitate changes in the workplace through restructurings, adaptations and technological innovations			
Yes	---	77	77
No	---	21	21
restrict changes in the workplace through restructurings, adaptations and technological innovations			
Yes	---	77	77
No	---	21	21

Table viii: Overview social impacts - Results from questionnaire and SME Panel

Annex 8.0.2b Questionnaire Social Impacts WEEE Directive

Question List

A. Employment and Labour Market

1. Does the implementation of the WEEE Directive facilitate new job creation in your company/organisation?

Yes ☐
No ☐

If no, you may go directly to Question 5.

2. If yes, how many jobs are created in your company/organisation?

(Number)

(Select frequency) Only once ☐
Monthly ☐
Annually ☐
Other ☐ *Please specify:*

3. What kind of new jobs are created?

(Please tick)

Permanent ☐
Temporary ☐
Contracting of freelancers/consultants ☐
Other ☐ *Please specify:*

4. Which particular jobs in which areas are created?

(State) job/area e.g. manual dismantler in materials recycling

5. Does the implementation of the WEEE Directive facilitate loss of jobs in your company/organisation?

Yes ☐
No ☐

If no, you may go directly to Question 8.

6. If yes, how many jobs have been lost in your company/organisation?

(Number)

(Select frequency) Only once ☐
Monthly ☐
Annually ☐
Other ☐ *Please specify:*

7. Which particular jobs in which area have been lost?

(State) job/area

e.g. manual dismantler in materials recycling

B. Health and Safety Standards

8. Does the implementation of the WEEE-Directive result in any new measures in your company/organisation affecting health and safety standards (e.g. safety regulations, introduction of technologies…)?

Yes ☐
No ☐

If no, you may go directly to Question 10.

9. If yes, which measures are being undertaken?

(State)

10. Are you aware of any approaches towards your company/organisation targeting affects on the local environment resulting in changes in noise/pollution sonore, air quality etc. (e.g. complaint letters, newspaper articles…)?

Yes ☐
No ☐

11. If yes, please specify:

(State)

C. Training/Capacity Building and Awareness Rising

12. Does the implementation of the WEEE-Directive result in new need for WEEE training or information measures in your company/organisation (e.g. informative staff meetings, training workshops, publishing of brochures on health and safety standards, placement of information on the intranet …)?

Yes ☐
No ☐

If no, you may go directly to Question 16.

13. If yes, how? Please specify.

(State)

14. How much do you invest in these (new) training and information measures in staff and/or money expenditure?

(Number of staff)

(Select frequency)

- Only once ☐
- Monthly ☐
- Annually ☐
- Other ☐ *Please specify:*

(Amount in €)

(Select frequency)

- Only once ☐
- Monthly ☐
- Annually ☐
- Other ☐ *Please specify:*

15. In which type of measures are you investing? Please specify the issues targeted and the measures implemented.

(State)

16. Does the implementation of the WEEE-Directive result in a new need for information of your business partners and customers?

Please note: Information is seen as support for staff, consumers etc. in the implementation on the Directive. Campaigning, as referred to in question 20 et sqq., includes any activities energetically pursued to accomplish a specific purpose or interest.

Yes ☐
No ☐

If no, you may go directly to Question 20.

17. If yes, how? Please specify.

(State)

18. How much do you invest in these (new) information measures in staff and/or money expenditure?

(Number of staff)

(Select frequency)

- Only once ☐
- Monthly ☐
- Annually ☐
- Other ☐ *Please specify:*

(Amount in €)

(Select frequency) Only once ☐
Monthly ☐
Annually ☐
Other ☐ *Please specify:*

19. In which type of measures are you investing? Please specify the issues covered, the target groups addressed and the measures implemented.

(State)

20. Does the implementation of the WEEE-Directive result in a new need for of campaigning through your company/organisation?

Please note: Campaigning includes any activities energetically pursued to accomplish a specific purpose or interest. Information, as referred to in question 16, is seen as support for staff, consumers etc. in the implementation on the Directive.

Yes ☐
No ☐

If no, you may directly do to Question 24.

21. If yes, how? Please specify.

(State)

22. How much do you invest in these (new) campaigning measures in staff and/or money expenditure?

(Number of staff)

(Select frequency) Only once ☐
Monthly ☐
Annually ☐
Other ☐ *Please specify:*

(Amount in €)

(Select frequency) Only once ☐
Monthly ☐
Annually ☐
Other ☐ *Please specify:*

23. In which type of measures are you investing? Please specify the issues covered, the target groups addressed and the measures implemented.

(State)

D. Digital Divide

24. What is your contribution to equal access to IT services and goods (hardware etc.) for the entire society (e.g. charity donations, export of used equipment, no contribution…)?

(State)

25. Has this been changed due to the implementation of the WEEE-Directive?

Yes ☐
No ☐

If no, you may go directly to Question 27.

26. If yes, how? Please specify what has changed and why it has changed.

(State)

27. If you wish, please provide feedback (comment on the consultation – relevance of the questionnaire, etc.)

28. If you wish to further explore this issue e.g. via telephone, please feel free to contact us at +49-(0)228-815-0213/-0214 or info@step-initiative.org

Thank you for your cooperation!

Annex 8.0.4 Key Economic Data

Annex 8.0.4a Administrative Burden Survey

Only Q2 qnd Q4 of the "Questionnaire on Administrative Burden for Stakeholders" were submitted to EERA. Responses to Questionnaire from EERA (Recyclers) were grouped together to confidentiality reasons. Responses are then listed. There are no correlations between responses listed on the same line as potentially coming not from the same recycler. For Q1, Q3 and Q5 N.Q. (No Question) is displayed accordingly.

# File	Stakeholder Type	Size	Employees	Member State	Q1	Q1b	Q1c	Q2	Q2b	Q2c	Q3	Q3b	Q3c	Q4	Q4b	Q4c	Q5	Q5b	Q5c
1	Producer	Large	3500	EU	2	Y	Y	4	Y	Y	2	Y	N.A.	3	Y	N	2	N.A.	N.A.
2	Producer	Micro	5	Finland	2	N.A.	N.A.	2	N.A.	N.A.	2	N.A.	N.A.	2	N.A.	N.A.	2	N.A.	N.A.
3	Producer	N.A.	N.A.	Finland	2	Y	Y	1	N	Y	2	Y	Y	1	N	Y	1	Y	Y
4	Producer	Large	N.A.	EU	4	Y	Y	1	Y	Y	2	N	Y	1	Y	N.A.	4	Y	Y
5	Producer	Large	N.A.	EU	4	N.A.	Y	4	Y	Y	3	N.A.	Y	3	Y	Y	3	Y	Y
6	Producer	Medium	46	EU	3	Y	Y	2	N.A.	N.A.	2	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.
7	Producer	N.A.	N.A.	Finland	3	Y	Y	3	Y	Y	3	Y	Y	3	Y	Y	2	Y	Y
8	Producer	Large	N.A.	EU	4	Y	N	4	Y	N	4	Y	N	4	Y	Y	1	N.A.	N.A.
9	Producer	N.A.	N.A.	Italy	4	Y	Y	4	Y	Y	4	Y	Y	1	N.A.	N.A.	1	N.A.	N.A.
10	Producer	N.A.	N.A.	Italy	3	Y	Y	3	Y	Y	4	N	Y	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
11	Producer	N.A.	N.A.	Italy	3	Y	N	3	Y	N	3	N	N	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
12	Producer	N.A.	N.A.	Italy	3	Y	Y	3	Y	Y	4	Y	N	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	Producer	Large	4000	EU	2	N.A.	N.A.	2	N.A.	N.A.	2	N.A.	N.A.	2	N.A.	N.A.	2	N.A.	N.A.
14	Producer	Large	N.A.	EU	3	N	N	4	Y	N	3	Y	N	3	Y	N	1	N.A.	N.A.
15	Producer	Large	10000	France	3	Y	N	3	Y	N	3	Y	Y	1	Y	Y	2	N.A.	N.A.
16	Municipalities	N.A.	N.A.	UK	3	Y	Y	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.
17	Producer	Large	N.A.	EU	4	N	N	4	Y	N	3	Y	N	4	Y	N	1	N.A.	N.A.
18	Producer	Medium	101	Germany	4	Y	N	4	Y	N	4	Y	N	4	Y	N	1	N.A.	N.A.
19	Producer	Large	N.A.	EU	4	N	Y	4	N	Y	4	N	Y	4	Y	Y	1	N.A.	N.A.
20	Producer	Micro	5	Italy	3	Y	N	3	Y	N	4	Y	N	3	Y	N	3	Y	N
21	Producer	Large	170000	EU	4	Y	Y	4	Y	Y	4	N	Y	2	N	N.A.	4	Y	Y
22	Producer	Large	40000	EU	4	Y	Y	1	Y	Y	2	Y	Y	1	Y	N.A.	4	Y	Y
23	Producer	Large	N.A.	EU	3	Y	Y	3	Y	Y	3	Y	Y	3	Y	Y	4	Y	N.A.
24	Producer	Medium	125	Hungary	2	N.A.	Y	4	Y	Y	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.

# File	Stakeholder Type	Size	Employees	Member State	Q1	Q1b	Q1c	Q2	Q2b	Q2c	Q3	Q3b	Q3c	Q4	Q4b	Q4c	Q5	Q5b	Q5c
25	Producer	Large	N.A.	EU	3	Y	Y	4	Y	Y	4	N	Y	1	Y	N.A.	1	Y	Y
26	Municipalities	Large	300	Luxembourg	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.
27	Municipalities	N.A.	N.A.	UK	3	Y	N	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.
28	Producer	Large	7000	Germany	4	Y	Y	3	Y	Y	4	N	Y	3	N.A.	N.A.	3	N.A.	N.A.
29	Producer	Large	2200	Germany	4	Y	N	4	Y	N	2	Y	Y	2	Y	Y	4	Y	N
30	Producer	Large	350	EU	4	Y	N	4	Y	N	4	Y	N	1	N.A.	N.A.	1	N.A.	N.A.
31	Compliance Scheme	Micro	3	Slovenia	N.A.	Y	Y	4	Y	N	2	Y	N	3	Y	N	1	Y	N.A.
32	Compliance Scheme	Micro	8	Hungary	2	Y	N	3	Y	Y	1	N.A.	N.A.	3	Y	N	3	Y	Y
33	Compliance Scheme	Micro	5	Norway	2	Y	Y	2	Y	Y	2	Y	Y	2	Y	Y	1	Y	N.A.
34	Producer	Large	380	Germany	4	Y	N	4	Y	N	4	Y	N	4	Y	N	4	Y	N
35	Compliance Scheme	Micro	10	Czech Republic	3	Y	Y	3	N	Y	3	Y	Y	3	Y	Y	3	N	Y
36	Producer	Small	25	Scandinavia	3	Y	Y	2	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.	2	N.A.	N.A.
37	Producer	Large	800	EU	3	Y	N	3	N	N	2	Y	Y	4	Y	Y	1	N	Y
38	Association	N.A.	2	Poland	3	Y	Y	3	Y	Y	2	N.A.	N.A.	1	N.A.	N.A.	3	N.A.	N.A.
39	Compliance Scheme	Micro	3	UK	4	Y	Y	4	Y	Y	2	N.A.	N.A.	2	N.A.	N.A.	1	N.A.	N.A.
40	Producer	Medium	65	Germany	4	Y	Y	4	Y	Y	4	Y	Y	3	N.A.	N	N.A.	N.A.	N.A.
41	Producer	Large	1200	Ireland	3	N	N	4	Y	N	1	N.A.	N	3	Y	N	3	Y	N
42	Producer	Large	N.A.	EU	4	Y	Y	4	Y	N	3	N.A.	N.A.	3	N.A.	N.A.	1	N.A.	N.A.
43	Producer	Large	5000	EU	4	Y	N	4	Y	N	4	N	N	4	Y	N	1	N.A.	N.A.
44	Refurbisher	Large	10000	EU	4	N	Y	4	Y	N	4	N	Y	4	Y	Y	4	Y	Y
45	Producer	Small	3	Ireland	3	N	N	3	N	N	3	N	N	3	N	N	1	N.A.	N.A.
46	Distributor	Large	700	Germany	3	Y	Y	3	Y	Y	1	N.A.	N.A.	4	Y	Y	3	Y	Y
47	Producer	Large	320	Spain	4	Y	Y	2	N.A.	N.A.	4	N	N	4	Y	N	4	Y	N
48	Producer	Large	1000	Germany, Austria	4	Y	Y	4	Y	Y	4	Y	Y	4	Y	N	3	Y	Y
49	Compliance Scheme	Medium	18	Netherlands	N.A.	Y	Y	4	N	Y	4	N	Y	4	Y	Y	4	Y	Y
50	Association	N.A.	8	Slovakia	4	Y	N	4	Y	N	2	N.A.	N.A.	4	Y	N	4	Y	N

# File	Stakeholder Type	Size	Employees	Member State	Q1	Q1b	Q1c	Q2	Q2b	Q2c	Q3	Q3b	Q3c	Q4	Q4b	Q4c	Q5	Q5b	Q5c
51	Producer	Medium	36	Ireland	2	Y	Y	4	Y	Y	1	Y	Y	1	N.A.	N.A.	1	N.A.	N.A.
52	Producer	Micro	2	Ireland	4	N	Y	4	Y	N	2	N.A.	N.A.	2	N.A.	N.A.	2	N.A.	N.A.
53	Producer	Micro	6	Ireland	4	Y	N	4	Y	N	4	Y	N	1	N.A.	N.A.	1	N.A.	N.A.
54	Distributor	Small	18	Ireland	3	Y	Y	3	Y	N	3	Y	N	4	Y	N	1	N.A.	N.A.
55	Distributor	Micro	2	Ireland	3	Y	N	3	Y	N	1	N.A.	N.A.	3	Y	N	1	N.A.	N.A.
56	Producer	Medium	100	Ireland	2	N.A.	N.A.	2	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.
57	Producer	Large	2200	EU	4	Y	Y	4	Y	Y	2	N.A.	N.A.	2	N.A.	N.A.	4	Y	Y
58	Producer	Micro	1	Ireland	4	N	N	4	N	N	4	N	N	4	N	N	1	N.A.	N.A.
59	Association	N.A.	N.A.	EU	4	Y	N	4	Y	N	4	Y	N	4	Y	N	4	Y	N
60	Producer	Micro	8	Ireland	3	N	Y	1	N	N.A.	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.
61	Producer	Large	167505	Germany	3	Y	Y	3	Y	Y	3	Y	Y	3	Y	Y	3	Y	Y
62	Producer	Large	250	EU	3	Y	Y	3	Y	Y	2	Y	Y	2	Y	Y	2	Y	Y
63	Producer	Large	N.A.	EU	4	N	N	4	N	N	1	N.A.	N.A.	1	N.A.	N.A.	1	N.A.	N.A.
64	Distributor	Micro	3	Ireland	2	N.A.	Y	2	N	Y	2	N	Y	2	N	Y	1	N.A.	N
65	Recycler	N.A.	100	N.A.	N.Q.	0	0	1	N	N	N.Q.	0	0	1	N	N	N.Q.	0	0
66	Recycler	N.A.	107	N.A.	N.Q.	0	0	2	N	N	N.Q.	0	0	2	N	N	N.Q.	0	0
67	Recycler	N.A.	12	N.A.	N.Q.	0	0	2	N	N	N.Q.	0	0	2	N	N	N.Q.	0	0
68	Recycler	N.A.	140	N.A.	N.Q.	0	0	2	N	N	N.Q.	0	0	2	N	N	N.Q.	0	0
69	Recycler	N.A.	14000	N.A.	N.Q.	0	0	2	N	Y	N.Q.	0	0	2	N	Y	N.Q.	0	0
70	Recycler	N.A.	150	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
71	Recycler	N.A.	230	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
72	Recycler	N.A.	27	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
73	Recycler	N.A.	300	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
74	Recycler	N.A.	3000	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
75	Recycler	N.A.	3500	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
76	Recycler	N.A.	370	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
77	Recycler	N.A.	40	N.A.	N.Q.	0	0	3	Y	Y	N.Q.	0	0	3	Y	Y	N.Q.	0	0
78	Recycler	N.A.	60	N.A.	N.Q.	0	0	4	Y	Y	N.Q.	0	0	4	Y	Y	N.Q.	0	0
79	Recycler	N.A.	600	N.A.	N.Q.	0	0	4	Y	Y	N.Q.	0	0	4	Y	Y	N.Q.	0	0

Table ix: Administrative Burden Survey

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?

# File	Stakeholder Type	Member State	Answ Q1	Answ Q1a	Answ Q1b	Why	Answ Q1c	Answ Q1d
1	Producer	EU	2		Y	To be registered as a producer is fundamental. Failure to do so leads to free-riding and sanctions	Y	
2	Producer	Finland	2		N.A.		N.A.	
3	Producer	Finland	2		Y		Y	
4	Producer	EU	4	Split between B2B and B2C not possible as lamps are dual use; reporting lamps as 1 category (gasdischarge) is sufficient. Reporting on a more detailed level causes large administrative burden and no substantial added value. Clear rule on this will facilitate european alignment on the reporting in the individual member states.	Y	In the present set-up of the legislation result of collection & recycling as % of put on the market is essential for measuring the actual performance. Reporting can be on an agregated level to keep reporting/administrating efficient.	Y	
5	Producer	EU	4	In obtaining information from some countries authorities due to lack of clarity or they themselves being delayed.	N.A.		Y	
6	Producer	EU	3	Having to register/report separately in each country and in some cases not being able to do this from a central regional location.	Y	I believe registration and reporting is important to ensure bona fide producers are not put at an economic disadvantage to "free-riders"	Y	
7	Producer	Finland	3	Provide data according to specific needs.	Y	It's important to know what we are recycling and how much.	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
8	Producer	EU	4	1) The definition of B2B/B2C and the lack of consistency - Cisco is a B2B company in all countries except netherlands where we have B2C products based on their definition. 2) We have had to hire people to analyse compliance schemes and legal representation to ascerain if we are eligible to register in the nation registers/compliance schemes. 3) Lack of ability for us to take producer responability can lead to a lot of work with partners and distributors as we try to minimise the impact on them of Cisco equipment. 4) Effectively the lack of harmonisation of the directive across member states has lead to an increased and un-necessary admin burden	Y	1) Most of the activities list above are necessary but due to the variation of national legislation it has made each one much more onerous. 2) We would like to be able to take producer responsibility everywhere and this would be a significant gain and reduction in admin workload. 3) The burden could be too much for smaller companies who do not have the resources of the large multinationals	N	T I
9	Producer	Italy	4	1) Familiarising with obligations and training employees. 2) Adjusting and producing needed data. 3) Filling form and Submitting the information.	Y	1) It's necessary to completely satisfied the WEEE Requirements. 2) it is an obligation given to producers from the Italian reception of the WEEE Directive.	Y	
10	Producer	Italy	3	1) Familiarising with obligations and training employees.	Y	To create a system map	Y	
11	Producer	Italy	3	1) Adjusting and producing needed data. 2) Filling form and Submitting the information.	Y	1) Registering is just one off activity there is no need of familiarising. But it might become a difficult activity in case registering obligations and procedures are all different among 25-27 European Member States. In this case famialiarising with activities might be needed to save time. 2) In the worst case of 25-27 different Registers we could not have enough resources.	N	M T

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
12	Producer	Italy	3	1) Familiarising with obligations and training employees. 2) Adjusting and producing needed data. 3) Filling form and Submitting the information.	Y	1) Producers are still unaware of such new obligations 2) They have to collect market information and finance the structure and verify current activity	Y	
13	Producer	EU	2		N.A.		N.A.	
14	Producer	EU	3	1) Several rules are in place according with local legal rules. WEEE has not the same involvement/responsibility in all countries. No centralized. 2) The major problems arose for SIG licence. 3) Documentation to present to authorities not always clearly stated. 4) Lack of experience/information in authorities side. 5) Difficulties to decide to join a consortia or create a SIG (B2B/B2C definitions/support). 6) Investigation for finding the guarantee required by authorities to complete the registration process (blocked account, insurance….)	N	This could have been avoided if the information would be clearly defined. The registration itself should not cause administrative burden.	N	I
15	Producer	France	3	1) Collection of registering informations which are not the same for all the european countries. 2) Association of sales information and weights. 3) Split B2B, B2C (definition not the same for all the countries).	Y		N	T I
16	Municipalities	UK	3	We will have to register our Civic Amenity Recycling Centres as collection points. In addition, we will have to negotiate site clearance arrangements/contracts with producer compliance schemes. Site layouts and infrastructure will also have to be reviewed/altered to accommodate WEEE activities. We are unable to quantify the amount of burden at this stage.	Y	If we are not able to register sites as collection points for WEEE, we will not qualify for free WEEE collection and therefore the cost of transporting and treating WEEE will fall to this organisation.	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
17	Producer	EU	4	1) Investigating whether the company can register or not in all EU MS. 2) Investigating when, where and how to register. 3) Investigating whether a product belongs to the B2B or B2C category. 4) Investigating how to meet the obligations for the finance guarantee	N	The effort to register in all EU MS can be significantly reduced if all countries would use the same definitions, same procedures, same data format, etc.	N	T
18	Producer	Germany	4	1) Registering EAR: Company, financial Guarantee, type of producs. 2) Checking of all details, in case of EAR very complicated and slow system.	Y	We need to react immediately, because of the tight time frames given.	N	M T I
19	Producer	EU	4	1) Administrative issues associated to the local definition of Producer and identification of the responsible party for Registration. (E.g. Impossibility of extra requirements for registration for Producers legallly established in a 3rd MS (foreign producer), registration for 3rd party products for system integrators (specially in intracommunity trade). Potential requirements for multiple registrations for intra-community trade.) 2) Obligation to segregate information according to origin of the product (manufactured in-country, imported, acquired in a 3rd MS, etc.) 3) Lack of flexibiliy regarding proofs of financial guarantees (e.g. Spain and Germany) 4) Muliple steps in Registration and upfront payments (e.g. Germany). 5) Different registration numbers provided at different MSs with obligation to include this Reg number in Invoices, shipping documents, etc.	N	1) Registration should - above all - allow to identify Producers and how these comply with WEEE related obligations. National Registers should be open to any company legally established in EU. 2) Registration should require the appropiate level of deail regarding Producer's activities and its Compliance Programs and not require an excessive amount of information that is unnecessary (e.g. unis of products, breakdown according to origin, etc.).	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
20	Producer	Italy	3	It isn't possible to specify it because in Italy there isn't the adequate indications, in terms of applicable laws, to perform the subject of the question; nevertheless, I would expect tipically Italian complicated regulations.	Y	Because they are stated in the Directive and therefore in the national laws.	N	T I
21	Producer	EU	4	Effort for registration itself depends on the requirements of each EU-Member State. The main reasons for administrative burdens are: 1) The differentiation between "B2B" (EEE other than EEE used in private households) and "B2C"-equipment is not harmonized - in some countries e.g. according to customer type, in others by properties of the equipment. As a result, time consuming conutry-specific decisions need to be made (e.g. justification for B2B properties needs to be provided.) 2) Registers have different substructures below WEEE-categories, e.g. different Types of Equipment - again as a result no harmonized data management is possible. 3) Especially for B2B-equipment additional efforts in classifying products whether they are affected by the WEEE or not are necessary - as the scope of the directive regarding (especially) cat. 9 is not precise - and some MS have differeent interpretions on the scope.	Y	Non harmonized scope and B2B-B2C-differentiation makes a general approach regarding data management impossible.	Y	
22	Producer	EU	4	1) Split between B2B and B2C not possible as lamps are dual use; reporting lamps as 1 category (gasdischarge) is sufficient. 2) Reporting on a more detailed level causes large administrative burden and no substantial added value. Clear rule on this will facilitate	Y	In the present set-up of the legislation result of collection & recycling as % of put on the market is essential for measuring the actual performance. Reporting can be on an agregated level to keep reporting/administrating	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
				european alignment on the reporting in the individual member states.		efficient.		
23	Producer	EU	3	1) to adjust internal statistics to required data following WEEE categories. 2) internal control and inspection. 3) also external auditing required by registers (example Germany).	Y	Registration as a continuous process which requires a change of internal IT-support and additional resources (see also Question 2).	Y	
24	Producer	Hungary	2		N.A.		Y	
25	Producer	EU	3	The burden is relatively low as it is a one time activity. In countries where company is present, this activity is done by company employees, in countries without company presence, we are using consultants	Y	Only when all companies effected by WEEE, are known (registered), the number of freeriders can be controlled.	Y	
26	Municipalities	Luxembourg	1		N.A.		N.A.	
27	Municipalities	UK	3	Uncertain to the exact burdens until we have registered our Recycling Centres as designated collection facilities.	Y		N	M T
28	Producer	Germany	4	1) Access to the registration portal. 2) effort for guarantee contract. 3) determination of the relevant products and their weight.	Y		Y	
29	Producer	Germany	4	1) No Overview on different national regulations. 2) No European Registration possible (we deliver to hundreds of Distributions all over Europe and each of them forces us to register in "their" country, even if the distributors are very small). 3) different weights notifiable in the memberstates (including package, no	Y	1) We are producers no attorneys. We have to pay attention to x different national WEEE regulations and we have to keep these lists of weights up to date. 2) Each Distributor sends products through Europe and we have to cancel products in memberstate 1 and to notify the same products two	N	T I

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
				batteries, without package, includig manuals, including batteries and so on).		days later in the next memberstat (and so on).		
30	Producer	EU	4	1) collection of the specific national requirements. 2) implementation of/compliance with national requirements.	Y	1) registration is condition to be able to sell. 2) legal compliance.	N	M T I
31	Compliance Scheme	Slovenia	N.A.		Y	Because, this data are the basis for the financial responsibilities of the producers.	Y	
32	Compliance Scheme	Hungary	2		Y		N	T I
33	Compliance Scheme	Norway	2		Y		Y	
34	Producer	Germany	4	1) Hiring consultants, providing data, looking for data needed for registering and reporting. 2) Making contracts with recyclers an so on….	Y	Is is for a good purpose. But anyway a lot of work, which could be made much more easier in my mind.	N	T I
35	Compliance Scheme	Czech Republic	3	1) sorting EEE according EEE categories and subcategories, to explain the WEEE act and its impact, presentations. 2) communication with producers (to explain all liabalities, agreement between comliance scheme and producer,…), communication with Ministry of Environment on behalf of producers (handing over the documents,to inform of any changes)	Y	Yes for compliance scheme, because of comliance scheme bear the administrative costs on behalf of producers	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
36	Producer	Scandinavia	3	1) reporting and reconsiling of sold items including the work to gathering information. 2) Major problems is to gather information from dealers who are active in all Scandinavian countries (what have they put on market in Sweden?).	Y	Yes, to report sold qty is an obligation…	Y	
37	Producer	EU	3	1) Completing the registration forms, locating the certificates for re-registration, issuing PO's to pay for registration, dealing with rejected applications due to the business model not meeting the Producer Definition, confirming with the Impoter to fullfill the WEEE registration requirement on behalf of my company. 2) The complexity of the Producer definiteion between the countries has caused a lot of burden in joining schemes and later being told your company doesn't meet the registration requirements. This is a continuous cycle of running around in circles. 3) The reporting timeframes and requirements are different across the Member States and an administrative nightmare. I am constantly filling out reports for the member states and keeping track of the 3 month, 1 month, 1 year, periods that are needed is difficult to manage.	Y	Activities are fundamental but require resources which in most cases can not be out-sourced. They are time consuming and in some cases a full-time job in itself.	N	T I
38	Association	Poland	3	filling in registering form, provoiding information on number of units and weight	Y	The Central Register has to know the number of units and weight of EEE introduced on the market to compare it then with the raports which will be submited every single quarter	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
39	Compliance Scheme	UK	4	1) Imprecise definitions in Schedule 2. 2) Non household luminaires should be defined as luminaires embodying gas discharge lamps. 3) Includng non household luminaires instead of household luminaires.	Y	How can a producer determine whether his luminaires are going to be used in a household or in a business when he sells via wholesalers, who sell to contractors.	Y	
40	Producer	Germany	4	1) The Online Registration proceeding itself. 2) To get the information for the monthly report about marketinput out of our own system. 3) The usage of the Online System of the German EAR.	Y	The whole system in Germany is to complicated and far to expensive.	Y	
41	Producer	Ireland	3	Own internal problems with issuing cheques on time	N	internal problems to date	N	M T I
42	Producer	EU	4	1) Identifying recycling compliance scheme. 2) 2. Development of compliance scheme contracts. 3) Processing compliance scheme financial details to enable electronic funds transfer (EFT). 4) Completing company internal processes to ensure correct invoicing from different company legal entities. 5) Documenting WEEE registration numbers within the company. 6) Process to include the wheelie bin label on registered products. 7) Processing WEEE registration authorities financial details for EFT. 8) Tracking invoices for timely payment. 9) Identifying recycler. 10) Development of recycler implementation processes. 11) Completing contacts with recycler. 12) Processing recyler financial details for EFT. 13) Development and sustaining the company WEEE website for our channel customers. 14) Managing the company's WEEE query email account. 15) Each country has a unique registration	Y	Due to the number of countries involved and their different methods of WEEE implementation, there must be company mechanisms in place to ensure a smooth implementation and running of WEEE.	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
				system. This requires a review of the application and information requirements for each country which are all slightly different and a duplication of information entry for products. No standard format or centralized system.				
				16) No consistent agreement on who is the producer and must register. Therefore, there is some duplication in product registration for the same products by different "producers" (eg, distribution companies vs. manufacturing companies are both registering the same products and potentially "double counting" the weights). 17) No consistent agreement on foreign entity registration. Therefore, in certain countries producers cannot register because they do not have local entities. 18) Low volume producers have essentially the same administrative burden as high volume producers.				

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
43	Producer	EU	4	The difficulties that arise for us as a company that exports products to all of the EU Countries is in the inconsistency of approach for each of the Countries. Each Country may have different requirements. The other main difficulty is language based, particularly when trying to interpret what the main requirements are and in many cases where the registration takes place on line and an english language version of the website is not available.	Y	I think that the activity of registering as a producer is necessary to ensure the practical application of the WEEE Directive, but it would make perfect sense to have a central European Register that each of the administrative authorities in each country could then access. Producers could then input consistent information into the central register for each country.	N	T I
44	Refurbisher	EU	4	1) Registering in 25 different countries with different tools. 2) Reporting in different countries based on different requirements (type of equipment, definition of weight, different periods,…)	N	We don't know whether more IT waste will be collected than before.	Y	
45	Producer	Ireland	3	1) Collecting data on very small components(weights etc). 2) Calculation of 3 year waste plan (mostly guesswork). 3) finding recycling specialists for various components. 4) The disproportionate cost of registration for a small company -- our cost is €1000 per annum while a large multi -national pays €2000 per annum!	N	Calculating for a piece of metal weighing a few hundred grams is waste of time and money. A waste plan is only possible for a company with stable or predictable trading conditions.	N	T
46	Distributor	Germany	3	WEEE Directive hard to implement with our Business Setup due to importer-obligations. As a result, pricing problems arise and reporting system is swelled (providing data, IT-Systems, etc…).	Y	Compliance with EU-Directive must be ensured.	Y	
47	Producer	Spain	4	Actually at the registry process, there is a gap regarding the categories of WEEE, because there is not a specific list for each product and therefore some companies are placing	Y	Because we must all regist the waste quatity of the same product at the same category to avoid distortion of the market shares.	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
				the information where they consider opportune.				
48	Producer	Germany, Austria	4	1) Austria: one-time action, small effort. 2) Germany: one-time action, but bigger effort due to adminstration of the guarantee.	Y	Some kind of coordination body is crucial to make the distribution of responsibilites fair and transparent.	Y	
49	Compliance Scheme	Netherlands	N.A.	We are the register	Y		Y	
50	Association	Slovakia	4	1) Compliance schemes (CS) are not registered officialy, no rules and definition of Compliance schemes in law. 2) Uncertinity of definition of individual responsibility.	Y	1) they are "CS" founded and managed by recyclers or collecting companies with no responsibility for future waste. 2) in relation to previous point unfair competition with dumping pricing from related CS.	N	I
51	Producer	Ireland	2	Too much contradictory information in the initial stages of WEEE directive, no exact or precise answers to obligations and roles as a Producer.	Y		Y	
52	Producer	Ireland	4	Filling Out forms	N	Could be automated	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
53	Producer	Ireland	4	1) Annual registration with WEEE Register Society requires an understanding of a very complex scheme that is not well understood by most SME's. As a business we have had to divert an amount of scarce resources into studying the WEEE Directive in order to understand our obligations. 2) the analysis required to produce accurate filing is not catered for by financial systems, and requires manual analysis of annual sales data using spreadsheet analysis etc. 3) the cost of registration annually adds an unwelcome financial burden on top of the administration overheads required to maintain compliance. 4) we would strongly suspect that many operators in the market are not compliant and therefore the burden on compliant businesses is disproportionate.	Y	Mainly because the administrative requirements are out of step with normal business software products. New versions of financial / stock systems require an enormous overhaul of data structures and record content in order to reduce the manual processing load.	N	I
54	Distributor	Ireland	3	I feel this could be done as a one off form and payment. I understand the importance of this put the time involved is causing problems.	Y		Y	
55	Distributor	Ireland	3	Printing off reports to qualify and quatify the amont of WEEE we generate, because we are a small company our information systems are limited. I personally find the whole process a burden on the company and myself.	Y	Yes as a company we need to by law quantify the amount of WEEE we generate.	N	M T I
56	Producer	Ireland	2		N.A.		N.A.	
57	Producer	EU	4	Most definitely yes! First of all it's much too frequent. A number of countries allow quarterly reporting which is an ideal compromise.	Y	The frequency is definitely fundamental: quarterly reporting is one third of the administrative burden! we should not be randomising these resources with needless monthly reporting when	Y	

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
						quarterly would be sufficient.		
58	Producer	Ireland	4	Completion of WEEE reg. membership renewal form.	N	Our details are already on record and have not changed	N	T I
59	Association	EU	4	Finding out all 27 EU Member States national registration authorities, the different registration costs to be paid, different data formats to be studied, different marking requirements to be checked.	Y	Above mentiooned necessary actions are very time consuming as only poor information is available!	N	M T I
60	Producer	Ireland	3	Time taken to review purchases for month, splitting types of sales and obtaining information on weights etc	N	I don't understand why exactly weights are required. Would it not be adequate simply to provide quantity of sales of each item.	Y	
61	Producer	Germany	3	Registration at the EAR and the monthly updates to the EAR.	Y	With the data given to the EAR our take-back amount is specified. The financial bulk is very important.	Y	
62	Producer	EU	3	Providing data according to specific needs in different countries and time requested to carry out specific needs	Y		Y	
63	Producer	EU	4	The main burden is now with developing a Waste management plan.	N	We are a sales company and do not manufacture any products locally, so there are limited resourses in the organisation that are not focused on selling	N	I
64	Distributor	Ireland	2		N.A.		Y	
65	Recycler	N.A.	N.Q.					
66	Recycler	N.A.	N.Q.					
67	Recycler	N.A.	N.Q.					
68	Recycler	N.A.	N.Q.					
69	Recycler	N.A.	N.Q.					

Q1) Do you feel or experience an administrative burden in registering at National Register (as Producer, Collection Point or Compliance Scheme, etc) ?								
70	Recycler	N.A.	N.Q.					
71	Recycler	N.A.	N.Q.					
72	Recycler	N.A.	N.Q.					
73	Recycler	N.A.	N.Q.					
74	Recycler	N.A.	N.Q.					
75	Recycler	N.A.	N.Q.					
76	Recycler	N.A.	N.Q.					
77	Recycler	N.A.	N.Q.					
78	Recycler	N.A.	N.Q.					
79	Recycler	N.A.	N.Q.					

Table x: Administrative burden survey – Question 1

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
# File	Stakeholder Type	Member State	Answ Q2	Answ Q2a	Answ Q2b	Why	Answ Q2c	Answ Q2d
1	Producer	EU	4	1) Elaboration of put on the market statistics in weight per product categories. These statistics are specific for WEEE, and are of no use for any other activity. 2) Constant involvement / monitoring of the workings and the results gathered and reported by the Collective System. 3) The collective systems acts on behalf of the Producer, but the fulfillment of the producer obligations stay with the Producer who must make sure that the Collective Systems is operating properly.	Y	Essential to quantify the share of the costs to be paid to the collective system.	Y	
2	Producer	Finland	2		N.A.		N.A.	

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
3	Producer	Finland	1		N	Due to our turnover being under 1 million euros, we are not required to provide detailed reporting.	Y	
4	Producer	EU	1	Only put on the market data have to be provided; the CRSO deals with the rest. Condition is reporting discharge lamps as 1 category and no split between B2C and B2B	Y	Providing put on the market data is the the only criterium to allocate C&R obligation, either as indiviudal producer or within a scheme.	Y	I
5	Producer	EU	4	Reporting 'put on market' and 'take-back', particularly where authorities require more frequent reporting e.g. monthly in Ireland.	Y	Irrespective of the burden this has placed on the company, the statistics obtained are useful for reporting our (Ericsson's) environmental CR performance.	Y	
6	Producer	EU	2		N.A.		N.A.	
7	Producer	Finland	3	Provide data according to specific needs.	Y	It's important to know what we are recycling and how much.	Y	
8	Producer	EU	4	1) Regular reporting to national registers is burdensome due to the lack of coordination in what data they require, when they require it and how it is submitted. 2) Extra resource had to be hired to do the reporting element of WEEE and create a new database. 3) Again countries like Netherlands require indenpent auditing of figures which is costly and time consuming. 4) There is no consistency in the product categories. 5) Again a lack of harmonisation across member states means differing formats and differing reporting requirements across the member states. Standardisation of reporting across all Member States is a "must" in order to reduce this admin	Y	1) No system is going to work unless reporting is done accurately and consistently. 2) However some of the results of the legislation such differing wieghts definitions and different product catgeories is going to make it harder to compare countries results.	N	T I

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
				burden.				
9	Producer	Italy	4	(only for put on market, take back performances carried out by compliance scheme) 1) Retrving information from existing data. 2) Adjusting and producing needed data. 3) Filling forms and tables, submitting information	Y	1) It's necessary to completely satisfied the WEEE Requirements. 2) it is an obligation given to producers from the Italian reception of the WEEE Directive.	Y	
10	Producer	Italy	3	(only for put on market) 1) Retrving information from existing data. 2) Adjusting and producing needed data.	Y	It's important to send information to a national authority that works as guarantor.	Y	
11	Producer	Italy	3	(only for put on market) 1) Retrving information from existing data. 2) Adjusting and producing needed data. 3) Filling forms and tables, submitting information	Y	Every producer has all the necessary data needed by national registers. The point is that these data are to be organised in the format requested by Registers. It is obvious that thera 25-27 different registering format the impact of Registering and providing sale data might become huge. Some producers might need to hire a consultant or to buy specific sowftware tools to adapt their ERP to	N	M

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
						produce the requsted reports.		
12	Producer	Italy	3	(only for put on market) 1) Retrving information from existing data. 2) Adjusting and producing needed data. 3) Filling forms and tables, submitting information	Y	Also collect market information	Y	
13	Producer	EU	2		N.A.		N.A.	
14	Producer	EU	4	1) Interpretation in each country of basic definitions (goods put on the market, B2B/B2C split criteria, machines/parts obligation). 2) Document of Understanding/Scope of Work definition, agreement and sign between parties. 3) Tools development for reporting. 4) Requirements definition in each country. 5) Reporting frecuency different in each country.	Y	1) It is neccesary to have a clear understanding of what we need to report to fulfill with the law in each country. 2) It is also neccesary to define a standard reporting to avoid manual errors.	N	I
15	Producer	France	3	Idem question 1, the problem for a european company is to have different forms of registering and reporting. 2) Association of sales information and weights. 3) Split B2B/B2C	Y		N	M T I
16	Municipalities	UK	1		N.A.		N.A.	

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
17	Producer	EU	4	1) Reporting in different ways in the various EU MS e.g. different data format, different time periods, etc. 2) Getting the weight data caused extra effort or costs to upgrade the IT systems. 3) Consolidating the numbers of the recycler and/or compliance schemes.	Y	1) Sales data have to be reported for the calculation of the obligations of each producer but the same reporting format/procedurer should be used in all EU MS. 2) Recyclers data are needed to calculate the quantities and quotes defined by the Directive resp by the country decrees.	N	M T
18	Producer	Germany	4	1) Retrieving the weight data creates high burden in the factories and in Germany. We need to develop own EDP systems for weight data. Also it is a pitty that each EU country needs different data. 2) Tracing the individual containers. 3) Monthly, input- output weight registration. 4) Checking of all details, in case of EAR very complicated and slow system.	Y	We need to react immediately, because of the tight time frames given. It is not enough time to ask the sub-contracter to clarify, because the time frame does not allow and we are responsible.	N	M T I

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
19	Producer	EU	4	1) Excessive reporting frequency and difference frequency in registers at different Member States. 2) Unclear and/or non-consistent criteria regarding classificiation by Types of Equipment (clustering of equipment). 3) Obligations to breakdown data by origin or put-on-market method (manufactured, 3rd party supply, intracommunity trade, imported, etc). 4) Obligation to report units: difficult in the case of integrated systems and unndecessary for the purpose of calculating market shares by Type of Equipment. 5) Unclear and/or non-consistent criteria for the differentiation between household and non-household equipment. 6) Additional administrative burden on the product managers and engineers to populate net weight information and fill out additional criteria as part of the Design process. 7) Administrative efforts to maintain the data in the corporate databases. 8) Obligation to report quantities that are exported. 9) Obligation to audit reported figures (lack of criteria and experience in the auditing sector, excessive costs, obligation also for non-household equipment).	N	1) Some of the reporting requirements are unnecessary; e.g. monthly reporting, units, origin of the equipment exports, etc. 2) Criteria for other reporting requirements should be harmonized across EU to minimize burden; e.g. clustering by Type of Equipment, differentiation between household and non-household. 3) Auditing of the information provided should be reconsidered due to the complexity and costs it presents and restricted only to household equipment.	Y	
20	Producer	Italy	3	Contacts with Dealers and specific needs according to national laws.	Y	Because they are stated in the Directive and therefore in the national laws.	N	T I

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
21	Producer	EU	4	1) An Europe-wide approach needs harmonized definitions regarding product weights, categories and types of equipment as well as B2B-B2C differentiation. 2) As the necessary data for take-back performance and recycling targets is either available within collective schemes or contracted suppliers it should not be the responsibility of the producers to report on these.	Y	Non harmonized scope and B2B-B2C-differentiation makes a general approach regarding data management impossible.	Y	
22	Producer	EU	1	Only put on the market data have to be provided; the CRSO deals with the rest. Condition is reporting discharge lamps as 1 category and no split between B2C and B2B	Y	Providing put on the market data is the the only criterium to allocate C&R obligation, either as indiviudal producer or within a scheme	Y	1
23	Producer	EU	3	1) Provision of data: to adjust internal sales statistics to required data following WEEE categories. 2) inspection: to carry out additional auditing. 3) reporting of take-back performances.	Y	1) These activities require a change of internal IT-support and additional resources for reporting, documentation and control. 2) our company had to create these resources in order to come up with the requirements.	Y	M 1
24	Producer	Hungary	4	To provide data according to the specific needs - summary by weight and sold quantity per invoice and by area the product derives from (EU, non EU, domestic) needs special query and additional activity to summarize.	Y	It have to be done every month.	Y	

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
25	Producer	EU	4	1) Exessive burden results from a different definition of 'Type of Equipment (ToE)', the group of products for which market share and resulting out of this, the obligation of a manufacturer is calculated. The differences between countries are huge, some countries differentiate between 6 ToE'S (Austria) while other countries are separating between more then 100. 2) The definition of categories is very often based on elements which are not required for any other use and therefore not available in the internal product databases of OEM's and have to be found out thru quite complex processes within company (e.g. physical length of a product, removable papertray….).	Y	Basing the obligation of a manufacturer on 'type of equipment' is essential to recognize lifetimer and material composition and therefore a fair contribution between product types.	Y	
26	Municipalities	Luxembourg	1		N.A.		N.A.	
27	Municipalities	UK	1		N.A.		N.A.	
28	Producer	Germany	3		Y		Y	
29	Producer	Germany	4	1) No Overview on different national regulations. 2) No European Registration possible (we deliver to hundreds of Distributions all over Europe and each of them forces us to register in "their" country, even if the distributors are very small). 3) different weights notifiable in the memberstates (including package, no batteries, without package, includig manuals, including batteries and so on).	Y	1) We are producers no attorneys. We have to pay attention to x different national WEEE regulations and we have to keep these lists of weights up to date. 2) Each Distributor sends products through Europe and we have to cancel products in memberstate 1 and to notify the same products two days later in the next memberstat (and so on).	N	T

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
30	Producer	EU	4	1) different reporting requirements in the countries. 2) different definitions.	Y	unnecessary additional workload	N	M T I
31	Compliance Scheme	Slovenia	4	1) The problem is how to measure the recycling targets if it is very difficult even to control the recycling. 2) There is also the problem, because the WEEE is not collected on the proper way (mixed, destroyed, etc.)	Y	because of the cmpetition between recycler and the take-back schemes	N	I
32	Compliance Scheme	Hungary	3	1) Clearing house function is missing. 2) Very comlicated reporting system.	Y		Y	
33	Compliance Scheme	Norway	2		Y		Y	
34	Producer	Germany	4	1) Hiring consultants, providing data, looking for data needed for registering and reporting. 2) Making contracts with recyclers an so on….	Y	Is is for a good purpose. But anyway a lot of work, which could be made much more easier in my mind.	N	T I
35	Compliance Scheme	Czech Republic	3	1) to collect and provide data to authorities. 2) all kinds of reporting, filling up the forms.	N	depends on systematic settings	Y	
36	Producer	Scandinavia	2		N.A.		N.A.	
37	Producer	EU	3	1) Collection of data and auditing the accuracy of data is complicated and time consuming. 2) Take back performance and recycling targets rely upon the schemes since there are no internal resources to manage and collect this data.	N	Reporting "put on the market" data is important, but the other information should be done by the collection agency or government agency instead of industry (Producers).	N	M T I
38	Association	Poland	3	Filling in reports on the numebr of equipment put on the market, reporting take back quantities and recycling targets	Y	The Central Register has to determine the number of kilograms collected and the percentage of the fullfilment of the recycling targets.	Y	

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
39	Compliance Scheme	UK	4	1) Small businesses find it difficult to report on the basis of weight. Conversion factors should be permitted to convert units to weight. 2) It is not sensible to re-use non household luminaires because they are less energy efficient than the replacement.	Y	1) Reporting on weight places a disproportionate burden on small companies. 2) Pomoting re-use of EEE can be counter-productive	Y	
40	Producer	Germany	4	1) the reporting itself. 2) We have to filter manually, which units are sold in Germany and which are sold abroad.	Y	I think that getting this information out of th eown system costs time and money for smaller companies. I.E. a monthy report takes me 5 hours to make up and report online.	Y	
41	Producer	Ireland	4	1) collating the information. 2) collating the information on b2b, targets, not sure how to do it, when in effect, no equipment is returned.	Y	no information to provide so hard to complete Waste Management Plan	N	M T I

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
42	Producer	EU	4	1) Maintaining our company's WEEE product list. 2) Producing monthly WEEE sales out reports for the WEEE registration requirements. 3) The company has hired two consultants to aid in the WEEE implementation & sustaining. 4) Lack of centralized system requires duplication of reporting for each member state, which increases the administrative burden. No consistent format means companies have to reformat the same data to fit into country forms. 5) Potential for double reporting due to lack of clarity of "producer". Both manufacturing and distribution companies may be reporting the same product sales since both have had to register. 6) Due to different registration requirements and interpretation of scope, some products may require registration in some countries, but not others. Also, B2B and B2C vary between countries. Reporting requirements also vary considerably. These issues above may make it very difficult to determine success of WEEE on an EU-wide basis due to lack of centralization and standardization and potential for double counting.	Y	1) Yes as the company must produce this data as required by WEEE. 2) The aim is to develop a database that will minimise the need for resources but this will take time to program and a significant amount of funding.	N	M T

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
43	Producer	EU	4	The time and effort that is involved in the compiling of all of this information for all of the Countries and the subsequent calculation of the take back and recycling targets achieved. This effort involves many different functions within any organisation i.e. Sales, Finance, Shipping/Distribution, Manufacturing and also the external scrap vendors or waste management facilities.	Y	I think that this is a necessary activity, but the reporting frequencies within each of the countries should be consistent. Currently some countries are insisting on monthly and six monthly reporting whereby the legislation is aimed at annual reporting from each of the Countries to the EU Commission. Again this is an example of where a central reporting structure for all of Europe could be utilised whereby the various administrative bodies could go and extract their country specific information.	N	T I
44	Refurbisher	EU	4	1) different definitions of type of equipment in the countries. 2) different reporting requirements. 3) weight definitions are different in the countries. 4) definition of recycling rates are not clear.	Y	Reporting must be simplified to save costs, recycling rates and take back results of countries can only be compared if inputs are standardised	N	M T I
45	Producer	Ireland	3	Attending meetings , hiring advisors, paying overtime to a staff member for WEEE work. Locating and negotiating with specialists for recycling.	N	1) This work should have been set out in a planned way by the Authorities especially for small firms. We should not have to search for recyclers. 2) We should not have to tell a licenced metal Recycler how to process waste steel or an electronics specialist how to process a simple logic board.	N	T
46	Distributor	Germany	3	Reportings and providing data, communication with vendors.	Y	Compliance with EU-Directive must be ensured.	Y	
47	Producer	Spain	2	takes around 30 minutes each quarter.	N.A.		N.A.	

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
48	Producer	Germany, Austria	4	1) Austria: reporting to ERP (the recycling system) put on the market per category (three categories), only small effort. 2) Germany: reporting to EAR (the national clearing house) of put on the market per category (three categories), then product types (2+10+1), then by brand (6) per month (all in all up to 73 reporting categories are possible). Three to four hours, no direct link between systems, data has to be entered by hand, corrections have to be done by mail.	Y	For waste allocations purposes these activities are fundamental but should be possible to create more efficient routines for the German system.	Y	
49	Compliance Scheme	Netherlands	4	There should be no need to report sales figures as they donnot change any position in the collection and treatment.	N	The obligation of collecting sales figures causes high costs without any sense. Moreover these figures can be obtained otherwise.	Y	
50	Association	Slovakia	4	1) take back performance in relation to collection target 4 kg/inhabitant is not reported strictly from household (mixed with B2B…) differ from country to country. 2) no unified metodology for reporting of results of recycling targets.	Y	1) comparability of results of take back performance among Member States and related costs as well. 2) unified collection target are very different from point of wiev different market or economical performance.	N	I
51	Producer	Ireland	4	There is seldom data given back on weight taken back and sent for recycling from SDCC (Local Civic Amenity), they can not always give weigh bill when EEE is left with them	Y	It is part of the WEEE directive to keep records of take back,	Y	
52	Producer	Ireland	4	Differentiating quantity and amount of each bulb on the market going through each invoice	Y	Requires a huge amount of time to go through each invoice.	N	M T

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
53	Producer	Ireland	4	1) Monthly reporting of quantity and weight of EEE placed on market / produced. 2) Calculation of EMC charges on outgoing documentation.	Y	Financial / stock systems are not capable of automatically identifying and processing: which items are subject to EMC charges; of these, which are sourced from Irish producers versus overseas; of these in turn wich customers are chargeable or not (e.g. export); which items should incur than one EMC charge (e.g. combined light fittings plus fluorescent lamp)	N	I
54	Distributor	Ireland	3	Identifying the products for charging the appropriate EMC Charges when we are classed as the producer. This means I have to monitor all incoming Invoices closely. The time involved in this and the time involved in reporting these items as they are sold is a major financial burden.	Y	I think this is very important for the future of the country	N	M T I
55	Distributor	Ireland	3	Yes I find calculating the weights on WEEE are a time consuming exercise as we have so many products that have different weights etc..	Y	Yes as a company we need to by law quantify the weight of WEEE we generate.	N	M
56	Producer	Ireland	2		N.A.		N.A.	
57	Producer	EU	4	I report for almost 20+ schemes. The main issue is the frequency of reporting, the differing definitions of WEEE weight, the differing classifications by scheme and country, the myriad of mediums used to collect that data (web, paper, email, etc), and the differing definitions of 'producer'. In some countries I can register for distance selling but cannot register for sales to distributors (e.g. France).	Y	These are fundamental issues: We need harmonisation in terms of: Registration; data formats; definitions of 'foreign producer; definitions of 'distance selling'.	Y	

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
58	Producer	Ireland	4	We are a very small company with only one employee. We sell less than 250 Kg. of WEEE per year. which is 100% B2B. Administration and registration costs are a problem to us.	N	There should be an exemption for small companies.	N	T
59	Association	EU	4	Our EU wide operating companies have to put together all the figures for 27 EU Member States. This is a heavy burden for SMEs!	Y	Getting a clear picture of the market.	N	M T I
60	Producer	Ireland	1		N		N.A.	
61	Producer	Germany	3	Additional work to put the data together out of the database correctly and in time.	Y	Yes, these activities are fundamental, because minor changes in the data and in the time-slot to give the data to the Nationa Register are allowed.	Y	
62	Producer	EU	3	Evidence for logistics, take back treatment performance and recycling targets documentation	Y	A proper treatment operation in compliance with WEEE requirements and incentives, is essential to ensure high quality output material fractions and avoid environmental burden	Y	
63	Producer	EU	4	The whole process is time consuming. We sell through the channel and retrieving information from distributors can be very time consuming	N	We are a sales company and do not manufacture any products locally, so there are limited resourses in the organisation that are not focused on selling	N	M
64	Distributor	Ireland	2		N	Don't understand the reason why weight is required	Y	
65	Recycler	N.A.	1	Administration is however essential. It needs however to be practical	N	Follow the WEEE is essential	N	M
66	Recycler	N.A.	2	Authorizations	N	High quality recovery/recycling requst detailed reporting/monitoring and (!) enforcement to meet the WEEE Directive rates in a proven way	N	T

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
67	Recycler	N.A.	2	Burden caused in assistance in inspection by control organizations	N	In waste world, we know that there are many regulations, global, european, regional and company wise (mass balances for suppliers). We cannot change this fact and we will have to live with it. However the complexity is growing and interpretaions differ	N	I
68	Recycler	N.A.	2	In Germany the administrative burden is not known yet as there are no rules yet for reporting	N	It guarantees adequate recycling and distinguished the legitimate recyclers from the non legitimate	N	
69	Recycler	N.A.	2	In our country we still do not have the equal of rights in technical appraisal individual companies in standard of recycling and applied available technologies so we could say what the prority is and what a minimum standard is etc..	N	Many of the surveys/inspections do lack specified rules, regulations and targets	Y	
70	Recycler	N.A.	3	Notifications, analyses, documentation, mas balance reports	Y	In my opinion processors activity in EU should have been liable to authorization and for that common criteria chould be made out	Y	
71	Recycler	N.A.	3	1) Reporting data on received WEEE quantitites and qualities into different formats, details, etc. 2) more uniformity would much simplify the process and would increase the quality and comparability of reporting significantly	Y	To prove the % of recovery and recycling	Y	
72	Recycler	N.A.	3	Reporting is not unique in EU. E.g. German EPA has not given the necessary framework	Y	To stop existing "wild west" situation some monitoring will be needed	Y	

Q2) Do you feel or experience an administrative burden in reporting put on market, take back performance, recycling targets?								
73	Recycler	N.A.	3		Y	We are convinced that monitoring and reporting of WEEE fractions up to the final destination is crucial to safeguard a compliant treatment throughout the recyclign chain. So we do not complain the report, but reporting procedures should be uniform.	Y	
74	Recycler	N.A.	3		Y	The monitoring actions are necessary to make a level playground for the recyclers.	Y	
75	Recycler	N.A.	3		Y		Y	
76	Recycler	N.A.	3		Y		Y	
77	Recycler	N.A.	3		Y		Y	
78	Recycler	N.A.	4		Y		Y	
79	Recycler	N.A.	4		Y		Y	

Table xi: Administrative burden survey – Question 2

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?								
# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
1	Producer	EU	2		Y	1) Information with the final user is performed via the retailers. 2) Information with the recyclers is taken care of by the collective system	N.A.	
2	Producer	Finland	2		N.A.		N.A.	
3	Producer	Finland	2		Y		Y	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
4	Producer	EU	2	Informing the final users and recyclers is a inseparable part of the producer responsibilty to fulfil the obligations arising from the Directive. Clear target setting of each of the 10 categories is crucial for being able to define exact target and related information requirements (especially PR).	N	Except marking for distinguishing historical and new waste	Y	
5	Producer	EU	3	1) Initially in informing the design organizations, manufacturing plants, subsidiaries, etc. 2) Discussions with our suppliers. Some of the areas mentioned above have now been included in our internal processes and therefore have become routine tasks	N.A.		Y	
6	Producer	EU	2		N.A.		N.A.	
7	Producer	Finland	3	Time needed for design labelling.	Y	Labelling helps recycling.	Y	
8	Producer	EU	4	Raising the awareness of the user community is critical but since we are so focused on compliance at the moment we have not had the time to dedicate to performing this task as completely as we would have liked	Y	Without good awareness campaigns the regulations will never be fully effective nor will the targets be met……	N	M T
9	Producer	Italy	4	1) Designing information material (leaflet conception,…). 2) Reproducing reports, producing labels and leaflets.	Y	1) It's necessary to completely satisfied the WEEE Requirements. 2) it is an obligation given to producers from the Italian reception of the WEEE Directive.	Y	
10	Producer	Italy	4	1) Designing information material (leaflet conception,…). 2) Reproducing reports, producing labels and leaflets.	N	Government should do information campaigns	Y	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
11	Producer	Italy	3	1) Designing information material (leaflet conception,…). 2) Reproducing reports, producing labels and leaflets.	N	1) For consumers the labelling with the crossed wheeled dustbin is enough and it has been applied for at least 2 years. For Recyclers: when waste electrical equipments arrive in treatment facilities they are worn out by their normal use and by being stock in collection centres, therefore any labelling is likely to be unclear, unreadable, hence unsuitable to provide complex information for treating, apart alerting for the presence of CFC/HCFC/HFC gases... 2) Labelling is not an expensive activity if it is possible to use only one language suitable for all European single market, or if it is possible use only pictograms (as it is the case of the mentioned crossed wheeled dustbin) If labelling is mandated to be in the local languages cost raises very much: the overall impcat of labelling might be huge. 3) Raising the awareness of consumers is in any case the first step then they should have the possibility to collect easily waste EEE. 4) it can be done at consortium level. In other words for example fridges or small appliances do not vary so	N	M T

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
						much when considering different producers, therefore information to recyclers can be prepared centrally and provided to recyclers from consortiums, which of course can be helped and supported surely by their member producers.		
12	Producer	Italy	4	1) Designing information material (leaflet conception,…). 2) Reproducing reports, producing labels and leaflets. 3) Adjusting and producing data.	Y	To increase success of WEEE Collection.	N	M
13	Producer	EU	2		N.A.		N.A.	
14	Producer	EU	3	1) Time cost need for design labelling (Country specifics). 2) Comunications campaings (internal/external). 3) Legal involvement to approve the text use to raise the awareness in final users. 4) WEB page development in each country (each language). 5) WEB page update with Recyclers information to contact	Y	New legal requirements has to be published and deeply informed to fulfill it	N	I

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
				with in each country (each language). 6) Internal support into the company (documentation, presentations,…).				
15	Producer	France	3	1) Time needed to inform different range of customer like wholesalers, resellers, end-users. 2) updating of marketing and sales supports as web, brochures,...	Y	It's our responsabilty as producer to inform our customers of our WEEE conformity	Y	
16	Municipalities	UK	1		N.A.		N.A.	
17	Producer	EU	3	1) Setting upd the Marking Guidelines for each product family. 2) Changing/amending the User's Manuals and other leaflets. 3) Setting up a web site for consumers and recyclers.	Y	Consumers need to understand the meaning of the crossed-out wheelie bin and need to know where they can discard their obsolete items	N	M T
18	Producer	Germany	4	1) It was necessary to modify all related documents and organize the marking. The difficulties were especially in the transition phase. 2) It was necessary to prepare information system for recyclers even if they will never use.	Y	Creating huge burden.	N	M T I
19	Producer	EU	4	1) Preparation of the necessary information to users in the different languages (limited burden). 2) Obligation extended to non-household equipment on some MSs.	N	The specification regarding the type of information that should be provided to users should be limited to household equipment.	Y	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
20	Producer	Italy	4	Time and cost needed to provide adequate labelling on equipments and design and write down documents for end users and recyclers.	Y	Because they are stated in the Directive and therefore in the national laws.	N	T I
21	Producer	EU	4	1) The translation of the information for users about the meaning of the crossed-out wheeled dustbin only had to be made once and since then is used as a template for all following products. From this point of view, the effort is not considered as material. 2) From our perspective, it is essential not to put additional burdens on the producers e.g. regarding PR activities to inform consumers. 3) Regarding information for recyclers, our experience is that recyclers usually know their business and do not need additional information. For special B2B-equipment, it is common practice that producers contract designated, qualified recyclers for dismantling, treatment and disposal which are then provided with the necessary information. 4) A general obligation to provide information to all stakeholders is not regarded as useful. Currently, the few requests we had did not come from recyclers but from companies that wanted to sell their services (e.g. a "recycling passport" etc.)	N	Current situation requires activities but is not regarded as disproportionate.	Y	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
22	Producer	EU	2	Informing the final users and recyclers is a inseparable part of the producer responsibilty to fulfil the obligations arising from the Directive. Clear target setting of each of the 10 categories is crucial for being able to define exact target and related information requirements (especially PR)	Y	Except marking for distinguishing historical and new waste	Y	
23	Producer	EU	3	1) Main burden was warehouse management in order to distinguish between labelled and non-labelled products. Time gap between production and sales is 6 - 9 months, so production and warehousing had to deal with this problem one year ahead the legal requirements. 2) labelling: for small household appliances labeling requirements are not easy to fulfill due to the restricted space available on the equpiment. 3) information to recyclers are handled on corporate level.	Y	Warehousing and distribution processes have been fundamentally influenced, even though only for a limited period of time (1 year).	Y	
24	Producer	Hungary	1		N.A.		N.A.	
25	Producer	EU	4	This has been a one time burden which has been mainly caused that the final design / reuqirements of the label was done very late. With the exception of Poland, who requires to publish the weight of a product on the product itself, the manual or the box, the burden is not recognisable today.	N		Y	
26	Municipalities	Luxembourg	1		N.A.		N.A.	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
27	Municipalities	UK	1		N.A.		N.A.	
28	Producer	Germany	4	Disassembly information for recycling companies	N	Without significant effects/benefits	Y	
29	Producer	Germany	2		Y	for producers with many different types of products	Y	
30	Producer	EU	4	Different requirements in the countries	Y		N	M T
31	Compliance Scheme	Slovenia	2		Y	It is fundamental for the better collection (quality and quantity of WEEE)	N	M T
32	Compliance Scheme	Hungary	1		N.A.		N.A.	
33	Compliance Scheme	Norway	2		Y		Y	
34	Producer	Germany	4	1) Hiring consultants, providing data, looking for data needed for registering and reporting. 2) Making contracts with recyclers an so on….	Y	Is is for a good purpose. But anyway a lot of work, which could be made much more easier in my mind.	N	T I
35	Compliance Scheme	Czech Republic	3	PR, advertisemensts, marketing	Y	TV, newspapers, flyers, workshops, events	Y	
36	Producer	Scandinavia	1		N.A.		N.A.	
37	Producer	EU	2		Y	Marking is needed. Once complete is doesn't need to be revisited and the task can be built into internal processes to avoid burden.	Y	
38	Association	Poland	2		N.A.		N.A.	
39	Compliance Scheme	UK	2		N.A.		N.A.	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
40	Producer	Germany	4	The whole procedure to become conform to the German Elektrogesetz took about 1 year(without RoHS).	Y	the are no exception in the Elektrogesetz for smaller and smallest companies. Those companies have not the possibility deligate all the work to a new department or the legal department within the company.	Y	
41	Producer	Ireland	1		N.A.		N	M T I
42	Producer	EU	3		N.A.		N.A.	
43	Producer	EU	4	The time, resources and cost involved in designing, and labelling for end users, and changing engineering specifications. The greatest demand by far on our organisation was in the production of dismantling instructions for numerous products, which range in weight from 400 to 2,000lbs and include hundreds of parts, continues to be a considerable burden on the resources for our organisation.	N	The requirements under the WEEE Directive in relation to labelling and dismantling instructions for B2B products is impractical, and is an additional burden on concientious companies that have been successfully recycling their products at end-of-life. With our particular products we have been operating a take-back system from our customers for years and in the main we have been dealing with the same recyclers. Our organisation has always used reputable, licensed waste management companies.	N	T I
44	Refurbisher	EU	4	1) Information for users require additional paper / brochure per type of equipment. 2) Information for recyclers requires specific knowledge per system.	N	The activities/actions can be simplified and standardised.	Y	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
45	Producer	Ireland	3	Waste of time (cost) in labelling small parts, eproms, boards, cables	N	1) A law must be practical and feasable not to become an object of jokes. 2) If we sell an eprom to a customer based 200kilometres away and that customer declares the old eprom as weee then it would appear that we must collect the old eprom from him by using a licenced weee transport operator and convey that component to a licenced facility at our expense ----- this is bad law.	N	M T I
46	Distributor	Germany	I		N.A.		N.A.	
47	Producer	Spain	4	Yes, Authorities are requiring to give authorizations that each Scheme expend around 20 c€/inhabitant per year.	N	Is to expensive 20c€/inhabitant per year, at the current situation in Spain it was almost recycling 4 kg/Inhabitant per year and this is not a need because we already comply with the EU requirements.	N	M
48	Producer	Germany, Austria	4	1) Preparation of WEEE information text is a one off activity. 2) Customers ask for registration number with EAR. 3) To recyclers: dialouge with recyclers to keep them informed about coming product developments.	Y	To some extent but should be cost effective and basic.	Y	
49	Compliance Scheme	Netherlands	4	1) If financing regulations (art 8) do not make any differnce between historical and new waste tehere is no need to label anymore. 2) Information to recyclers goes through the collective system and gives only burdens on request of the	N		Y	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
				system.				
50	Association	Slovakia	2		N.A.		N.A.	
51	Producer	Ireland	1		Y		Y	
52	Producer	Ireland	2		N.A.		N.A.	
53	Producer	Ireland	4	Labelling	Y	Labelling of product can only be correctly implemented in the manufacturing process. Most European countries have not implemented the WEEE Directive, so many manufacturers do not label.	N	I
54	Distributor	Ireland	3	There is a need for a better definition from the EPA. There isn't enough information printed in layman's terms for the use of customers, ie B2B and B2C.	Y	There is not information for customers	N	M T I
55	Distributor	Ireland	1		N.A.		N.A.	
56	Producer	Ireland	1		N.A.		N.A.	
57	Producer	EU	2		N.A.		N.A.	
58	Producer	Ireland	4	WE have to get any new customer to sign an agreement relating to the disposal at end of life.	N	We have to keep up to date on new requirements	N	T
59	Association	EU	4	All products must be marked, which adds additional tooling costs. Consumers must be informed. Product catalogs must be adopted.	Y	Consumer and final user must understand reasons behind WEEE Directive	N	M T I
60	Producer	Ireland	1		N.A.		N.A.	

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?

# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
61	Producer	Germany	3	In the beginning the implementation of the labelling had to be done on the products and in additional product specifications our house. This was done with every product we sell to our customers. In the beginning there was a peak to inform the users and the recyclers, but now it´s added to the process and it´s standard.	Y		Y	
62	Producer	EU	2		Y	Recyclers and treatment facilities should have a fair knowledge share in product information in order to facilitate the environmentaly sound treatment of WEEE including maintenance, upgrade, refurbishment and recycling. It enables a low barrier information entrance into the ongoing shorter design and product life cycle	Y	
63	Producer	EU	1		N.A.		N.A.	
64	Distributor	Ireland	2		N	More paperwork and little assistance to answer queries without having vague answers	Y	
65	Recycler	N.A.	N.Q.					
66	Recycler	N.A.	N.Q.					
67	Recycler	N.A.	N.Q.					
68	Recycler	N.A.	N.Q.					
69	Recycler	N.A.	N.Q.					
70	Recycler	N.A.	N.Q.					
71	Recycler	N.A.	N.Q.					

Q3) Do you feel or experience an administrative burden in informing the final users (incl. Labelling) or Recyclers?								
# File	Stakeholder Type	Member State	Answ Q3	Answ Q3a	Answ Q3b	Why	Answ Q3c	Answ Q3d
72	Recycler	N.A.	N.Q.					
73	Recycler	N.A.	N.Q.					
74	Recycler	N.A.	N.Q.					
75	Recycler	N.A.	N.Q.					
76	Recycler	N.A.	N.Q.					
77	Recycler	N.A.	N.Q.					
78	Recycler	N.A.	N.Q.					
79	Recycler	N.A.	N.Q.					

Table xii: Administrative burden survey – Question 3

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?								
# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
1	Producer	EU	3	The burden to monitor free-riding is 'de facto' left to the registered producers: the authorities do not care. This means our own 'field staff' has to take it upon them to report on brandnames that should be checked (who are the producers, are these producers registered and how do they fullfill their obligations?). One should keep in mind that in some product categories, e.g. small home appliances, there are hundreds of brandnames some of which may exist for a few months (e.g. those	Y	Free-riding is a key concern. Recycling is a financial burden; the incentive to free-ride is very significant. Basically, the Producers are left on their own to 'slug it out': as frequently is the case with EU Directives, the national authorities do not care very much about Market Surveillance and, when challenged, the European Commission responds all ways and means rest exclusively with the national authorities	N	M T I

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
				used for promotional targets).				
2	Producer	Finland	2		N.A.		N.A.	
3	Producer	Finland	1		N	Due to our turnover being under 1 million euros, we are not required to provide detailed reporting.	Y	
4	Producer	EU	1	Is the activity of the CRSO.	Y	Yes, but simple model to be used to keep system efficient and the measurments comparible	N.A.	
5	Producer	EU	3	1) Time (cost) needed to carry out inspections at recycling facilities. 2) Setting up of our (Ericsson's) take-back process to handle the requirements of, for example, the UK and Spanish authorities.	Y	Due in large to each EU country being able to transpose the WEEE Directive as they wish providing it equals or exceeds the requirements of the Directive. This causes much unnecessary bureaucracy.	Y	
6	Producer	EU	1		N.A.		N.A.	
7	Producer	Finland	3	1) Gather information requested for applications form. 2) Time (cost) needed to carry out inspections at recycling facilities and collection points	Y	There must be clear system how recycling is arranged. Instructions etc.	Y	

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
8	Producer	EU	4	The audits required in certain countries to get a Waste Management Plan approved and also the independent verification of reporting that exceeds a certain weight limit	Y	1) It is vital that these exercises are carried to ensure the quality it maintained. Without quality the legislation will only be partially effective. 2) However these are costly and could be prohibitively expensive for smaller companies.	Y	
9	Producer	Italy	1		N.A.		N.A.	
10	Producer	Italy	N.A.		N.A.		N.A.	
11	Producer	Italy	N.A.		N.A.		N.A.	
12	Producer	Italy	N.A.		N.A.		N.A.	
13	Producer	EU	2		N.A.		N.A.	
14	Producer	EU	3	1) All the examples included above (questionnaire examples). 2) Control KPIs with our supplier (review and monthly presentations).	Y		N	I
15	Producer	France	1		Y		Y	
16	Municipalities	UK	1		N.A.		N.A.	
17	Producer	EU	4	Assessment of the compliance schemes for B2B and B2C waste	Y	Assessment process for the individual schemes and simple evaluation for the authorised national and/or international collective schemes	N	T
18	Producer	Germany	4	We are responsible by law so wee need to check even if we use Sub-contractor.	Y	Creating huge burden.	N	M T I
19	Producer	EU	4	Time (cost) required to ensure recycling facilities meet minimum requirements.	Y		Y	
20	Producer	Italy	3	Time and resources needed to gather infos and maintain contacts with all the stakeholders.	Y	Because they are stated in the Directive and therefore in the national laws.	N	T I

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
21	Producer	EU	2	1) Regarding our systems of supplier qualification, we consider it as good management practice to carry out our own audits at WEEE-recyclers. 2) Regarding other monitoring activities, it is the aim of all registered companies to prevent free-riders.	N	In Germany also a certification system of recycling facilities according to ElektroG was set up. Recyclers should state if this is a fundamental burden or not.	N.A.	
22	Producer	EU	1	Is the activity of the CRSO.	Y	Yes, but simple model to be used to keep system efficient and the measurments comparible	N.A.	
23	Producer	EU	3	1) In Germany only, where BSH has to operate take-back and recycling on its own. 2) in all other countries BSH is founder/ member of a collective take-back system and these monitoring functions are taken over by the system's management.	Y	New operational field of business which requires additional competences to comply with legal requirements and internal quality standards.	Y	
24	Producer	Hungary	1		N.A.		N.A.	
25	Producer	EU	1	1) Most countries reuire the collection schemes or even the recyclers to monitor & control the enforcement. Within the company we have set an audit process to ensure propper quality of our WEEE Database accuracy. 2) However, enforcement of WEEE on free-riders need to become a focus of the authorities to ensure fair cost allocation.	Y		N.A.	
26	Municipalities	Luxembourg	1		N.A.		N.A.	
27	Municipalities	UK	1		N.A.		N.A.	

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
28	Producer	Germany	3		N.A.		N.A.	
29	Producer	Germany	2		Y	for producers with many different types of products	Y	
30	Producer	EU	1		N.A.		N.A.	
31	Compliance Scheme	Slovenia	3	Not enough supervision by the authority.	Y	For no free riders.	N	I
32	Compliance Scheme	Hungary	3	Very complicated product specification.	Y		N	M T
33	Compliance Scheme	Norway	2		Y		Y	
34	Producer	Germany	4	1) Hiring consultants, providing data, looking for data needed for registering and reporting. 2) Making contracts with recyclers an so on….	Y	Is is for a good purpose. But anyway a lot of work, which could be made much more easier in my mind.	N	T I
35	Compliance Scheme	Czech Republic	3	1) auditing of treatment partners, collection points,logistic partners. 2) auditing producers of EEE (if they report correctly).	Y	many partners for auditing (24 treatment partners, several transportation partners, over 700 clients) we have unclear WEEE legislation.	Y	
36	Producer	Scandinavia	1		N.A.		N.A.	
37	Producer	EU	4	Managing my suppliers, visiting and selecting the schemes and recyclers, managing the financial aspects… however these are needed tasks, part of the everyday function of a business, and can be outsourced if my organization determines there is a need.	Y	Basic function of doing business and protecting your company's investment.	Y	
38	Association	Poland	1		N.A.		N.A.	
39	Compliance Scheme	UK	2		N.A.		N.A.	

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
40	Producer	Germany	3	We don't have experience with that until now.	N.A.		N	M
41	Producer	Ireland	3	Nobody available to take on this role within IT services company.	Y	needs to be carired out properly	N	M T I
42	Producer	EU	3		N.A.		N.A.	
43	Producer	EU	4	Auditing of our recyclers operations now has to be focussed on the specific requirements of the WEEE Directive and the accurate reporting of recycling targets achieved. The additional reporting required from our recyclers has a cost implication for our organisation.	Y	In order to ensure that we are operating in compliance with legislation, our internal Environment Management Systems, and to ensure due diligence on our part, this is a necessary activity.	N	T I
44	Refurbisher	EU	4	Complexity of the interfaces to the Clearing House(s) require too many different reports.	Y	Activities are required by law(s) and other requirements.	Y	
45	Producer	Ireland	3	1) It is not possible to calculate an exact provision for all future weee which arises as we don't know what inflation will be, we don't know what new rules will be introduced 10 years from now so it is an open ended guarantee. 2) It is a psychological and a competitive burden when the larger firms in our own sector are not even registered. 3) Has the Revenue agreed on how much a small company can hold back for future provision?	N	Advising end users should be done by the State.	N	M T
46	Distributor	Germany	4	Uncertainties concerning registration of "Marke" and b2b, communication ongoing.	Y	Compliance with EU directive must be ensured.	Y	

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
47	Producer	Spain	4	Because the authorities are not acting as watchers. And to act legally against someone that is not compliant, you must go to the community where it is located, there is not a national way of doing.	Y	Because around 15% of the companies are registered and acting in the frame of legality.	N	T I
48	Producer	Germany, Austria	4	1) Austria: no activity. 2) Germany: for the day to day business. Monitoring of WEEE pickups by the logistics/ CCR/ ERP; company remain legal responsible even after signing contract with a system. Will require producers to monitor the systems.	Y	Monitoring activities are fundamental but question is if these activities are best handled by producers (like in Germany) or if they could be handled by the recovery schemes and authorities instead like it is done in most other countries.	N	
49	Compliance Scheme	Netherlands	4	Monitoring and control is a big part of our job.	Y		Y	
50	Association	Slovakia	4	inspection at recycling facilities	Y	activities are necessary for correct and fair system operation and competition	N	I
51	Producer	Ireland	1		N.A.		N.A.	
52	Producer	Ireland	2		N.A.		N.A.	
53	Producer	Ireland	1		N.A.		N.A.	
54	Distributor	Ireland	4	The costs involved are a burden	Y	I can see why the reporting needs to be done but it would be much easer to only do it 2 or maybe 4 times a year	N	M T
55	Distributor	Ireland	3	Time needed to inspect controls etc	Y	The right information is need to qualify and quantify our WEEE	N	M T I
56	Producer	Ireland	1		N.A.		N.A.	
57	Producer	EU	2		N.A.		N.A.	
58	Producer	Ireland	4	Administration	N	Much information requested is already on record	N	T

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
59	Association	EU	4	Responsible administration authorities are not equipped with sufficient resources to carry out efficient market surveillance!	Y	Secure level playing fields for EU manufacturers against increasing destortion of competition by Far East importers.	N	M T I
60	Producer	Ireland	I		N.A.		N.A.	
61	Producer	Germany	3	In the beginning we had to build up all the monitoring systems according to the database. But know the system is running and the needed information can be given.	Y		Y	
62	Producer	EU	2		Y		Y	
63	Producer	EU	I		N.A.		N.A.	
64	Distributor	Ireland	2		N		Y	
65	Recycler	N.A.	I	Administration is however essential. It needs however to be practical	N	Follow the WEEE is essential	N	M
66	Recycler	N.A.	2	Authorizations	N	High quality recovery/recycling requst detailed reporting/monitoring and (!) enforcement to meet the WEEE Directive rates in a proven way	N	T
67	Recycler	N.A.	2	Burden caused in assistance in inspection by control organizations	N	In waste world, we know that there are many regulations, global, european, regional and company wise (mass balances for suppliers). We cannot change this fact and we will have to live with it. However the complexity is growing and interpretaions differ	N	I
68	Recycler	N.A.	2	In Germany the administrative burden is not known yet as there are no rules yet for reporting	N	It guarantees adequate recycling and distinguished the legitimate recyclers from the non legitimate	N	

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?

# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
69	Recycler	N.A.	2	In our country we still do not have the equal of rights in technical appraisal individual companies in standard of recycling and applied available technologies so we could say what the prority is and what a minimum standard is etc..	N	Many of the surveys/inspections do lack specified rules, regulations and targets	Y	
70	Recycler	N.A.	3	Notifications, analyses, documentation, mas balance reports	Y	In my opinion processors activity in EU should have been liable to authorization and for that common criteria chould be made out	Y	
71	Recycler	N.A.	3	1) Reporting data on received WEEE quantitites and qualities into different formats, details, etc. 2) more uniformity would much simplify the process and would increase the quality and comparability of reporting significantly	Y	To prove the % of recovery and recycling	Y	
72	Recycler	N.A.	3	Reporting is not unique in EU. E.g. German EPA has not given the necessary framework	Y	To stop existing "wild west" situation some monitoring will be needed	Y	
73	Recycler	N.A.	3		Y	We are convinced that monitoring and reporting of WEEE fractions up to the final destination is crucial to safeguard a compliant treatment throughout the recyclign chain. So we do not complain the report, but reporting procedures should be uniform.	Y	
74	Recycler	N.A.	3		Y	The monitoring actions are necessary to make a level playground for the recyclers.	Y	
75	Recycler	N.A.	3		Y		Y	

Q4) Do you feel or experience an administrative burden in monitoring and control enforcement?								
# File	Stakeholder Type	Member State	Answ Q4	Answ Q4a	Answ Q4b	Why	Answ Q4c	Answ Q4d
76	Recycler	N.A.	3		Y		Y	
77	Recycler	N.A.	3		Y		Y	
78	Recycler	N.A.	4		Y		Y	
79	Recycler	N.A.	4		Y		Y	

Table xiii: Administrative burden survey – Question 4

Q5) Do you feel or experience an administrative burden in setting up National Registers or Clearing Housee?								
# File	Stakeholder Type	Member State	Answ Q5	Answ Q5a	Answ Q5b	Why	Answ Q5c	Answ Q5d
1	Producer	EU	2		N.A.		N.A.	
2	Producer	Finland	2		N.A.		N.A.	
3	Producer	Finland	1		Y	Important in efficient handling of reporting, however due to our small size we have not participated in the national registers at this time.	Y	
4	Producer	EU	4	Yes, the burden exist but the existance of both national register and clearing houses is crucial to track and trace free riders respectively to guarantee confidentiality.	Y		Y	
5	Producer	EU	3	Some countries authority's long delays and lack of clarity.	Y	Delays and bureaucracy.	Y	
6	Producer	EU	1		N.A.		N.A.	
7	Producer	Finland	2		Y		Y	
8	Producer	EU	1		N.A.		N.A.	
9	Producer	Italy	1		N.A.		N.A.	

Q5) Do you feel or experience an administrative burden in setting up National Registers or Clearing Housee?

# File	Stakeholder Type	Member State	Answ Q5	Answ Q5a	Answ Q5b	Why	Answ Q5c	Answ Q5d
10	Producer	Italy	N.A.		N.A.		N.A.	
11	Producer	Italy	N.A.		N.A.		N.A.	
12	Producer	Italy	N.A.		N.A.		N.A.	
13	Producer	EU	2		N.A.		N.A.	
14	Producer	EU	1	We only have one case of Clearing House in Germany for B2C.	N.A.		N.A.	
15	Producer	France	2		N.A.		N.A.	
16	Municipalities	UK	1		N.A.		N.A.	
17	Producer	EU	1		N.A.		N.A.	
18	Producer	Germany	1		N.A.		N.A.	
19	Producer	EU	1		N.A.		N.A.	
20	Producer	Italy	3	Time to understand different national regulations and react therefore.	Y	Because they are stated in the Directive and therefore in the national laws.	N	T1
21	Producer	EU	4	German Industry had to do the whole work to develop rules for the national clearing house and completely financed the installation of the German register EAR in advance. It is expected that the system by the registration/administration fees pays it back to the financing producers.	Y	There was not other possibility to set up an infrastructure which ensures competition in the recycling marked.	Y	
22	Producer	EU	4	Yes, the burden exist but the existance of both national register and clearing houses is crucial to track and trace free riders respectively to guarantee confidentiality	Y		Y	

Q5) Do you feel or experience an administrative burden in setting up National Registers or Clearing Housee?								
# File	Stakeholder Type	Member State	Answ Q5	Answ Q5a	Answ Q5b	Why	Answ Q5c	Answ Q5d
23	Producer	EU	4	1) Industry has been initiator or partner for national government to define or even to install new! infrastructures for registers. In Germany industry is financing the register continuously with registration and administration fees (10 Mio. €/ year). 2) In other countries industry has provided resources (mainly on associations level) for the definition of required register functionalities and possible practical solutions. 3) In the third category of countries the systems integrate the register/ clearing house function with satisfying results and at a very reduced expense/ effort.	Y		N.A.	
24	Producer	Hungary	1		N.A.		N.A.	
25	Producer	EU	1	National Clearing Houses are usually set up by the industry association and not by individual companies. However, we recognize great cost differences between the two currently established (e.g. Austria: Budget approx. 2 mil/€, Germany > 10 mil € year)	Y	Clearing houses are essential to ensure fair access to municipal waste for the various systems	Y	
26	Municipalities	Luxembourg	1		N.A.		N.A.	
27	Municipalities	UK	1		N.A.		N.A.	
28	Producer	Germany	3		N.A.		N.A.	
29	Producer	Germany	4	1) registration in each country with different ways to do so. 2) different weights are necessary in the memberstates (see above).	Y	lack of time and lack of knowledge to read sentences, made by lawyers (as a simple minded engineer)	N	T I
30	Producer	EU	1		N.A.		N.A.	

Q5) Do you feel or experience an administrative burden in setting up National Registers or Clearing Housee?

# File	Stakeholder Type	Member State	Answ Q5	Answ Q5a	Answ Q5b	Why	Answ Q5c	Answ Q5d
31	Compliance Scheme	Slovenia	1		Y		N.A.	
32	Compliance Scheme	Hungary	3	The National Register is working but the Clearing House NOT prescibed.	Y		Y	
33	Compliance Scheme	Norway	1		Y		N.A.	
34	Producer	Germany	4	1) Hiring consultants, providing data, looking for data needed for registering and reporting. 2) Making contracts with recyclers an so on….	Y	Is is for a good purpose. But anyway a lot of work, which could be made much more easier in my mind.	N	T I
35	Compliance Scheme	Czech Republic	3	exchange of information and basic data between two compliance schemes	N		Y	
36	Producer	Scandinavia	2		N.A.		N.A.	
37	Producer	EU	1		N	there are acceptable schmes in place for my category of equipment and this task should not affect a business selling in the B2C arena.	Y	
38	Association	Poland	3	The association wanted to use the art. 17 of the National law and together with other representatives of the industry introducing equipment on the market set up the Register. Unfortunately, the Chief Inspection for Environmental Protection decided that they can set up the Register on their own.	N.A.		N.A.	
39	Compliance Scheme	UK	1		N.A.		N.A.	
40	Producer	Germany	N.A.		N.A.		N.A.	
41	Producer	Ireland	3	preparing Waste Management Plan for B2B	Y	required by law	N	M T I
42	Producer	EU	1		N.A.		N.A.	

Q5) Do you feel or experience an administrative burden in setting up National Registers or Clearing Housee?

# File	Stakeholder Type	Member State	Answ Q5	Answ Q5a	Answ Q5b	Why	Answ Q5c	Answ Q5d
43	Producer	EU	1		N.A.		N.A.	
44	Refurbisher	EU	4	Discussion and implementation and support of too many National Registers cause administrative burden.	Y	The activities are required by (too many) national laws.	Y	
45	Producer	Ireland	1		N.A.		N.A.	
46	Distributor	Germany	3		Y	Compliance with EU-Directive must be ensured.	Y	
47	Producer	Spain	4	The clearing house must be set-up by the squemes. This means that all the squemes must reach an agreement, and very hard because the rules of the game are not clear.	Y	It is a requirement for the authorizations. Fundamental because it is needed to make the waste allocation work.	N	T I
48	Producer	Germany, Austria	3	1) Austria: clearing house set up by government. 2) Germany: three to four days a month today for setting up the patchwork solution; setting up the whole set for rules for the clearing house - for distriubution of responsibilit, guarantee para meters, calculate obligation, down from halftime 2005 to march 2006	Y	Of course it is fundamental. Like as for Q2 the Registry/Clearing House is necessary to make the waste allocation to work.	Y	
49	Compliance Scheme	Netherlands	4	1) All our participants are registered for free. Inspection is executed by the national authority. 2) There is a big difference between a register and a clearinghouse. This should not be mentioned in one question.	Y	1) Only the register is fundamental (against free riders). 2) A clearing house is nonsense.	Y	
50	Association	Slovakia	4	1) in slovakie we have several competitive CS and no "Clearing house mechanism". 2) it is not "order" from part of the market and from autoritiy to set up Clearing house	Y	Clearing house is necessary for correct and fair system of operation and competition	N	I
51	Producer	Ireland	1		N.A.		N.A.	
52	Producer	Ireland	2		N.A.		N.A.	

Q5) Do you feel or experience an administrative burden in setting up National Registers or Clearing Housee?

# File	Stakeholder Type	Member State	Answ Q5	Answ Q5a	Answ Q5b	Why	Answ Q5c	Answ Q5d
53	Producer	Ireland	1		N.A.		N.A.	
54	Distributor	Ireland	1		N.A.		N.A.	
55	Distributor	Ireland	1		N.A.		N.A.	
56	Producer	Ireland	1		N.A.		N.A.	
57	Producer	EU	4	Yes, Yes, Yes! The issue is complete lack of pan-European harmonisation!	Y	Absolutely fundamental!	Y	
58	Producer	Ireland	1		N.A.		N.A.	
59	Association	EU	4	New organisations have no experience of market. They need a lot of support to install funtioning systems not distorting the day to day business.	Y	Industry needs clear requirements what is expected from them!	N	M T I
60	Producer	Ireland	1		N.A.		N.A.	
61	Producer	Germany	3	The setup at the National Register was done by the industry. We payed our rate to finance the National register. Also we supported the founding of the National Register, because this was our chance to design the National Register.	Y		Y	
62	Producer	EU	2		Y		Y	
63	Producer	EU	1		N.A.		N.A.	
64	Distributor	Ireland	1		N.A.		N	
65	Recycler	N.A.	N.Q.					
66	Recycler	N.A.	N.Q.					
67	Recycler	N.A.	N.Q.					
68	Recycler	N.A.	N.Q.					
69	Recycler	N.A.	N.Q.					
70	Recycler	N.A.	N.Q.					
71	Recycler	N.A.	N.Q.					
72	Recycler	N.A.	N.Q.					

Q5) Do you feel or experience an administrative burden in setting up National Registers or Clearing Housee?								
# File	Stakeholder Type	Member State	Answ Q5	Answ Q5a	Answ Q5b	Why	Answ Q5c	Answ Q5d
73	Recycler	N.A.	N.Q.					
74	Recycler	N.A.	N.Q.					
75	Recycler	N.A.	N.Q.					
76	Recycler	N.A.	N.Q.					
77	Recycler	N.A.	N.Q.					
78	Recycler	N.A.	N.Q.					
79	Recycler	N.A.	N.Q.					

Table xiv: Administrative burden survey – Question 5

Q6) Could you provide the number of employees in your entity/company fully engaged on WEEE?						
# File	**Stakeholder Type**	**Member State**	**Answ Q6**	**[unit]**	**Q6b**	**Comments**
1	Producer	EU	6,800	menh/year	3,500	This question is flawed. Most of the work to comply with our Producer obligations is in fact delegated onto the Collective System, which has engaged its own staff. All operational expenditures are -of course- paid by the Producers. The case is similar to "outsourcing"
2	Producer	Finland	5	men	5	We have worked like on WEEE just during many years before!
3	Producer	Finland				
4	Producer	EU	20	men		
5	Producer	EU	Unknown		Many	Ericsson has subsidiaries in all 25 (27) EU countries so all are involved in some way. All design and manufacturing organizations are involved due to the WEEE marking requirements.
6	Producer	EU	500	menh/year	10,000	
7	Producer	Finland	0		46	
8	Producer	EU	8,5	men		1) It is important to note that the total requirements in terms of man hours and employees are much higher than this when you take into account the involvement of the Sales, IT, Finance, Legal and other teams who need to be brought in from time to time. 2) A varying requirement depending on registration, reporting, requirements in each member state and not in a position yet to definitively measure in man-hours.
9	Producer	Italy	N.A.			
10	Producer	Italy	N.A.			
11	Producer	Italy	N.A.			
12	Producer	Italy	N.A.			

Q6) Could you provide the number of employees in your entity/company fully engaged on WEEE?						
# File	**Stakeholder Type**	**Member State**	**Answ Q6**	**[unit]**	**Q6b**	**Comments**
13	Producer	EU	1		4,000	For registrating at National Register, declaring goods put on the market, reporting about take-back performances and recycling targets, informing final users and recyclers, we fully rely on the Compliance Scheme we belong to. It carries out collectively all these tasks for all its members. No redundant activities are thus achieved by producers: large scale benefits are gained for all, with huge economies of time, money and people for all members. We are totally satisfied with such a simple and effective approach to comply with legal requirements. For the setting up of the National Register, the task was achieved by the national authorities. The Clearing House was created by the compliance schemes themselves. As a result, there was no specific burden for producers for those activities.
14	Producer	EU	5	men		t is really difficult to give a figure. I could say 5 fully engaged from GL operations and EA local and central responsables but there were people involved and working in Europe from the beginning of WEEE directive to help in legislation development. For implementation several departments have been working and continue giving us their support for the project, legal, communication, WEB managers, operations, finance, procurement, people in brands and plants. Approximately, just for the operational area, I would say 3 full time people. Be aware that in this calculation is not included the resources we use to follow and lobby legislation in the different countries.
15	Producer	France	1	men	10,000	(10000 Employers across World)
16	Municipalities	UK	1	men	16,631	
17	Producer	EU				

Q6) Could you provide the number of employees in your entity/company fully engaged on WEEE?

# File	Stakeholder Type	Member State	Answ Q6	[unit]	Q6b	Comments
18	Producer	Germany	2	men	101	Cross border shipments are very complicated and create hign burden.
19	Producer	EU	6000	menh/year		Employees are not full time engaged on WEEE, but the network of 50 persons appx pend a significant part of their time in support of WEEE compliance. E.g. 20% for core team members, 5-10% for country contacts and environmental professionals, 5% for lawyers, logistic partners, procurement, etc.
20	Producer	Italy	200	menh/year	5	Very few time can be devoted to the subject.
21	Producer	EU	N.A		170,000	170000 (in Germany). "engaged on WEEE" needs to be differentiated: - pure WEEE administration (selecting products in scope, registering, reporting) - Refurbishment of (W)EEE: which is a business opportunity for some industrial products such as medical equipment - on site activities with WEEE from production or used EEE in own facilities. - recycling, treatment, disposal which is usually not done by producers. A ratio compared to total number of employees does not give a clear picture as e.g. for our company, by far not all our products & solutions are in the scope of the WEEE directive.
22	Producer	EU	5	men	40,000	40000 employees worldwide
23	Producer	EU	N.A		N.A	After a rough calculation We can confirm the average figure of 0,5 - 1 %
24	Producer	Hungary			125	It is mainly the task of the Quality- and Environmental manager, but some other departments are also involved

Q6) Could you provide the number of employees in your entity/company fully engaged on WEEE?

# File	Stakeholder Type	Member State	Answ Q6	[unit]	Q6b	Comments
25	Producer	EU	4	men	30,000	We asume we need about 3-4 fulltime equivalents for the ongoing management of WEEE in a mature implementation across all MS. These resources include administration and operational improvements / cost efficiency projects but not the initial implementation and lobbying.
26	Municipalities	Luxembourg	5	men	300	
27	Municipalities	UK	N.A		N.A	
28	Producer	Germany				0,2 (maybe the percentage?)
29	Producer	Germany				0,70%
30	Producer	EU	407,5	menh/month		
31	Compliance Scheme	Slovenia				
32	Compliance Scheme	Hungary				
33	Compliance Scheme	Norway				
34	Producer	Germany	N.A.			
35	Compliance Scheme	Czech Republic				
36	Producer	Scandinavia			25	The company uses less than 0,5% of employees manpower for WEEE. I think less than 0,1%.
37	Producer	EU	100	menh/week		
38	Association	Poland			2	
39	Compliance Scheme	UK			3	Financial control and accountancy are being out sourced
40	Producer	Germany				1,50%
41	Producer	Ireland	10	menh/week	1,200	WEEE policy for the company is unclear. WE are not Producers for most products. Only distributors for b2b.

Q6) Could you provide the number of employees in your entity/company fully engaged on WEEE?

# File	Stakeholder Type	Member State	Answ Q6	[unit]	Q6b	Comments
42	Producer	EU				
43	Producer	EU	N.A.			The WEEE Directive affects many functional groups within our organisation and the number of manhours is difficult to calculate but it is a significant number. Hundreds of hours were spent tracking, interpreting and understanding the country specifc legislation, and an equal number of hours are required on a continuous basis to maintain compliance with the WEEE legislation
44	Refurbisher	EU	2 FT + 20 PT		10,000	2 full time employees + 20 part time.
45	Producer	Ireland	4	menh/week	3	
46	Distributor	Germany	2	men	700	There are still uncertainties concerning the handling of reporting, especially the necessity of registering "Marke". We feel that environmental purposes concerning take-back-obligations could also be reached with less administrative burden.
47	Producer	Spain	0,5	men	320	2 persons that are not working fully engaged on this issues. Between both 0,5 person (in time dedicated to this issue).
48	Producer	Germany, Austria	1	men	1,000	
49	Compliance Scheme	Netherlands	18	men	18	100%
50	Association	Slovakia			8	My answers was founded on my personal experience as Managing Director one of the of Compliance scheme in Slovakia (Envidom, responsible for cat. 1 and 2 of WEEE)
51	Producer	Ireland	1	men	36	
52	Producer	Ireland	2	days/month	2	Well over 1% of time is spent Complying with WEEE

Q6) Could you provide the number of employees in your entity/company fully engaged on WEEE?						
# File	**Stakeholder Type**	**Member State**	**Answ Q6**	**[unit]**	**Q6b**	**Comments**
53	Producer	Ireland	0,02	?	6	2 man days per month on reporting. Extra data entry, analysis and checking of outgoing paperwork on all transactions. Extra data entry, analysis and checking of incoming paperwork on all transactions. Annual reporting workload.
54	Distributor	Ireland	15	menh/week	18	We are a small company and don't have any employees dedicated to WEEE. However we would spend a lot of manhours in the maintenance of WEEE.
55	Distributor	Ireland	3	hours/return	2	As stated, the time and effort need to supply correct and accurate information for our returns is a strain to a small company as we as accompany go forward and business grows our burden will become more, maybe as we do grow our systems will change and the reporting system we have will become less of a burden
56	Producer	Ireland	2	menh/month	100	
57	Producer	EU	2	men	2,200	
58	Producer	Ireland			1	Would welcome an exemption for small producers say less than 500 kg/year. The cost and administrative burden are much higher as a percentagfe of turnover for for a small company than a large producer. Like other EU relatred legislation, it appears to be weighted to favour the "bg guy" over the "small guy".
59	Association	EU	N.A		N.A	
60	Producer	Ireland	5	?	8	

Q6) Could you provide the number of employees in your entity/company fully engaged on WEEE?						
# File	**Stakeholder Type**	**Member State**	**Answ Q6**	**[unit]**	**Q6b**	**Comments**
61	Producer	Germany	N.A.		167,505	It´s very difficult to give a number of manhours or even of employes working only on the WEEE. In the beginning of the setting of WEEE we surely spend a lot of time to implement the WEEE. But today the process of WEEE is completely included in our processes, that makes it very difficult to specify the manpower or employees.
62	Producer	EU	30	men	>250	5 + 25 at National Level
63	Producer	EU	0	men	28	No one is fully employed on WEEE it is split between Service, ISO and WEEE.
64	Distributor	Ireland	10	hours/month	3	The WEEE is an inforced change and suppliers should not feel like this. Clearer information required on the intent
65	Recycler	N.A.	N.A.		100	
66	Recycler	N.A.	N.A.		107	
67	Recycler	N.A.	N.A.		12	
68	Recycler	N.A.	N.A.		140	
69	Recycler	N.A.	N.A.		14,000	
70	Recycler	N.A.	N.A.		150	
71	Recycler	N.A.	N.A.		230	
72	Recycler	N.A.	N.A.		27	
73	Recycler	N.A.	N.A.		300	
74	Recycler	N.A.	N.A.		3000	
75	Recycler	N.A.	N.A.		3,500	
76	Recycler	N.A.	N.A.		370	
77	Recycler	N.A.	N.A.		40	
78	Recycler	N.A.	N.A.		60	
79	Recycler	N.A.	N.A.		600	

Table xv: Administrative burden survey - Question 6

Annex 8.0.4b Overview National Registers Responses

National Register of Producers		AUSTRIA	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	DENMARK	ESTONIA
Register Set Up		Data From Register				Data From Register	Data From Register	Data From Register
Register of Producers in place	[Yes, No]	Yes				Yes	Yes	Yes
Name of the organization which holds the Register		EPA on behalf of the Minsitry of Environemnt				Ministry Environment	WEEE-System	Authorised body - Estonian Environment Information Centre
Website or Contact of the Register		www.edm.gv.at				www.env.cz/www/reveza_1.nsf	www.weee-system.dk	http://proto.envir.ee
Registering Obligations								
Deadline date for registering	[dd-mm-yyyy]	online since May 2005; producers have to register before they start to put on the market				12-10-2006	31-12-2005	20-02-2006
Registering Fee (as joining fee to be paid only once)	[€]	no fees				0 €	132 €	0
Does a Producer need a legal entity in the country for registering?	[Yes, No]	Yes				Yes. Minimum VAT member	Yes. In case of direct sale to private households NO.	Yes
Is annual renewal obligatory?	[Yes, No]	No				Yes	No	No
Deadline date for annual renewal	[dd-mm-yyyy]					31-mar	Deadline for anual reporting of data is 31-3-XXXX	-
Renewal or Annual Fee - indicate for which one you provide the fee	[€]	No fees				0 €	Renewal 132 €	-
How many producers are currently registerd in your country?	[number]	1300				1860	979	3 collective schemes and through them 104 producers
Reporting EEE Put on Market Obligations								
What is the time frequency for reporting?	[Annually, Quarterly	Quarterly/Annually				Annually	Annually	2006 - quartely; 2007 and forward - annually
What is the current basis for reporting?	[weight, units, turn	Weight					Weight	Weight & Units
How are EEE put on market grouped?	[1-10 categories, Pr	5 categories				1-10 categories	1-10 categories	1-10 categories
Is there a split into household (B2C)/non-household (B2B)?	[Yes/No]	Yes				Yes	Yes	No

National Register of Producers		FINLAND	FRANCE	GERMANY	GREECE	HUNGARY	IRELAND	ITALY
Register Set Up		Data From Register	Data From Register			Data From Register	Data From Register	
Register of Producers in place	[Yes, No]	Yes	Yes			Yes	Yes	
Name of the organization which holds the Register		Pirkanmaa Regional Environment Centre	ADEME			National Inspectorate for Environment, Nature and Water (="Országos Környezetvédelmi, Természetvédelmi és Vízügyi Főfelügyelőség")	WEEE Register Society	
Website or Contact of the Register		www.ymparisto.fi/tuottajavastuu/www.miljo.fi/producentansvar (www.environment.fi/producerresponsibility)	https://registredeee.ademe.fr/			main page: http://www.oktvf.gov.hu/ WEEE (and other) data: http://www.oktvf.gov.hu/index.php?akt_menu=213	www.weeeregister.ie	
Registering Obligations								
Deadline date for registering	[dd-mm-yyyy]	15-05-2005				1-01-2005	20-07-2005	
Registering Fee (as joining fee to be paid only once)	[€]	390 € if Producer 1400 € if Compliance Scheme				~ 300	N/A	
Does a Producer need a legal entity in the country for registering?	[Yes, No]	Yes				Yes	Company,Place of Business or Branch	
Is annual renewal obligatory?	[Yes, No]	No				No	Yes	
Deadline date for annual renewal	[dd-mm-yyyy]					-	31-01-yyyy	
Renewal or Annual Fee - indicate for which one you provide the fee	[€]					-	250 € if annual Turnover <250.000€ 500 € if annual Turnover <500.000€ 1000 € if annual Turnover <1.000.000€ 2000 € if annual Turnover >1.000.000€	
How many producers are currently registerd in your country?	[number]	800 (WEEE)	3744			715	850+	
Reporting EEE Put on Market Obligations								
What is the time frequency for reporting?	[Annually, Quarterly	Annually	Half-yearly			Annually	Monthly	
What is the current basis for reporting?	[weight, units, turn	Weight & Units	Weight & Units			Weight	Weights & Units	
How are EEE put on market grouped?	[1-10 categories, Pr	1-10 categories	1-10 categories, sub-categories			1-10 categories	According to the VF subcategories	
Is there a split into household (B2C)/non-household (B2B)?	[Yes/No]	Yes				Yes	Yes	

National Register of Producers		LATVIA	LITHUANIA	LUXEMBOURG	MALTA	NETHERLANDS	POLAND	PORTUGAL
Register Set Up		Data From Register	Data From Register				Data From CECED	Data From Register
Register of Producers in place	[Yes, No]	Yes	Yes				Yes	Yes
Name of the organization which holds the Register		Latvian Electrical Engineering and Electronics Industry Association	Environmental Protection Agency and Regional Environmental Protection Departments				Chief Inspection for Environmental Protection	ANREE
Website or Contact of the Register		www.elektroregistrs.lv	A. Juozapavičiaus st. 9, LT-09311 Vilnius http://193.219.55.14/gii s/				www.gios.gov.pl	www.anree.pt
Registering Obligations								
Deadline date for registering	[dd-mm-yyyy]	6-04-2006	31-03-2006				30-09-2006, for new companies before starting the activity as persons introducing the products on the market	13-08-2005
Registering Fee (as joining fee to be paid only once)	[€]	0	None				up to 2000€	50 €
Does a Producer need a legal entity in the country for registering?	[Yes, No]	Yes	Yes				Yes	No
Is annual renewal obligatory?	[Yes, No]	No	Yes				Yes, the annual fee is obligatory	Yes
Deadline date for annual renewal	[dd-mm-yyyy]		31 of March				28-02 each year	Submission semester reports
Renewal or Annual Fee - indicate for which one you provide the fee	[€]	0	None				up to 2000€	375 € if less than 3.750 EEE put on market
								0,10 €/unit from 3.750 to 10.000 EEE put on
								0,01 €/unit from 10.001 to 60.000 EEE put on market
								1.500 € if more than 60.000 EEE put on
How many producers are currently registerd in your country?	[number]	605	546				2146 (end of February 2007)	928
Reporting EEE Put on Market Obligations								
What is the time frequency for reporting?	[Annually, Quarterly	Quarterly	Annually				most of the reports Quarterly some Annually	Semester (Jul & Jan)
What is the current basis for reporting?	[weight, units, turn	Weight & Units	Weight				weight	Weight & Units
How are EEE put on market grouped?	[1-10 categories, Pr	1-10 categories	1-10 categories				1-10 categories	Product Subcategory annex 1B WEEE Directie
Is there a split into household (B2C)/non-household (B2B)?	[Yes/No]	No	No				in registration and reporting No	No

National Register of Producers		ROMANIA	SLOVAKIA	SLOVENIA	SPAIN	SWEDEN	UNITED KINGDOM
Register Set Up			Data From Register		Data From Register	Data From Register	
Register of Producers in place	[Yes, No]		Yes		Yes	yes	
Name of the organization which holds the Register			Ministry Environment		Ministry of Industry, Tourism and Trade	Swedish EPA	
Website or Contact of the Register			www.enviro.gov.sk/servlets/files/14647		http://www.mityc.es/raee	www.naturvardsverket.se/eeregistret	
Registering Obligations							
Deadline date for registering	[dd-mm-yyyy]		30-06-2005		Not defined	31-01-2007	
Registering Fee (as joining fee to be paid only once)	[€]		0		Free of charge	No	
Does a Producer need a legal entity in the country for registering?	[Yes, No]		Yes, or they must be member of collective system		Spanish VAT number, legal representative and address	Yes	
Is annual renewal obligatory?	[Yes, No]		No, they must send us application, if something changed		No	Yes	
Deadline date for annual renewal	[dd-mm-yyyy]				N.A.		
Renewal or Annual Fee - indicate for which one you provide the fee	[€]		0		N.A.	350 €	
How many producers are currently registerd in your country?	[number]		700		951	1000	
Reporting EEE Put on Market Obligations							
What is the time frequency for reporting?	[Annually, Quarterly, Monthly,...]		Annually		Quarterly	Annually	
What is the current basis for reporting?	[weight, units, turnover, other]		Weight		Weight	Weight	
How are EEE put on market grouped?	[1-10 categories, Products,...]		1-10 Categories		1-10 categories, split into subcategories	1-10 categories	
Is there a split into household (B2C)/non-household (B2B)?	[Yes/No]		No		Yes	Yes	

Figure ix: Overview National Registers repsonses

Annex 8.1.2 Breakdown Total Costs and Technical Costs per year and per Product Category (ALL WEEE Arising)

Min Total Costs		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1a	Large household appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1b	Cooling&freezing appliances	285	293	300	308	316	324	332	341	350	359	368	378	388	398	409	420
2	Small household appliances	81	83	85	87	89	91	94	96	99	101	104	107	110	112	115	119
3a	IT & T equipment *(excl. CRT's)*	90	92	94	97	99	102	104	107	110	113	116	119	122	125	129	132
3b	IT & T screens – CRT's	113	115	118	121	124	128	131	134	138	141	145	149	153	157	161	166
4a	Consumer equipment *(excl. CRT's)*	90	92	94	97	99	102	105	107	110	113	116	119	122	125	129	132
4b	TV sets - CRT's	181	185	190	195	200	205	210	216	221	227	233	239	246	252	259	266
5	Lighting equipment	111	114	116	119	122	126	129	132	136	139	143	147	151	155	159	163
6	Electrical and electronic tools	60	61	63	64	66	68	69	71	73	75	77	79	81	83	85	88
7	Toys	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5
8	Medical devices	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
9	M&C instruments	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	7
10	Automatic dispensers	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	6
	Total MIN TOTAL	**1,022**	**1,048**	**1,075**	**1,102**	**1,131**	**1,160**	**1,190**	**1,221**	**1,253**	**1,286**	**1,319**	**1,354**	**1,390**	**1,427**	**1,466**	**1,505**

Table xvi: Breakdown Total Costs per year and per Product Category, in Million Euro. Minimum Value

Max Total Costs		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1a	Large household appliances	2,424	2,486	2,549	2,614	2,681	2,750	2,821	2,895	2,970	3,048	3,128	3,211	3,297	3,385	3,475	3,569
1b	Cooling&freezing appliances	1,295	1,328	1,362	1,397	1,432	1,469	1,507	1,547	1,587	1,629	1,671	1,716	1,761	1,808	1,857	1,907
2	Small household appliances	724	743	762	781	801	822	843	865	888	911	935	960	985	1,011	1,039	1,067
3a	IT & T equipment (excl. CRT's)	1,130	1,158	1,188	1,218	1,250	1,282	1,315	1,349	1,384	1,421	1,458	1,497	1,536	1,577	1,620	1,663
3b	IT & T screens - CRT's	972	996	1,022	1,048	1,075	1,102	1,131	1,160	1,191	1,222	1,254	1,287	1,321	1,357	1,393	1,431
4a	Consumer equipment (excl. CRT's)	862	883	906	929	953	978	1,003	1,029	1,056	1,083	1,112	1,141	1,172	1,203	1,235	1,269
4b	TV sets - CRT's	1,535	1,573	1,614	1,655	1,697	1,741	1,786	1,832	1,880	1,930	1,980	2,033	2,087	2,143	2,200	2,259
5	Lighting equipment	512	525	538	552	566	581	596	611	627	643	660	678	696	714	734	753
6	Electrical and electronic tools	305	313	321	329	337	346	355	364	374	384	394	404	415	426	437	449
7	Toys, ...	5	5	6	6	6	6	6	6	7	7	7	7	7	7	8	8
8	Medical devices	6	6	6	6	6	6	7	7	7	7	7	8	8	8	8	8
9	M&C instruments	24	25	25	26	27	27	28	29	30	30	31	32	33	34	35	36
10	Automatic dispensers	7	7	7	8	8	8	8	8	9	9	9	9	10	10	10	10
	Total MAX TOTAL	**9,800**	**10,049**	**10,305**	**10,568**	**10,840**	**11,119**	**11,407**	**11,703**	**12,009**	**12,323**	**12,648**	**12,982**	**13,327**	**13,683**	**14,050**	**14,429**

Table xvii: Breakdown Total Costs per year and per Product Category, in Million Euro. Maximum Value

Min Technical Costs		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1a	Large household appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1b	Cooling&freezing appliances	250	256	263	270	277	284	291	299	306	314	323	331	340	349	359	368
2	Small household appliances	72	73	75	77	79	81	83	85	88	90	92	95	97	100	103	105
3a	IT & T equipment (excl. CRT's)	82	84	86	88	90	93	95	97	100	103	105	108	111	114	117	120
3b	IT & T screens – CRT's	96	98	101	104	106	109	112	115	118	121	124	127	131	134	138	141
4a	Consumer equipment (excl. CRT's)	80	82	84	86	88	91	93	95	98	100	103	106	108	111	114	117
4b	TV sets - CRT's	154	158	162	166	170	175	179	184	189	194	199	204	210	215	221	227
5	Lighting equipment	101	103	106	109	111	114	117	120	123	127	130	133	137	141	144	148
6	Electrical and electronic tools	47	48	50	51	52	54	55	56	58	59	61	63	64	66	68	70
7	Toys, ...	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4
8	Medical devices	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9	M&C instruments	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5
10	Automatic dispensers	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4
	Total MIN TECHNICAL	**892**	**915**	**938**	**962**	**987**	**1,012**	**1,038**	**1,065**	**1,093**	**1,122**	**1,151**	**1,182**	**1,213**	**1,246**	**1,279**	**1,314**

Table xviii: Breakdown Technical Costs per year and per Product Category, in Million Euro. Minimum Value

Max Technical Costs		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1a	Large household appliances	1,004	1,029	1,055	1,082	1,110	1,139	1,168	1,199	1,230	1,262	1,295	1,330	1,365	1,401	1,439	1,478
1b	Cooling&freezing appliances	1,089	1,116	1,145	1,174	1,204	1,235	1,267	1,300	1,334	1,369	1,405	1,442	1,480	1,520	1,561	1,603
2	Small household appliances	248	255	261	268	275	282	289	296	304	312	320	329	338	347	356	365
3a	IT & T equipment (excl. CRT's)	548	562	576	591	606	622	638	655	672	689	708	726	746	765	786	807
3b	IT & T screens – CRT's	411	421	432	443	454	466	478	490	503	516	530	544	558	573	589	604
4a	Consumer equipment (excl. CRT's)	305	312	320	328	337	346	354	364	373	383	393	403	414	425	437	448
4b	TV sets - CRT's	659	676	693	710	729	747	767	787	807	828	850	873	896	920	945	970
5	Lighting equipment	340	349	358	367	377	386	396	407	417	428	439	451	463	475	488	501
6	Electrical and electronic tools	145	148	152	156	160	164	168	173	177	182	187	192	197	202	208	213
7	Toys, ...	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6
8	Medical devices	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	7
9	M&C instruments	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15	15
10	Automatic dispensers	5	5	6	6	6	6	6	6	6	7	7	7	7	7	8	8
	Total MAX TECHNICAL	**4,772**	**4,893**	**5,018**	**5,146**	**5,278**	**5,414**	**5,554**	**5,699**	**5,847**	**6,001**	**6,159**	**6,322**	**6,490**	**6,663**	**6,842**	**7,026**

Table xix: Breakdown Technical Costs per year and per Product Category, in Million Euro. Maximum Value

Annex 8.2.1 Cat 1A LHHA

Scenario	**Recycling** Strict	**Recycling** WEEE recycling	**Recovery** WEEE recovery	**QWERTY** gain	**QWERTY** loss	**mPts**	**€**	**€/kg**
A: Default shredding, no Annex II comp. removal, 2005	60,1%	**93,7%**	**93,7%**	63,1%	36,9%	-3694,7	**12,76**	**0,24**
A1: Idem, max value 2005	60,1%	**93,7%**	**93,7%**	63,1%	36,9%	-3694,7	**30,25**	**0,56**
A2: Idem, minimum value 2005	60,1%	**93,7%**	**93,7%**	63,1%	36,9%	-3694,7	-1,98	-0,04
B: Default scenario, 2007 prices	60,1%	**93,7%**	**93,7%**	63,1%	36,9%	-3694,7	**9,21**	**0,17**
B1: Idem, maximum value 2007	60,1%	**93,7%**	**93,7%**	63,1%	36,9%	-3694,7	-5,54	-0,10
B2: Idem, minimum value 2007	60,1%	**93,7%**	**93,7%**	63,1%	36,9%	-3694,7	**26,70**	**0,49**
C: Manual Removal PCB's to Haz Waste Incineration	60,1%	**93,7%**	**93,7%**	63,1%	36,9%	-3694,8	**13,23**	**0,24**

Table xx: Cat. 1A LHHA, Eco-efficiency data per piece for various scenarios

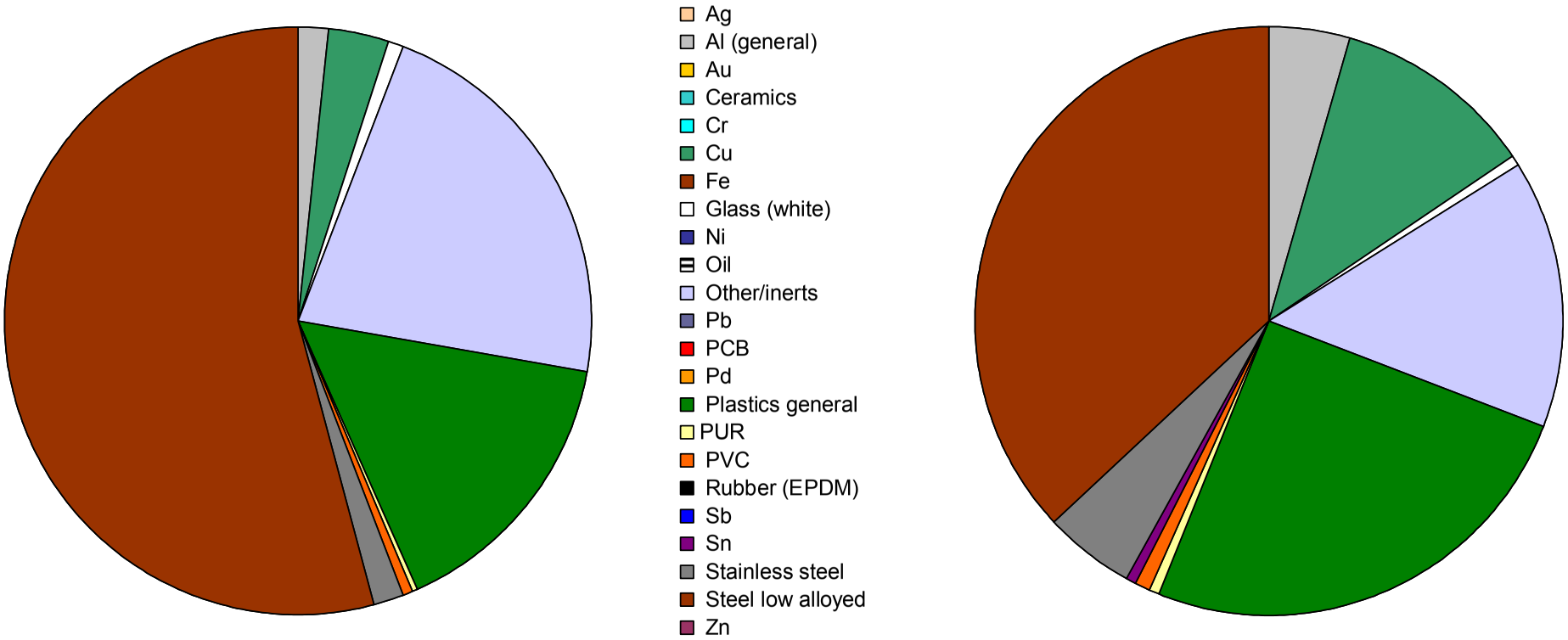
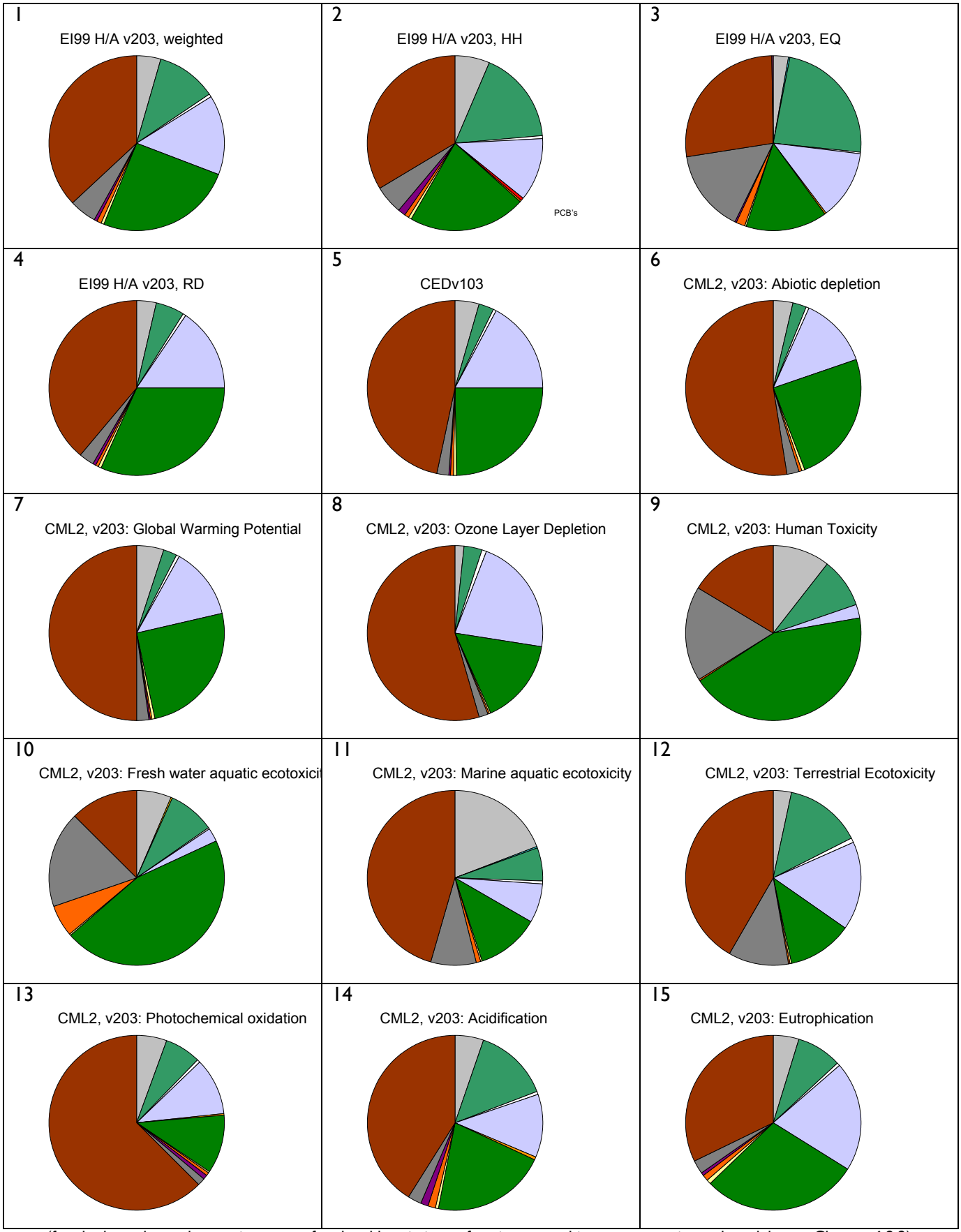


Figure x: Weight versus Environmental weight



(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xi: Weight versus environmental weight all impact categories – 1A,10 LHHA

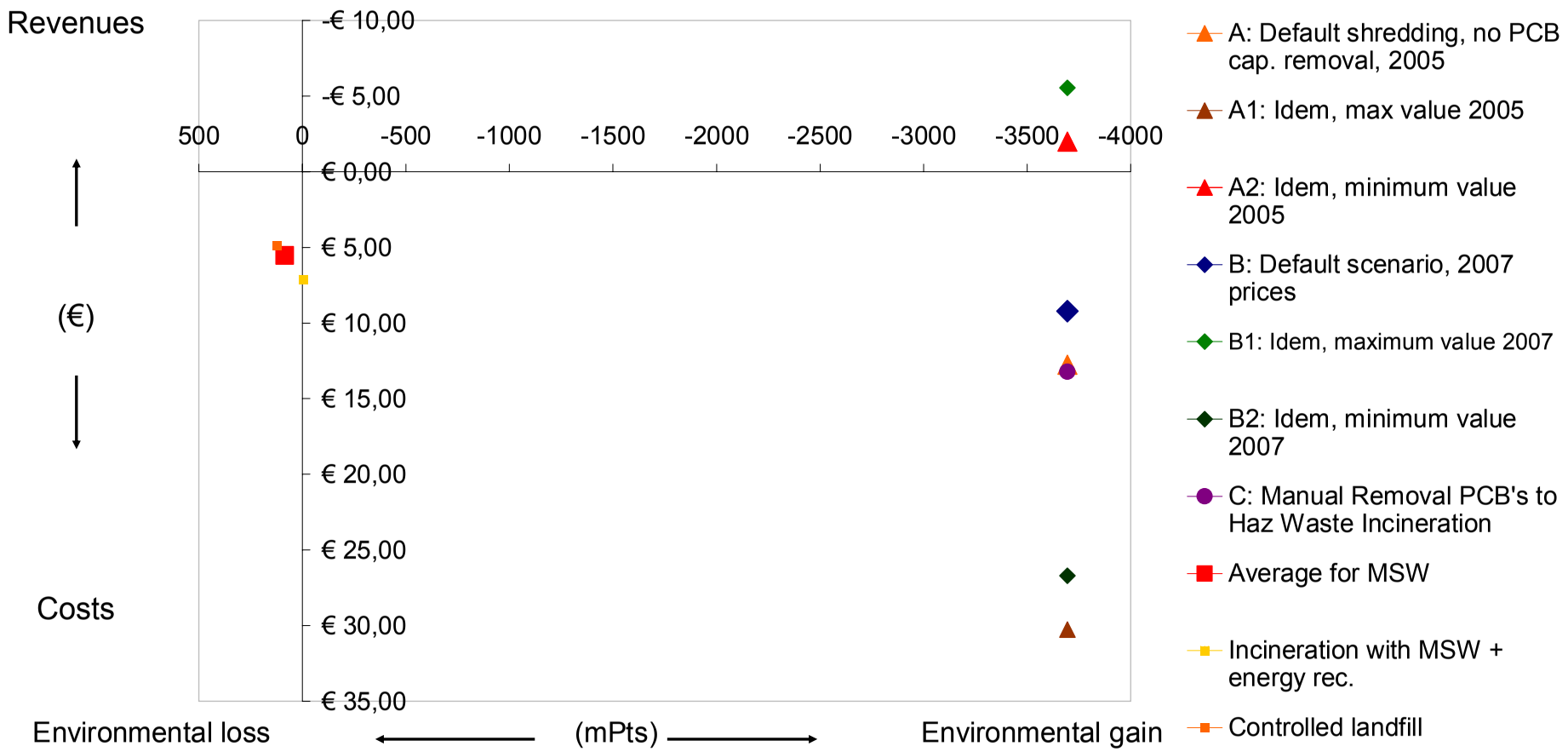


Figure xii: Figure Eco-efficiency Cat. I A LHHA

Annex 8.2.2 Cat 1B C&F

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, no Annex II components removal, 2005	75,6%	**87,5%**	**89,3%**	98,4%	82,1%	17,9%	-3,95	**21,46**	**0,56**
A1: Idem, max value 2005	75,6%	**87,5%**	**89,3%**	98,4%	82,1%	17,9%	-3,95	**36,59**	**0,95**
A2: Idem, minimum value 2005	75,6%	**87,5%**	**89,3%**	98,4%	82,1%	17,9%	-3,95	**10,96**	**0,28**
B: Default treatment, 2007 Metal prices	75,6%	**87,5%**	**89,3%**	98,4%	82,1%	17,9%	-3,95	**18,56**	**0,48**
C1: Default treatment 100% HC, CFC removal, 2005	75,6%	**87,5%**	**89,2%**	98,3%	82,7%	17,3%	-4,12	**21,45**	**0,56**
C2: Default treatment, 0% HC, CFC removal, 2005	75,6%	**87,5%**	**89,2%**	98,2%	34,4%	65,6%	**9,77**	**22,17**	**0,58**
D: Removal PCB and Hg containing components	75,6%	**87,5%**	**89,3%**	98,4%	82,1%	17,9%	-3,95	**21,93**	**0,57**
E1: Default treatment, CFC fridge only	75,6%	**87,4%**	**89,2%**	98,2%	83,9%	16,1%	-3,91	**21,46**	**0,56**
E2: Default treatment, CFC fridge only, no CFC removal	75,6%	**87,4%**	**89,1%**	98,1%	30,7%	69,3%	**13,23**	**22,22**	**0,58**
E3: Default treatment, CFC fridge only, loss of CFC12 pressure	75,6%	**87,5%**	**89,2%**	98,3%	62,7%	37,3%	**1,63**	**21,63**	**0,56**
F1: Default treatment, HC fridge only	75,8%	**87,7%**	**89,4%**	99,2%	66,8%	33,2%	-4,12	**21,48**	**0,56**
F2: Default treatment, HC fridge only, no HC removal	75,8%	**87,7%**	**89,4%**	98,4%	66,5%	33,5%	-4,06	**21,96**	**0,57**

Table xxi: Cat 1B C&F, All eco-efficiency data per scenario, recycling percentages

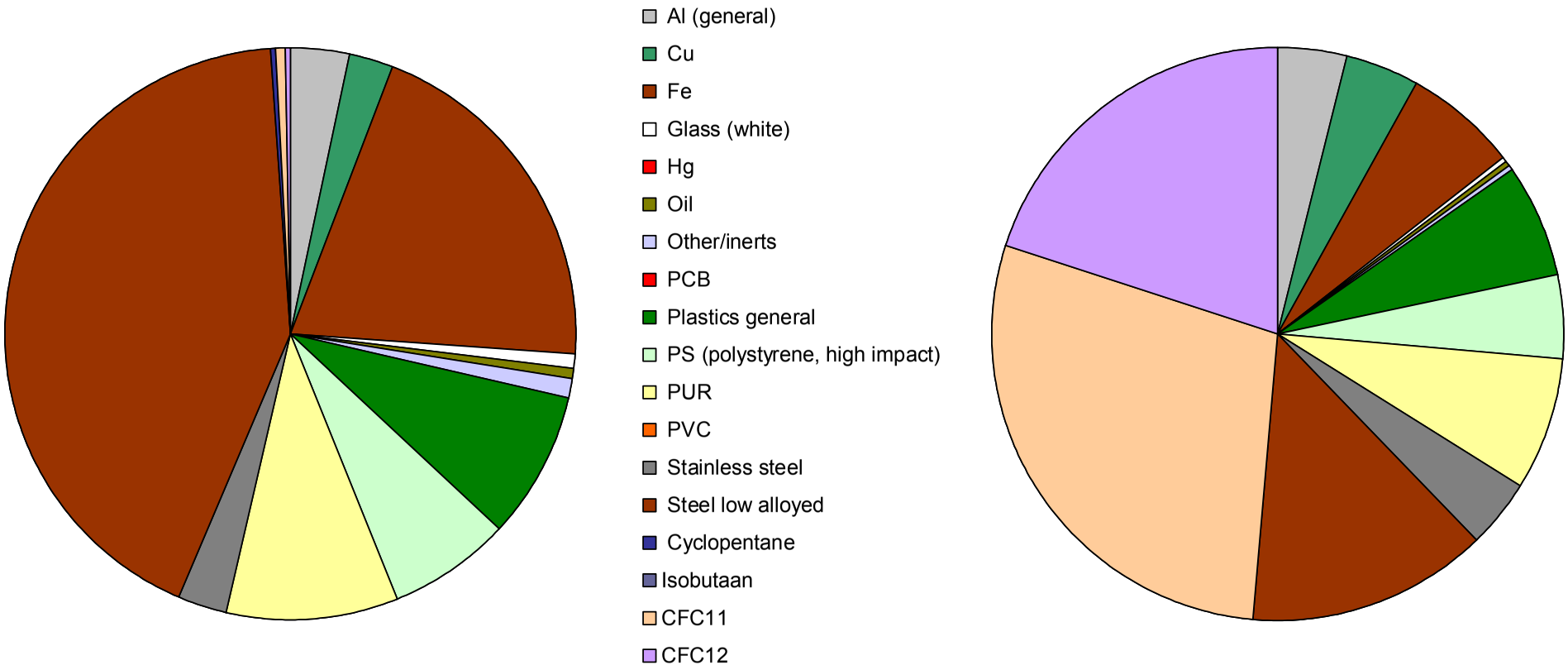
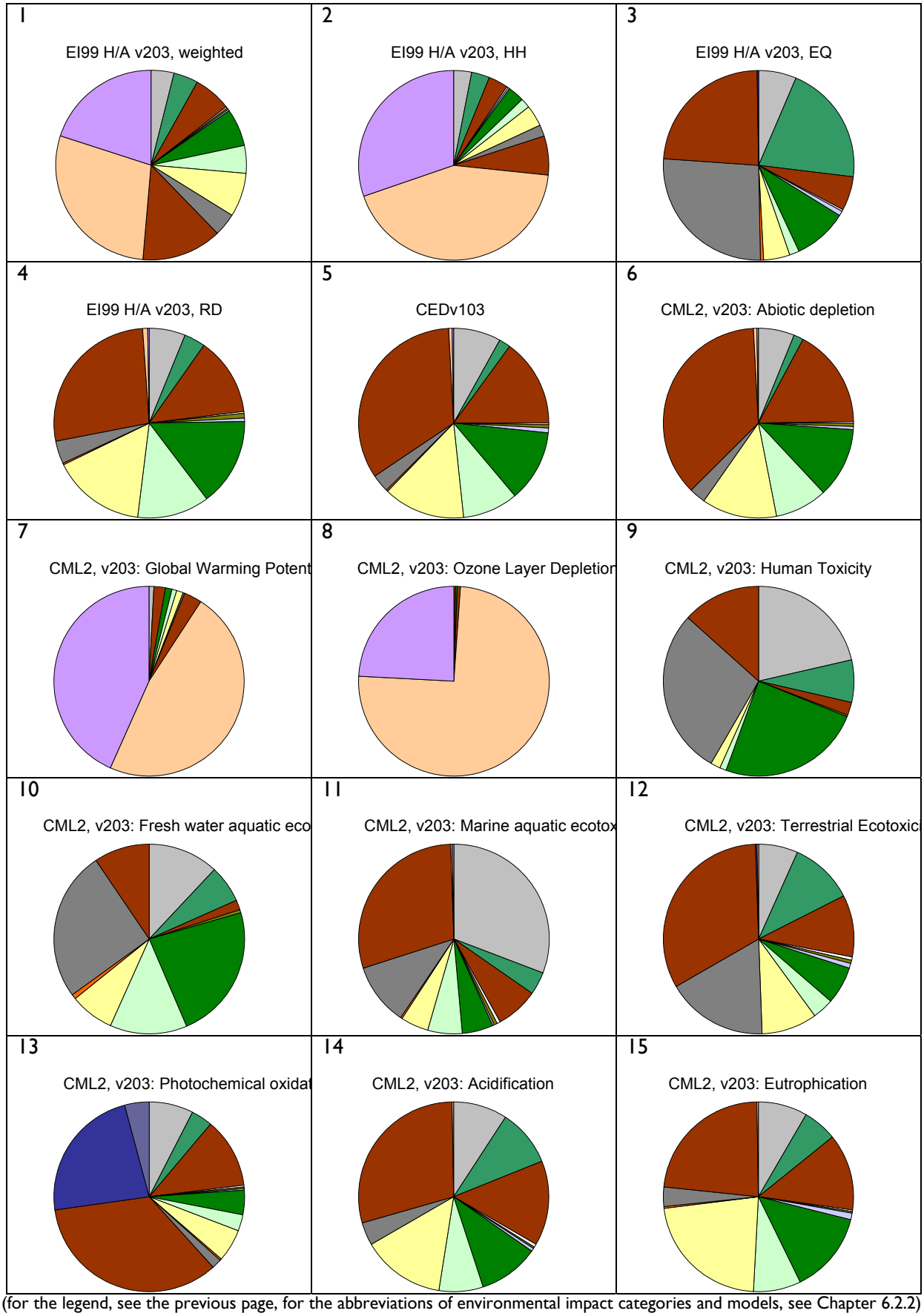


Figure xiii: Figure Weight versus Environmental weight Cat.1B C&F



(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xiv: Figure Weight versus environmental weight all impact categories – 1B C&F

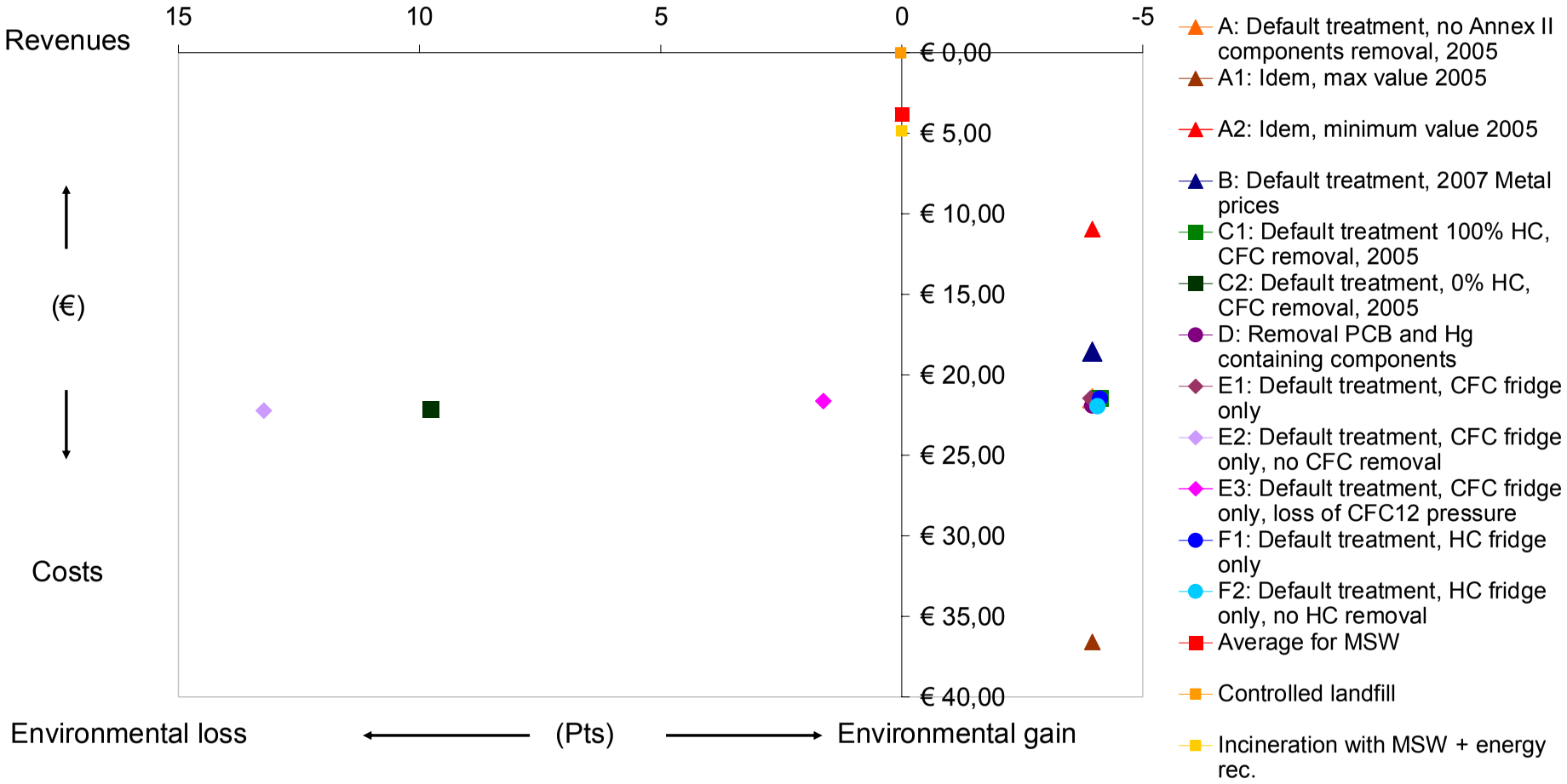


Figure xv: Eco-efficiency Cat.1B C&F

Annex 8.2.3 Cat 2 SDA

	1	4	5	6	7	8			
Scenario	**Recycling**	**Recycling**	**Recovery**	**Recovery**	**QWERTY**	**QWERTY**	**Pts**	**€**	**€/kg**
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, no Annex II components removal, 2005	71.2%	**84.36%**	**92.0%**	97.9%	62.6%	37.4%	-0.97	**3.89**	**0.38**
A1: Idem, max value 2005	71.2%	**84.4%**	**92.0%**	97.9%	62.6%	37.4%	-0.97	**7.88**	**0.78**
A2: Idem, minimum value 2005	71.2%	**84.4%**	**92.0%**	97.9%	62.6%	37.4%	-0.97	**0.15**	**0.01**
B: Default treatment, 2007 Metal prices	71.2%	**84.4%**	**92.0%**	97.9%	62.6%	37.4%	-0.97	**3.05**	**0.30**
C1: Default treatment, Plastic recycling mixed plastics	79.4%	**96.2%**	**96.2%**	98.3%	70.3%	29.7%	-1.30	**2.94**	**0.29**
C2: Default treatment, Incin. + energy rec. mixed plastics	70.9%	**83.9%**	**83.9%**	98.3%	61.9%	38.1%	-0.94	**3.13**	**0.31**
D: Default treatment + manual removal all Annex II components	71.1%	**84.58%**	**92.1%**	97.9%	62.7%	37.3%	-0.97	**6.98**	**0.69**
E1: Shredding and separation with high value settings	71.1%	**99.6%**	**99.6%**	100.0%	61.7%	38.3%	-0.93	**4.64**	**0.46**
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
Average for MSW	0%	0%	0%	29%	39%	61%	0.0261	1.04	0.10
Controlled landfill	0%	0%	0%	0%	39%	61%	0.0173	0.91	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	39%	61%	0.0472	1.36	0.13

Table xxii: Cat. 1C LHHA-small, All eco-efficiency data per scenario, recycling percentages

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, no Annex II components removal, 2005	36.2%	**45.95%**	**74.3%**	93.9%	48.0%	52.0%	-0.41	**1.46**	**0.38**
A1: Idem, max value 2005	36.2%	**46.0%**	**74.3%**	93.9%	48.0%	52.0%	-0.41	**2.95**	**0.78**
A2: Idem, minimum value 2005	36.2%	**46.0%**	**74.3%**	93.9%	48.0%	52.0%	-0.41	**0.07**	**0.02**
B: Default treatment, 2007 Metal prices	36.2%	**46.0%**	**74.3%**	93.9%	48.0%	52.0%	-0.41	**1.14**	**0.30**
C1: Default treatment, Plastic recycling mixed plastics	69.0%	**90.0%**	**90.0%**	95.4%	69.9%	30.1%	-0.90	**1.30**	**0.34**
C2: Default treatment, Incin. + energy rec. mixed plastics	34.9%	**44.3%**	**44.3%**	95.4%	46.1%	53.9%	-0.37	**1.55**	**0.41**
D: Default treatment + manual removal all Annex II components	36.1%	**46.03%**	**74.3%**	93.9%	48.0%	52.0%	-0.41	**2.99**	**0.79**
E1: Shredding and separation with high value settings	36.1%	**98.4%**	**98.4%**	99.9%	46.4%	53.6%	-0.38	**2.34**	**0.62**
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00

Table xxiii: Cat . 2 SHHA, All eco-efficiency data per scenario, recycling percentages

	1	4	5	6	7	8			
Scenario	**Recycling**	**Recycling**	**Recovery**	**Recovery**	**QWERTY**	**QWERTY**	**Pts**	**€**	**€/kg**
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, no Annex II components removal, 2005	59.3%	**70.89%**	**85.9%**	96.5%	57.9%	42.1%	-0.66	**1.59**	**0.38**
A1: Idem, max value 2005	59.3%	**70.8%**	**85.8%**	96.5%	58.6%	41.4%	-0.73	**2.68**	**0.64**
A2: Idem, minimum value 2005	59.3%	**70.8%**	**85.8%**	96.5%	58.6%	41.4%	-0.73	**0.30**	**0.07**
B: Default treatment, 2007 Metal prices	59.3%	**70.8%**	**85.8%**	96.5%	58.6%	41.4%	-0.73	**1.24**	**0.30**
C1: Default treatment, Plastic recycling mixed plastics	76.5%	**94.0%**	**94.0%**	97.3%	70.3%	29.7%	-1.01	**1.54**	**0.37**
C2: Default treatment, Incin. + energy rec. mixed plastics	58.6%	**69.9%**	**69.9%**	97.3%	57.5%	42.5%	-0.70	**1.64**	**0.39**
D: Default treatment + manual removal all Annex II components	58.5%	**72.47%**	**86.7%**	96.7%	65.9%	34.1%	-0.90	**3.05**	**0.73**
E1: Shredding and separation with high value settings	60.4%	**98.9%**	**98.9%**	99.5%	67.4%	32.6%	-0.94	**2.15**	**0.51**
Average for MSW	0%	0%	0%	29%	28%	72%	0.0116	0.43	0.10
Controlled landfill	0%	0%	0%	0%	28%	72%	0.0067	0.38	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	27%	73%	0.0235	0.54	0.13

Table xxiv: Cat .3A IT ex CRT, All eco-efficiency data per scenario, recycling percentages

Scenario	**Recycling**	**Recycling**	**Recovery**	**Recovery**	**QWERTY**	**QWERTY**	**Pts**	**€**	**€/kg**
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, no Annex II components removal, 2005	51.7%	**70.73%**	**84.2%**	95.4%	56.6%	43.4%	-0.52	**1.71**	**0.42**
A1: Idem, max value 2005	51.7%	**70.7%**	**84.2%**	95.4%	56.6%	43.4%	-0.52	**2.94**	**0.72**
A2: Idem, minimum value 2005	51.7%	**70.7%**	**84.2%**	95.4%	56.6%	43.4%	-0.52	**0.13**	**0.03**
B: Default treatment, 2007 Metal prices	51.7%	**70.7%**	**84.2%**	95.4%	56.6%	43.4%	-0.52	**1.50**	**0.37**
C1: Default treatment, Plastic recycling mixed plastics	66.2%	**91.6%**	**91.6%**	96.1%	67.5%	32.5%	-0.75	**1.68**	**0.41**
C2: Default treatment, Incin. + energy rec. mixed plastics	51.1%	**70.0%**	**70.0%**	96.1%	55.7%	44.3%	-0.50	**1.76**	**0.43**
D: Default treatment + manual removal all Annex II components	51.2%	**72.84%**	**85.3%**	95.7%	58.0%	42.0%	-0.55	**3.29**	**0.81**
E1: Shredding and separation with high value settings	51.2%	**99.3%**	**99.3%**	99.9%	56.2%	43.8%	-0.51	**2.31**	**0.57**
Average for MSW	0%	0%	0%	29%	32%	68%	0.0095	0.41	0.10
Controlled landfill	0%	0%	0%	0%	32%	68%	0.0067	0.37	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	31%	69%	0.0162	0.53	0.13

Table xxv: Cat.4A CE ex CRT, All eco-efficiency data per scenario, recycling percentages

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, no Annex II components removal, 2005	53.1%	**63.26%**	**82.4%**	95.8%	54.9%	45.1%	-0.69	**1.85**	**0.30**
A1: Idem, max value 2005	53.1%	**63.3%**	**82.4%**	95.8%	54.9%	45.1%	-0.69	**3.53**	**0.58**
A2: Idem, minimum value 2005	53.1%	**63.3%**	**82.4%**	95.8%	54.9%	45.1%	-0.69	**0.35**	**0.06**
B: Default treatment, 2007 Metal prices	53.1%	**63.3%**	**82.4%**	95.8%	54.9%	45.1%	-0.69	**1.12**	**0.18**
C1: Default treatment, Plastic recycling mixed plastics	74.6%	**93.0%**	**93.0%**	96.8%	69.6%	30.4%	-1.24	**1.67**	**0.27**
C2: Default treatment, Incin. + energy rec. mixed plastics	52.2%	**62.2%**	**62.2%**	96.8%	54.1%	45.9%	-0.66	**1.97**	**0.32**
D: Default treatment + manual removal all Annex II components	53.2%	**63.80%**	**82.7%**	95.8%	60.3%	39.7%	-0.89	**1.96**	**0.32**
E1: Shredding and separation with high value settings	53.0%	**99.0%**	**99.0%**	99.9%	53.6%	46.4%	-0.64	**2.86**	**0.46**
Average for MSW	0%	0%	0%	29%	35%	65%	0.0443	0.62	0.10
Controlled landfill	0%	0%	0%	0%	36%	64%	0.0109	0.55	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	33%	67%	0.1244	0.79	0.13

Table xxvi: Table Cat.6 Tools, All eco-efficiency data per scenario, recycling percentages

	1	4	5	6	7	8			
Scenario	**Recycling**	**Recycling**	**Recovery**	**Recovery**	**QWERTY**	**QWERTY**	**Pts**	**€**	**€/kg**
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, no Annex II components removal, 2005	28.4%	**41.06%**	**70.3%**	92.3%	37.9%	62.1%	-0.24	**6.55**	**0.51**
A1: Idem, max value 2005	28.4%	**41.1%**	**70.3%**	92.3%	37.9%	62.1%	-0.24	**10.35**	**0.80**
A2: Idem, minimum value 2005	28.4%	**41.1%**	**70.3%**	92.3%	37.9%	62.1%	-0.24	**2.83**	**0.22**
B: Default treatment, 2007 Metal prices	28.4%	**41.1%**	**70.3%**	92.3%	37.9%	62.1%	-0.24	**6.32**	**0.49**
C1: Default treatment, Plastic recycling mixed plastics	63.2%	**86.6%**	**86.6%**	93.9%	68.1%	31.9%	-1.97	**5.97**	**0.46**
C2: Default treatment, Incin. + energy rec. mixed plastics	27.0%	**39.3%**	**39.3%**	93.9%	35.1%	64.9%	-0.08	**6.87**	**0.53**
D: Default treatment + manual removal all Annex II components	29.7%	**100.00%**	**100.0%**	100.0%	37.6%	62.4%	-0.23	**12.40**	**0.96**
E1: Shredding and separation with high value settings	29.8%	**100.0%**	**100.0%**	100.0%	37.5%	62.5%	-0.22	**9.37**	**0.72**
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
	0.0%	**0.0%**	**0.0%**	0.0%	0.0%	0.0%	0.00	0.00	0.00
Average for MSW	0%	0%	0%	29%	33%	67%	0.0212	1.28	0.10
Controlled landfill	0%	0%	0%	0%	33%	67%	0.0202	1.16	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	33%	67%	0.0235	1.57	0.12

Table xxvii: Cat.7 Toys, All eco-efficiency data per scenario, recycling percentages

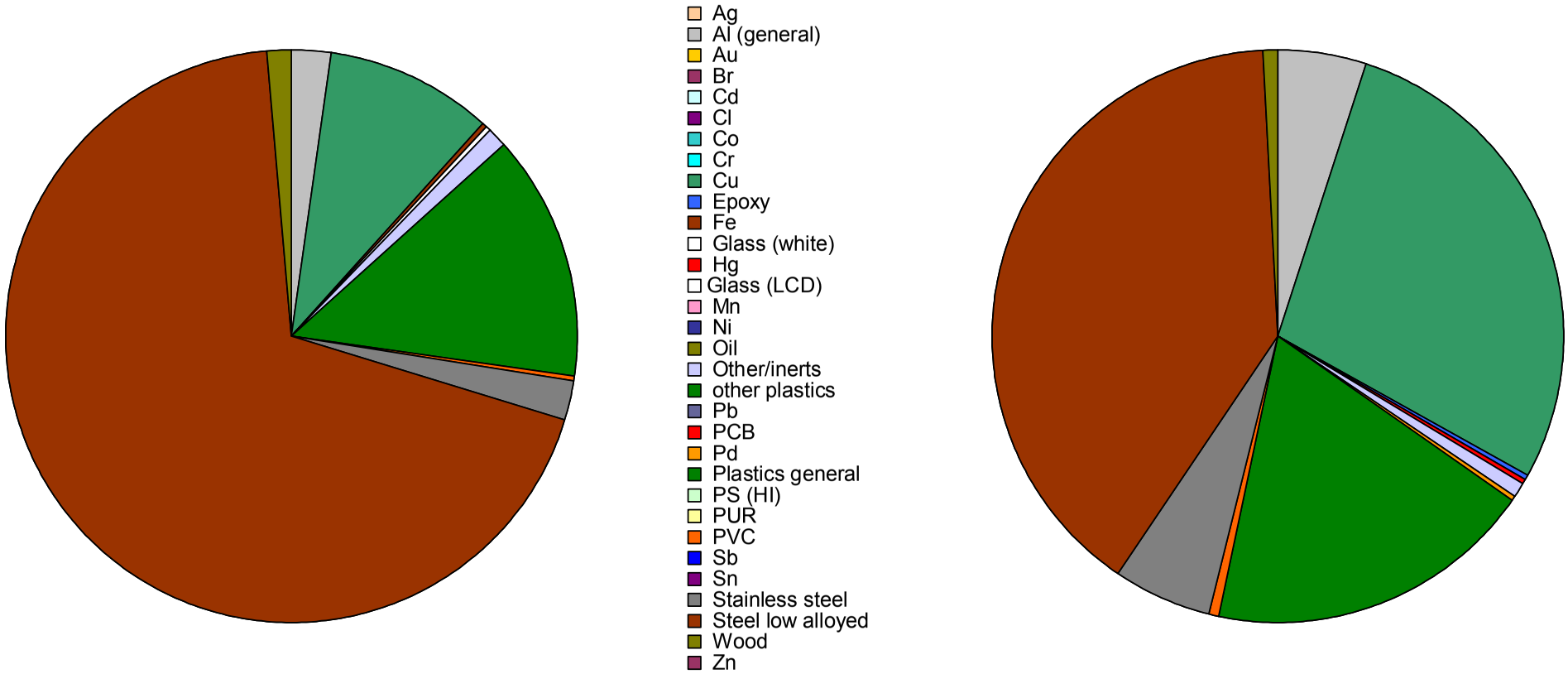


Figure xvi: Weight versus Environmental weight Cat.1C LHHA-small

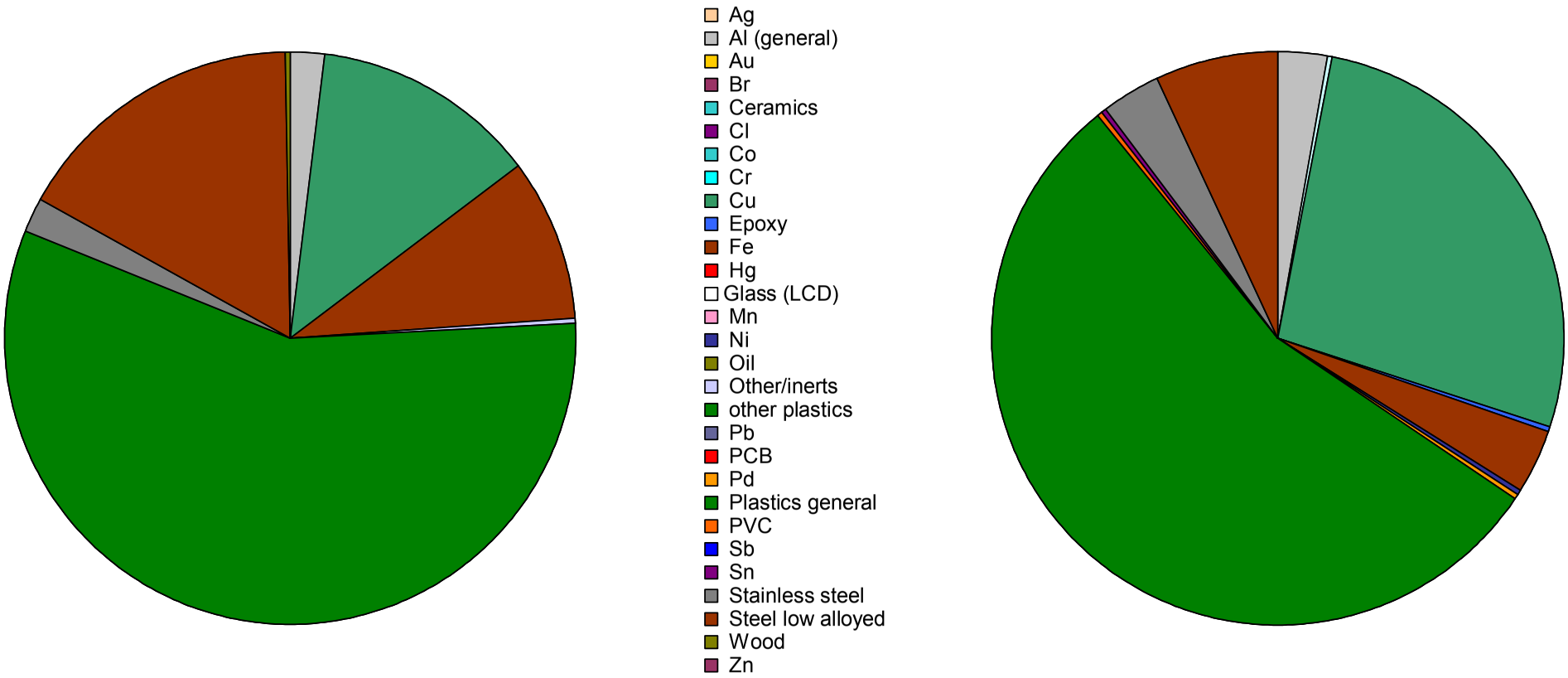


Figure xvii: Weight versus Environmental weight Cat.2,5,8 SHHA

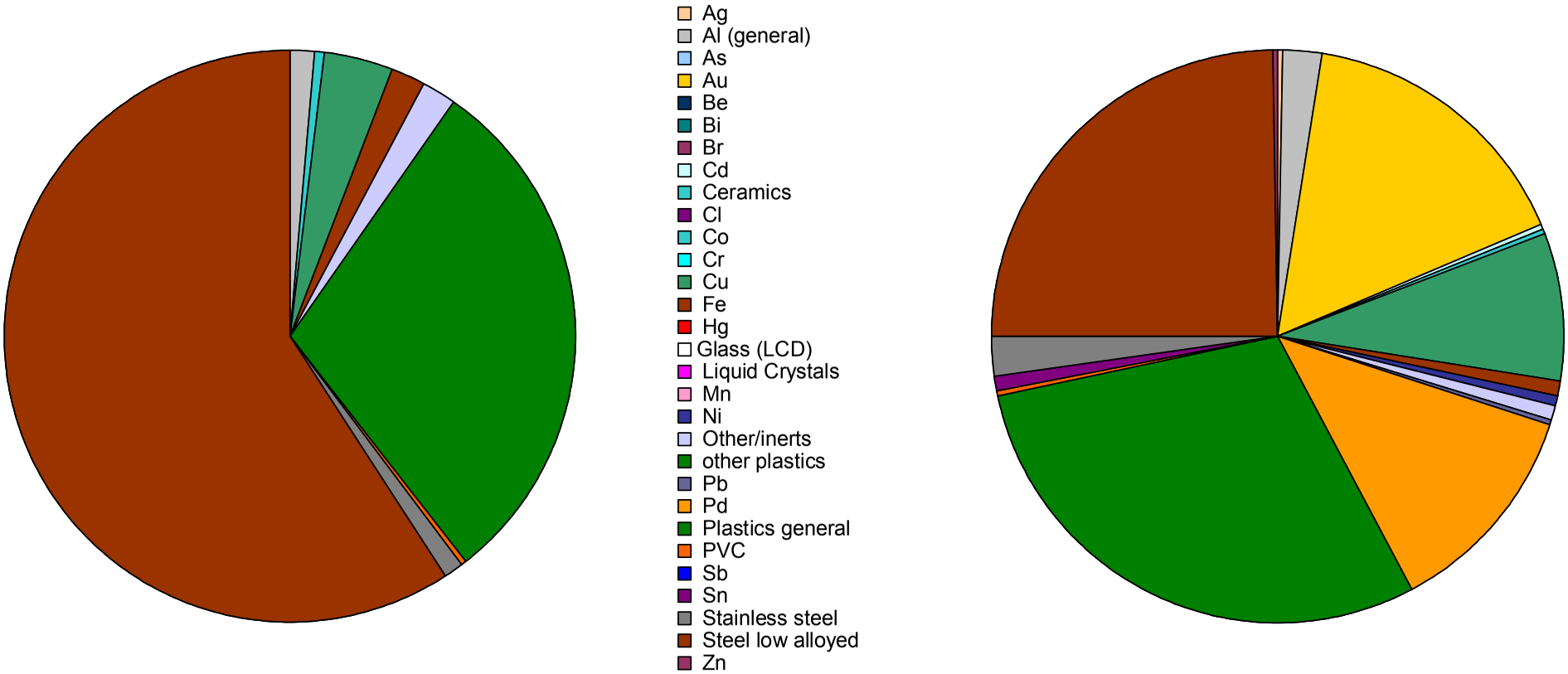


Figure xviii: Weight versus Environmental weight Cat.3A IT ex CRT

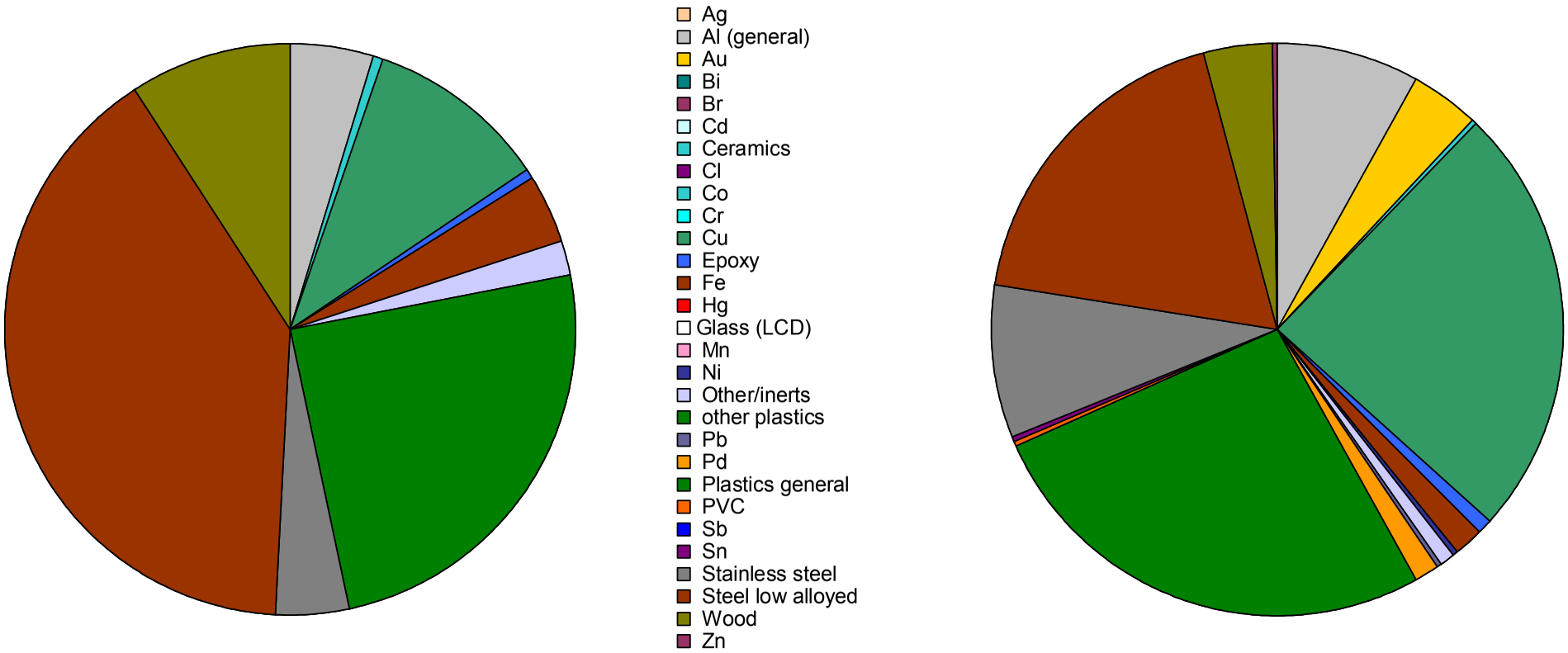


Figure xix: Weight versus Environmental weight Cat.4A CE ex CRT

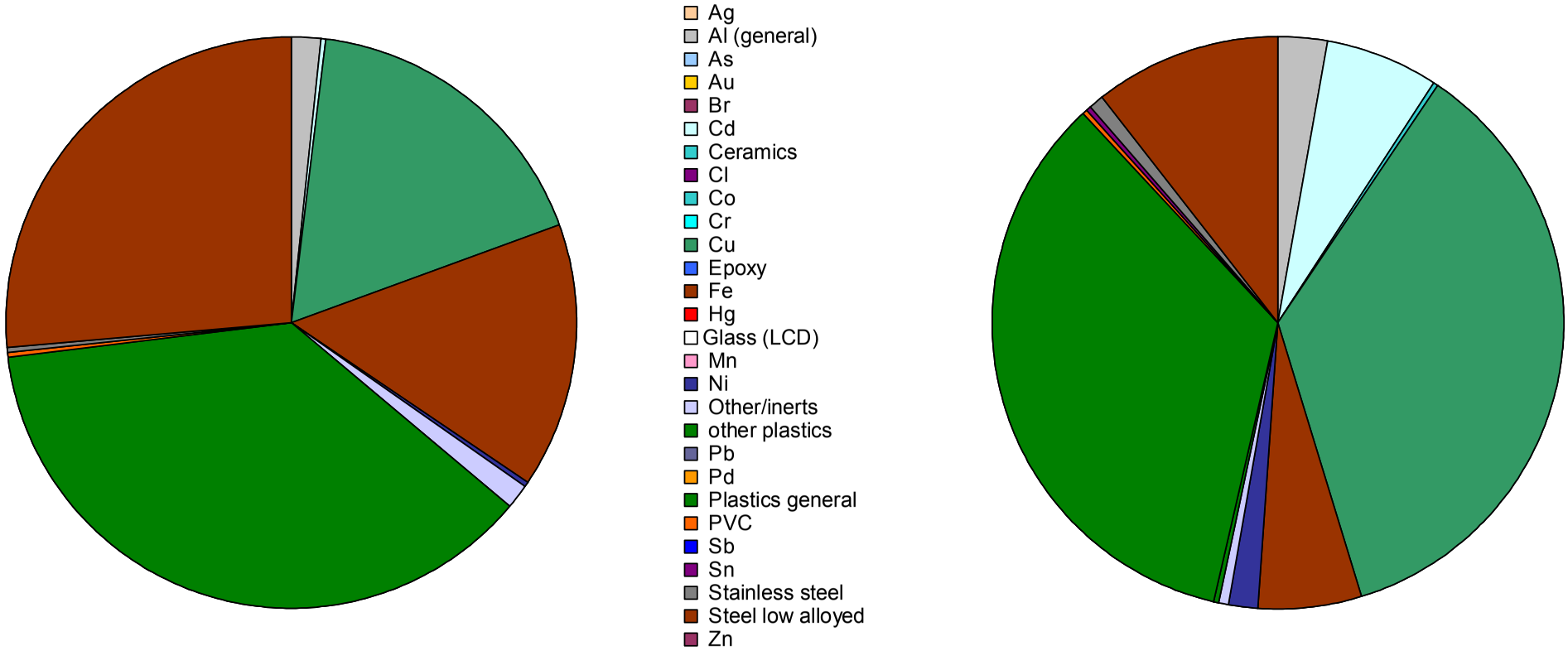


Figure xx: Weight versus Environmental weight Cat.6 Tools

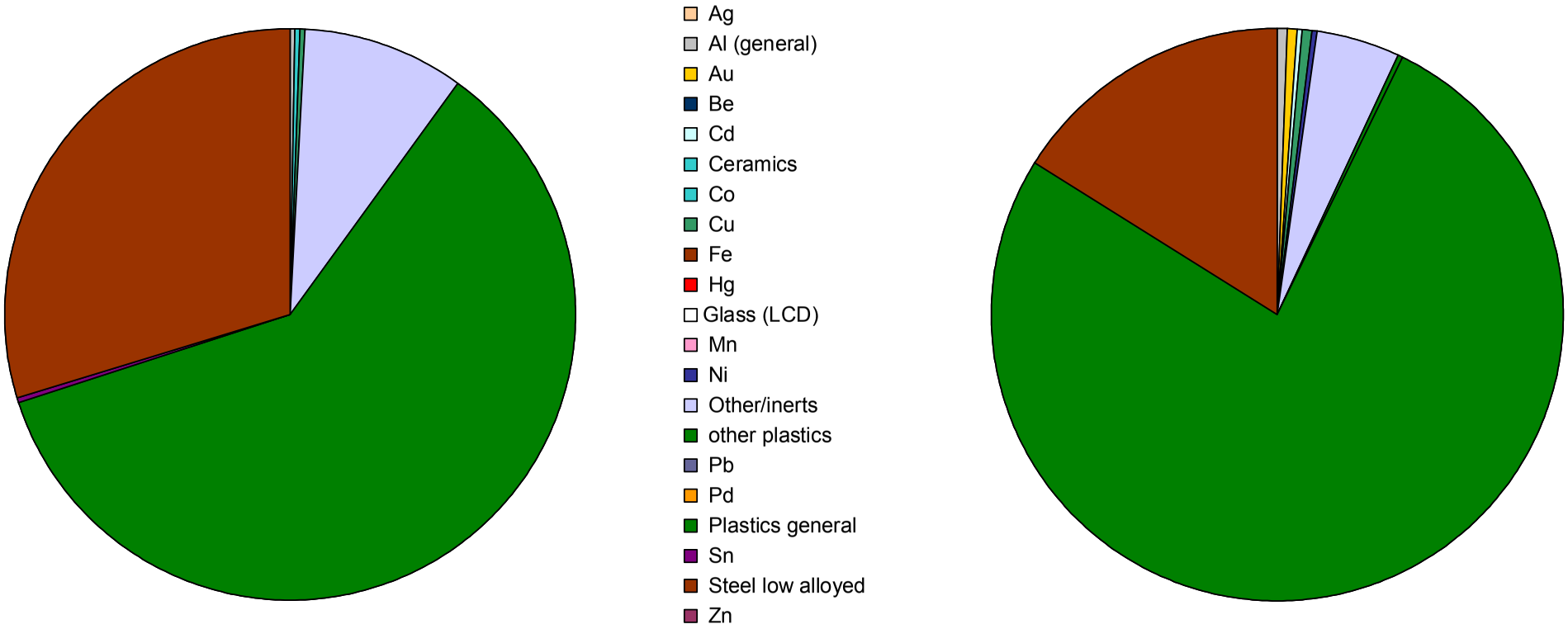
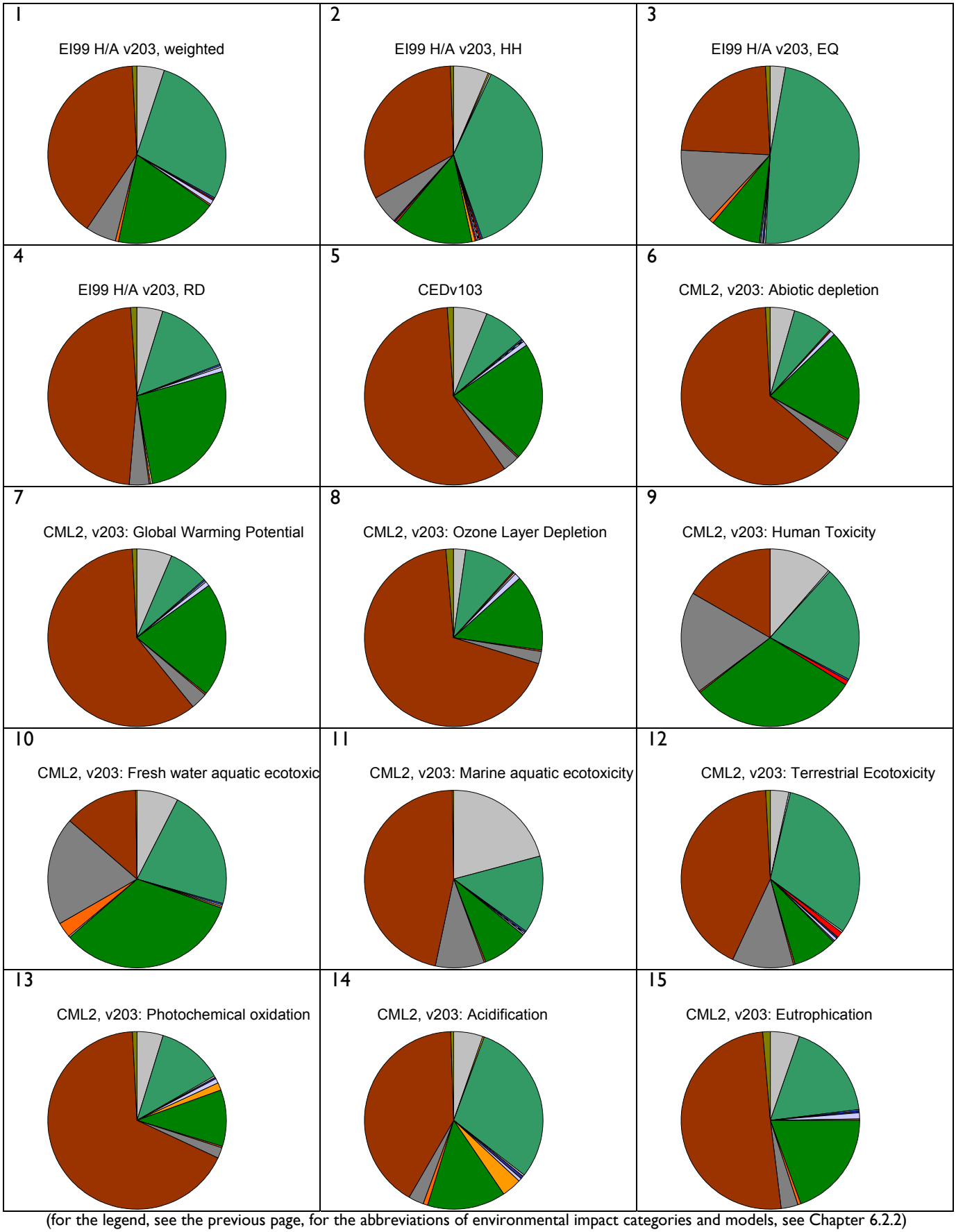
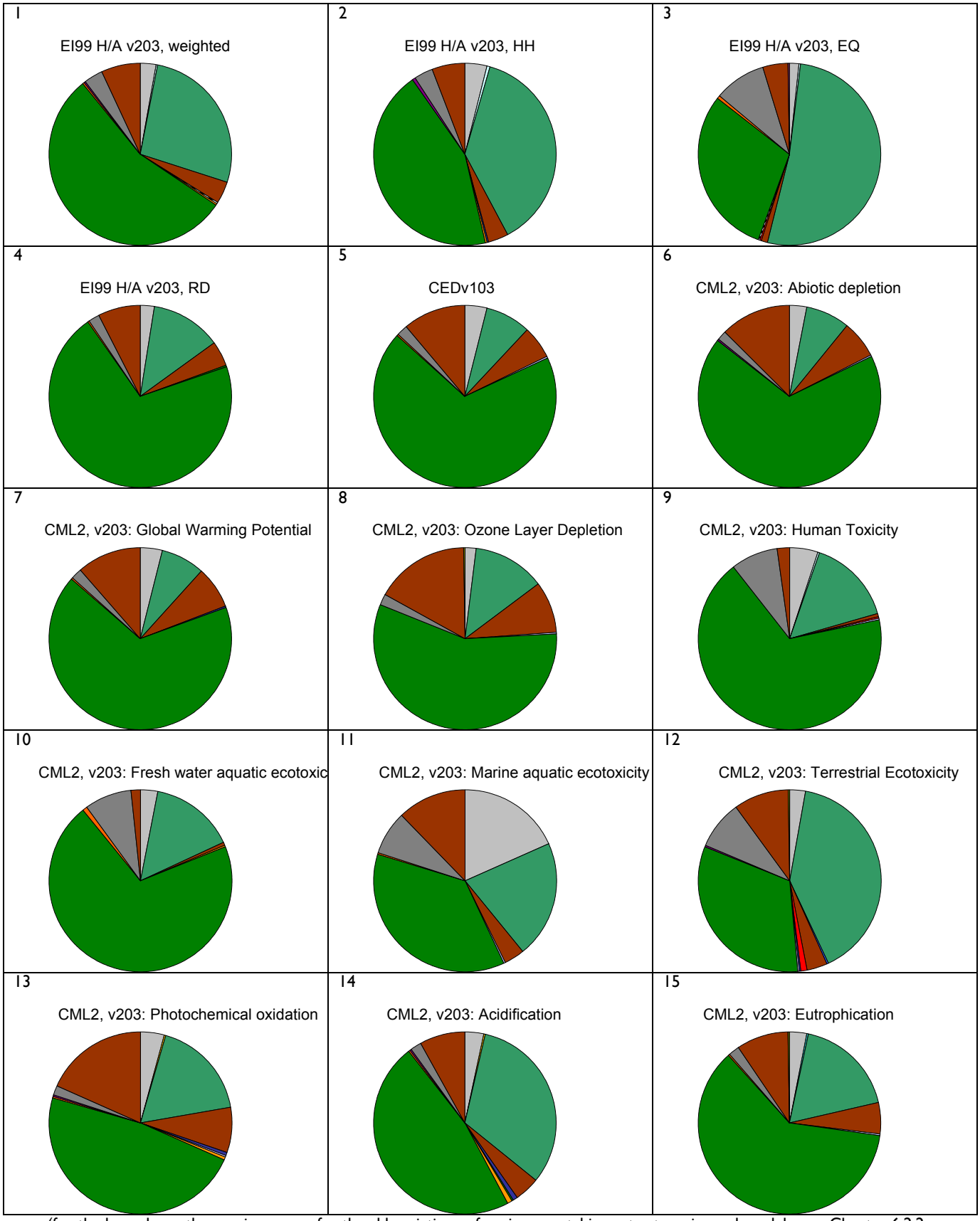


Figure xxi: Weight versus Environmental weight Cat.7 Toys



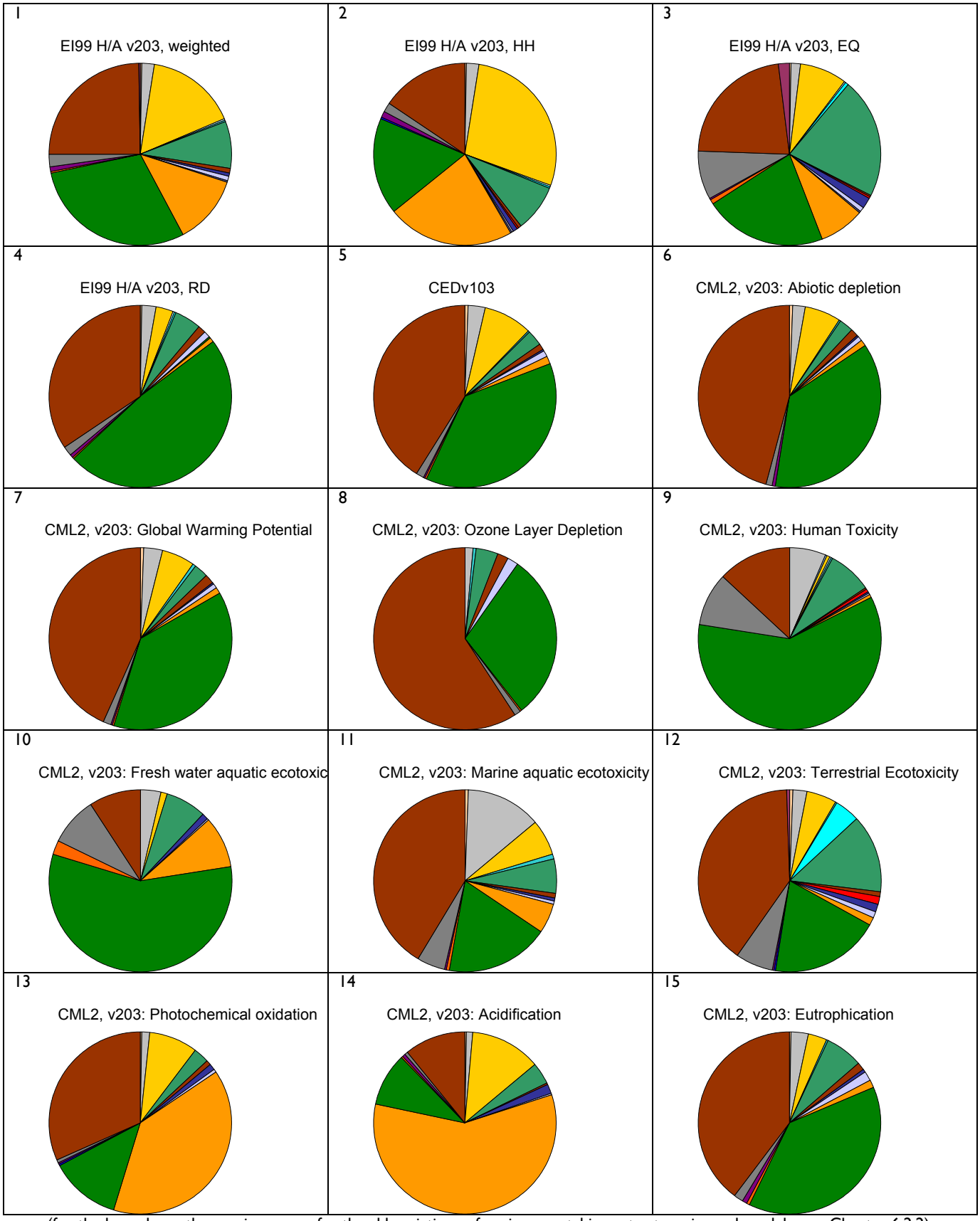
(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xxii: Weight versus environmental weight all impact categories – 1C LHHA-small



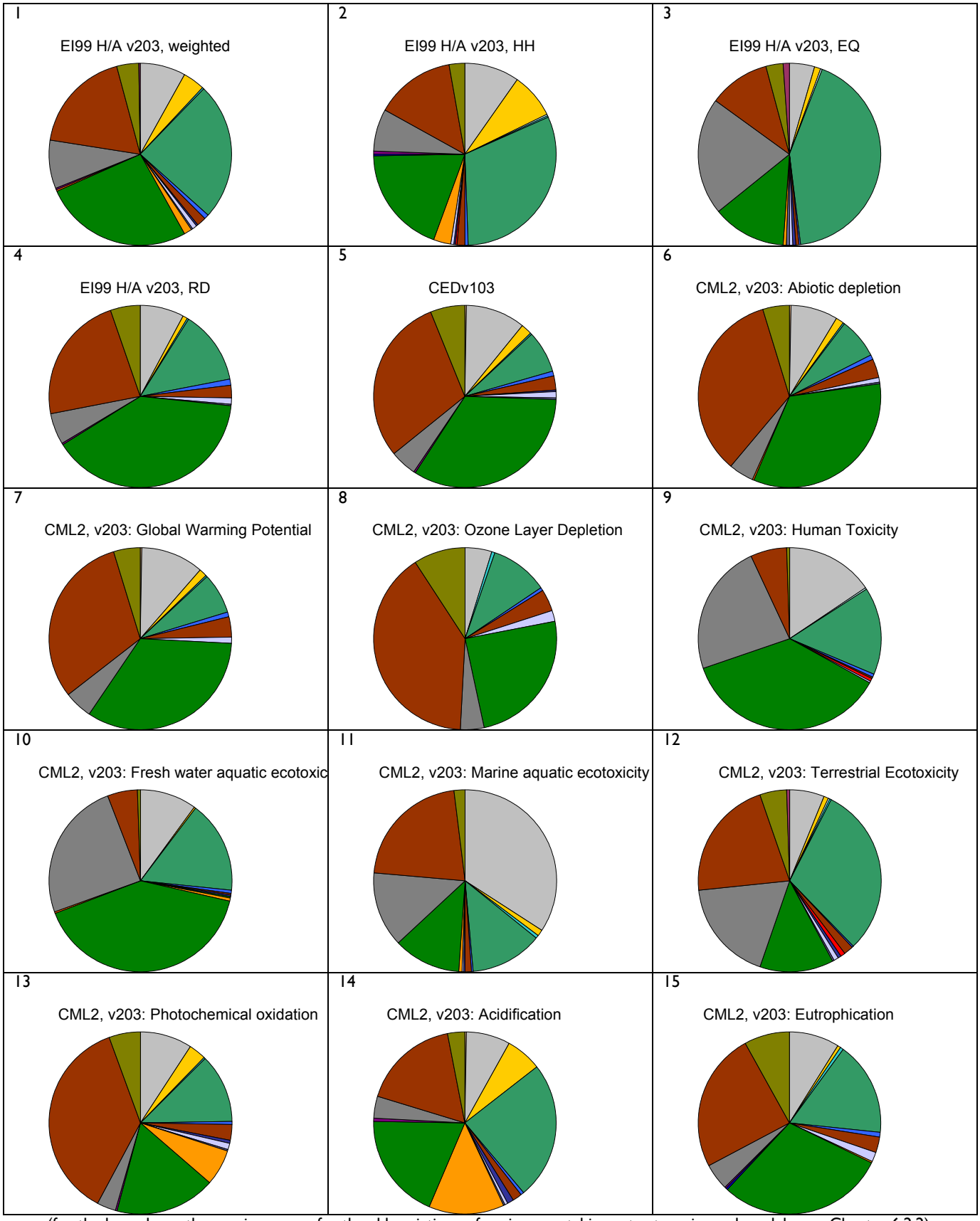
(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2

Figure xxiii: Weight versus environmental weight all impact categories – 2,5,8 SHHA



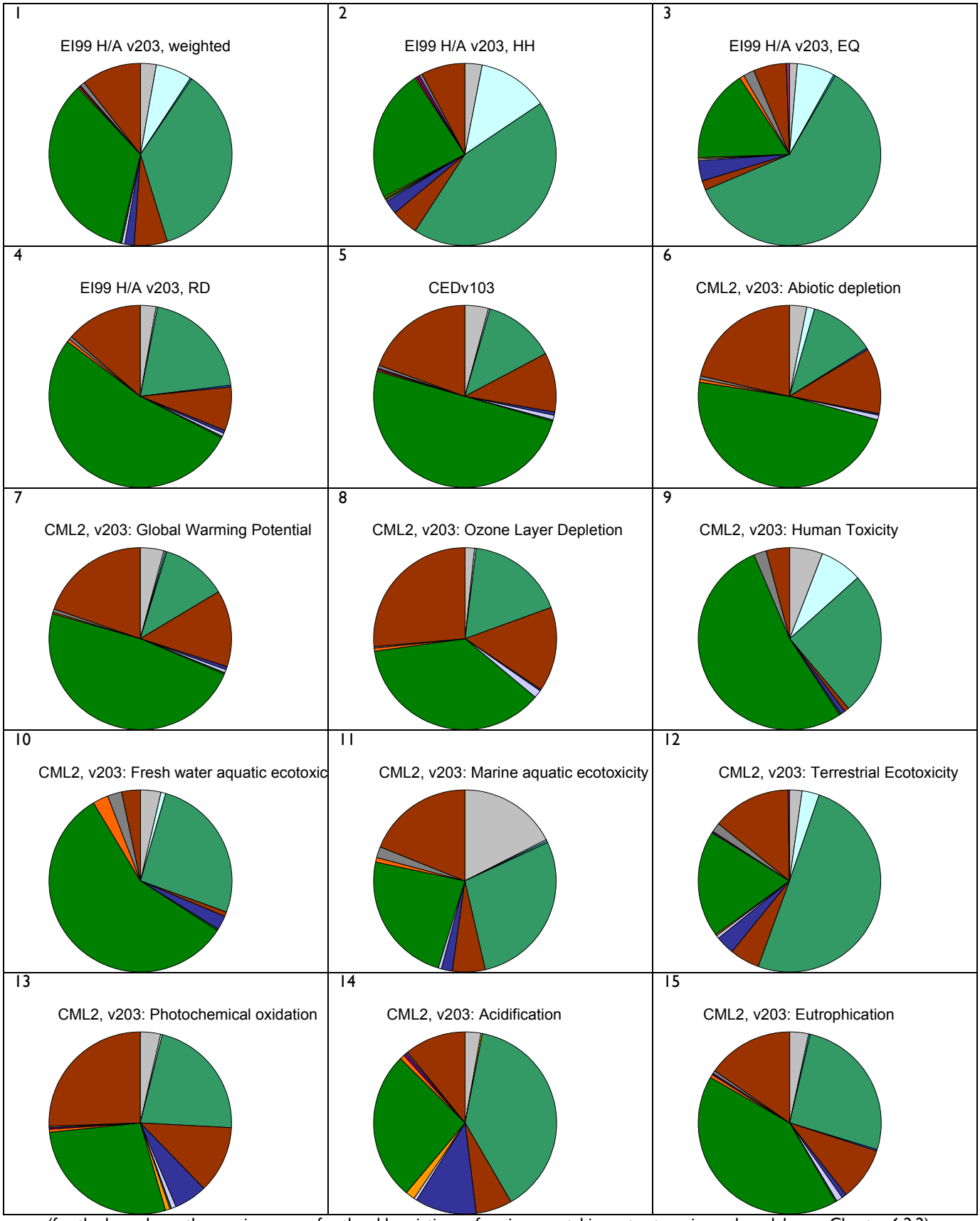
(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xxiv: Weight versus environmental weight all impact categories – 3A IT ex CRT



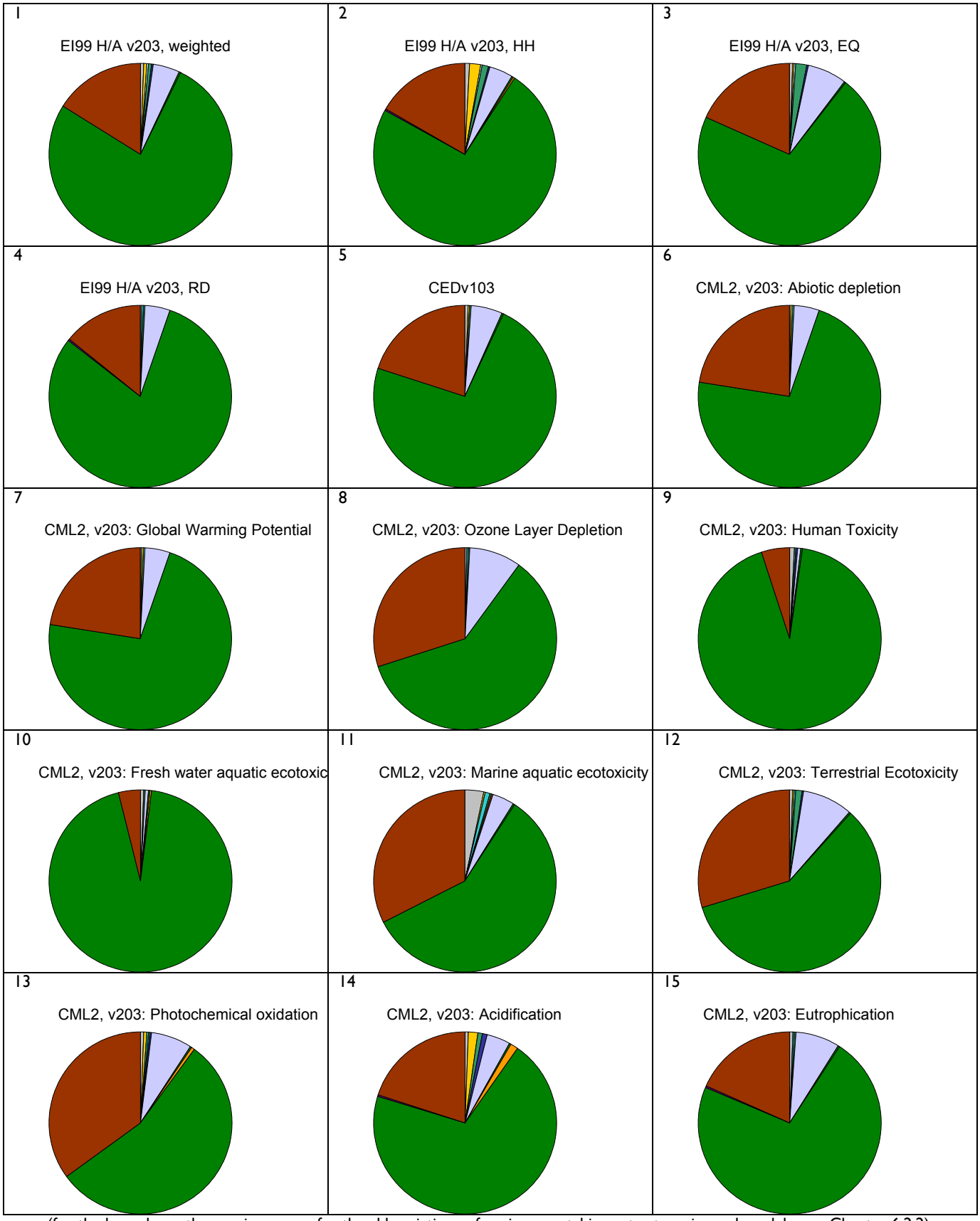
(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xxv: Weight versus environmental weight all impact categories – 4A CE ex CRT



(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xxvi: Weight versus environmental weight all impact categories – 6 Tools



(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xxvii: Weight versus environmental weight all impact categories – 7 Toys

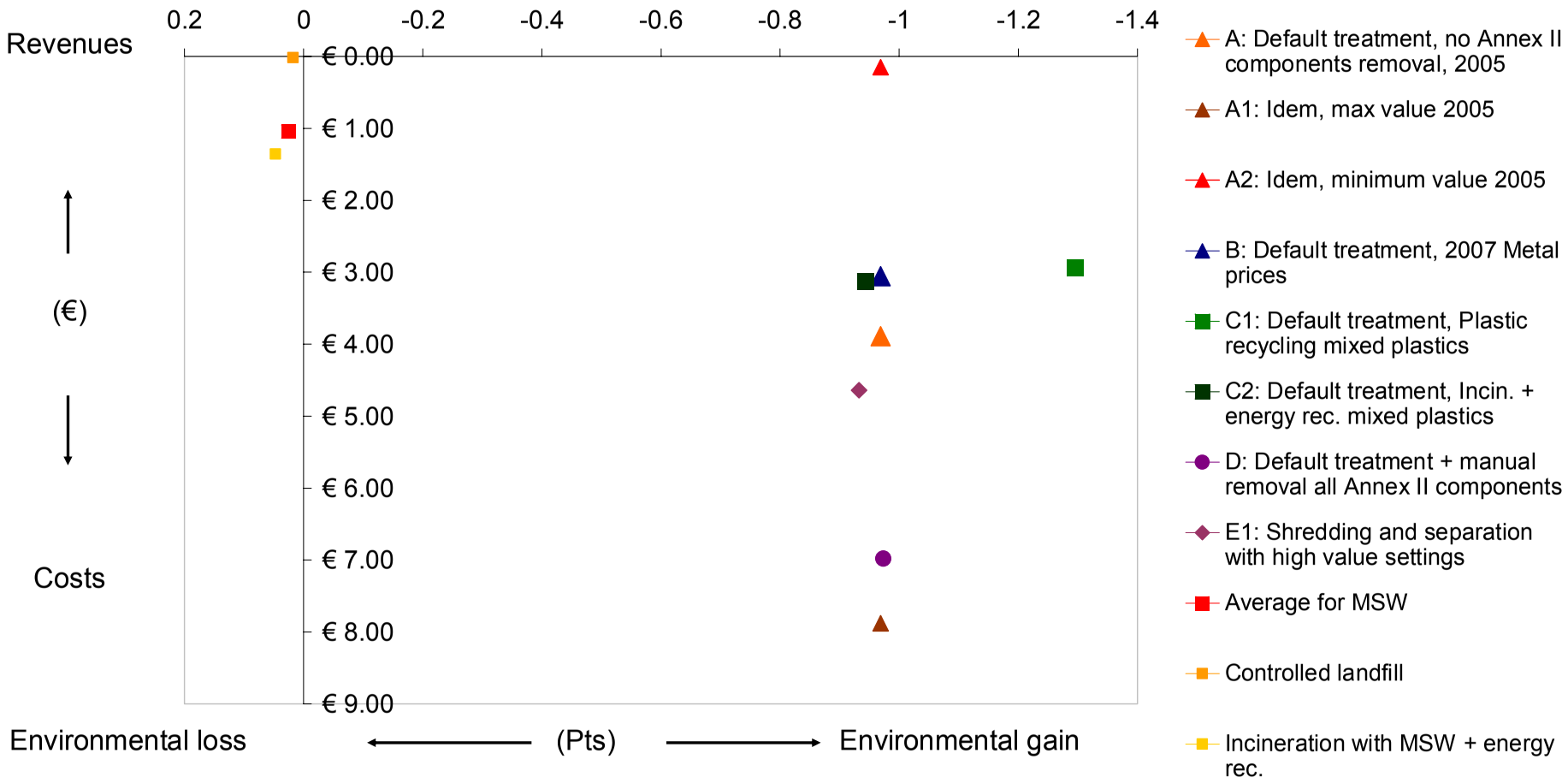


Figure xxviii: Eco-efficiency scenarios Cat.1 LHHA-small

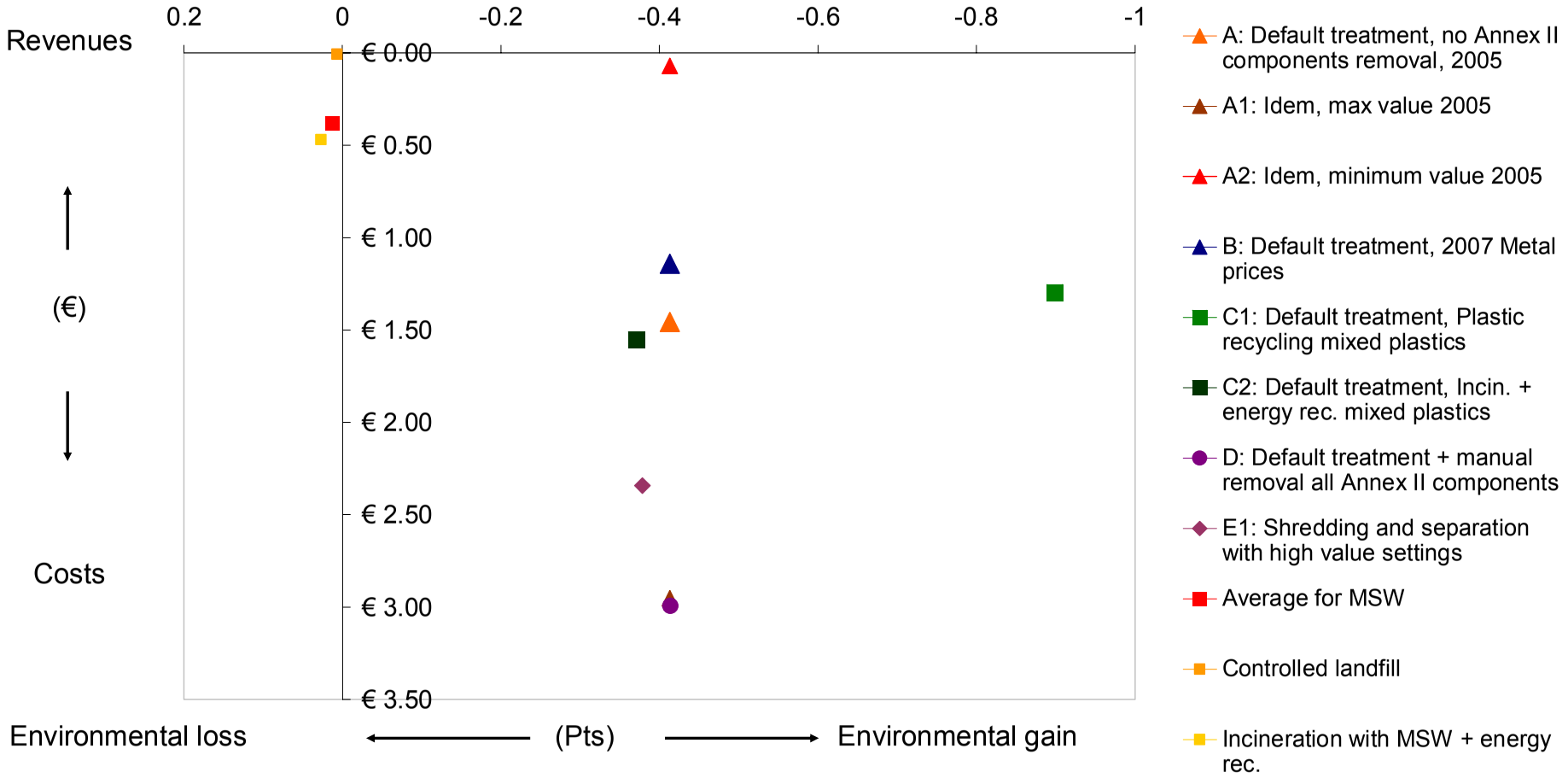


Figure xxix: -efficiency scenarios Cat.2,5,8 SHHA-small

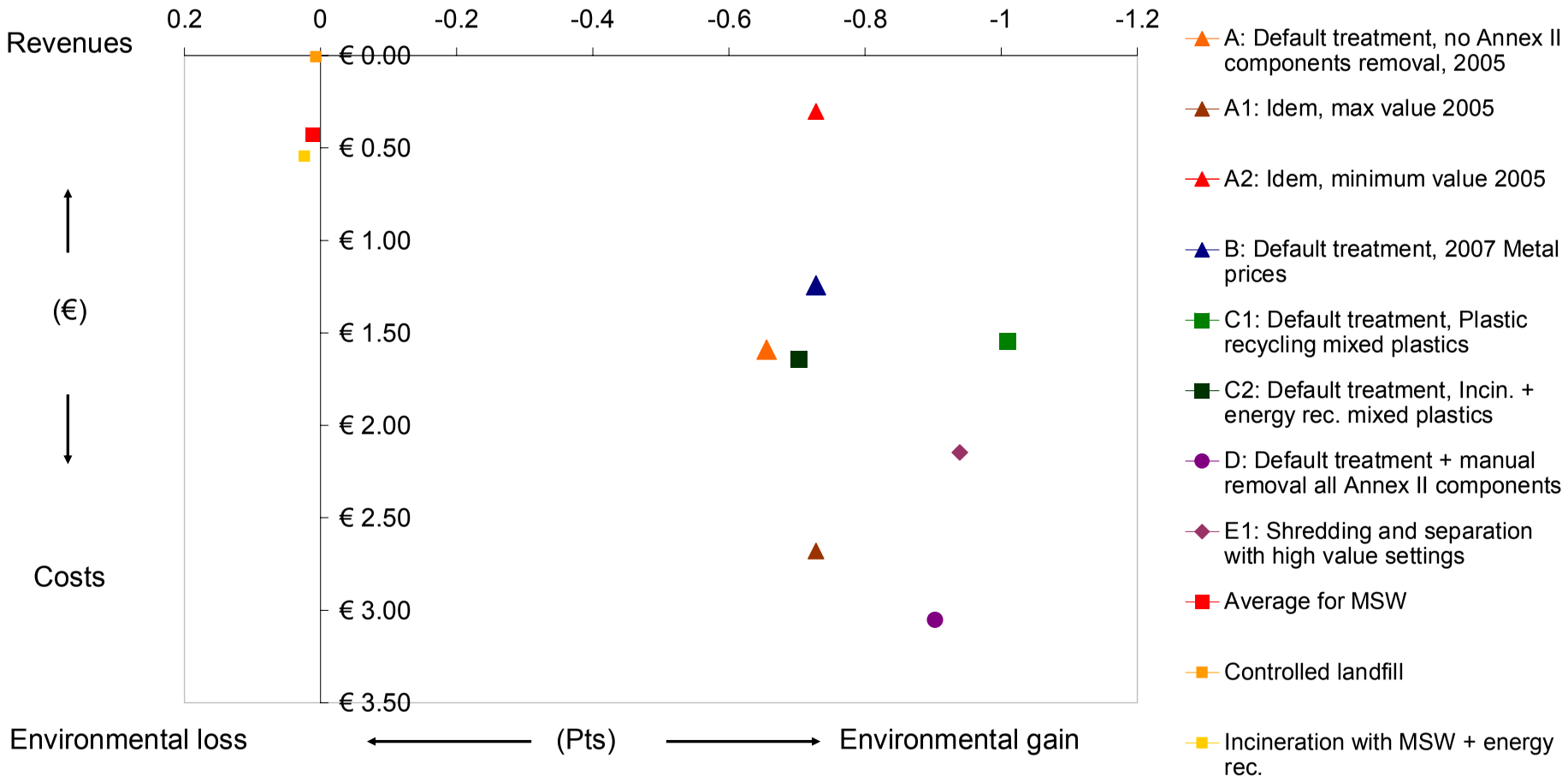


Figure xxx: Eco-efficiency scenarios Cat.3A IT ex CRT

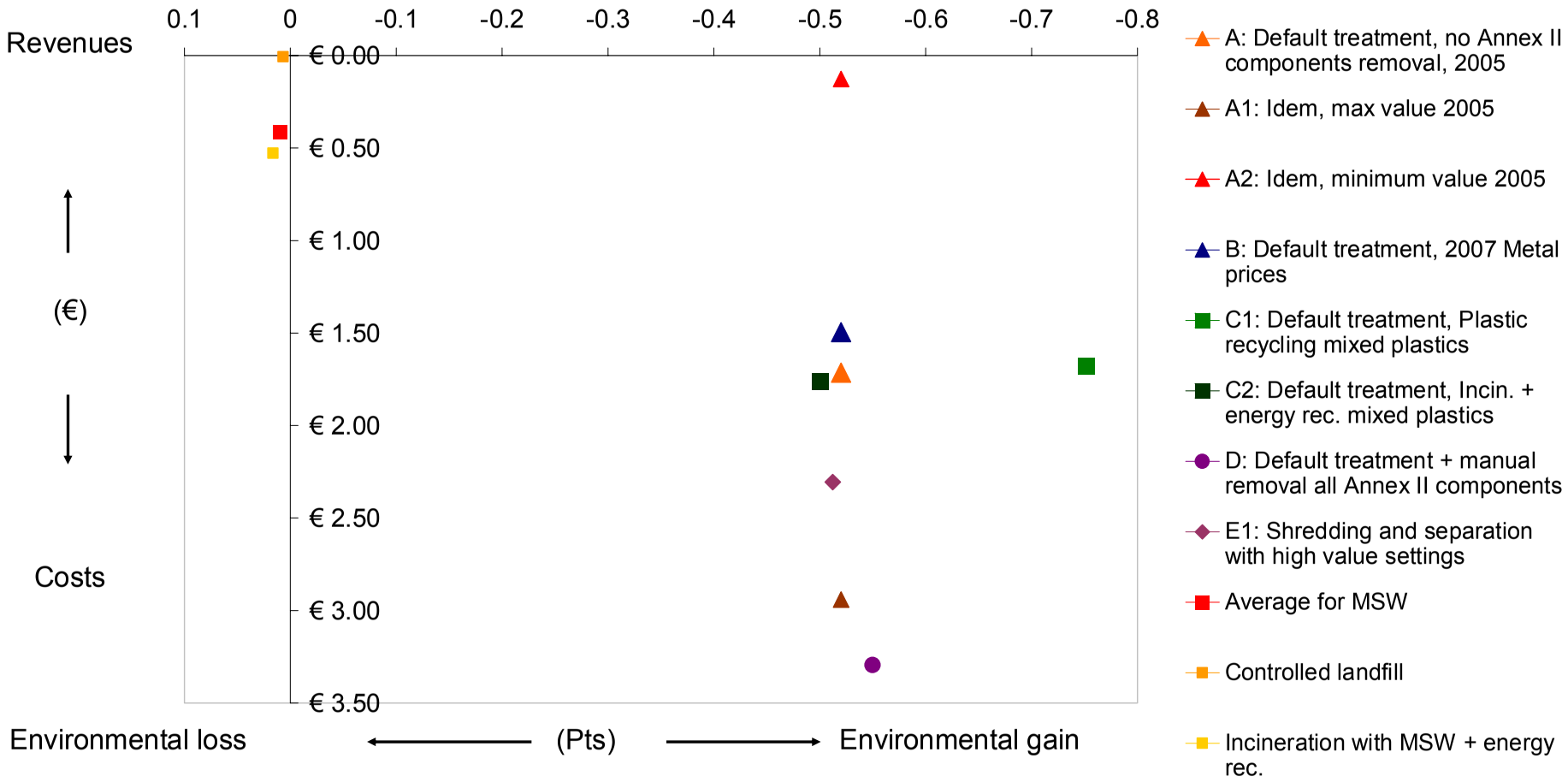


Figure xxxi: Eco-efficiency scenarios Cat.4A CE ex CRT

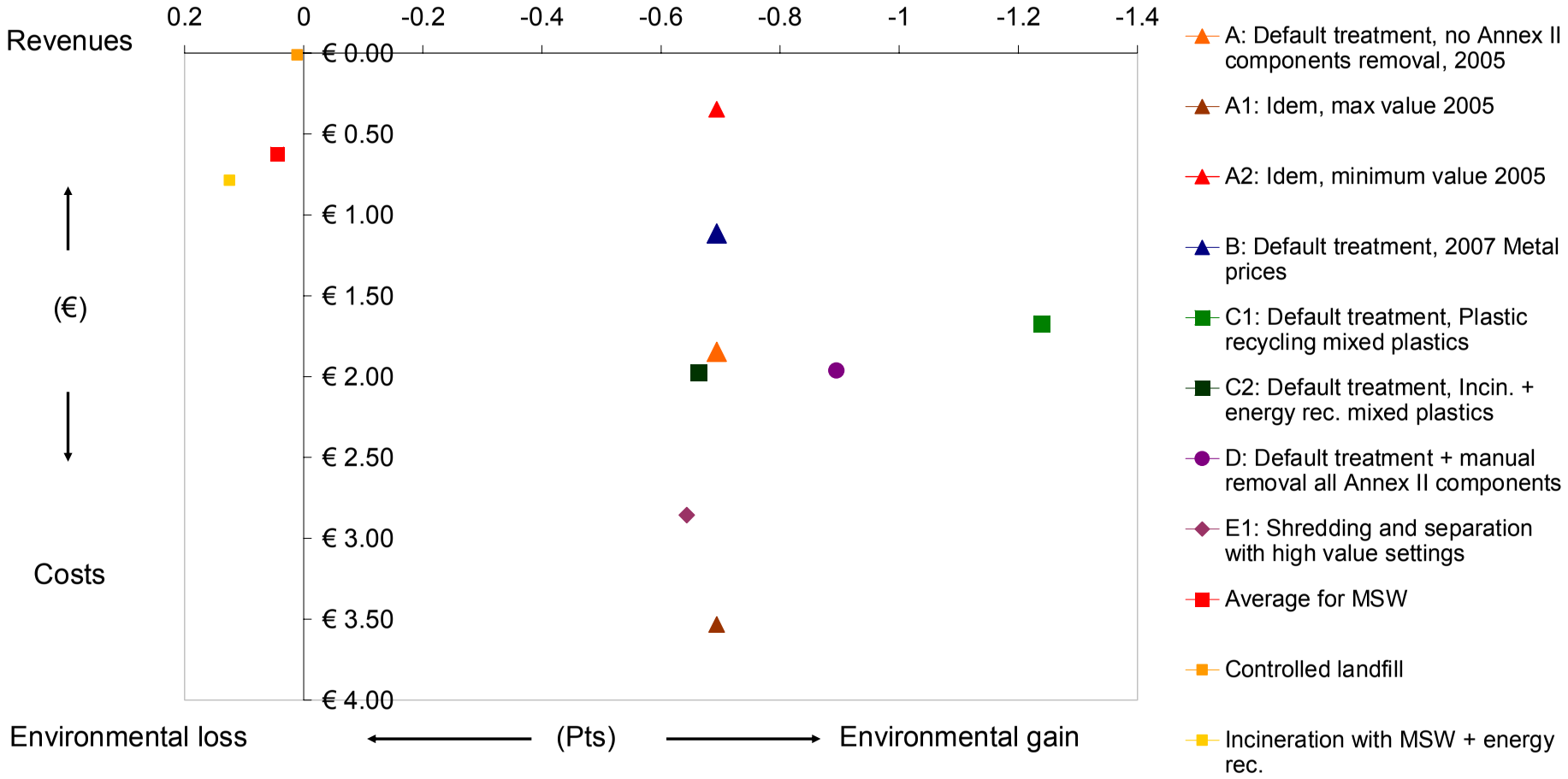


Figure xxxii: Eco-efficiency scenarios Cat.6 Tools

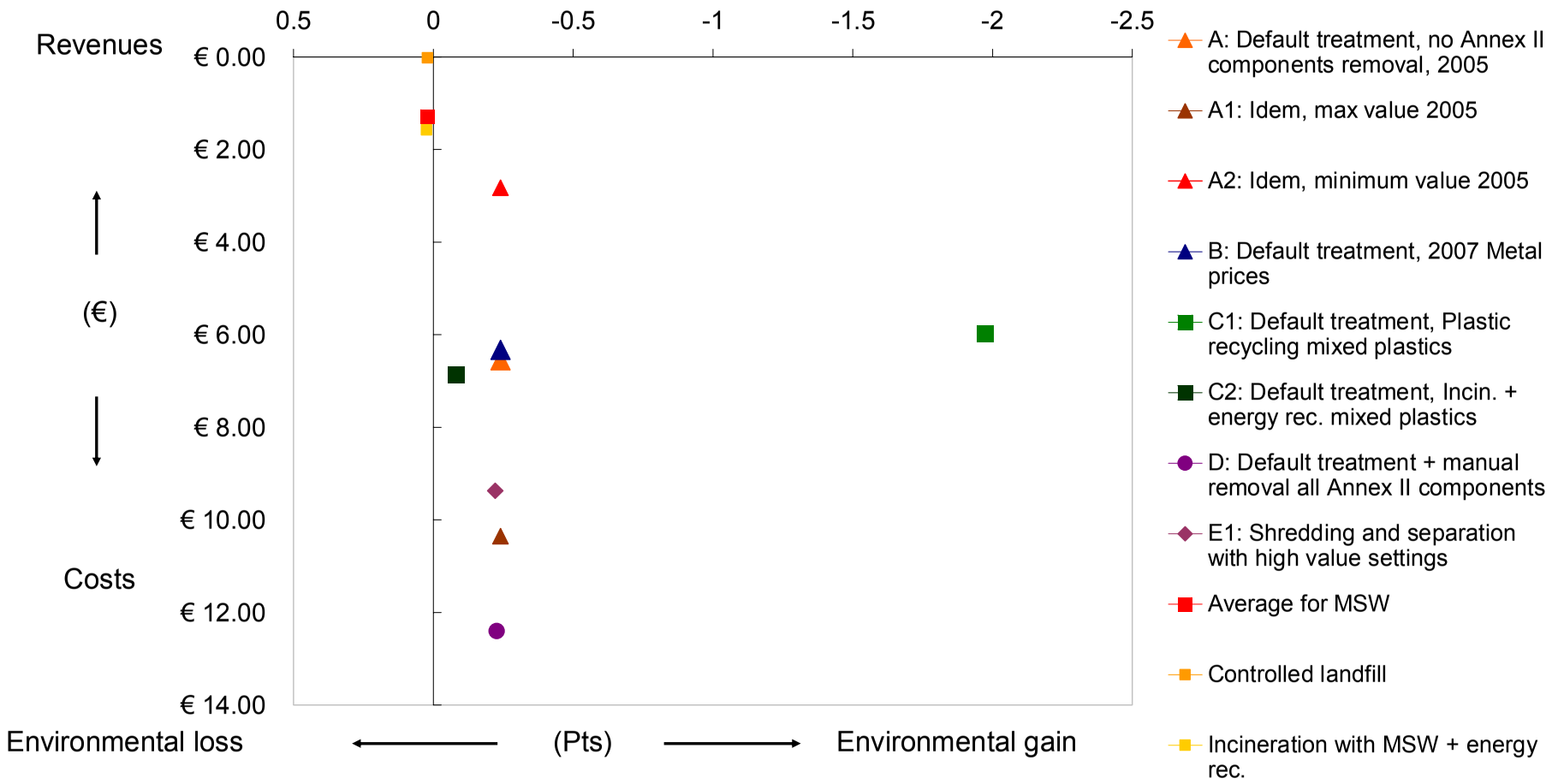


Figure xxxiii: Eco-efficiency scenarios Cat.7 Toys

Annex 8.2.4 Cat 3B,4B CRT

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, plastic recycling housings, 2005	77.7%	**87.77%**	**93.1%**	97.9%	76.6%	23.4%	-1.97	**7.32**	**0.50**
A1: Idem, max value 2005	77.7%	**87.8%**	**93.1%**	97.9%	76.6%	23.4%	-1.97	**10.59**	**0.72**
A2: Idem, minimum value 2005	77.7%	**87.8%**	**93.1%**	97.9%	76.6%	23.4%	-1.97	**4.23**	**0.29**
B: Default treatment, 2007 Metal prices	77.7%	**87.8%**	**93.1%**	97.9%	76.6%	23.4%	-1.97	**6.62**	**0.45**
C: Default treatment, Incin. + energy rec. plastics	70.6%	**78.6%**	**84.0%**	97.9%	72.9%	27.1%	-1.76	**8.10**	**0.55**
D1: Default treatment, CRT glass to building industry	20.1%	**87.8%**	**93.1%**	97.9%	61.8%	38.2%	-1.14	**8.65**	**0.59**
D2: Default treatment, CRT glass to ceramic industry	20.1%	**87.77%**	**93.1%**	97.9%	62.0%	38.0%	-1.15	**8.49**	**0.58**
D3: Partial dismantling, CRT glass to sec. CuSnPb smelter	12.1%	**100.0%**	**100.0%**	100.0%	69.5%	30.5%	-1.57	**2.68**	**0.18**
Average for MSW	0%	0%	0%	29%	42%	58%	-0.0264	1.48	0.10
Controlled landfill	0%	0%	0%	0%	41%	59%	0.0235	1.32	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	44%	56%	-0.1462	1.87	0.13

Table xxviii: Cat. 3B IT CRT, All eco-efficiency data per scenario, recycling percentages

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, plastic recycling housings, 2005	80.7%	**88.46%**	**93.9%**	98.3%	76.8%	23.2%	-4.50	**14.08**	**0.53**
A1: Idem, max value 2005	80.7%	**88.5%**	**93.9%**	98.3%	76.8%	23.2%	-4.50	**21.69**	**0.81**
A2: Idem, minimum value 2005	80.7%	**88.5%**	**93.9%**	98.3%	76.8%	23.2%	-4.50	**6.18**	**0.23**
B: Default treatment, 2007 Metal prices	80.7%	**88.5%**	**93.9%**	98.3%	76.8%	23.2%	-4.50	**13.04**	**0.49**
C: Default treatment, Incin. + energy rec. plastics	72.6%	**77.9%**	**83.3%**	98.3%	73.0%	27.0%	-4.06	**14.22**	**0.53**
D1: Default treatment, CRT glass to building industry	14.0%	**88.5%**	**93.9%**	98.3%	61.3%	38.7%	-2.74	**16.89**	**0.63**
D2: Default treatment, CRT glass to ceramic industry	14.0%	**88.46%**	**93.9%**	98.3%	61.4%	38.6%	-2.75	**16.55**	**0.62**
D3: Partial dismantling, CRT glass to sec. CuSnPb smelter	12.0%	**100.0%**	**100.0%**	100.0%	72.9%	27.1%	-4.06	**2.11**	**0.08**
Average for MSW	0%	0%	0%	29%	38%	62%	-0.0749	2.69	0.10
Controlled landfill	0%	0%	0%	0%	37%	63%	0.0424	2.40	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	40%	60%	-0.3565	3.39	0.13

Table xxix: Cat. 4B CE CRT, All eco-efficiency data per scenario, recycling percentages

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, full dismantling, 2005	55.8%	**71.90%**	**84.5%**	95.4%	76.3%	23.7%	-2.04	**6.74**	**1.33**
A1: Idem, max value 2005	55.8%	**71.9%**	**84.5%**	95.4%	64.5%	35.5%	-2.04	**8.34**	**1.64**
A2: Idem, minimum value 2005	55.8%	**71.9%**	**84.5%**	95.4%	64.5%	35.5%	-2.04	**4.79**	**0.94**
B: Default treatment, 2007 Metal prices	55.8%	**71.9%**	**84.5%**	95.4%	64.5%	35.5%	-2.04	**5.82**	**1.14**
C: Default treatment, No plastic recycling housings	42.9%	**56.0%**	**76.9%**	93.6%	70.1%	29.9%	-1.80	**7.54**	**1.48**
D: Shredding whole appliance	42.4%	**54.1%**	**76.1%**	93.4%	60.2%	39.8%	-1.42	**2.54**	**0.50**
E: Partial dismantling, panel to haz. waste landfill	37.8%	**44.33%**	**59.5%**	70.0%	28.2%	71.8%	-0.22	**2.83**	**0.56**
Average for MSW	0%	0%	0%	29%	23%	77%	-0.0016	0.51	0.10
Controlled landfill	0%	0%	0%	0%	22%	78%	0.0082	0.46	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	23%	77%	-0.0252	0.63	0.12

Table xxx: Cat. 3C IT FDP, All eco-efficiency data per scenario, recycling percentages

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, full dismantling, 2005	48.9%	**66.35%**	**74.1%**	89.6%	64.4%	35.6%	-3.71	**18.85**	**0.67**
A1: Idem, max value 2005	48.9%	**66.3%**	**74.1%**	89.6%	64.4%	35.6%	-3.71	**26.32**	**0.93**
A2: Idem, minimum value 2005	48.9%	**66.3%**	**74.1%**	89.6%	64.4%	35.6%	-3.71	**11.34**	**0.40**
B: Default treatment, 2007 Metal prices	48.9%	**66.3%**	**74.1%**	89.6%	64.4%	35.6%	-3.71	**17.44**	**0.62**
C: Default treatment, No plastic recycling housings	38.0%	**52.9%**	**67.7%**	88.1%	57.1%	42.9%	-2.78	**25.84**	**0.91**
D: Shredding whole appliance	39.1%	**51.1%**	**66.8%**	88.0%	55.3%	44.7%	-2.56	**9.18**	**0.32**
E: Partial dismantling, panel to haz. waste landfill	47.5%	**56.73%**	**64.4%**	69.7%	54.3%	45.7%	-2.42	**10.15**	**0.36**
Average for MSW	0%	0%	0%	29%	36%	64%	-0.1219	2.82	0.10
Controlled landfill	0%	0%	0%	0%	35%	65%	0.0448	2.55	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	39%	61%	-0.5224	3.47	0.12

Table xxxi: Cat. 4C CE FDP, All eco-efficiency data per scenario, recycling percentages

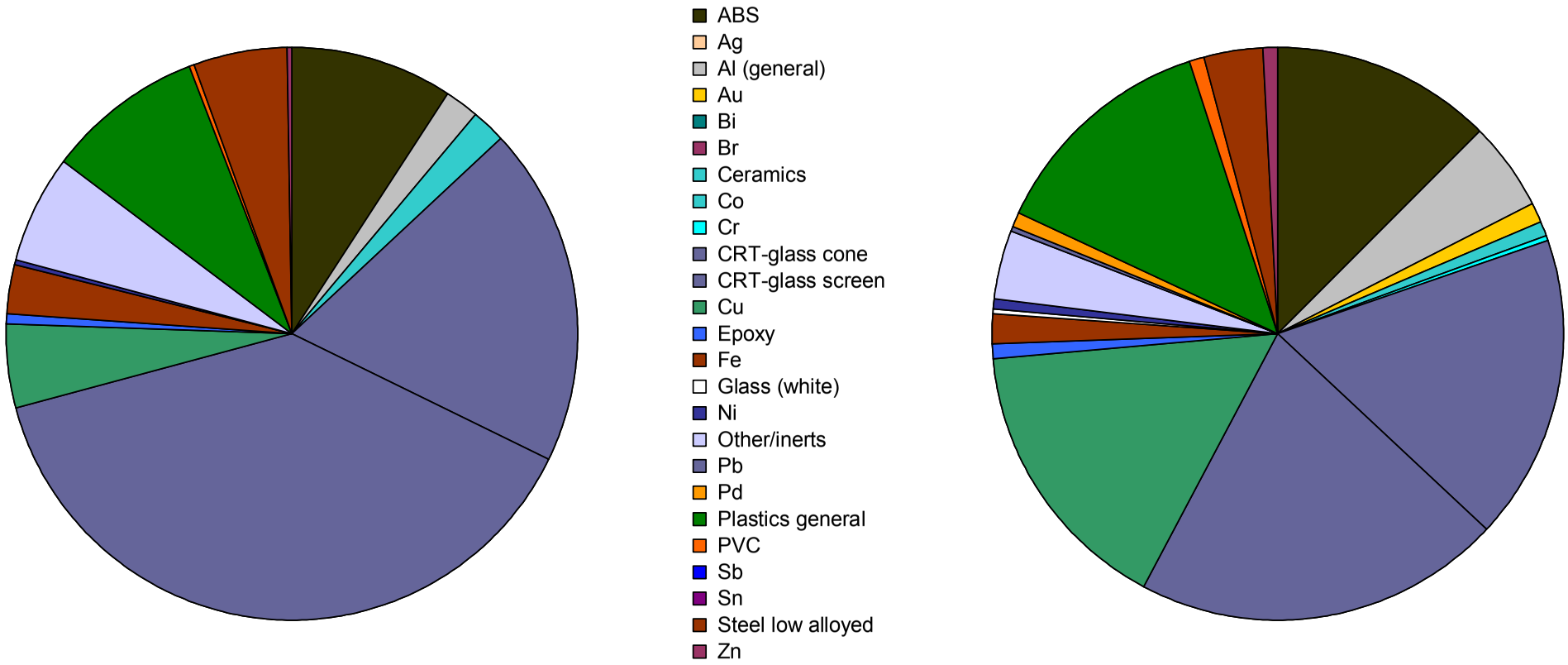


Figure xxxiv: Weight versus Environmental weight Cat.3B IT CRT

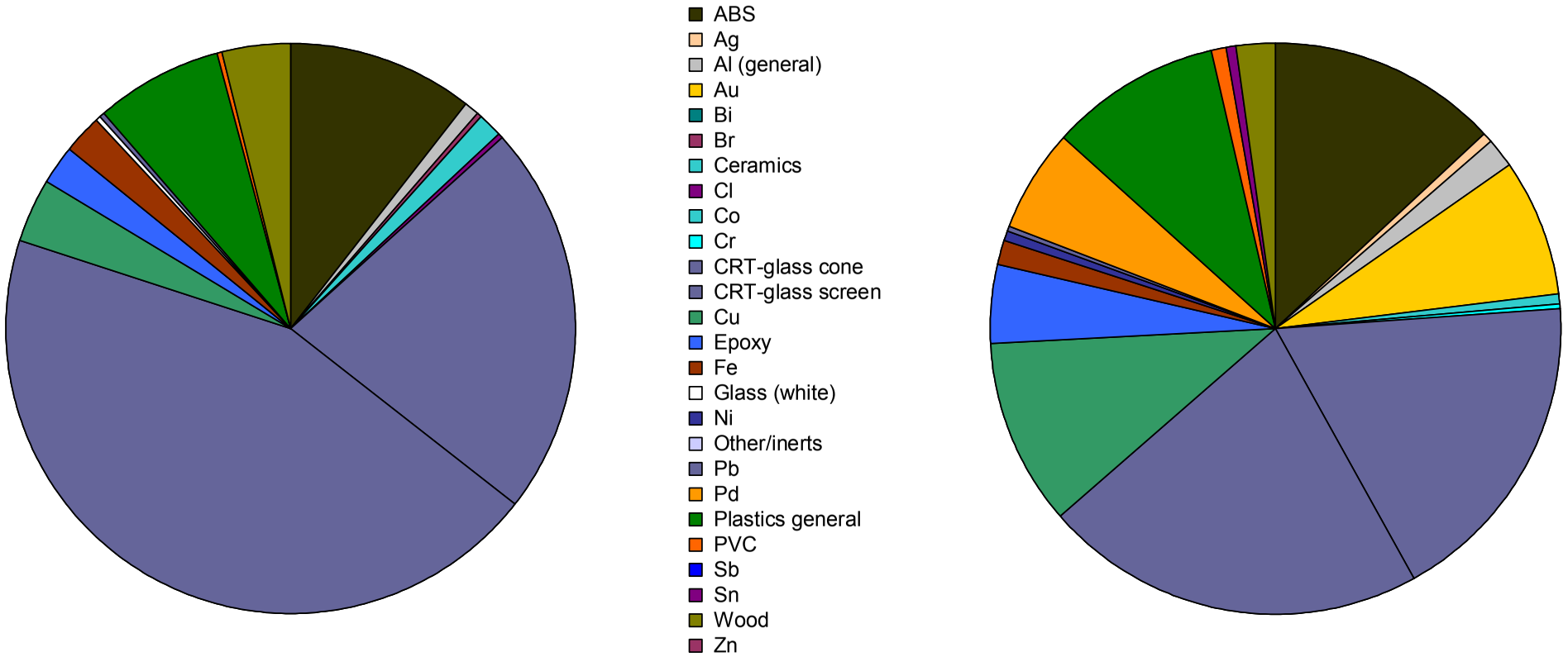


Figure xxxv: Weight versus Environmental weight Cat.4B CE CRT

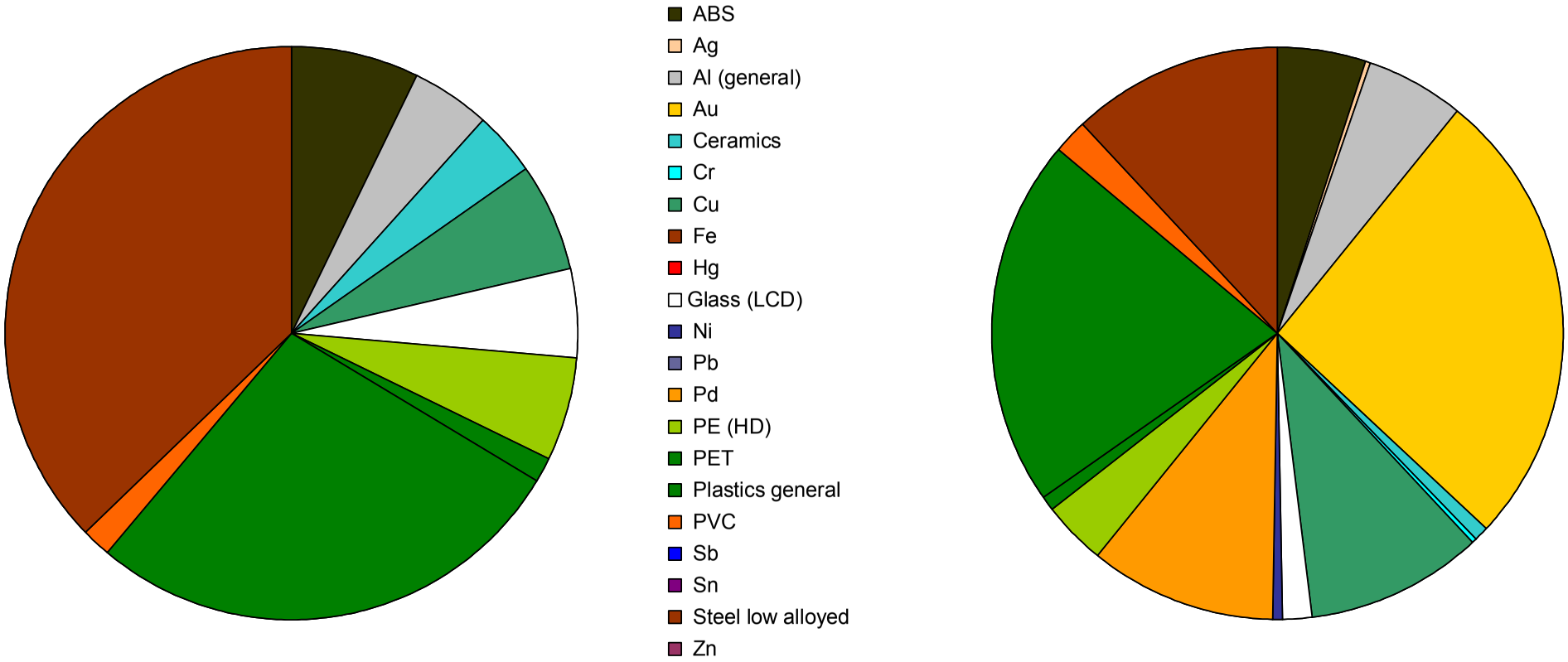


Figure xxxvi: Weight versus Environmental weight Cat.3C IT FDP

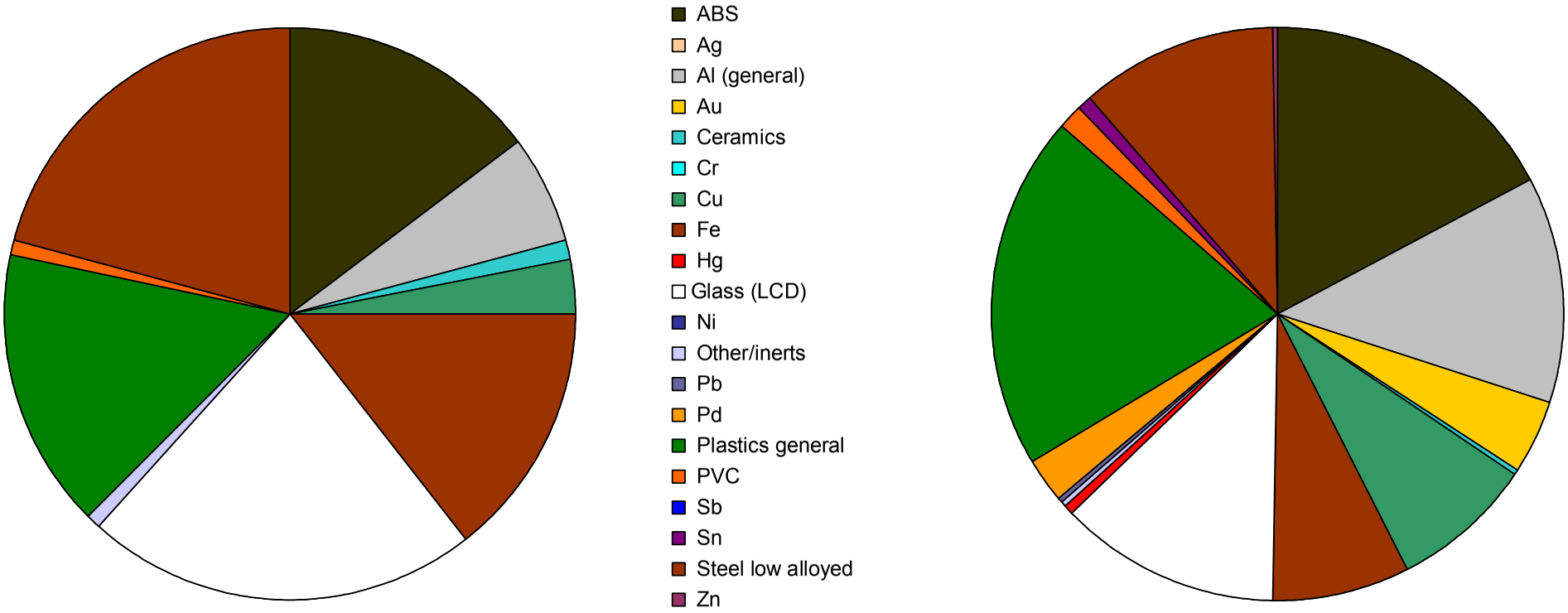
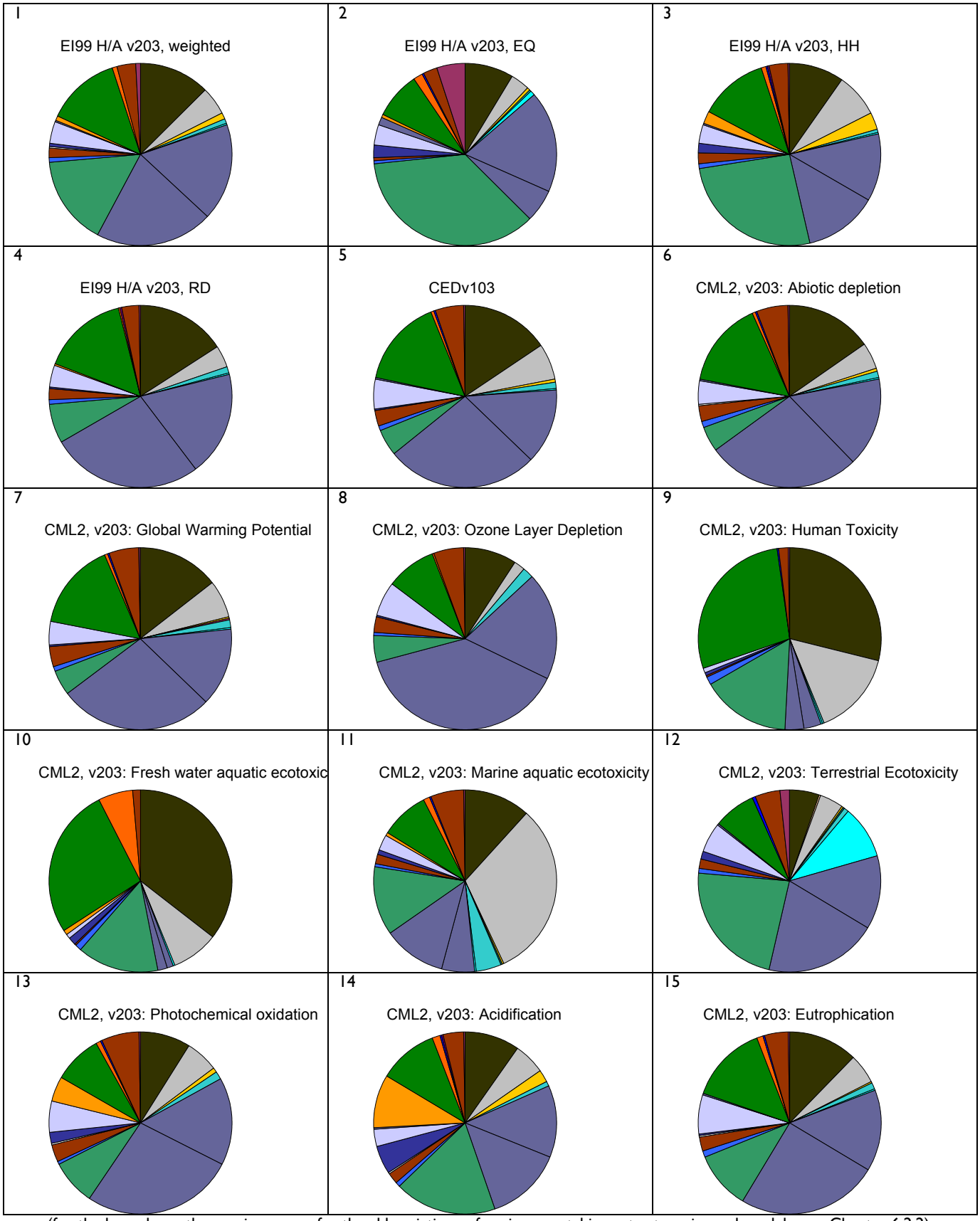
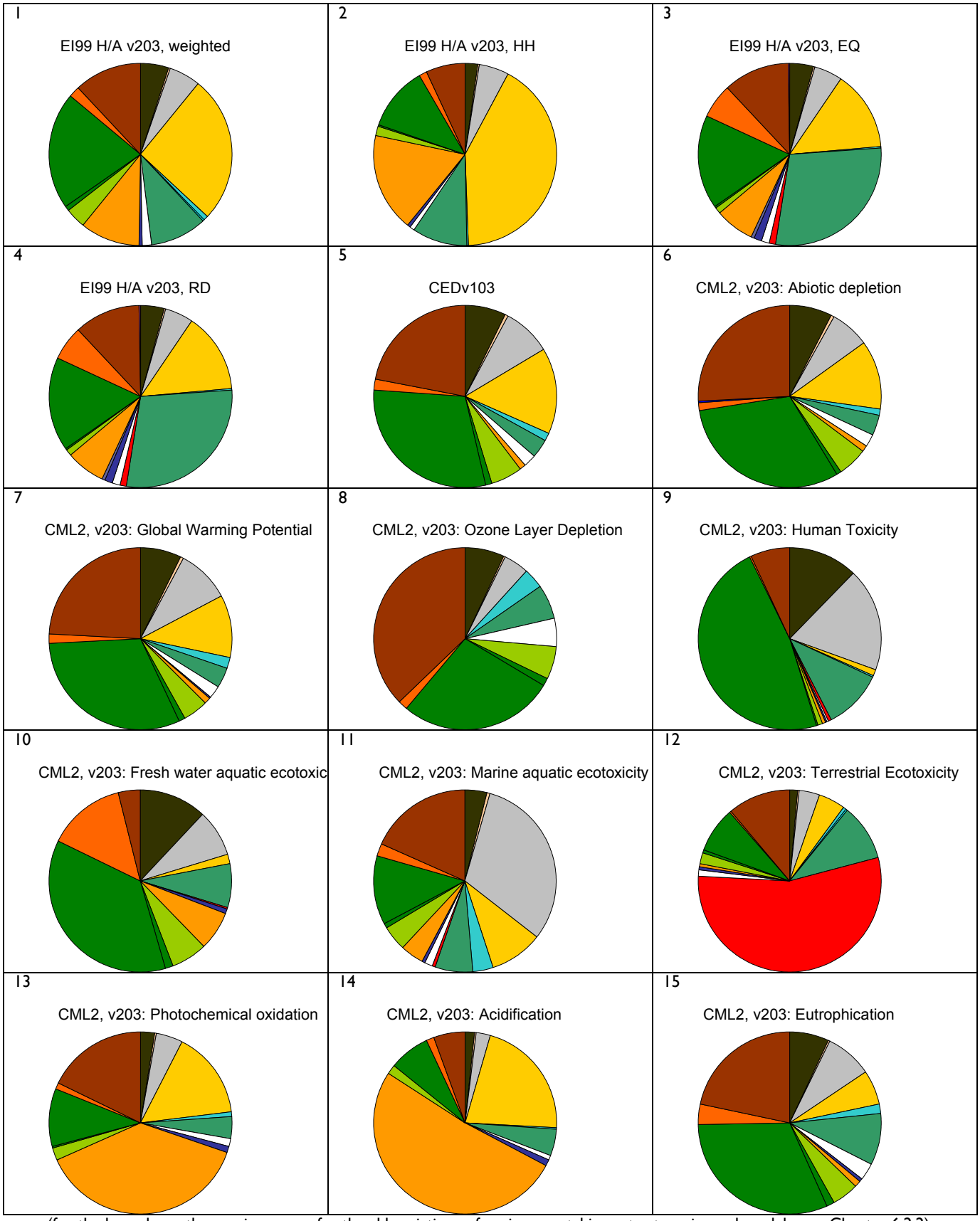


Figure xxxvii: Weight versus Environmental weight Cat.4C CE FDP



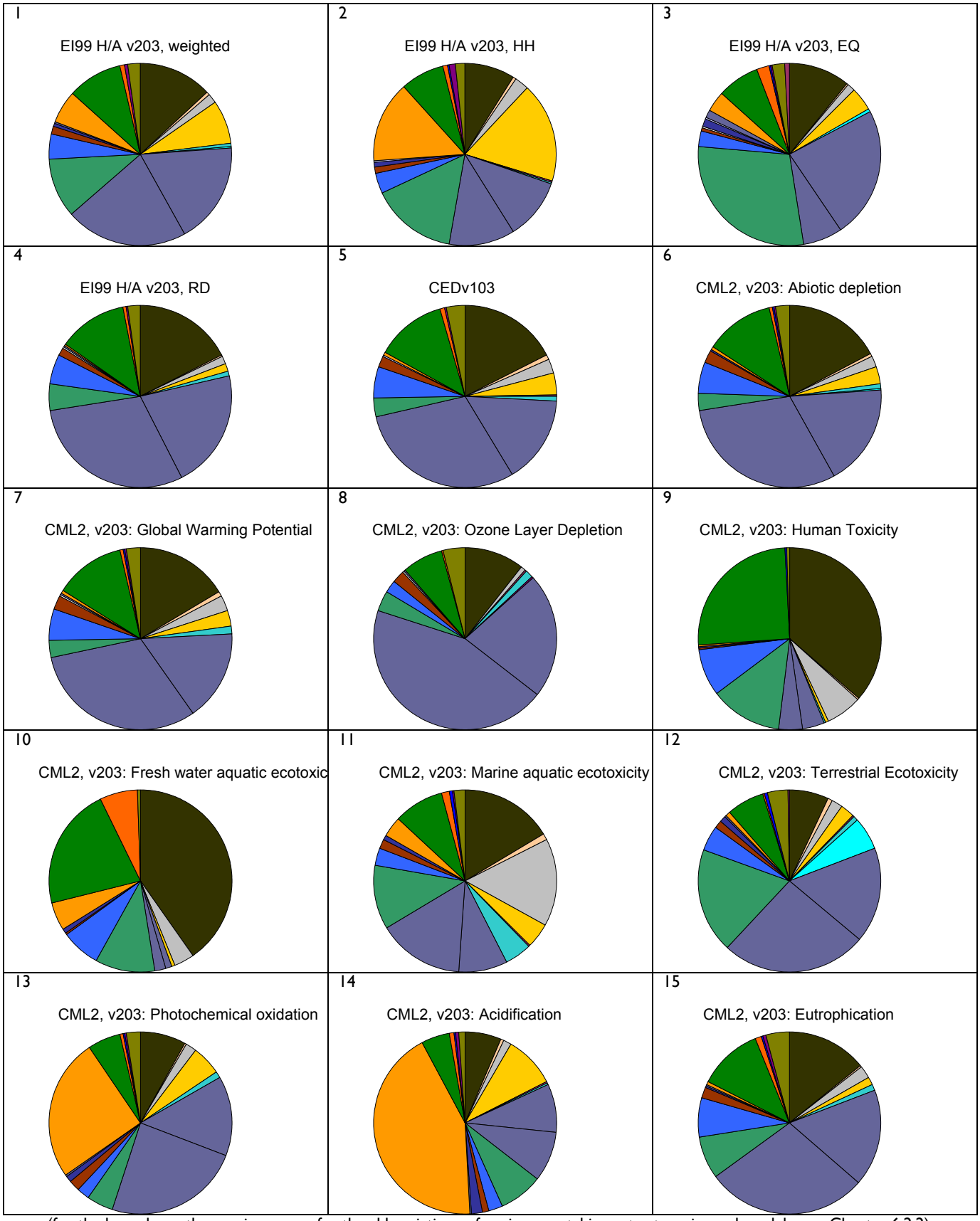
(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xxxviii: Weight versus environmental weight all impact categories – 3B IT CRT



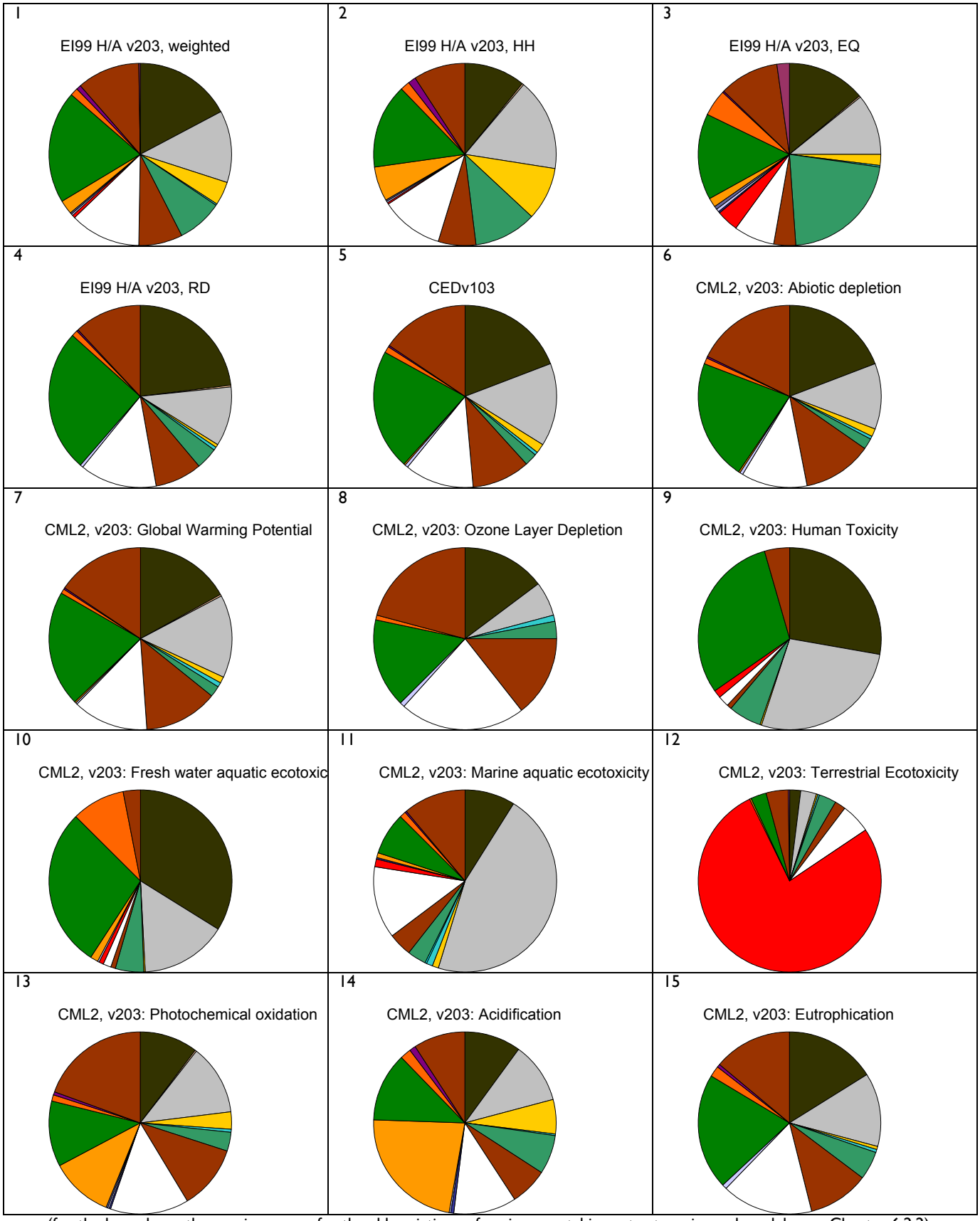
(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xxxix: Weight versus environmental weight all impact categories – 3C IT FDP



(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xl: Weight versus environmental weight all impact categories – 4B CE CRT



(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xli: Weight versus environmental weight all impact categories – 4C CE FDP

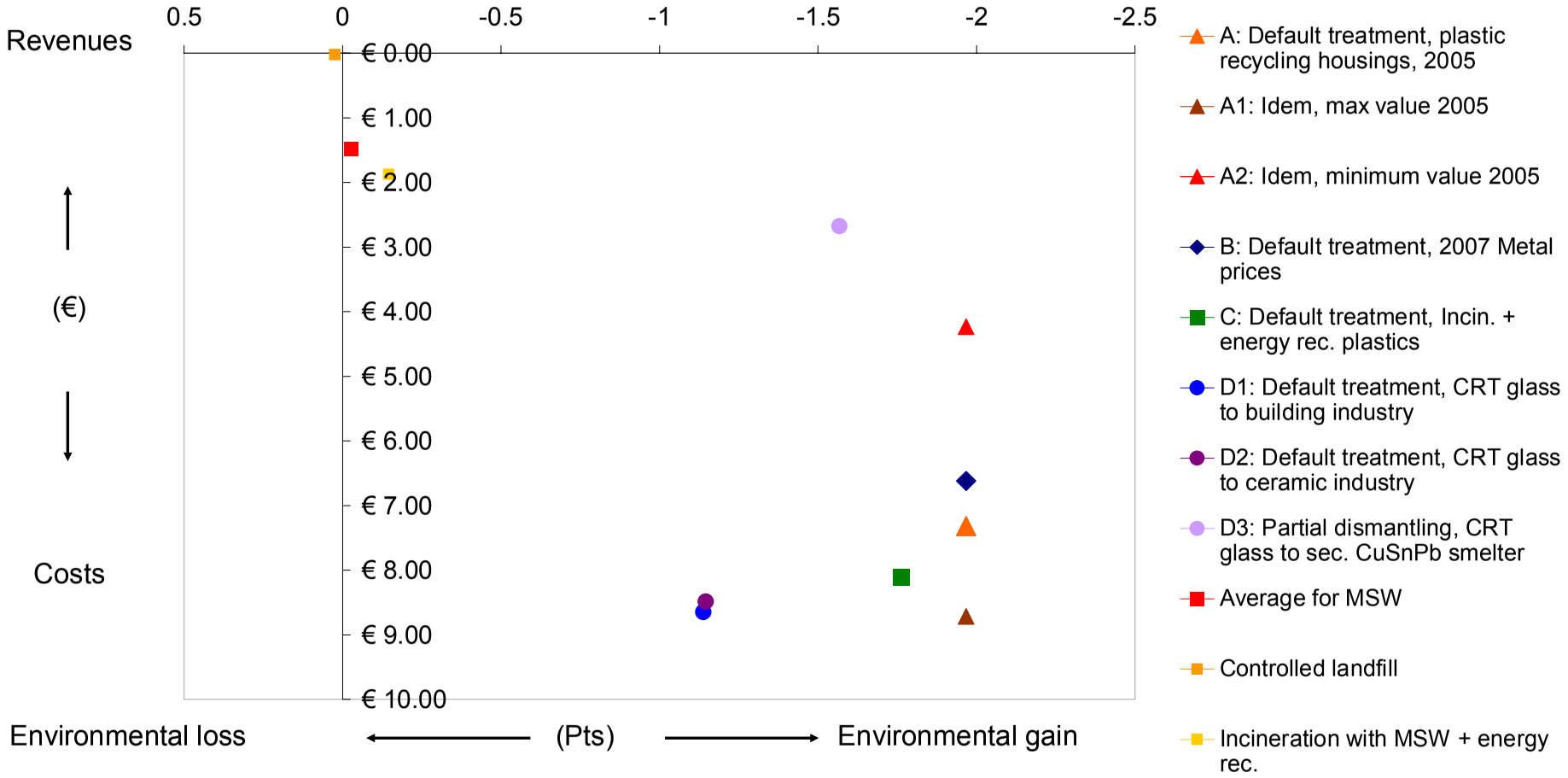


Figure xlii: Eco-efficiency scenarios Cat.3B IT CRT

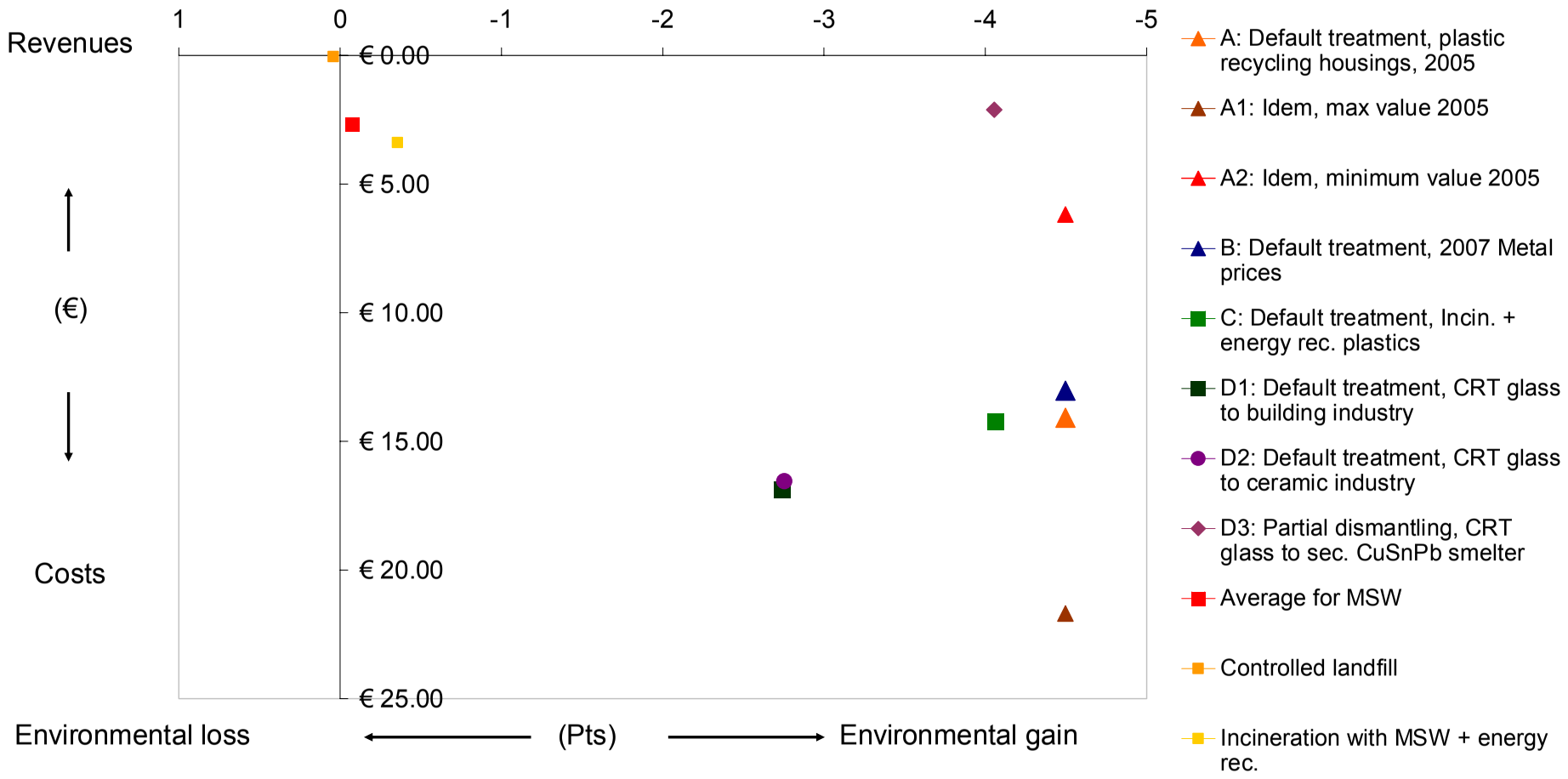


Figure xliii: Figure Eco-efficiency scenarios Cat.4B CE CRT

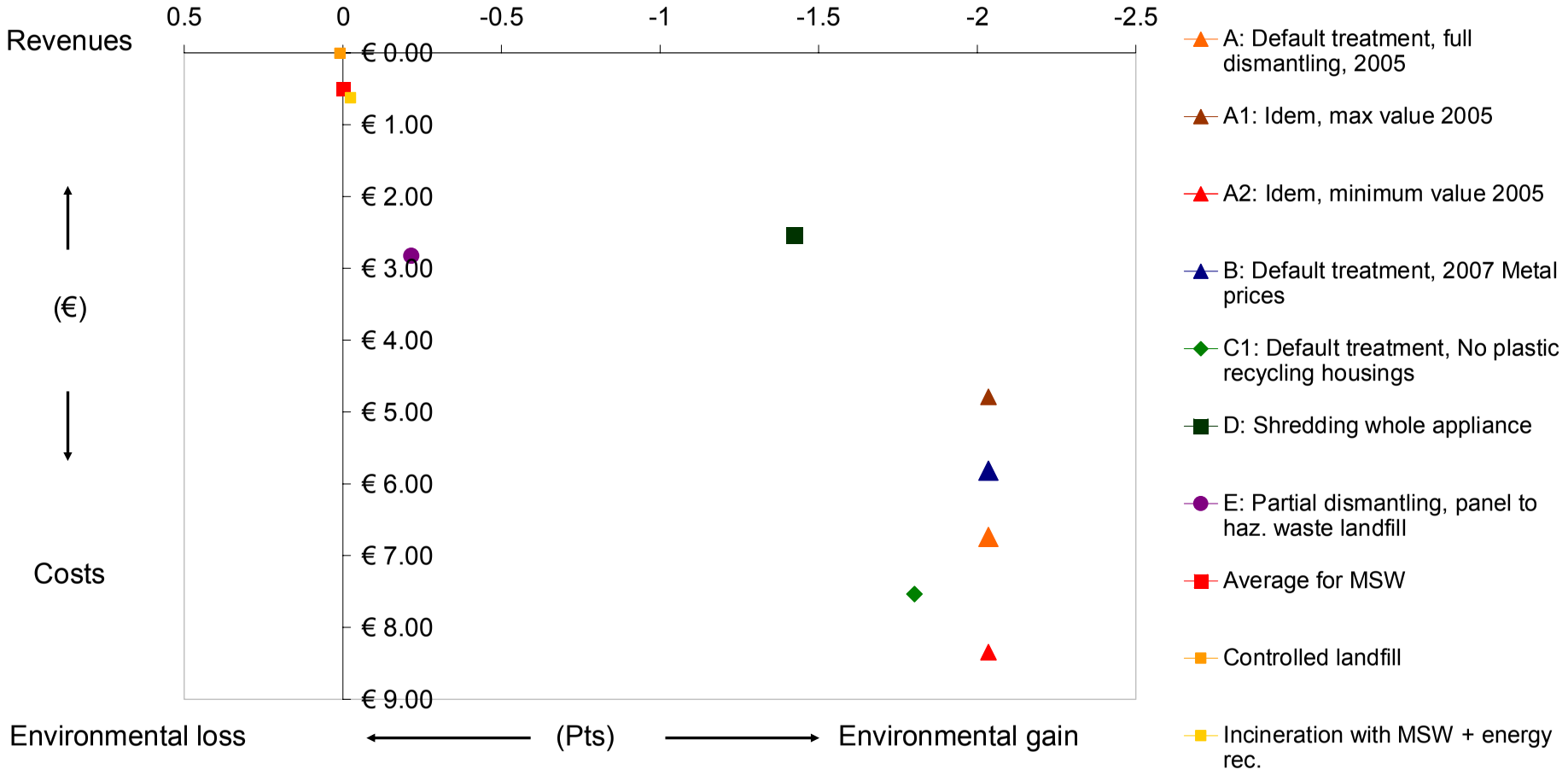


Figure xliv: Eco-efficiency scenarios Cat.3C IT FDP

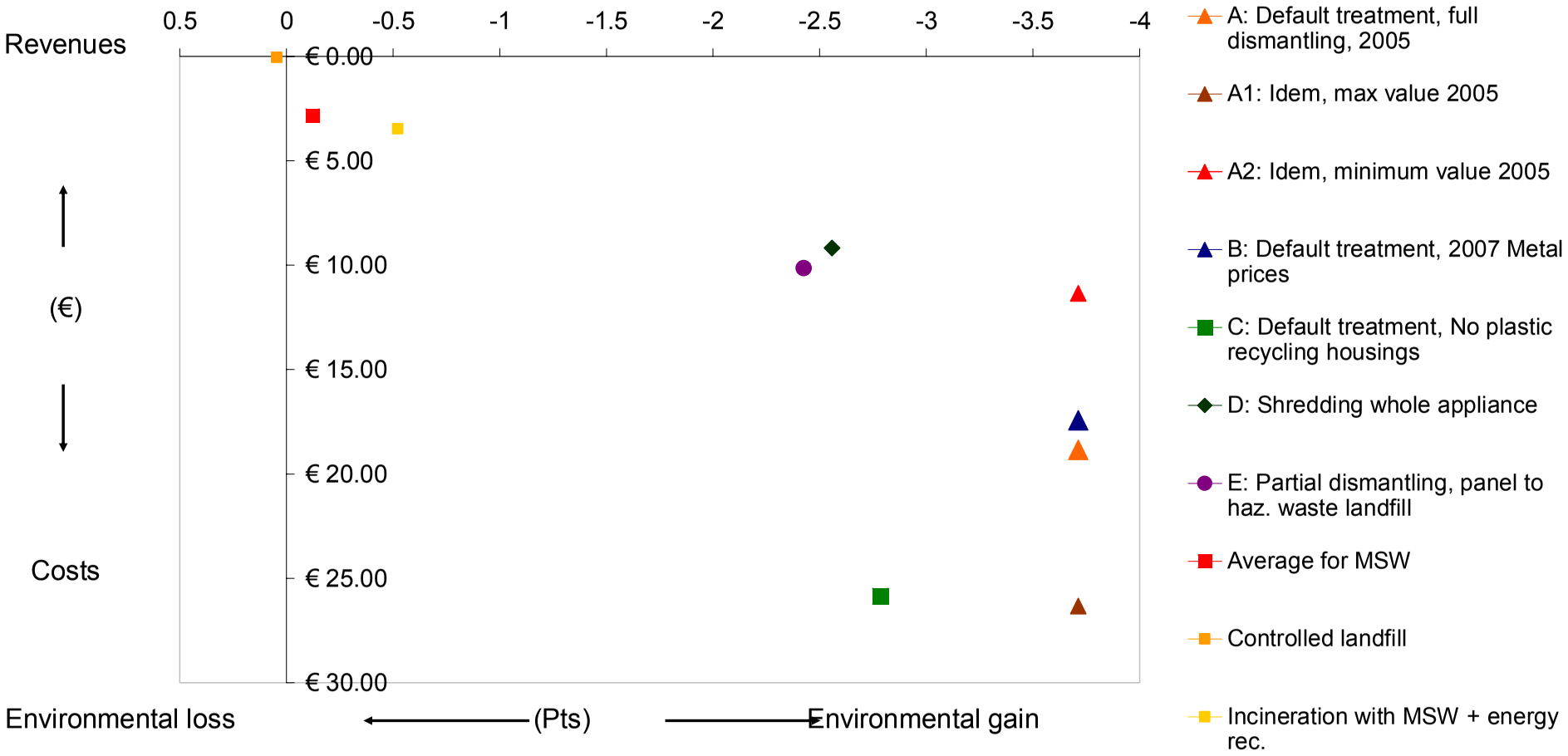


Figure xlv: Eco-efficiency scenarios Cat.4C CE FDP

Annex 8.2.5 Cat 5B Lamps

Scenario	Recycling	Recycling	Recovery	Recovery	QWERTY	QWERTY	Pts	€	€/kg
In bold: base scenarios; In red: technically not realistic (yet)	Strict	WEEE recycling	WEEE recovery	All energy recov. options	gain	loss			
A: Default treatment, 100% Hg removal	86.3%	**89.79%**	**91.3%**	95.4%	85.4%	14.6%	-0.02	**0.10**	**0.66**
A1: Idem, max value 2005	86.3%	**89.8%**	**91.3%**	95.4%	85.4%	14.6%	-0.02	**0.14**	**0.97**
A2: Idem, minimum value 2005	86.3%	**89.8%**	**91.3%**	95.4%	85.4%	14.6%	-0.02	**0.06**	**0.42**
B: Default treatment, 2007 Metal prices	86.3%	**89.8%**	**91.3%**	95.4%	85.4%	14.6%	-0.02	**0.09**	**0.64**
C1: Default treatment, all Hg to air	86.3%	**89.8%**	**91.3%**	95.4%	77.1%	22.9%	-0.01	**0.10**	**0.66**
C3: Default treatment, all Hg to air, EQ	86.3%	**89.8%**	**91.3%**	95.4%	37.5%	62.5%	**0.00**	**0.10**	**0.66**
C4: Default treatment, Hg removal 100%, EQ	86.3%	**89.79%**	**91.3%**	95.4%	82.9%	17.1%	0.00	**0.10**	**0.66**
D1: Default treatment, no glass recycling	7.1%	**10.6%**	**12.0%**	16.2%	62.8%	37.2%	-0.01	**0.07**	**0.48**
Average for MSW	0%	0%	0%	29%	52%	48%	0.0003	0.01	0.10
Controlled landfill	0%	0%	0%	0%	52%	48%	0.0002	0.01	0.09
Incineration with MSW + energy rec.	0%	0%	0%	100%	52%	48%	0.0005	0.02	0.14

Table xxxii: Cat. 5B Lamps, All eco-efficiency data per scenario, recycling percentages

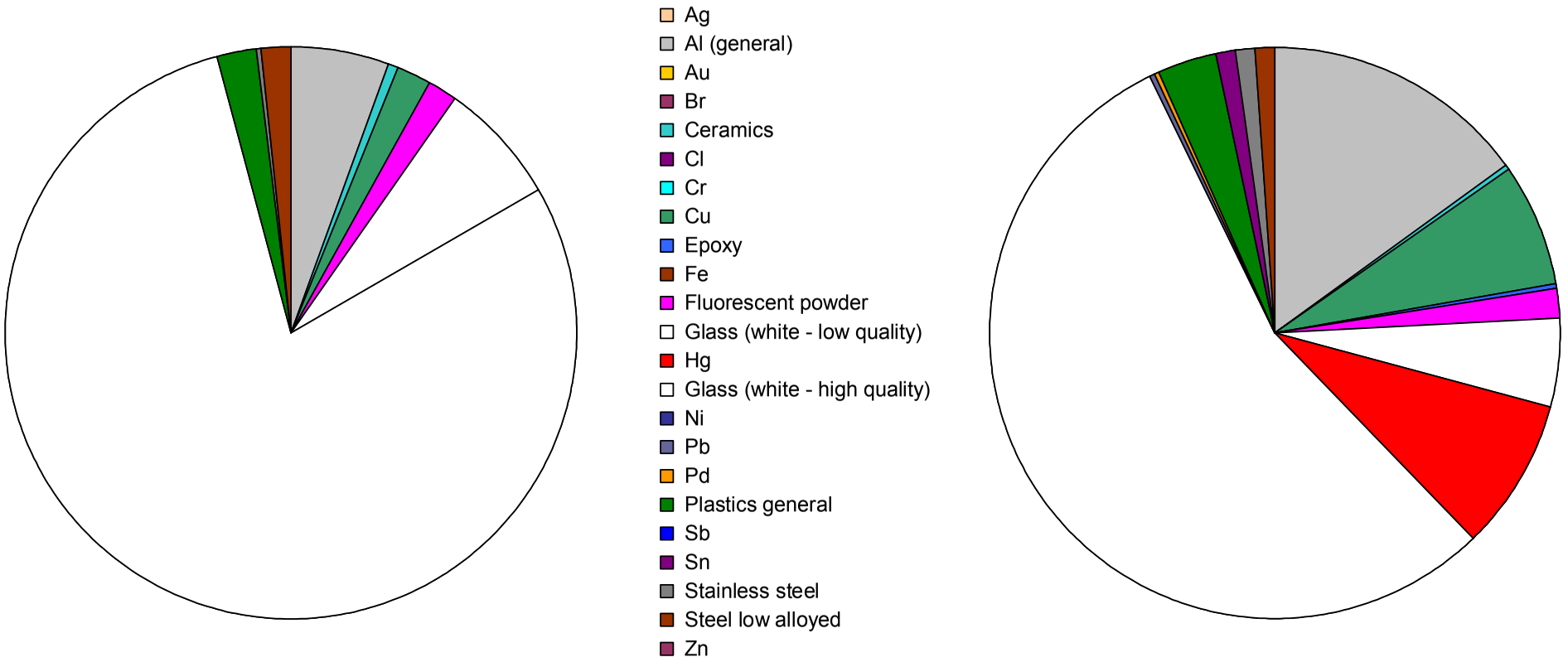
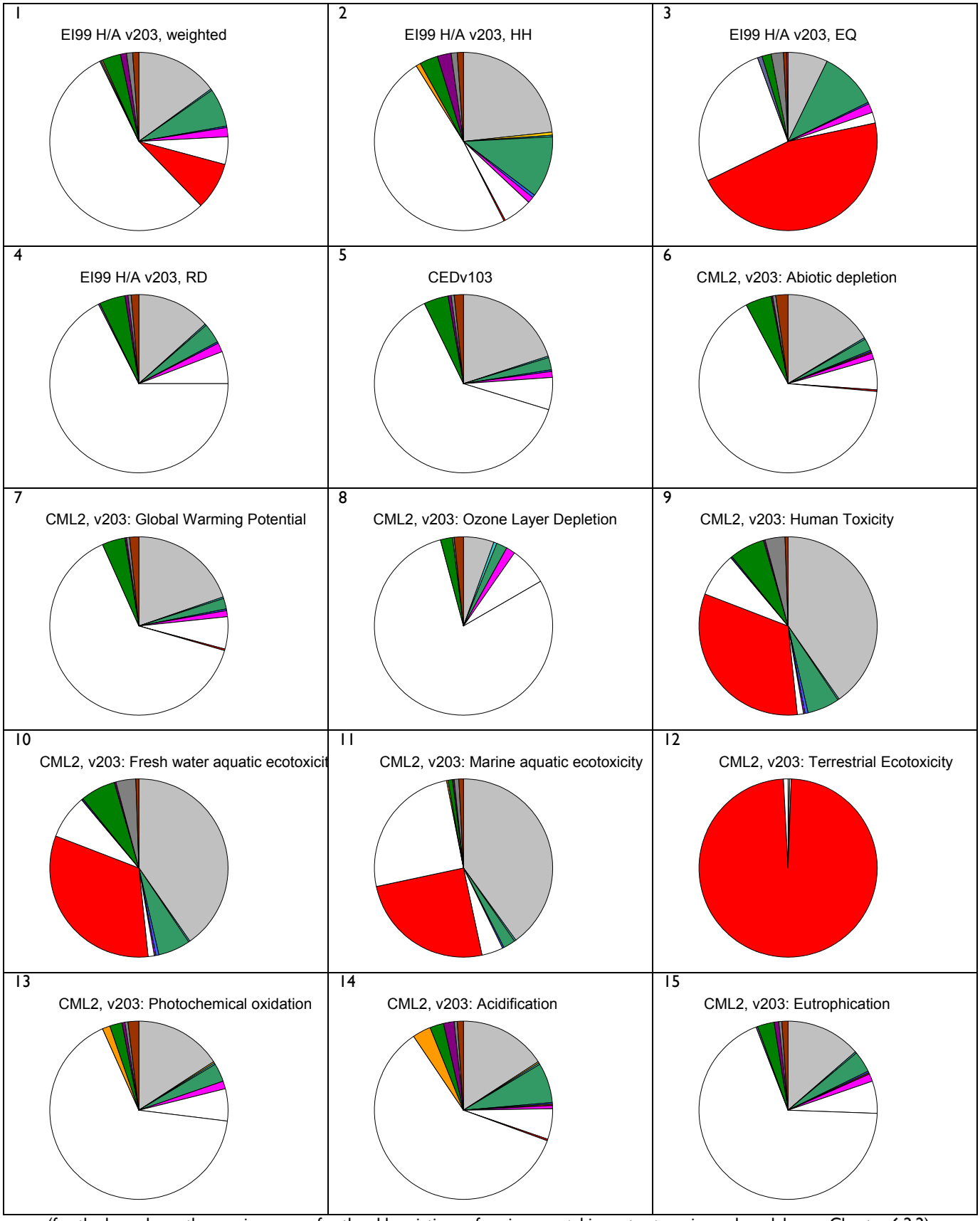


Figure xlvi: Weight versus Environmental weight Cat.5B Lamps



(for the legend, see the previous page, for the abbreviations of environmental impact categories and models, see Chapter 6.2.2)

Figure xlvii: Figure Weight versus environmental weight all impact categories – 5B Lamps

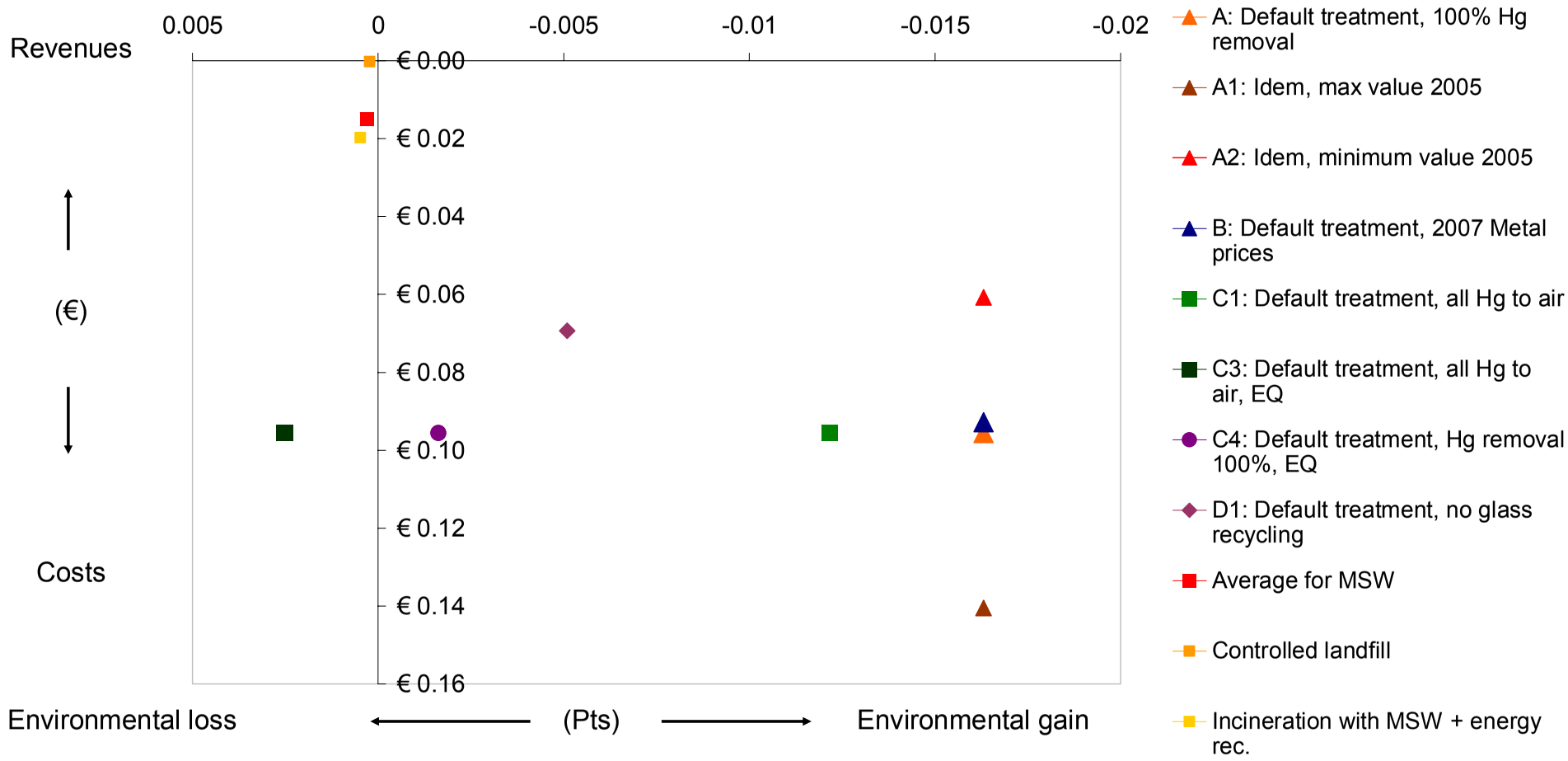
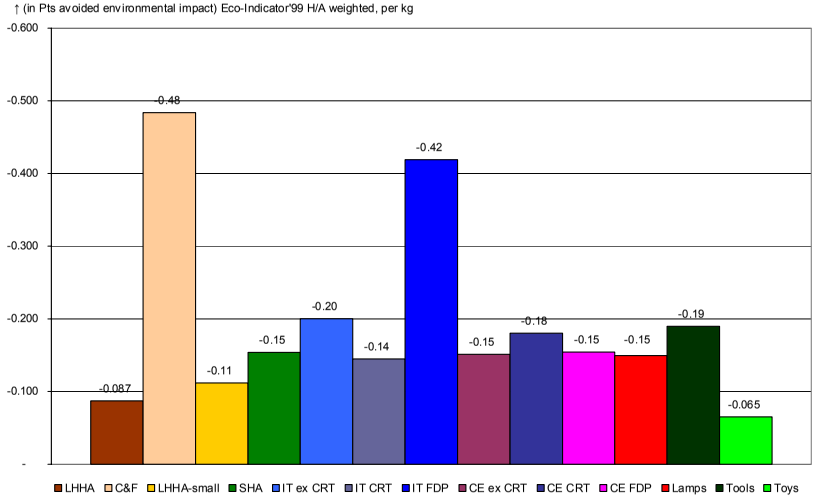
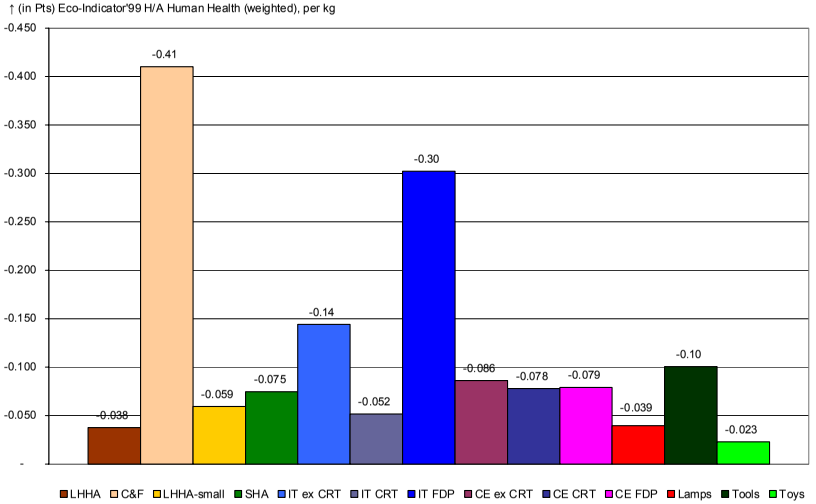


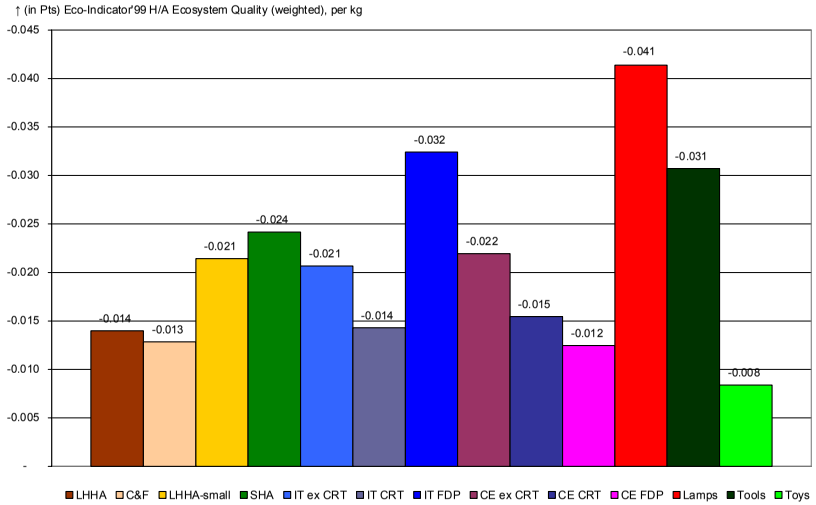
Figure xlviii: Eco-efficiency scenarios Cat.5B Lamps

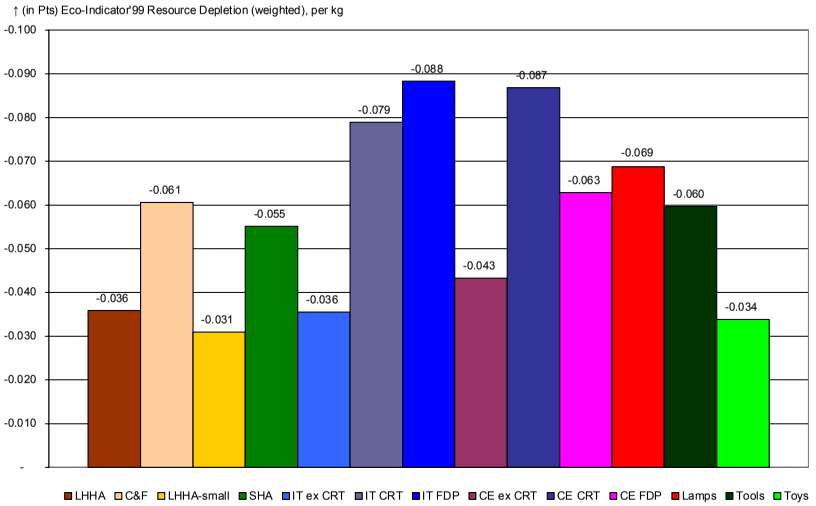
Annex 8.4.2 Environmental Impacts of Total WEEE

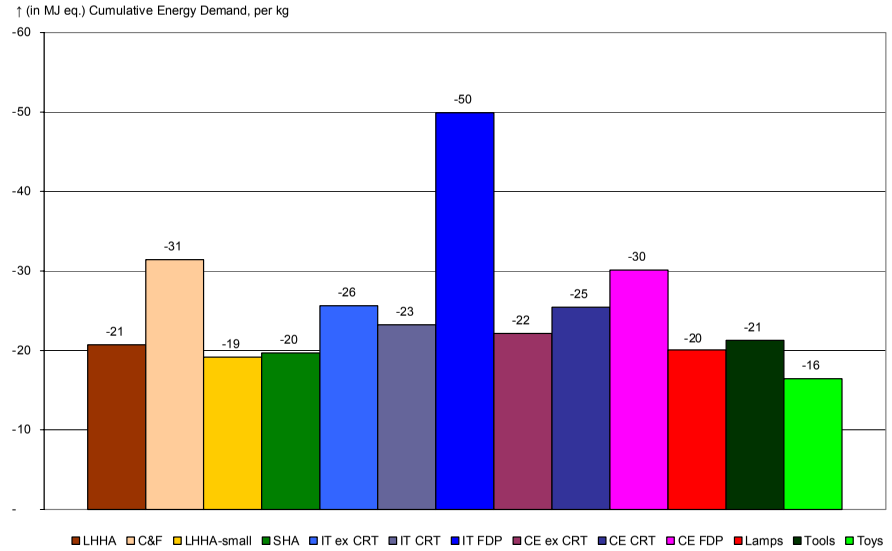
Annex 8.4.2a Environmental Impacts Per Average kg Diverted from Disposal

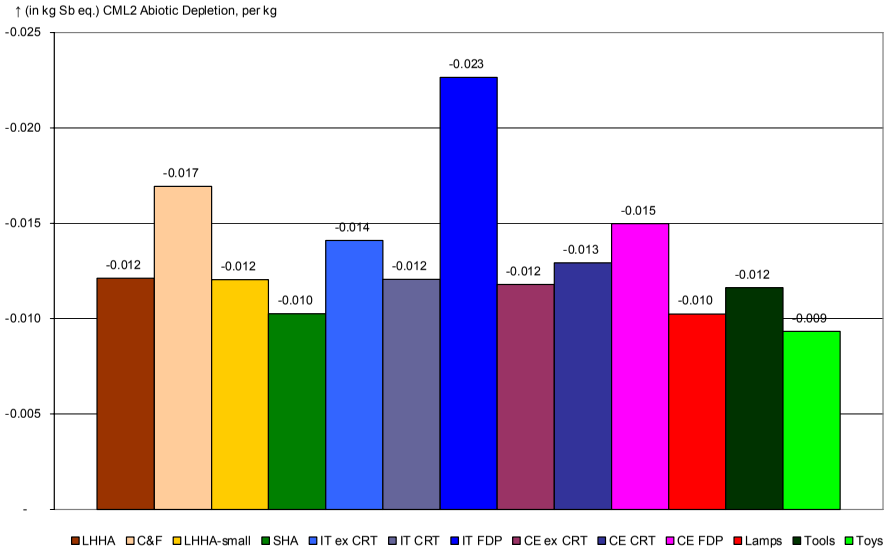


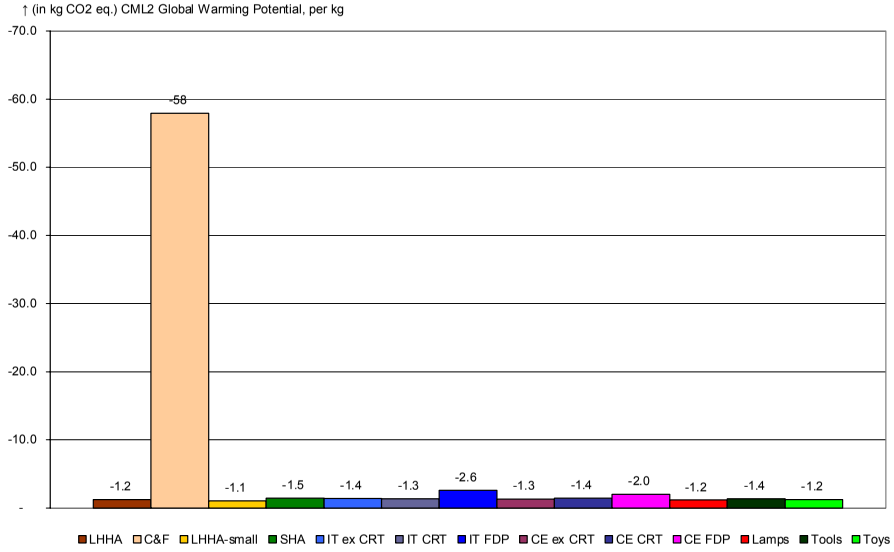


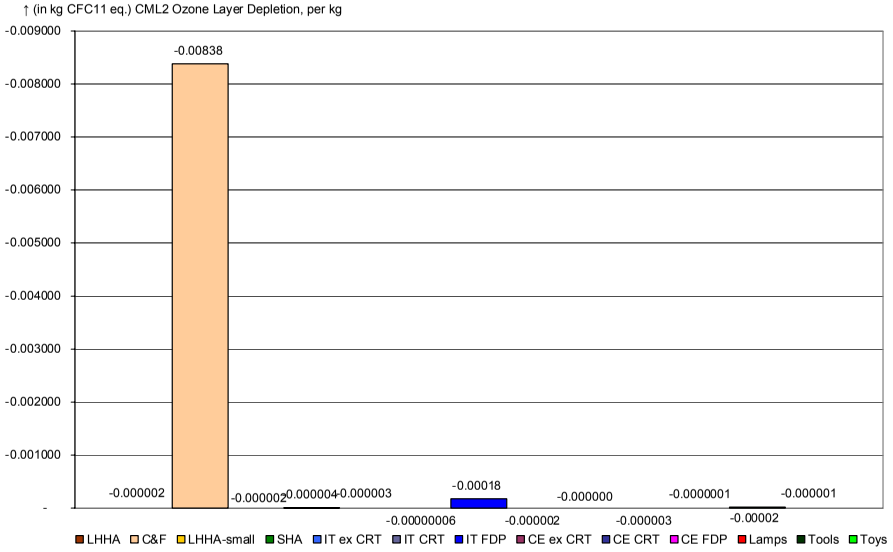


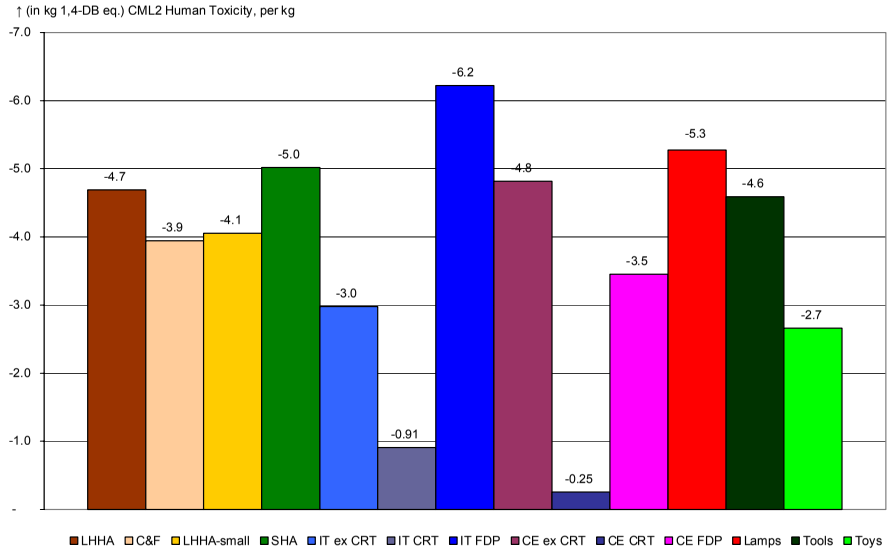


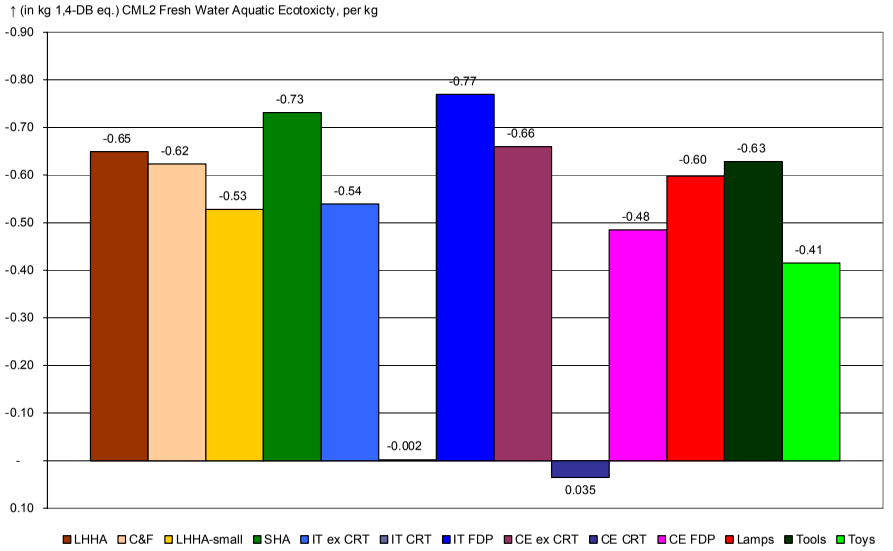

↑ (in MJ eq.) Cumulative Energy Demand, per kg
-60
-50
-40
-30
-20
-10
-
-21
-31
-19
-20
-26
-23
-50
-22
-25
-30
-20
-21
-16
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys

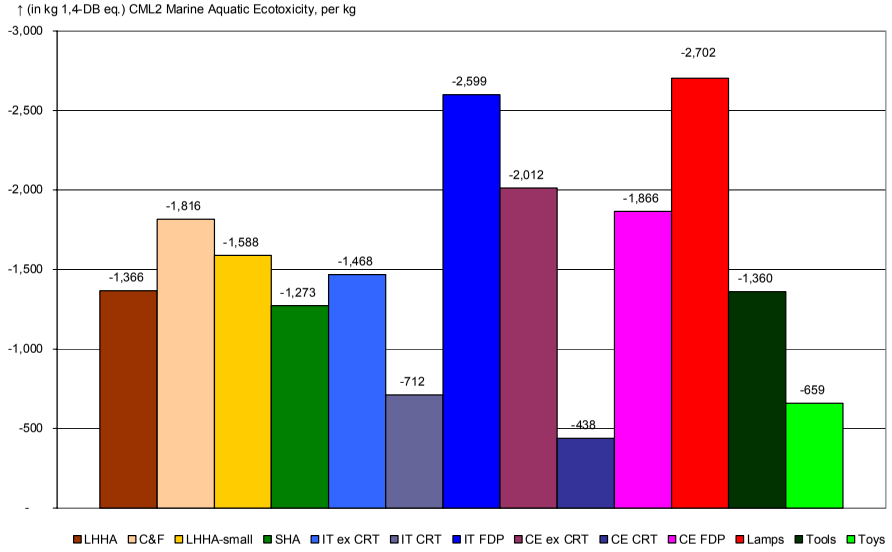

↑ (in kg Sb eq.) CML2 Abiotic Depletion, per kg
-0.025
-0.020
-0.015
-0.010
-0.005
-
-0.012
-0.017
-0.012
-0.010
-0.014
-0.012
-0.023
-0.012
-0.013
-0.015
-0.010
-0.012
-0.009
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys

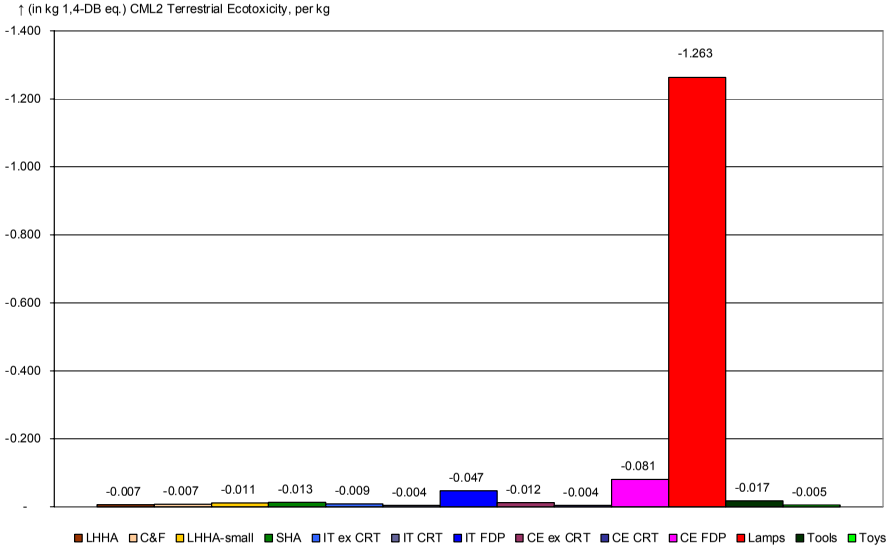

↑ (in kg CO2 eq.) CML2 Global Warming Potential, per kg
-70.0
-60.0
-50.0
-40.0
-30.0
-20.0
-10.0
-
-1.2
-58
-1.1
-1.5
-1.4
-1.3
-2.6
-1.3
-1.4
-2.0
-1.2
-1.4
-1.2
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys

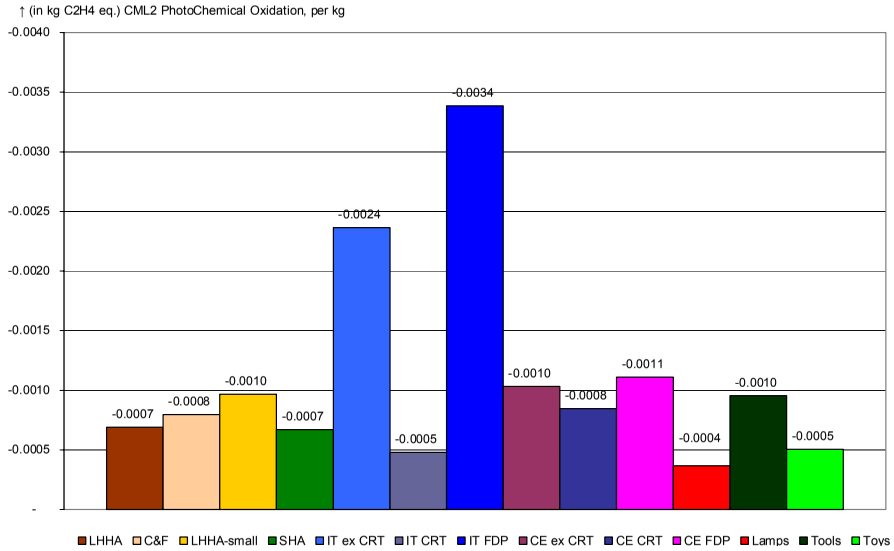

↑ (in kg CFC11 eq.) CML2 Ozone Layer Depletion, per kg
-0.009000
-0.008000
-0.007000
-0.006000
-0.005000
-0.004000
-0.003000
-0.002000
-0.001000
-
-0.00838
-0.000002
-0.000002
-0.000004
-0.000003
-0.00000006
-0.00018
-0.000002
-0.000000
-0.000003
-0.0000001
-0.00002
-0.000001
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys

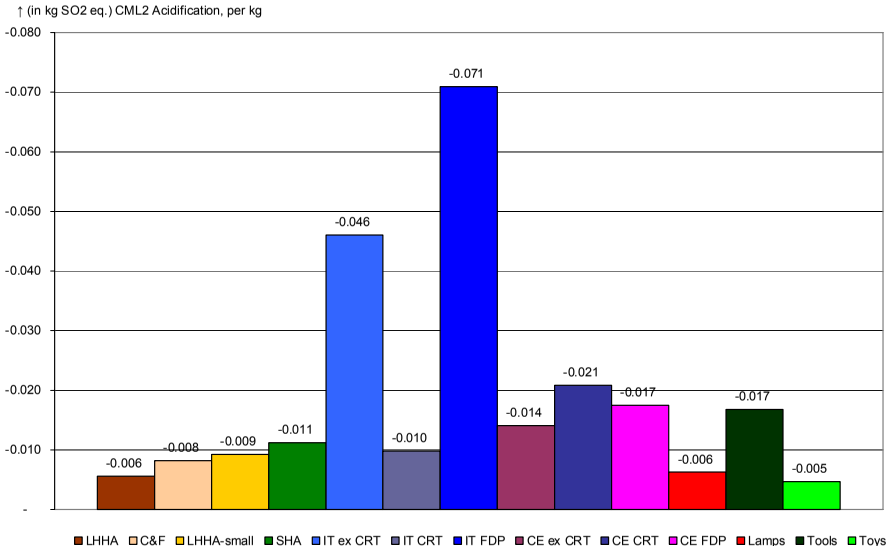

↑ (in kg 1,4-DB eq.) CML2 Human Toxicity, per kg
-7.0
-6.0
-5.0
-4.0
-3.0
-2.0
-1.0
-
-4.7
-3.9
-4.1
-5.0
-3.0
-0.91
-6.2
-4.8
-0.25
-3.5
-5.3
-4.6
-2.7
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys


↑ (in kg 1,4-DB eq.) CML2 Fresh Water Aquatic Ecotoxicty, per kg
-0.90
-0.80
-0.70
-0.60
-0.50
-0.40
-0.30
-0.20
-0.10
-
0.10
-0.65
-0.62
-0.53
-0.73
-0.54
-0.002
-0.77
-0.66
0.035
-0.48
-0.60
-0.63
-0.41
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys


↑ (in kg 1,4-DB eq.) CML2 Marine Aquatic Ecotoxicity, per kg
-3,000
-2,500
-2,000
-1,500
-1,000
-500
-
-1,366
-1,816
-1,588
-1,273
-1,468
-712
-2,599
-2,012
-438
-1,866
-2,702
-1,360
-659
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys


↑ (in kg 1,4-DB eq.) CML2 Terrestrial Ecotoxicity, per kg
-1.400
-1.200
-1.000
-0.800
-0.600
-0.400
-0.200
-
-0.007
-0.007
-0.011
-0.013
-0.009
-0.004
-0.047
-0.012
-0.004
-0.081
-1.263
-0.017
-0.005
LHHA C&F LHHA-small SHA IT ex CRT IT CRT IT FDP CE ex CRT CE CRT CE FDP Lamps Tools Toys





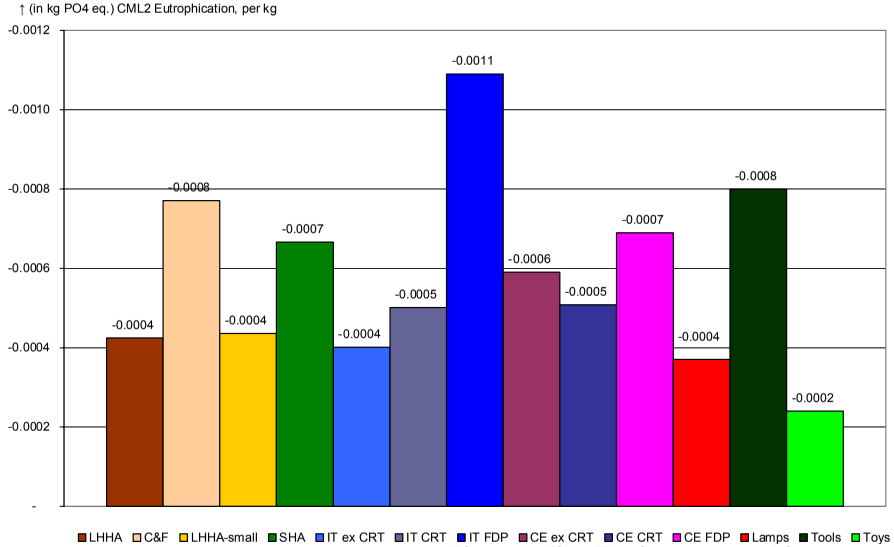
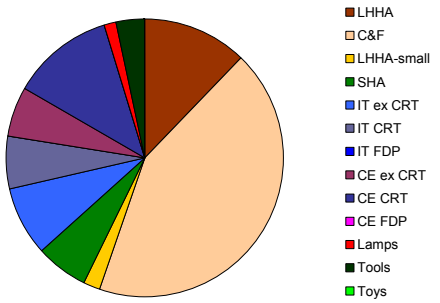


Figure xlix: Environmental impacts per kg recycled and prevented from disposal

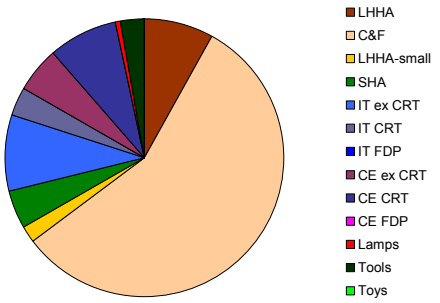
Annex 8.4.2b Contribution Categories to Environmental Impacts of *WEEE Total*

Eco-Indicator'99 H/A weighted, per kg WEEE arising



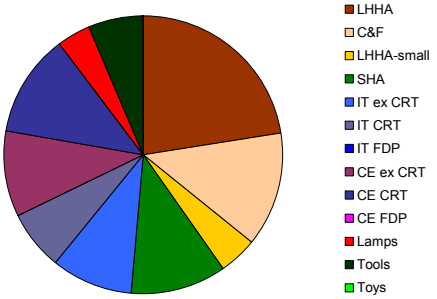
1

Eco-Indicator'99 H/A Human Health, per kg WEEE arising



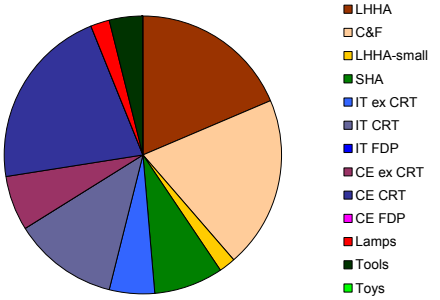
2

Eco-Indicator'99 H/A Ecosystem Quality, per kg WEEE arising



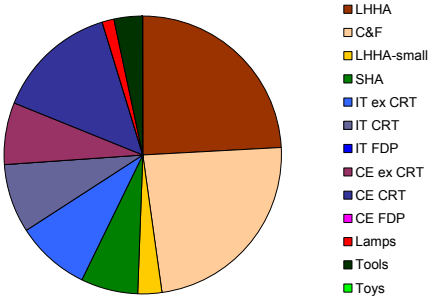
3

Eco-Indicator'99 H/A Resource Depletion, per kg WEEE arising



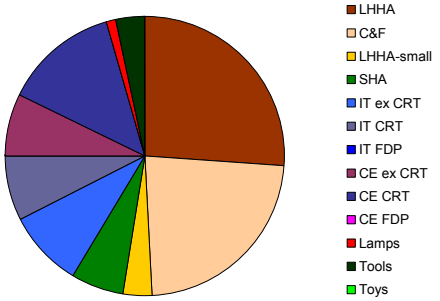
4

Cumulative Energy Demand, per kg WEEE arising



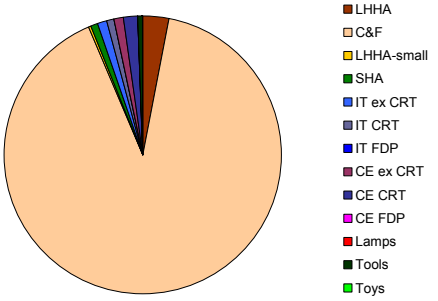
5

CML2 Abiotic Depletion, per kg WEEE arising



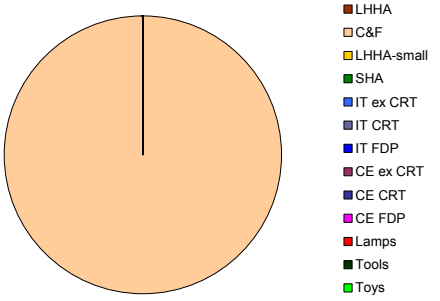
6

CML2 Global Warming Potential,per kg WEEE arising



7

CML2 Ozone Layer Depletion,per kg WEEE arising



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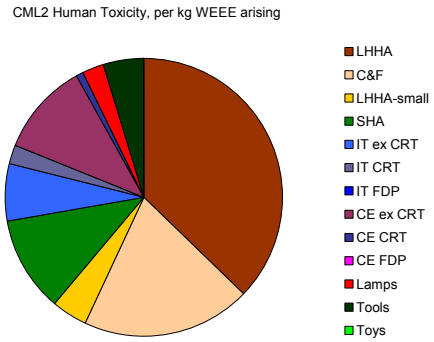

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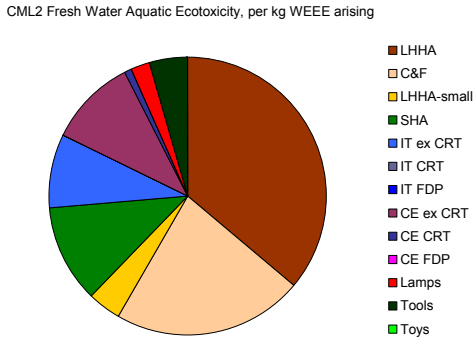

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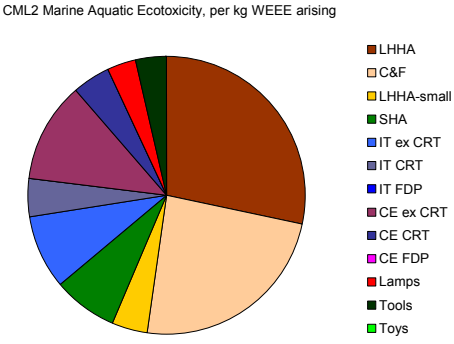

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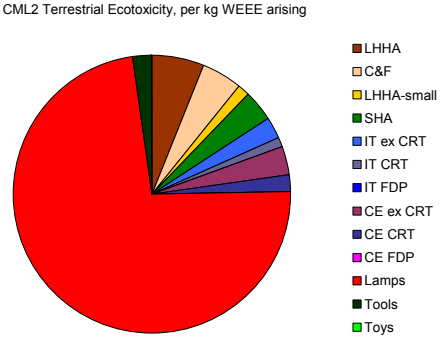

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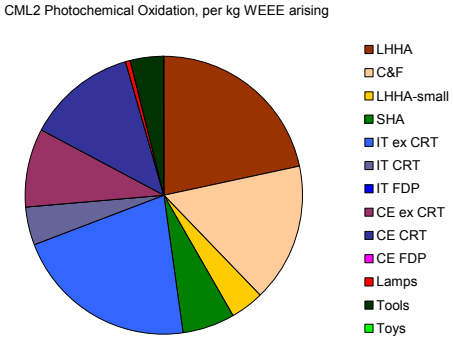

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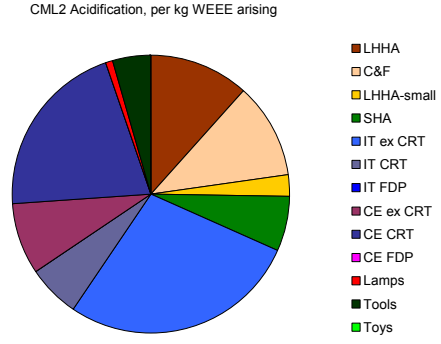

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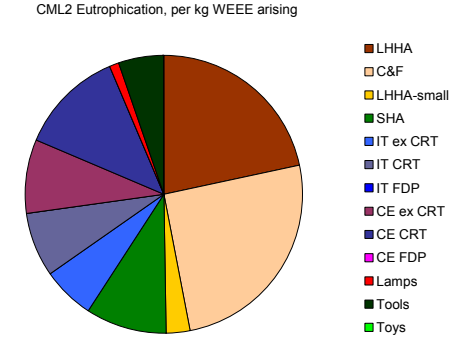


15

Figure I: Contribution Categories to Environmental Impacts WEEE Total

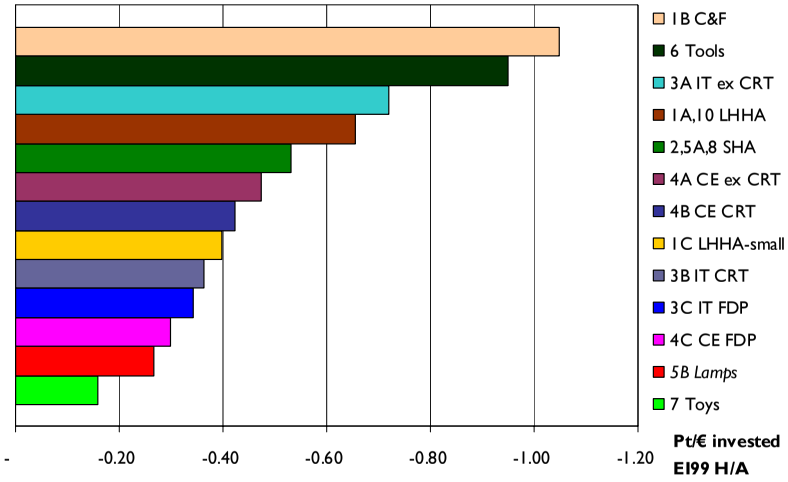
Annex 8.4.2c Benefits of the Directive 2005 – 2011 Per Year

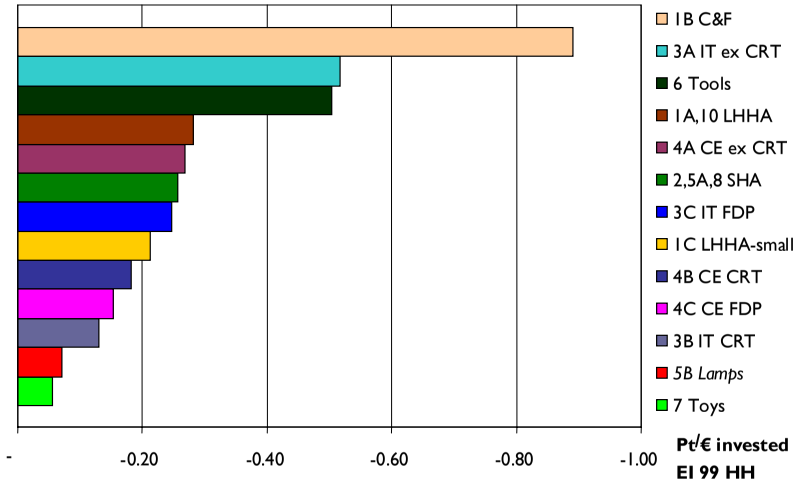
2005 Collection%	16.3%	27.3%	40.0%	26.6%	27.8%	35.3%	*40.5%*	40.1%	29.9%	*40.5%*	22.3%	24.5%	24.3%		
8,291,430,000	25.7%	16.0%	7.0%	12.2%	12.5%	8.0%	*0.2%*	4.5%	9.5%	*0.2%*	1.5%	1.7%	1.0%		
Indicator:	**Cat.1A**	**Cat.1B**	**Cat.1C**	**Cat.2,5,8**	**Cat.3A**	**Cat.3B**	***Cat.3C***	**Cat.4A**	**Cat.4B**	***Cat.4C***	**Cat.5B**	**Cat.6**	**Cat.7**	**Total**	
Name	**LHHA**	**C&F**	**LHHA-small**	**SHA**	**IT ex CRT**	**IT CRT**	***IT FDP***	**CE ex CRT**	**CE CRT**	***CE FDP***	**Lamps**	**Tools**	**Toys**	**All WEEE**	2005-2011
Weight	2.1E+09	1.3E+09	5.8E+08	1.0E+09	1.0E+09	6.6E+08	*1.7E+07*	3.7E+08	7.9E+08	*1.7E+07*	1.2E+08	1.4E+08	8.3E+07	8.3E+09	1.0E+09
Eco-indicator 99 H/A v203	1.1E+07	3.3E+08	-1.7E+07	4.2E+06	-3.0E+07	-2.7E+07	*-2.5E+06*	-1.4E+07	-3.3E+07	*-6.5E+05*	3.6E+05	3.8E+06	2.5E+06	2.3E+08	-6.4E+08
Idem, Human Health	7.1E+06	3.4E+08	-9.5E+06	1.3E+06	-2.9E+07	-8.5E+06	*-1.9E+06*	-8.9E+06	-1.4E+07	*-3.6E+05*	-7.1E+05	3.2E+06	1.3E+06	2.8E+08	-4.2E+08
Idem, Ecosystem Quality	8.6E+06	9.1E+05	-1.8E+06	1.4E+07	5.1E+06	-1.9E+06	*-2.5E+04*	8.6E+04	-1.8E+06	*7.3E+04*	2.6E+06	2.1E+06	1.6E+06	3.0E+07	-4.6E+07
Idem, Resource Depletion	-5.0E+06	-1.6E+07	-5.2E+06	-1.1E+07	-6.5E+06	-1.6E+07	*-5.9E+05*	-5.2E+06	-1.8E+07	*-3.6E+05*	-1.5E+06	-1.4E+06	-3.6E+05	-8.7E+07	-1.7E+08
Cumulative Energy Demand	-4.4E+09	-9.1E+09	-3.7E+09	-3.8E+09	-6.0E+09	-4.7E+09	*-3.3E+08*	-2.8E+09	-5.0E+09	*-1.8E+08*	-4.1E+08	-4.7E+08	-2.1E+08	-4.1E+10	-7.5E+10
Abiotic depletion	-3.0E+06	-5.1E+06	-2.5E+06	-2.1E+06	-3.4E+06	-2.5E+06	*-1.5E+05*	-1.5E+06	-2.6E+06	*-9.0E+04*	-2.2E+05	-2.7E+05	-1.3E+05	-2.4E+07	-4.0E+07
Global warming (GWP100)	7.1E+08	5.5E+10	3.0E+07	1.4E+09	5.4E+08	-1.5E+06	*3.6E+05*	8.9E+07	8.2E+07	*2.8E+06*	-1.8E+07	1.2E+08	1.3E+08	5.8E+10	-3.6E+10
Ozone layer depletion (ODP)	3.0E+03	8.3E+06	6.8E+02	2.8E+03	1.9E+03	4.6E+01	*1.7E+03*	3.5E+02	6.3E+01	*2.5E+01*	1.7E+01	2.1E+03	4.9E+01	8.3E+06	-4.8E+06
Human toxicity	6.6E+09	1.6E+09	1.0E+09	1.3E+10	6.4E+09	4.5E+08	*7.2E+07*	1.5E+09	8.5E+08	*4.0E+07*	2.3E+08	1.3E+09	1.2E+09	3.4E+10	-4.0E+09
Fresh water aquatic ecotox.	1.2E+09	4.6E+08	2.1E+08	2.2E+09	1.1E+09	1.1E+08	*1.8E+07*	2.7E+08	1.7E+08	*1.1E+07*	3.4E+07	2.0E+08	2.0E+08	6.1E+09	-4.0E+08
Marine aquatic ecotoxicity	2.1E+11	-1.6E+11	-2.0E+11	7.9E+11	1.7E+11	-9.9E+10	*-3.3E+09*	-1.2E+11	-1.2E+10	*-5.2E+09*	8.5E+10	6.0E+10	8.4E+10	7.9E+11	-3.6E+12
Terrestrial ecotoxicity	-1.1E+06	-2.2E+06	-2.2E+06	-2.8E+06	-1.8E+06	-8.1E+05	*2.6E+05*	-1.5E+06	-7.8E+05	*7.1E+05*	1.2E+08	-2.3E+05	-7.0E+04	1.1E+08	-7.4E+07
Photochemical oxidation	-1.5E+05	5.4E+05	-2.0E+05	-1.4E+05	-6.4E+05	-8.9E+04	*-2.0E+04*	-1.4E+05	-1.7E+05	*-6.8E+03*	-5.8E+03	-2.2E+04	-6.6E+03	-1.0E+06	-2.9E+06
Acidification	-3.7E+05	-2.0E+06	-1.8E+06	-2.2E+06	-1.3E+07	-1.9E+06	*-4.7E+05*	-1.8E+06	-4.5E+06	*-1.1E+05*	-1.1E+05	-3.9E+05	-2.5E+04	-2.8E+07	-5.0E+07
Eutrophication	2.9E+05	9.9E+04	3.9E+02	2.9E+05	1.7E+05	-1.5E+04	*-1.6E+03*	3.7E+03	1.4E+04	*-3.2E+02*	1.3E+03	2.1E+04	3.5E+04	9.0E+05	-1.5E+06
a minus means avoided environmer	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.00%	*0.00%*	0.00%	0.00%	0.00%	0.00%	

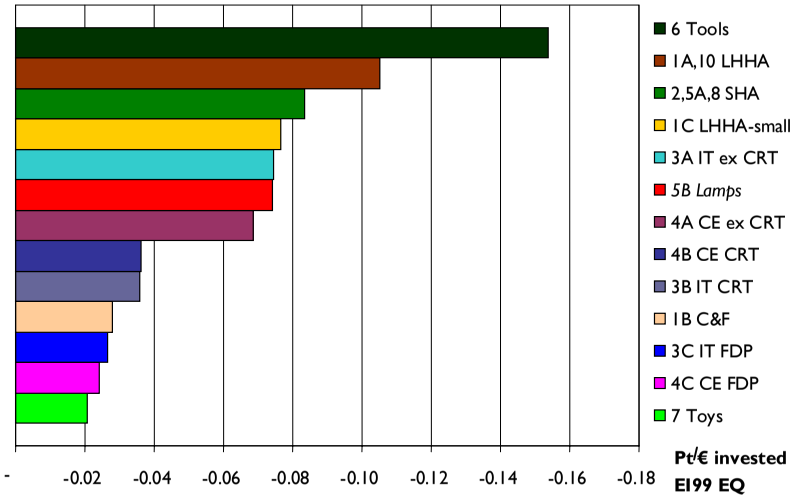
2011 Collection%	16.3%	75.0%	75.0%	60.0%	60.0%	75.0%	*75.0%*	60.0%	75.0%	*75.0%*	60.0%	60.0%	75.0%	
9,650,616,326	25.7%	16.0%	7.0%	12.2%	12.5%	8.0%	*0.2%*	4.5%	9.5%	*0.2%*	1.5%	1.7%	1.0%	**Total**
Indicator:	**Cat.1A**	**Cat.1B**	**Cat.1C**	**Cat.2,5,8**	**Cat.3A**	**Cat.3B**	***Cat.3C***	**Cat.4A**	**Cat.4B**	***Cat.4C***	**Cat.5B**	**Cat.6**	**Cat.7**	**All WEEE**
Name	**LHHA 2011**	**C&F 2011**	**LHHA-small 2011**	**SHA 2011**	**IT ex CRT 2011**	**IT CRT 2011**	***IT FDP 2011***	**CE ex CRT 2011**	**CE CRT 2011**	***CE FDP 2011***	**Lamps 2011**	**Tools 2011**	**Toys 2011**	9.3E+09
Weight	2.1E+09	1.5E+09	6.8E+08	1.2E+09	1.2E+09	7.7E+08	*1.9E+07*	4.3E+08	9.2E+08	*1.9E+07*	1.4E+08	1.6E+08	9.7E+07	-4.2E+08
Eco-indicator 99 H/A v203	1.1E+07	2.7E+07	-4.6E+07	-5.5E+07	-1.1E+08	-7.6E+07	*-5.7E+06*	-2.9E+07	-1.1E+08	*-1.8E+06*	-7.7E+06	-6.6E+06	-2.3E+05	-1.4E+08
Idem, Human Health	7.1E+06	9.8E+07	-2.5E+07	-2.8E+07	-9.0E+07	-2.6E+07	*-4.2E+06*	-1.8E+07	-4.8E+07	*-9.5E+05*	-3.0E+06	-2.2E+06	4.4E+05	-1.7E+07
Idem, Ecosystem Quality	8.6E+06	-8.4E+06	-7.1E+06	6.7E+06	-2.0E+06	-6.6E+06	*-2.4E+05*	-1.8E+06	-8.4E+06	*2.0E+03*	7.6E+05	6.8E+05	1.4E+06	-2.6E+08
Idem, Resource Depletion	-5.0E+06	-6.3E+07	-1.3E+07	-3.4E+07	-2.1E+07	-4.3E+07	*-1.3E+06*	-9.7E+06	-5.7E+07	*-8.4E+05*	-5.5E+06	-5.1E+06	-2.1E+06	-1.2E+11
Cumulative Energy Demand	-4.4E+09	-3.4E+10	-8.8E+09	-1.2E+10	-1.7E+10	-1.3E+10	*-7.1E+08*	-5.2E+09	-1.6E+10	*-4.1E+08*	-1.6E+09	-1.8E+09	-1.1E+09	-6.4E+07
Abiotic depletion	-3.0E+06	-1.8E+07	-5.7E+06	-6.4E+06	-9.5E+06	-6.6E+06	*-3.2E+05*	-2.8E+06	-8.4E+06	*-2.0E+05*	-8.1E+05	-1.0E+06	-6.1E+05	2.2E+10
Global warming (GWP100)	7.1E+08	2.1E+10	-2.2E+08	1.0E+09	9.2E+07	-4.1E+08	*-1.7E+07*	-1.1E+07	-5.0E+08	*-1.0E+07*	-8.6E+07	5.8E+07	9.1E+07	3.4E+06
Ozone layer depletion (ODP)	3.0E+03	3.4E+06	2.4E+02	1.7E+03	1.1E+03	3.4E+01	*8.5E+02*	2.6E+02	5.1E+01	*1.1E+01*	1.3E+01	1.3E+03	1.2E+01	3.0E+10
Human toxicity	6.6E+09	-1.1E+09	2.1E+08	1.3E+10	6.3E+09	2.5E+08	*4.2E+07*	1.3E+09	8.9E+08	*2.3E+07*	-2.1E+07	1.3E+09	1.2E+09	5.7E+09
Fresh water aquatic ecotox.	1.2E+09	7.4E+07	1.2E+08	2.3E+09	1.0E+09	1.3E+08	*1.5E+07*	2.6E+08	2.1E+08	*9.5E+06*	6.4E+06	2.0E+08	2.1E+08	-2.8E+12
Marine aquatic ecotoxicity	2.1E+11	-1.5E+12	-6.1E+11	4.2E+11	-3.8E+11	-3.3E+11	*-2.1E+10*	-3.2E+11	-2.0E+11	*-1.9E+10*	-4.9E+10	-1.0E+10	6.6E+10	3.5E+07
Terrestrial ecotoxicity	-1.1E+06	-8.0E+06	-5.3E+06	-8.5E+06	-5.6E+06	-2.2E+06	*-1.1E+04*	-2.8E+06	-2.7E+06	*2.8E+05*	7.3E+07	-1.3E+06	-3.5E+05	-3.9E+06
Photochemical oxidation	-1.5E+05	4.6E+04	-4.6E+05	-4.2E+05	-1.7E+06	-2.5E+05	*-4.6E+04*	-2.5E+05	-5.5E+05	*-1.5E+04*	-2.7E+04	-8.1E+04	-3.2E+04	-7.8E+07
Acidification	-3.7E+05	-8.3E+06	-4.3E+06	-6.9E+06	-3.2E+07	-5.2E+06	*-1.0E+06*	-3.4E+06	-1.4E+07	*-2.4E+05*	-4.7E+05	-1.4E+06	-2.6E+05	-5.9E+05
Eutrophication	2.9E+05	-4.5E+05	-1.0E+05	7.1E+04	3.7E+04	-1.7E+05	*-9.1E+03*	-4.7E+04	-1.9E+05	*-5.0E+03*	-1.9E+04	-2.2E+04	3.0E+04	
a minus means avoided environmer	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.00%	*0.00%*	0.00%	0.00%	0.00%	

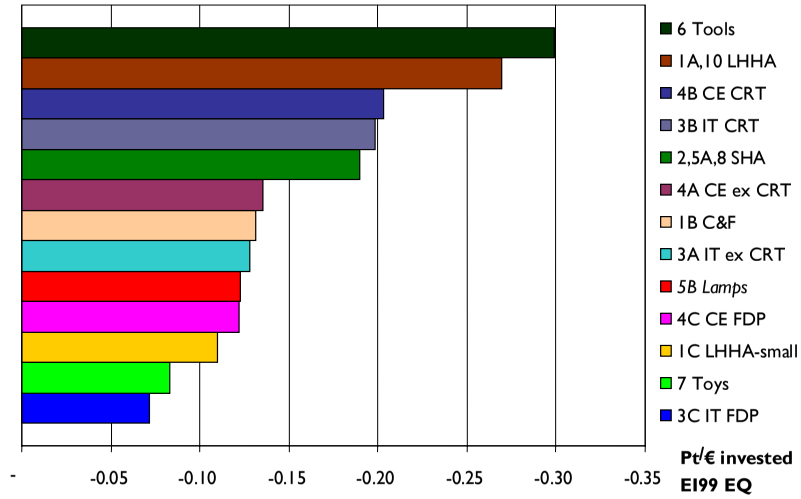
Figure Ii: Benefits of the Directive 2005 – 2011 per year

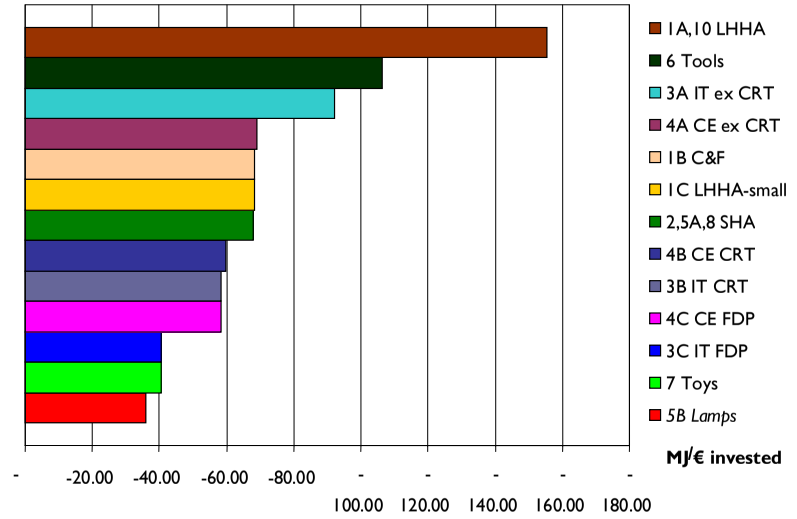
Annex 8.4.2d Eco-efficiency of Preventing Disposal Per Category

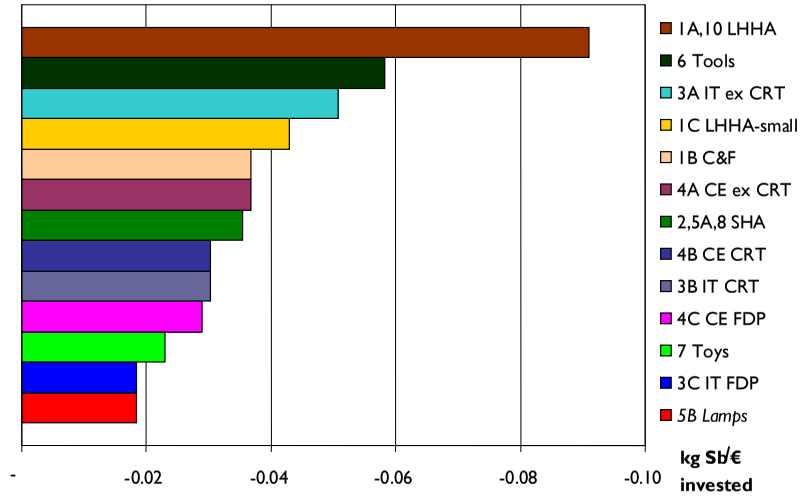


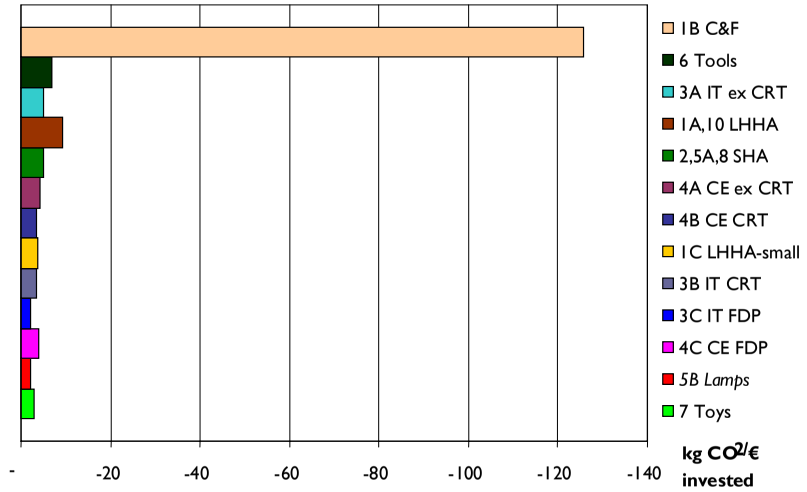


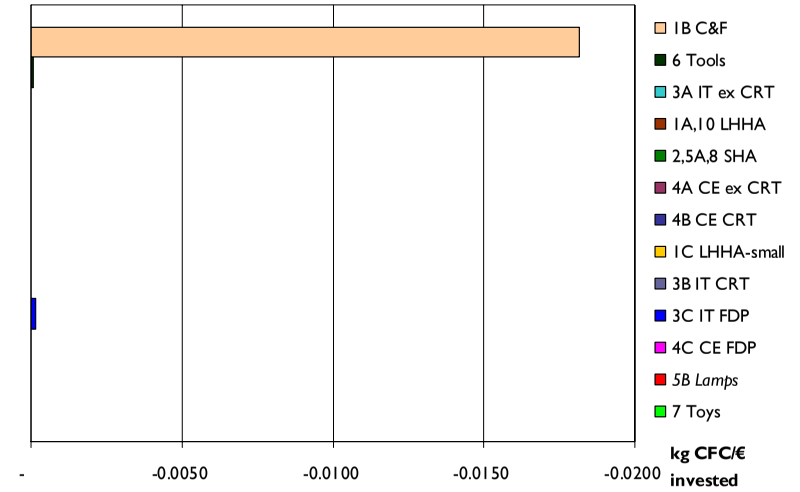

6 Tools
1A,1C LHHA
2,5A,8 SHA
1C LHHA-small
3A IT ex CRT
5B Lamps
4A CE ex CRT
4B CE CRT
3B IT CRT
1B C&F
3C IT FDP
4C CE FDP
7 Toys
- -0.02 -0.04 -0.06 -0.08 -0.10 -0.12 -0.14 -0.16 -0.18
Pt/€ invested
EI99 EQ

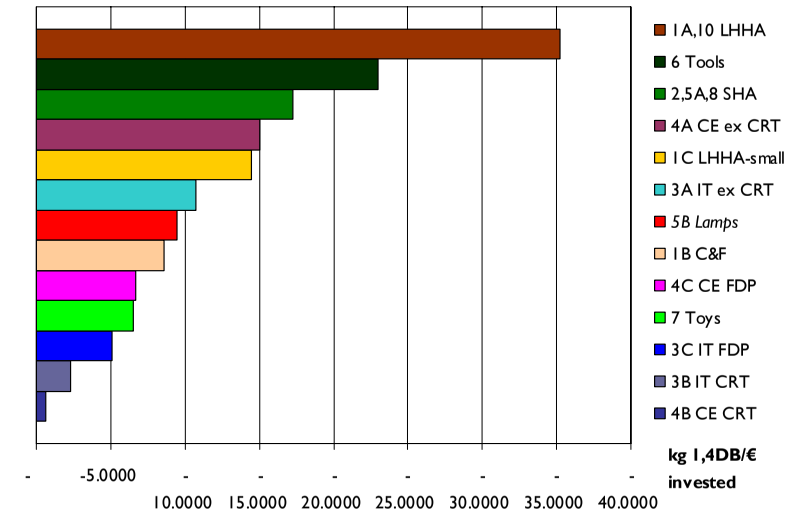

6 Tools
1A,1C LHHA
4B CE CRT
3B IT CRT
2,5A,8 SHA
4A CE ex CRT
1B C&F
3A IT ex CRT
5B Lamps
4C CE FDP
1C LHHA-small
7 Toys
3C IT FDP
- -0.05 -0.10 -0.15 -0.20 -0.25 -0.30 -0.35
Pt/€ invested
EI99 EQ

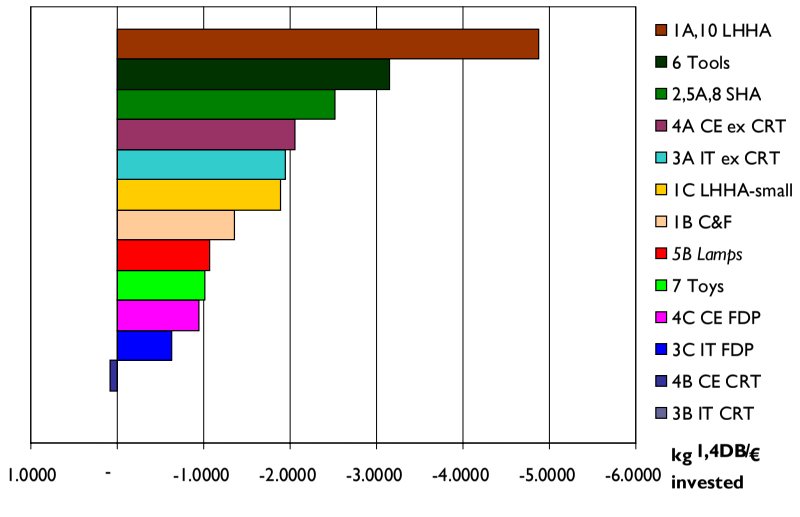

1A,1C LHHA
6 Tools
3A IT ex CRT
4A CE ex CRT
1B C&F
1C LHHA-small
2,5A,8 SHA
4B CE CRT
3B IT CRT
4C CE FDP
3C IT FDP
7 Toys
5B Lamps
- -20.00 -40.00 -60.00 -80.00 - - - - - 100.00 120.00 140.00 160.00 180.00
MJ/€ invested

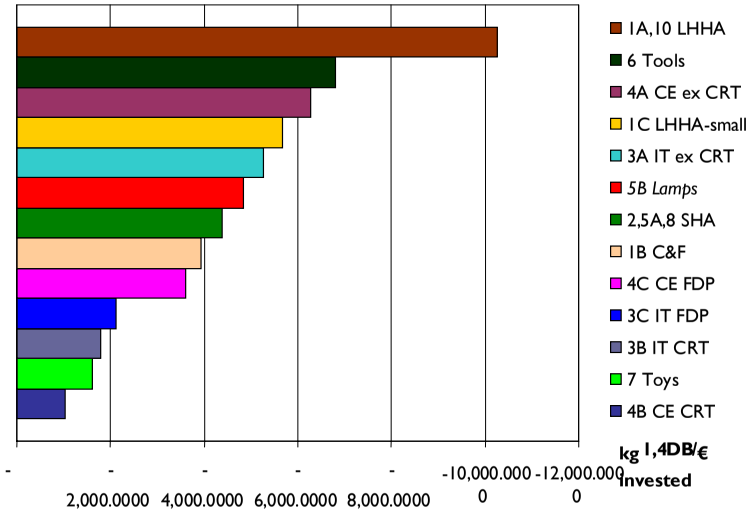

1A,1C LHHA
6 Tools
3A IT ex CRT
1C LHHA-small
1B C&F
4A CE ex CRT
2,5A,8 SHA
4B CE CRT
3B IT CRT
4C CE FDP
7 Toys
3C IT FDP
5B Lamps
- -0.02 -0.04 -0.06 -0.08 -0.10
kg Sb/€ invested

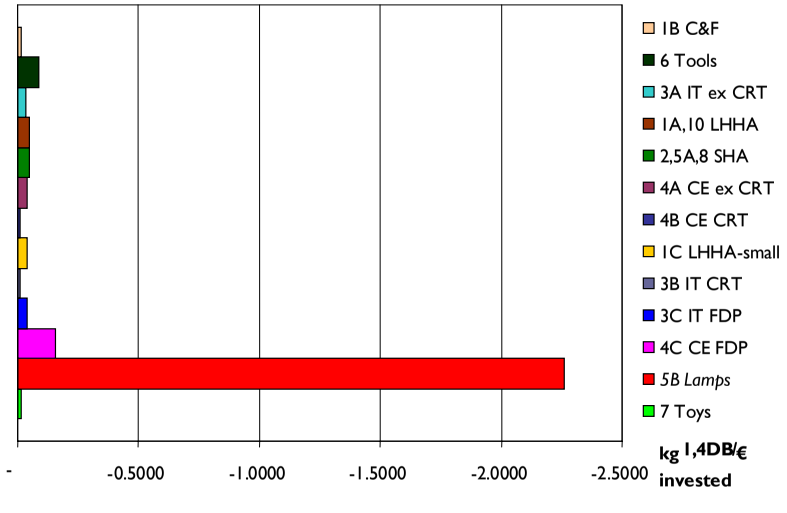

1B C&F
6 Tools
3A IT ex CRT
1A,10 LHHA
2,5A,8 SHA
4A CE ex CRT
4B CE CRT
1C LHHA-small
3B IT CRT
3C IT FDP
4C CE FDP
5B Lamps
7 Toys
- -20 -40 -60 -80 -100 -120 -140
kg CO2/€ invested

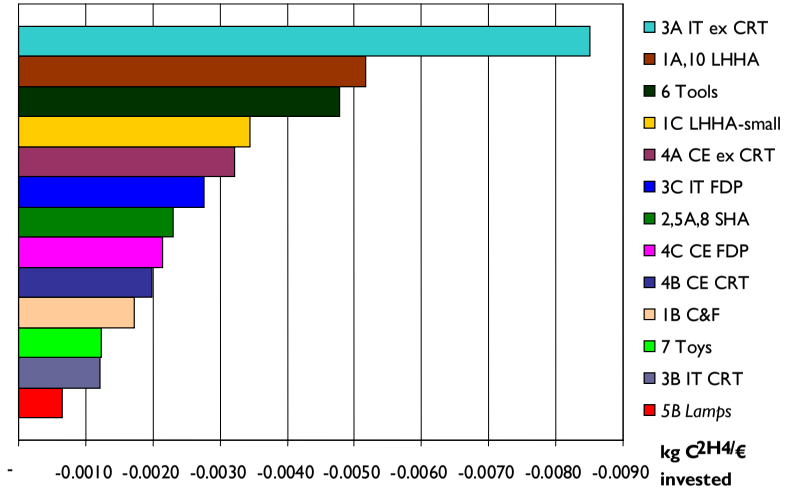

1B C&F
6 Tools
3A IT ex CRT
1A,10 LHHA
2,5A,8 SHA
4A CE ex CRT
4B CE CRT
1C LHHA-small
3B IT CRT
3C IT FDP
4C CE FDP
5B Lamps
7 Toys
- -0.0050 -0.0100 -0.0150 -0.0200
kg CFC/€ invested

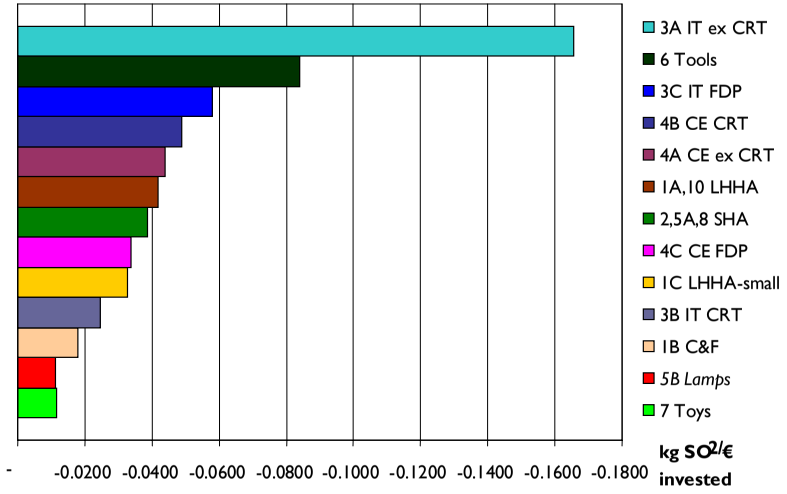

1A,10 LHHA
6 Tools
2,5A,8 SHA
4A CE ex CRT
1C LHHA-small
3A IT ex CRT
5B Lamps
1B C&F
4C CE FDP
7 Toys
3C IT FDP
3B IT CRT
4B CE CRT
- -5.0000 - - - - - - -
10.0000 15.0000 20.0000 25.0000 30.0000 35.0000 40.0000
kg 1,4DB/€ invested


1A,10 LHHA
6 Tools
2,5A,8 SHA
4A CE ex CRT
3A IT ex CRT
1C LHHA-small
1B C&F
5B Lamps
7 Toys
4C CE FDP
3C IT FDP
4B CE CRT
3B IT CRT
1.0000 - -1.0000 -2.0000 -3.0000 -4.0000 -5.0000 -6.0000
kg 1,4DB/€ invested


1A,10 LHHA
6 Tools
4A CE ex CRT
1C LHHA-small
3A IT ex CRT
5B Lamps
2,5A,8 SHA
1B C&F
4C CE FDP
3C IT FDP
3B IT CRT
7 Toys
4B CE CRT
kg 1,4DB/€ invested
- - - - - -10,000.000 -12,000.000
2,000.0000 4,000.0000 6,000.0000 8,000.0000 0 0


1B C&F
6 Tools
3A IT ex CRT
1A,10 LHHA
2,5A,8 SHA
4A CE ex CRT
4B CE CRT
1C LHHA-small
3B IT CRT
3C IT FDP
4C CE FDP
5B Lamps
7 Toys
kg 1,4DB/€ invested
- -0.5000 -1.0000 -1.5000 -2.0000 -2.5000


3A IT ex CRT
1A,10 LHHA
6 Tools
1C LHHA-small
4A CE ex CRT
3C IT FDP
2,5A,8 SHA
4C CE FDP
4B CE CRT
1B C&F
7 Toys
3B IT CRT
5B Lamps
kg C2H4/€ invested
- -0.0010 -0.0020 -0.0030 -0.0040 -0.0050 -0.0060 -0.0070 -0.0080 -0.0090


3A IT ex CRT
6 Tools
3C IT FDP
4B CE CRT
4A CE ex CRT
1A,10 LHHA
2,5A,8 SHA
4C CE FDP
1C LHHA-small
3B IT CRT
1B C&F
5B Lamps
7 Toys
kg SO2/€ invested
- -0.0200 -0.0400 -0.0600 -0.0800 -0.1000 -0.1200 -0.1400 -0.1600 -0.1800

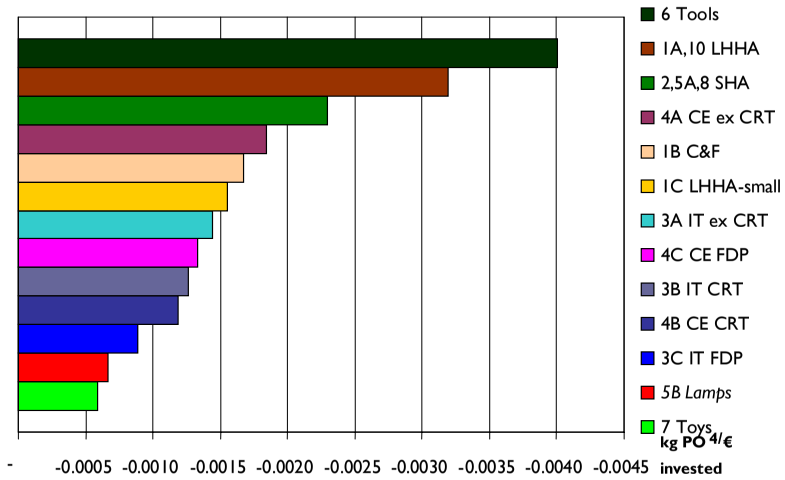


Figure lii: Eco-efficiency of preventing disposal per category

Annex 10 Written Response on Options

The following document displays the written response of participants of the expert workshop on the options for change of the Directive, as presented at the Workshop on 15th of March in Brussels. Comments have not been subject to any changes. To keep for anonymity, each respondent is represented by a number in brackets given behind their comment.

Working Group 1 Changes to the Scope of the Directive

Increase, Add, Maintain or Delete (entry-specific) requirements

- 1.1.1 Add new types of equipment, not listed in WEEE Annex IB
- 1.1.2 Review of the exclusions of 'part of another equipment'
- 1.1.3 Review of the exclusions of 'military equipment'
- 1.1.4 Review of the exclusions of 'large-scale stationary industrial tools'
- 1.1.5 Review of the exclusions of 'implanted and infected products'
- Other? List of 'Types of Equipment' (*8*)
- 1.1.6 Base scope on article 95
- 1.1.7 Base scope on practical relevance (what is coming back in practice from private households, environmental relevance and cost efficiency)
- 1.1.8 Extend scope to further equipment (e.g.: EuP) (*4*)

Please fill this in where you think it is relevant:

	1. Is the option relevant or not? Why?
1.1.1	NO, existing problems should be solved first before thinking about adding new equipment to the scope; (remark: annexI.B does not constitute a list of type of equipment)
1.1.2	YES for clarifying article 2.1 (fixed installation/finished product to be incorporated into legal body of WEEE); NO for deletion of exclusion "part of another type of equipment"
1.1.3	NO, not relevant
1.1.4	NO, not relevant
1.1.5	NO, not relevant
1.1.6	YES to ensure that financing and marking for end of life treatment of all WEEE under the scope is ensured consistently in all member states; important to safeguard functioning of internal market
1.1.7	YES
1.1.8	NO *(4)*
1.1.1	~~YES~~/ **NO**. Actually Annex IB is not an exhaustive list and scope is determined by Annex IA. Moreover, the list of products in Annex IB is not referred in any form as the list of "types of equipment" that should be used for the calculation of market share and reporting required for the calculation of historical liabilities (e.g. new products make other obsolete and therefore should be under the same Type of Equipment). Moreover, this list will never be complete as new types of products appear on a continual basis.

1.1.2	~~YES~~ / **NO**. The modification of this point would create a lot confusion regarding the inclusion of parts and components that are actually 'part of another equipment".
1.1.3	YES/ NO – No position.
1.1.4	**YES**/ NO – No position regarding the exclusion of 'large stationary industrial tools' in Category 6. However this specific exclusion at only the Category 6 creates confusion regarding the inclusion of similar equipment in other Categories i.e. Category 3, 8 or 10. It is recommended to be consistent in the criteria for exclusion or non-exclusions across the different categories.
1.1.5	YES/ NO - – No position.
Other	**YES**/ NO – A list of 'Types of Equipment' related to the determination of the historical responsibility (article 8) and linked to the reporting obligations would be highly desirable. This List could be actually much shorter than current Annex IB and group types of products; eventually could be linked somehow to the actual collection groups and therefore with the responsibility for collection. (*8*)
1.1.1	YES – Flat displays like LCD and Plasma screens
1.1.2	YES – Since the aim of the of the WEEE Directive is to preserve, protect and improve the quality of the environment, protect human health and **utilise natural resources prudently and rationally** it is only logic that all E&E equipment should be included.
1.1.3	YES
1.1.4	YES
1.1.5	YES
Other	YES/ NO (*9*)
1.1.1	YES/ NO Yes. Many of the listings in Annex IB are too general and create uncertainty as to whether a particular product is in scope. A revised Annex with specific product types listed only and no open-ended listings would resolve much of the uncertainty.
1.1.2	YES/ NO No. This exemption is appropriate.
1.1.3	YES/ NO No. This exemption is appropriate.
1.1.4	YES/ NO No. This exemption is appropriate.
1.1.5	YES/ NO Yes. Consider extending this exemption to include all products requiring EU approval as a medical product.
Other	YES/ NO (12)
1.1.1	NO – Industry and other stakeholders across the EU are still struggling to comply with the existing requirements of, what is already, a very broad scope.
1.1.2	YES – The current definition (as given in the FAQ document) is similar to that for LSIT, (the derogation from Category 6 of Annex 1A), and needs further clarification and explanation.

1.1.3	YES – The dual purpose issue is not fully understood by many and it is also not clear whether the exclusion is for 'military **and** national security purposes' or 'military **or** national security purposes'.
1.1.4	YES – see reply to 1.1.2 above. There also seems to be no reason why an LSIT cannot be placed on the market as a single functional or commercial unit.
1.1.5	YES – Some industry stakeholders have claimed that equipment like hearing aids should benefit from this exclusion. The FAQ document or a possible revision to the Directive should make it clear how broad the derogation is intended to be.
Other	YES/ NO – No strong feelings but willing to consider any proposals that are made.
	(11)
1.1.1	YES
1.1.2	No opinion yet
1.1.3	"
1.1.4	"
1.1.5	"
Other	"
	(3)
1.1.1	Review list and categories on the basis of "Environmental Weight" and propose reuse/recycling and recovery targets based on this "Environmental Weight"
1.1.2	No
1.1.3	No
1.1.4	No
1.1.5	No
	(10)
Other	
1.1.1	In general it makes sense to keep the scope as it is. To delete part could of would rise the question of consumer why product "A "of electric and electronic device is covered by the WEEE, but product "B", what is used also by private households is not covered
1.1.2	
1.1.3	
1.1.4	
1.1.5	Special equipment like military, large scale stationary industrial are going (because of there difficult "removebility" treated in a certain way (Experience from Germany)
Other	No comments on implanted and infected products, as we do not have any experience.
	(13)

1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 Other	No not relevant for all. WEEE should focus in improvement of current systems, Inclusion criteria are large number of kilograms and/or environmental relevance (substances of concern or of high value) (7)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
1.1.1	Given diversity of appliances, a list can never be complete and therefore never provide legal certainty; remaining problems on the scope should be solved first before discussing extension of scope to further equipment since only clear legal requirements can give legal certainty and therefore help to achieve the environmental objectives
1.1.2	Legal certainty is a precondition for delivering any objective of WEEE; B2B equipment does not end up in the municipal waste stream. Its end of life treatment is in general solved on a contractual basis between the economic operators. No need to cause additional costs of B2B treatment according to WEEE, since not of practical relevance ; Fixed installations is a settled term derived from existing Community legislation that should be taken up in WEEE for the sake of consistency
1.1.3	No comment
1.1.4	Definition provided in COM F.A.Q. document should be incorporated into legal text to give legal certainty to the benefit of environment, economic and social objectives involved.
1.1.5	No comment
1.1.6	"175"-scope risks free-riding (with negative environmental, economic and social impacts)- if a product doesn't fall under the scope in country A, but then circulates to country B, it is neither marked to be collected separately nor has the financing for its end of life treatment been guaranteed; scope is interrelated with product aspects of WEEE (e.g.: financing, marking)
1.1.7	Would allow to address environmentally relevant waste stream first and therefore be more focused on areas where WEEE can really have an impact on the environment; end of life treatment of B2B is generally agreed between two business partners
1.1.8	Would be pre-mature and not automatically environmentally beneficial if scope were extended while not solving present problems in determining the scope first. *(4)*
1.1.1	Reduction of loopholes. Fairness in the assignment of responsibilities for Types of Equipment. No need to continuous update. Reduction of confusion and facilitation of compliance. It would foster more equality between countries and producers in eliminating interpretation divergences can only generate a positive environmental impact.
1.1.2	Little additional environmental impact since most of EEE part of another equipment is either in Professional equipment (not ending up in municipal waste streams) or in products covered by other legislation. Reduction of the confusion and double costing for components/parts finally incorporated in EEE.
1.1.3	

1.1.4	Consistent application of the criteria across different categories (either inclusion/exclusion) will help to establish an even playing field and would reduce confusion and the creation of loopholes.
1.1.5	Simplification of the reporting obligations. Cost reductions by associating responsibilities related to the placement of products on the market by Type with the actual collection.
Other	(8)
1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 Other	**General response** – the impact of clarifying these exclusions will generate a much clearer understanding of the scope of the Directive across all stakeholders in the EU, (MS Governments, industry and NGOs). This will help overall consistency and help achieve the overall environmental impact of the measure in all aspects. On the social side, it will enable the EU consumers of electrical equipment to understand the role that they have to play in this important sustainability issue. (11)
1.1.1	Add the few exceptions still remaining: eg. Filament lamps Filament lamps are excluded in category of Annex IB for now. This is confusing for consumers (as all WEEE, all lamps are collected except those). Those lamps contain also hazardous substances, e.g. lead; rough estimation for EU-15 indicates a use of 4000 tonnes of lead per year. For environmental reasons collection and recycling is justified. Recycling is technically and economically feasible. The cost depends on the discipline/quality of the collection but has been estimated at 1-2 eurocent per piece (compactlamps 20-25 eurocent per piece) Con: collection costs not known, but comparable to other lamps (3)
3.	**What data can either support or reject/ falsify these?**
1.1.1	See examples given in "Orgalime guide to understand the scope of WEEE and RoHS" for products that are ruled on differently in different member states
1.1.2	See "Key figures 2005" of the WEEE Forum: figures for B2B WEEE collected (i.e.: cat. 8-10) is low ; Bavarian Supreme Court ruling Az 23BV N0.3012
1.1.3	No comment
1.1.4	See examples given in "Orgalime guide to understand the scope of WEEE and RoHS" for products that are ruled on differently by different member states as well as examples given in Commission F.A.Q. document
1.1.5	No comment
1.1.6	See working documents TAC on "grey area products" that evidences differences in member states views on certain products
1.1.7	See "Key figures 2005" of the WEEE Forum: figures for B2B WEEE collected (i.e.: cat. 8-10) is insignificant. *(4)*

1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 Other	Inconsistent classification of Type of Equipment and relation with annex 1B. Confusion created around the definition of fixed-installation equipment as the way-out in other categories. Unclear and inconsistent definition of Type of Equipment used in different MSs. Assignment of responsibility for the collection based on market share of a very detailed type of equipment (e.g. telecom equipment) and the obligation to pick up contained containing unrelated products (e.g. mixed of category 2 small household equipment mainly). (8)
1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 Other	**General response** – I have sat on many discussions at both the European and national level over the past four years and heard the problems that the current definitions for key areas of the scope have brought. It would assist all of us to help achieve the aims and objectives of this important piece of European legislation if these areas of uncertainty can be minimised. (11)
1.1.1	On the use of lead in light bulbs: contact KEMI in Sweden. (3)
1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 Other	In general current situation of WEEE shows that there is low collection and systems are not performing well. Therefore WEEE should focus on improvement of current scope before including new categories. Criteria for inclusion of are large number of kilograms and/or environmental relevance (substances of concern or of high value) (7)

Readdress the split between B2B and B2C equipment/ non-harmonised scope in the EU

- 1.2.1 Applying a '95' character for the scope
- 1.2.2 Differentiation per (sub)category: F.i. lamps as B2C only, cat. 8,9,10 B2B only.
- 1.2.4 No change
- Other? 1.2.4 Exclude B2B equipment *(4)*

Please fill this in where you think it is relevant:

	1. Is the option relevant or not? Why?
1.2.1	YES, WEEE embeds product related requirements in a waste management legislation; different scopes cause different product related requirements (financing, marking) within the internal market
1.2.2	Better than what is in WEEE now, but only second best alternative in comparison to 1.2.4
1.2.3	NO, existing present problems on WEEE scope are mainly related to B2B; review should be an opportunity to solve B2B issue
1.2.4	Bureaucratic burden and cost of establishing B2B WEEE schemes which can today not operate satisfactorily due to reduced numbers of appliances coming back; this is logical because normal practice in B2B is to reach an agreement between the professional client and professional supplier at sale. *(4)*
1.2.1	**YES**/ NO – In general, do recommend to have a dual basis and apply '95' character to the obligations related to the placement of products on the market while '175' for the waste management aspects. Scope should clearly have a '95' character.
1.2.2	YES/ **NO** – Rather than assigning B2B or B2C character to some of the categories it is important to establish a common set of criteria (e.g. EICTA's) to help in the differentiation between B2B and B2C consistently. Additionally, the reference to 'household' in Category 1, tends to indicate that non-household large refrigeration equipment is excluded. And B2C products can be found for category 9 and 10 also. Other criteria than equipment category/type are used to determine B2B/B2C distinction (distribution channel). Going back to a more simple but less adapted distinction could have adverse environmental effects in switching waste flow to less appropriate collection schemes (typically municipal schemes for B to B equipment). Dual use products should be classified as B2C.
1.2.4	YES/ **NO** - Common criteria for the differentiation between B2B and B2C, otherwise, same products could be classified as B2B or B2C in different MSs and this would create a market barrier by establishing different requirements regarding financial regime and guarantees, retroactive liabilities, marking, etc.
Other	(8)
1.2.1	YES – This would be the best solution for harmonizing many aspects. The different interpretations, omissions and additions in the various member states creates market disruptions for legitimate recyclers.
1.2.2	YES/NO
1.2.4	YES/ NO
Other	YES – At present > 2/3 of the WEEE put on the market is unaccounted for in terms of recycling. This is unacceptable. The scope of the WEEE legislation should be changed in such a way that after collection from consumers or businesses it should be compulsory to submit WEEE to approved and authorized take back organisations or approved and authorized recyclers. *(9)*
1.2.1	NO – The RoHS Directive already has a 95 basis but the considerable uncertainty over the extent and breadth to the scope issue still remains. Clarifying definitions as much as possible is

	a far better (and easier route) than a change to the legal base of any revision to the original Directive.
1.2.2	MAYBE! – could help, but any proposals would need to be thought through very carefully.
1.2.4	NO – Some changes on scope need to be included in any proposals for the Directive's revision, otherwise current uncertainty will continue.
Other	YES/ NO
	(*11*)
1.2.1	NO
1.2.2	YES/ NO
1.2.4	YES/ NO
Other	YES/ NO
	(*3*)
1.2.1	YES harmonisation is needed to created a level playing flied within the area of European Union as well for WEEE treatment, recycling and recovery
1.2.2	YES B2B should be defined more specific. Dual use appliances make things more difficult
1.2.4	NO – see comments above
Other	YES/ NO
	(*10*)
1.2.1	YES/ It causes problems for producers that the scope is not the same in all countries. YES/ NO
1.2.2	YES/ NO
1.2.4	YES/ NO
Other	(*14*)
1.2.1	YES/ NO – yes, harmonisation is need to created a level playing flied within the area of European Union as well for WEEE treatment, recycling and recovery
1.2.2	YES/ NO yes B2B should be defined more specific. Dual use appliances make things more difficult
1.2.4	YES/ NO – see comments above
Other	YES/ NO
	(*13*)
1.2.1	YES~~/ NO~~ Harmonization is one of the major improvements of the directive. Especially SMEs are having problems with the different requirements in different countries related to registration, producer definition and reporting.
1.2.2	YES~~/ NO.~~ Same products should be treated the same way. For lamps and IT equipment there is difference between B2B and B2C which leads competitor disadvantage between producers based on the categorisation.

1.2.4	~~YES/~~ NO, see above
Other	YES/ NO (7)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
1.2.1 1.2.2 1.2.4	"175"-scope risks free-riding; art 95 better basis for combating free riding No negative environment inputs since end of life treatment forms part of agreement between business operators; B2B rarely comes back in municipal waste stream Bureaucratic burden and cost of separate WEEE scheme for B2B increase while environment protection is not improved. *(4)*
1.2.1 1.2.2 1.2.4 Other	'95' character for obligations related to the placement of products on the market such as SCOPE will reduce existing market barriers resulting from the definition of Producer at national level and will establish a common playing field for the the operators in the community. Otherwise, some products could end up being in-scope at a MS and out-of-scope in others. This would greatly affect the free movement of goods and the common market since impacts the obligations related to marking, identification of producer, registration, etc. As a potential con, could complicate the control of the compliance to Producers based in 3rd EU MSs, but this could be controlled by making them subject to the same obligations of local producers in the Registration process. Reduction of the pressures to exempt some of the products from obligations by forcing its classification as B2B. Some economic impact by applying B2C regime to dual use products; that however in some cases actually can migrate to B2C. In any case overall simplification and reduction of the administrative burden and facilitation of enforcement. No environmental impact. Reduction of market barriers. Reduction of compliance costs to Producers and Enforcement agencies by applying common criteria. (8)
1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 Other	**There are no cons to increasing certainty as to which products are in scope. Further, certain exemptions continue to be appropriate as per the intent of the WEEE Directive.** (*12*)
1.2.1	Article 175 of the Treaty gives the environmental goal the highest priority and allows Member States to go further. Art. 95 the internal market limits the possibilities of MS. The fact that the

	functioning of the internal market is involved is not enough to recourse to the article 95. (3)
1.2.1 1.2.2 1.2.4 Other	Less confusion and better for the internal market. (14)
1.2.1 1.2.2 1.2.4 Other	Leads to higher efficiency of the total system is all MSs. Minimizes administrative burden at producers which does not add value in relation to the objective of WEEE. A level playing field is key to ensure a free movement of goods. Currently the exact the same products (lamps, luminaries, mobile phones and IT equipment) are treated differently and these systems have different performance when considered B2B or B2C. Both in collection rates, financial & environmental performance are different. This is a not level playing field as from waste perspective the waste stream a exact the same. (7)
3. What data can either support or reject/ falsify these?	
1.2.1 1.2.2 1.1.3 1.2.4	See examples given in "Orgalime guide to understand the scope of WEEE and RoHS" for products that are ruled on differently by different member states as well as examples given in Commission F.A.Q. document See "Key figures 2005" of WEEE Forum See examples given in "Orgalime guide to understand the scope of WEEE and RoHS" for products that are ruled on differently by different member states as well as examples given in Commission F.A.Q. document See "Key figures 2005" of the WEEE Forum: figures for amount of B2B WEEE collected (i.e.: cat. 8-10) is low *(4)*
1.2.1 1.2.2 1.2.4	The application of the Producer definition at national level de-couples the responsibility from the actual producer from the management of the waste, since this last obligation is assumed by distributors and therefore WEEE is simply an added cost. Producers in a MS are currently blocked to sell their products in other MSs since are unable to register or are subject to obligations they can not meet (e.g. financial guarantees in a particular form in Germany). Some products are considered B2C in some countries while B2B in others and the criteria re different (weight, dimension, etc.) which make difficult the compliance with the obligations and the intra-community trade.

Other	(*8*)
1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 Other	**Under Category 3, the following general listings have created much uncertainty regarding scope: "other products and equipment for the collection, storage, processing, presentation or communication of information by electronic means" and "other products or equipment of transmitting sound, images or other information by telecommunciations."** (*12*)
1.2.1 1.2.2 1.2.4 Other	There is no subsidiarity reason to allow different scope / country. (14)
1.2.1 1.2.2 1.2.4 Other	Many country specific cases are known that support these ideas. There are several cases that can be specified such as The Netherlands, Germany Ireland. (*7*)

Alternative Definitions

- 1.3.0 Maintain current listing
- 1.3.1 Waste stream instead of a product scope
- 1.3.2 Criteria lists
- 1.3.3 Reference product lists from other nomenclature
- 1.3.4 Self-declaration by industry
- Other? **Revise the definition of "Electrical and Electronic Equipment (EEE)"** (*12*)
- The scope should be set with this principle in mind: **"products that occur in the WEEE waste stream need to be in the scope of the WEEE legislation".** (*14*)

Please fill this in where you think it is relevant:

1. Is the option relevant or not? Why?	
1.3.0	YES/ NO
1.3.1	YES, if understood that scope should be based on practical relevance (what is coming back in

	practice, environmental relevance and cost efficiency)
1.3.2	YES, criteria of COM F.A.Q. to be included in legal body of WEEE (especially clarification of article 2.1)
1.3.3	NO, a list can never be complete given sheer number of different EE appliances in various sectors and can therefore not provide necessary legal certainty and level playing field (internal market implications)
1.3.4	YES/NO
	(4)
1.3.0	YES/ NO Unclear question, Annex IA, definitions?
1.3.1	YES/ / **NO** – Determination should be made when equipment is put on the market for financial reasons (provisions, etc). Determination based on waste streams is too late and identical
1.3.2	products can appear in different streams.
1.3.3	YES/ NO – Unclear about the meaning of this entry. Criteria should be clear and be commonly applied.
1.3.4	**YES**/ NO – Would greatly facilitate the determination of products in/out scope, classification in categories, reporting, etc.
Other	(*8*)
1.2.1	YES/ NO **Yes. The distribution networks of many companies include centralised warehouses that ship into several different EU countries. If the scope varies between countries, this places significant burden and costs on manufacturers and the distribution networks. The WEEE Directive cannot effectively function as intended without substantial harmonization on scope and many other key requirements.**
1.2.2	YES/ NO **Maybe. This option would not be feasible for all categories, but could be appropriate for some.**
1.2.4	YES/ NO **No. Currently, there is too much variation between countries regarding scope and distinction between B2B and B2C.**
	(*12*)
Other	YES/ NO
1.3.0	NO – As a minimum the broad categories (particularly numbers 1, 2 and 4) need to be clarified or redefined as there is a general reluctance from some stakeholders to accept that non-household and non-consumer equipments is currently covered.
1.3.1	MAYBE – Worth further investigation.
1.3.2	NO – Probably not, as it would prove extremely difficult to come up with criteria in the body of a Directive that would work. Better left to supporting Commission guidance.
1.3.3	MAYBE – Again worth further investigation.
1.3.4	NO – Can't see how this would operate without increasing the risk of 'free riders'

Other	YES/ NO (*11*)
1.3.0 1.3.1 1.3.3 1.3.2 1.3.3 1.3.4 Other	YES YES/ NO YES/ NO YES/ NO YES/ NO YES/ NO YES/ NO (*3*)
1.3.0 1.3.1 1.3.3 1.3.2 1.3.3 1.3.4 Other	YES, but review groups in terms of "environmental weight" YES/ NO ? YES/ NO ? YES/ NO ? YES/ NO ? YES/ NO ? YES/ NO (10)
1.3.0 1.3.1 1.3.3 1.3.2 1.3.3 1.3.4 Other	YES/ NO YES/ Interesting YES/ NO YES/ NO YES/ NO YES/ NO YES/ Producers of the products that are under the scope, and run the recycling systems, shall not end up recycling and financing the recycling of some products that are not in the scope and where the producers of these products do not take part to the recycling systems. This is incorrect. E.g. gas household ovens appear in the WEEE waste stream in all countries, but gas ovens are not in the scope of WEEE legislation in all countries. The scope should be set with this principle in mind: **"products that occur in the WEEE**

	waste stream need to be in the scope of the WEEE legislation". (14)
1.3.0 1.3.1 1.3.2 1.3.3 1.3.4 Other	YES, In general current listing in Annex 1 are sufficient. In some cases there are grey area products. Basically we should focus main products in the WEEE. YES Relevant option, conditions is that some harmonization is done the waste streams in the different countries. YES/ Criteria should be volume in the market in Kgs and/or environmental relevance (substances of concern and/or value) 1.3.3. is clear what is exactly meant. No, leaving the definition of the scope to the self declaration does not look like a good idea, this could be creating loop holes in the directive. (7)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
1.3.0 1.3.1 1.3.2 1.3.3 1.3.4	 Would target real environment problems; would combat free-riding Clear scope would combat free riding and foster level playing field with all its positive impacts (legal certainty; fair competition; protect environmental) Procedure to decide what is on a list or not is too slow and thereby allow free riding *(4)*
1.3.0 1.3.1 1.3.3 1.3.2 1.3.3 1.3.4 Other	 Facilitation of compliance. Common definition would increase harmonisation and therefore reduce market distortions. (*8*)
1.2.1 1.2.2	**The impact would be more efficient and predictable operation of the WEEE Directive throughout the EU. There are no cons to improving a system that is not functioning as originally intended. All reasonable options for improvement should be considered**.

1.2.4 Other	(*12*)
1.3.0	Unless there are real problems with the scope and categories, it seems wise to keep on using the same in stead of changing administrative procedures for many involved stakeholders and countries. (*3*)
1.3.0 1.3.1 1.3.3 1.3.2 1.3.3 1.3.4 Other	Less free riding (*14*)
1.3.0 1.3.1 1.3.2 1.3.3 1.3.4 Other	- no change This would improve efficiency of WEEE as now products of similar materials characteristics can be treated in same waste stream (e.g. including luminaries in white goods). This improve the efficiency. Basically the 80-20 rule can apply as shown during the meeting. Only a small number of products are causing of the most relevant categories. It does not make sense to target small products (50 gr) in small volume that have a low environmental relevance. --- negative, Review should focus on closing loop holes instead of creating new ones. (*7*)
3. What data can either support or reject/ falsify these?	
1.3.0 1.3.1 1.3.3 1.3.2 1.3.3 1.3.4	"Key figures 2005" WEEE forum (*4*)
1.2.1 1.2.2	**In Netherlands, the product weight is important in determining whether a product is B2B or B2C. Other countries use more subjective criteria. There are numerous other examples of varying scope between countries.**

1.2.4 Other	(*12*)

Additional Comment Working Group 1 – Change to the Scope

Following up on the main findings in the societal evaluation, the definition of scope of the WEEE Directive, as currently defined in Article 2 and Annexes 1A and 1B, can potentially be improved by the following groups of options in order to obtain a more harmonised approach across EU:

- *The use of inclusion/exclusion criteria for products (currently borderline, new products or products falling in or out of the scope in different Member States) or categories of products (military equipments, large scale industrial tools, implanted and infectedproducts).*
- *The approach by product categories (currently used in definition of scope and requiredfor reporting to EC National targets to be achieved) versus waste stream categories (currently used in separate collection and treatment facilities).*
- *The split/definition of household (B2C) versus non-household (B2B).*

(*1*)

Working Group 2 Collection Targets

Increase, Add, Maintain or Delete (entry-specific) requirements

- 2.1.1 Maintain current targets
- 2.1.2 Higher collection targets for more 'relevant' WEEE
- 2.1.4 Specific collection targets per (sub)category
- 2.1.3 Alternative definition: % based on previous years put on market
- Other? Specific targets

(15)

Please fill this in where you think it is relevant:

	4. Is the option relevant or not? Why?
2.1.1	~~YES/~~ NO My personal opinion is to take into the consideration possibility to delete targets for take back at all from new version of directive. Why? It is OK to measure take back amounts but, how do benefit from Xkg/inh target? What if one member state does not reach the target, but only 3,5 kg/inh level is achieved, but because of standard of living and other local circumstances for example, it is maximum. What kind of penalties the member state may face in such case, if at all ?? Of course, deleting targets should bring set up other equivalent requirements serve the idea of "available and accessible" WEEE return possibilities for end-users, which actually serve same idea as x kg/inh. rule.
2.1.2	~~YES~~/ NO
2.1.4	~~YES~~/ NO
2.1.3	~~YES~~/ NO
Other	**YES**/ ~~NO~~ idea! to create targets/requirements for availability and accessibility of the necessary

	collection facilities. In the current wording of directive "availability and accessibility" is not defined. *(2)*
2.1.1 2.1.2 2.1.4 2.1.3 Other	NO NO – there is no such thing as more relevance NO – see 2.1.2. NO – contraproductive see other YES – individual target per Member State (relate to findings from Jim Poll GDP and returned WEEE volumes are linked) *(5)*
2.1.1 2.1.2 2.1.4 2.1.3 Other	NO - Only 28,5% of WEEE are collected, based on an average of 14 kg in the (old) EU MS YES – Small appliances, which otherwise go into not separated, residual waste YES – Mobile phones which contain hazardous substances (batteries, mercury) but also precious metals which go to landfills and incineration, but also electrical tooth brushes, knives, … YES – Ambitious targets in different markets cannot be set by mass volumes like kg. Otherwise: waste of resources sells in MS which put more EEE on the market than others *(3)*
2.1.1 2.1.2 2.1.4 2.1.3 Other	YES: There is no evidence to suggest that current targets should be changed. UNKNOWN: Further detail and explanation of this option in required. In particular how producers' obligations would be calculated, the criteria used to determine the 'relevance' of WEEE, and how producers could comply individually through this route. UNKNOWN: Further detail and explanation of this option in required. In particular how producers' obligations would be calculated, the criteria used to determine the 'relevance' of WEEE, and how producers could comply individually through this route. NO: This suggests that consumers throw away their product after one year. It is very difficult to determine an exact relation between the date of placing a product on the market and the date that the consumer decides to return that product. For IT equipment, consumers dispose their products after 7-9 years. YES/ NO *(6)*
2.1.1 2.1.2 2.1.4	NO, collection targets should be based on percentage of material placed on the market see above YES – per category see above

2.1.3	YES – indeed
Other	YES/NO *(10)*
2.1.1	/ NO 4kg/capita for all EU countries does not work at all for some and is not challenging for others.
2.1.2	YES/ NO
2.1.4	YES/ NOYES/ Collection target needs to relate to the amount of EEE sold in the country X number of years ago, where X=the average life time per product category.
2.1.3	YES/ NO
Other	*(14)*
2.1.1	YES/ ~~NO~~. Yes, why some countries collect app. 15 kg / capita any year and other (with probable the same EEE consumption) only 4-6 kg / capita and year. Collection target should be 8 kg / capita and year – or at least link to the average consumption rate (measured by sales figures through the register?)
2.1.2	YES/ NO – see above
2.1.4	YES/ NO – could be difficult in real life
2.1.3	YES/ ~~NO~~ YES!! This would reflect a realistic target with considering the local situation
Other	YES/NO *(13)*
2.1.1	YES/ ~~NO~~
2.1.2	YES~~/ NO~~
2.1.4	YES/ ~~NO~~
2.1.3	YES/ ~~NO~~
Other	YES/ NO *(7)*
2.1.1	NO – Target of 4 kg/inh/yr should significantly be increased. 8 kg/inh/yr should be the minimum. A charming solution is to set a target on basis of the volume (%) that is put on the market in order that target for the new member states is not necessarily the same as for western European countries.
2.1.2	YES – WEEE with high toxic risk should be collected for 100 %.
2.1.4	YES/ NO
2.1.3	YES/ NO
Other	YES/ NO (9)

2.1.1	NO
2.1.2	YES. See 2.1.4.
2.1.4	YES. Looking for European mines (very few) and the ratio of resources consumption on China, India,….If we don't collect as much as possible of NO renewable and high energetic cost renewable resources, for EU, the WEEE Directive is a fruitless passion and the Sustainable Development a pipe dream.
2.1.3	YES. On mature markets could be a representative ratio.
Other	YES. Specific targets regarding WEEE or components containing no renewable or high cost renewable resources.
	(15)
2.1.1	There should be at least no increase of the present target prior to all member states reaching it; priority to be on establishing missing infrastructures and information campaigns on consumers to return WEEE
2.1.2	NO, major reasons for failures to reach the target is insufficiency or absence of the collection infrastructure and different amount of WEEE generated in new member states due to different historic market situation or geography
2.1.4	NO, same as previous
2.1.3	YES/NO, necessary data may not be available in all member states
	(4)
5. What will the impacts be (environmental, economic, social)? Pro's and cons?	
2.1.1	Cons: Leakage cannot be avoided, producers are held responsible to reach collection targets by some MS, including penalty system via taxation.
2.1.2	
2.1.4	
2.1.3	
Other	*(5)*
2.1.1	Current collection target is very low for many EU countries, especially as the idea is to collect all WEEE in the end. 8 kg target has already been suggested in 2000. Too low targets allow too many leakages.
2.1.2 and 2.1.4	Current 4 kg target gives no incentive to collect small appliances (4kg can be reached without collecting any small appliance), though collection is for environmental reasons (hazardous substances) as important as for other WEEE. Especially needed for those categories where current implementation shows the biggest leakage.
2.1.3	It has been suggested to base the collection target on the amount of new EEE sold, already in 2000. With the enlargement of the EU, and the big differences in consumption of EEE in the 27 MS, one target based on kg for all MS will have to be set to the lowest EEE consumer and this

	would not drive the implementation of WEEE directive. If it is expressed as a % based on amounts put on the market, we have differentiation between the Member States and harmonisation in the achievement of the goal. *(3)*
2.1.1 2.1.2 2.1.4 2.1.3 Other	It would be necessary to conduct a thorough environmental and economic assessment of any alternative targets. This is difficult to assess without further detail regarding the rationale and logistics of this option. Further detail should be presented and discussed with stakeholders. This is difficult to assess without further detail regarding the rationale and logistics of this option. Further detail should be presented and discussed with stakeholders. *(6)*
2.1.1 2.1.2 2.1.4 2.1.3 Other	Continued unnecessary pressure on those members states where the sales of products X years ago was not large enough to generate a quantity of waste today that is enough to reach the target. Realistic targets give realistic solutions. *(14)*
2.1.1 2.1.2 2.1.4 2.1.3 Other	We are way below target, so making the system work must be first priority A minimal level for lamps is better, as this allows specialized collection schemes and lamps need more handling than other products Above Can be a good way, provided equal terms apply for all players active in the market for this category *(7)*
2.1.1 2.1.2 2.1.4 2.1.3 Other	 Economic. Shortage of no renewable resources. Who has the raw materials has the key of the market. Social. If there are not enough resources available development become difficult *(15)*

2.1.1	Increase of targets would put unnecessary pressure on new member states where the sales of products years ago was not sufficiently large to generate the quantity today to reach the target
2.1.2	Increases legal uncertainty, especially for member states that cannot generate enough WEEE given different historic market situation
2.1.4	If new member states don't meet present horizontal 4kg target, they may not reach targets per category either
2.1.3	Realistic targets require sound and comprehensive data but then can give realistic solution
2.1.5	*(4)*
6.	**What data can either support or reject/ falsify these?**
2.1.1	Collection data of various countries show the target is very low.
2.1.2 and 2.1.4	Small appliances can be easily thrown away with the other household waste, don't count much for producers or countries in the general target, therefore specific targets for those combined with educational programs should help.
2.1.3	E.g. Belgium uses already the percentage sold for a year as the basis to calculate the amount in kg to be collected as target (50 %).
	(3)
2.1.1	See LCAs of the WEEE Directive conducted by Price Waterhouse Coopers among others.
2.1.2	See LCAs of the WEEE Directive conducted by Price Waterhouse Coopers among others.
2.1.4	See LCAs of the WEEE Directive conducted by Price Waterhouse Coopers among others.
2.1.3	
Other	*(6)*
2.1.1	When some of these countries have realised they can not reach the 4kg target they have simply passed the problem over on industry by giving the full collection responsibility to producers in national laws. That does not solve the problem at all. It just shifts the problem to the industry.
2.1.2	
2.1.4	
2.1.3	
Other	*(14)*
2.1.1	
2.1.2	
2.1.4	Look for reserves of oil, gas, copper, gold, silver, palladium, platinum, indium, tantalum, etc. and
2.1.3	look for the increasing annual global consumption.

Other	Look for environmental impact and energy consumption of virgin Fe, steel or aluminium. Look for the increasing annual global consumption. Parameter not controlled, parameter not working et all. *(15)*
2.1.1 to 2.1.3	See "key figures 2005" WEEE Forum; Transposition laws of member states that fail to achieve the present collection target shifted responsibility for collection to producers. This does not solve the problem. *(4)*

Avoiding leakage from the collection infrastructures

- 2.2.1 Mandatory hand in by retail and municipalities at certified compliance schemes.
- Mandatory hand in by retail and municipalities at certified compliance schemes.

I believe it is a principle which is already in place and must be followed by retailers and municipalities. I mean "individual responsibility" for example can not be achieved in any other way, than end-of-life appliances must returned to producer or holder of finances for appropriate treatment of WEEE from its products. (2)

- 2.2.2 Formulate mandatory trade-in mechanism
- 2.2.3 Formulating a minimum number of collection points

➢ Other? Stronger state supervision (2) Full payment by producers to municipalities or reuse-centres for collection *(3)*

Please fill this in where you think it is relevant:

1. Is the option relevant or not? Why?	
2.2.1 2.2.2 2.2.3 Other	~~YES~~/ NO ~~YES~~/ NO **YES**/ ~~NO~~ **YES**/ ~~NO~~ Any leakage can be avoided if all stakeholders dealing with WEEE follow strictly what are their rights and obligations concerning WEEE (incl. consumers). But, "supervision, supervision, supervision" are probably same important key factors of success as "location, location, location" in retail business. *(2)*
2.2.1 2.2.2 2.2.3 Other	YES - NO NO *(5)*
2.2.1 2.2.2	YES YES

2.2.3 Other	YES YES *(3)*
2.2.1 2.2.2 2.2.3 Other	NO: The WEEE Directive should not be used to restrict market access by imposing restrictions on distribution practices. NO, you cannot force the consumer to hand in old products. As mentioned before, the WEEE Directive should not be used to restrict market access by imposing restrictions on distribution practices. NO – this should be subject to the Member States – issue of subsidiarity. *(6)*
2.2.1 2.2.2 2.2.3 Other	YES As municipalities and retailer "cherry pick" and leave the "costly WEEE" to the compliance schemes and take own action of value able materials YES see above NO – Scandinavia and Benelux have completely different population densities – defining Collection Points per Million (CPM) is not practical. *(10)*
2.2.1 2.2.2 2.2.3 Other	YES/ NO If such trade-in programs were to be financed by producers, the producers would need to finance this by increasing product prices. *(14)*
2.2.1 2.2.2 2.2.3 Other	yes way for improvement (bad examples of Netherlands and Germany, where many WEEE is managed through scraps (mainly looking for metal, but do not care on the remaining fraction (plastics etc.)). Municipals and retailer leave the "cost WEEE" with producer and compl. Schemes, and take own action of value able materials yes, possibel improvememt in collection could be a result yes, bad covered areas have the worst collection rate (e. g. max. population per collection point) *(13)*

2.2.1	YES/ ~~NO~~
2.2.2	~~YES~~/ NO
2.2.3	~~YES~~/ NO
Other	YES/ NO
	(7)
2.2.1	YES – in order to overcome the ongoing trading by municipalities. It is not necessary to restrict this to certified compliance schemes. Also approved and authorized take back by an individual producer or recycler should be possible.
2.2.2	YES
2.2.3	NO – not necessary. Economy of scale is important.
Other	YES/ NO
	(9)
2.2.1	YES, mandatory return for consumers and retailers to "official infrastructure" could help
2.2.2	NO, too complex at this stage
2.2.3	NO, is a national competence; number of necessary collection points depends on local particularities of a member state and should therefore be organised at the level of member states
	(4)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
2.2.1	But difficult to control
2.2.2	Difficult
2.2.3	Same problem as one-size-fits-all collection target as infrastructures and logistical preconditions are very different. Logistic costs are driving costs for total costs
Other	
	(5)
2.2.1	Yes, if reuse-centres are included too as essential in the chain, as a possible collection point and as in-between collection and recycling. Mandatory would make consumers aware of their duty, but it should not lead to a short-cutting of the reuse-centres by forwarding WEEE from retailers or municipalities directly to treatment and recycling installations (which seems to be the case in many countries now, access to reusable WEEE is lower due to collection after which retailers are obliged to give the WEEE to the producers scheme).
2.2.2	Based on the priority of reuse WEEE should be regarded as reusable as long as there is no proof of the contrary. Reuse-centres should be the "authority" to decide which WEEE is allowed to go the way of manual or mechanical pre-treatment. Reuse inspectors from Work Integration Social Enterprises (WISEs) should decide also within take back schemes outside reuse-centres whether WEEE has to be reused or pre-treated manually or mechanically: this could be the fundament for the preferable ecological and social benefits from the updated WEEE Directive. Better reuse quotas, better collection of hazardous components (manual pre-

	treatment), more products for the poor, and more employment of people at risk.
2.2.3	Yes. By lack of nearby collection points, less WEEE will be collected. Reuse-centres as possible collection point can play an important role in achieving this. The success of reuse of WEEE depends on getting them at the earliest stage of collection
Other	Those responsible for collection, municipalities as well as reuse-centres, should be rewarded fully by producers (financial responsibility), this would stimulate reception facilities and more separate collection. The quality of collection determines the possibilities for reuse and recycling. *(3)*
2.2.1	
2.2.2	This would take money from some consumers and give to others. In addition such a "deposit"/trade-in scheme would need to be managed on a European level (same trade-in fees for each product category in all member states) in order not to be come corrupted by tactical movement of waste between member states. Such a system is open to fraud.
2.2.3	
Other	(14)
2.2.1	Would increase collection which is sought. Directing this would make access easier
2.2.2	
2.2.3	
Other	*(7)*
2.2.1	Could help solving "leakage" problem, but must be balanced against potential additional costs arising (producers should not be responsible for paying for collection from private households to collection point)
2.2.2	
2.2.3	Inefficiency, collection wise and cost wise, if national particularities are not sufficiently recognised (subsidiarity principle); also negative environment impact possible
Other	*(4)*
3. What data can either support or reject/ falsify these?	
2.2.1 2.2.2	• Evaluation of the WISE R.U.S.Z, Vienna by the Institute for applied Studies, Austria • Feasibility Study by the Technical University of Vienna, concerning the advantages of Vienna´s WEEE reuse and recycling by WISEs versus the mechanical treatment by a private waste company • Strategic Environmental Assessment on Vienna´s Waste Management Concept

2.2.3 Other	Most studies on separate collection Experiences on transport of WEEE *(3)*
2.2.1 2.2.2 2.2.3 Other	Collection quotes are low in most countries *(7)*
2.2.1 2.2.2 2.2.3 Other	See "key figures 2005" of WEEE Forum *(4)*

Other options for improvement

- 2.3.1 Create the possibility to introduce a return premium for consumers
- 2.3.2 Lower compliance cost when collection target achieved
- 2.3.3 Mandatory consumer education
- 2.3.5 Other financing models to promote better collection
- 2.3.6 More enforcement of waste shipments
- 2.3.4 Introduce a Recycling Fund mechanism
- Other? Other? a)WEEE is collected, but not in statistics because right codes by EWC are not used – using right codes! , b)enough municipal infrastructure for separately collected types of waste (All in One saves time and money of consumer and makes it easier do practise separate collection and give-back

(2)

Please fill this in where you think it is relevant:

	1. Is the option relevant or not? Why?
2.3.1	~~YES~~/ NO Get rid of free of charge is already consumers right they got during the buying new equipment. Are they able to pay more and how much to be reminded about their rights? I believe if we find easily way to shop to get new one, then it can not be more complicated to find right road for old one.

2.3.2	~~YES~~/ NO Lower cost to whom?? Collection targets are set for member state not for producers.
2.3.3	~~YES~~/ NO Difficult to implement. Is there any other working example available for benchmarking?? Frankly speaking it means we should spend money to remind consumers about their rights and obligations set by waste law. I do support education and lightening of consumers, especially kids and young people. Social responsibility
2.3.5	~~YES~~/ NO
2.3.6	**YES**/ ~~NO~~ Yes of course. See my comment on previous page about supervision. And not only shipments out of MS must be more enforced and supervised, but also in the MS.
2.3.4	~~YES~~/ NO
Other	**YES**/ ~~NO~~
	(2)
2.3.1	NO – payment for waste should be avoided
2.3.2	NO
2.3.3	YES
2.3.5	NO
2.3.6	YES
2.3.4	NO
Other	YES/ NO
	(5)
2.3.1	NO
2.3.2	NO
2.3.3	YES
2.3.5	YES
2.3.6	YES
2.3.4	NO
Other	Maybe
	(3)
2.3.1	NO – that option already exists as a marketing and sales tool. The WEEE directive has no role to play in restricting market access.
2.3.2	NO – this would suggest penalties for schemes that did not reach the target.

2.3.3	YES – This is the responsibility of the Member states. It is already provided for in the WEEE Directive.
2.3.5	YES: Individual producer responsibility should be encouraged. Initial evidence from take back trials indicates that individual producer responsibility leads to a purer waste stream. This material has a greater value for recycling and also provides a higher recycling rate.
2.3.6	YES/ NO
2.3.4	YES/ NO
Other	YES/ NO
	(6)
2.3.1	NO not practical, but do create awareness and free returns.
2.3.2	NO the market mechanism will automatically result in that.
2.3.3	YES awareness is an essential issue for the collection of WEEE
2.3.5	NO cannot think of any
2.3.6	NO there is existing legislation! Do not double legislation.
2.3.4	YES/ N.Q. to be clarified.
Other	YES/ NO
	(10)
2.3.1	NO see comment on 2.2.2
2.3.2	NO Who would control and finance that ? Compliance cost is a function of market conditions for recycling services. Steering the recycling prices is a plan-economy idea.
2.3.3	YES This would certainly help to avoid that WEEE ends up in the household waste. YES/ tax incentives for recycling systems, but would need to be set on a European level to avoid tactical shipment of waste.
2.3.5	YES/ Pre condition: financed by authorities and arranged on a European level
2.3.6	
	(14)
2.3.4	
Other	
2.3.1	YES/ NO yes, incentives to rise awareness should show positive results
2.3.2	YES/ N.Q. to be clarified
2.3.3	YES/ NO yes, awareness is and essential issue for the collection of WEEE

2.3.5	YES/ N.Q. to be clarified
2.3.6	YES/ NO yes, Europe is for waste shipments to developing countries a main source. It must be avoided to send waste to developing countries without the proof that in those countries the WEEE is treated in accordance to European legislation!
2.3.4	YES/ N.Q. to be clarified
Other	YES/ NO
	(13)
2.3.1	YES~~/ NO~~
2.3.2	YES/ ~~NO~~
2.3.3	~~YES~~/ NO
2.3.5	YES/ ~~NO~~
2.3.6	YES/ ~~NO~~
2.3.4	YES/ ~~NO~~
Other	YES/ NO
	(7)
2.3.1	YES – Since it is legally not possible to compel consumers to return WEEE a premium especially for SDA would be a great stimulus. How to include this in the WEEE Directive is an issue for lawyers.
2.3.2	NO
2.3.3	NO – It is a task of the authorities/governments
2.3.5	
2.3.6	YES – As was shown in the Netherlands (VROM Inspection) this definitely helps.
2.3.4	*(9)*
Other	
2.3.1	YES
	(15)
2.3.2	
2.3.3	
2.3.5	
2.3.6	

2.3.4 Other	
2.3.1	NO, risk of creating market distortion; who would pay the premium?
2.3.2	NO, too complex and risk of market distortion (compliance cost is a driver of competition between treatment schemes); market forces should determine competition in recycling markets
2.3.3	YES, without information campaigns and accompanied enforcement the leakage problem will continue; could help enforcing separate collection by consumers
2.3.5	NO (producers should not be responsible for collection from private households to collection point)
2.3.6	Waste shipment regulation has just been strengthened; regulation now needs to be implemented and enforced
2.3.4	NO, too complex (who would finance?) and risk for functioning of internal market (European or 27 national funds?)
	(4)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
2.3.1 2.3.2 2.3.3 2.3.5 2.3.6 2.3.4 Other	options based on some form of financing are likely to result in extra costs for producers and thus consumers.
	(5)
2.3.1	No. Consumers can return their WEEE free of charge; which is not the case for many other waste streams. Municipalities nor reuse-centres are capable of paying consumers to bring their waste (or producers should provide the money for it); it would lead to a situation where only retailers could use this incentive and as such WEEE might enter directly into the scheme forwarding the WEEE towards treatment and recycling, short-cutting the possibility of reuse.
2.3.2	No. Producers should pay all costs whatever amount has been collected. However, investigating how we can stimulate higher collection targets without leakages (export before accounting the amount as collected, to reduce the cost for producers of the recycling of a part not legally demanded) seems interesting.
2.3.3	Yes, absolutely necessary to improve collection and reuse.
2.3.5	Can be investigated. Many problems arose when municipalities asked producers to pay for collection. A clear financial obligation towards producers for the total waste management chain, especially the not well defined collection part done by municipalities as well as reuse-centres,

	should be rewarded fully by producers (financial responsibility).
2.3.6	Yes. Prevention of illegal waste shipments are urgently needed, keeping in mind that exports of 'products' ready for reuse is not blocked.
2.3.4	No. Financing is foreseen, no need for 'funds'.
Other	*(3)*
2.3.1	
2.3.2	
2.3.3	
2.3.5	The principle of individual producer responsibility is recognised as an important tool in encouraging producers to have regard to the end-of-life management of their products at the stage of product design. Individual Producer Responsibility provides a competitive incentive for producers to design their products so that they are easier and therefore cheaper to recycle.
2.3.6	
2.3.4	*(6)*
Other	
2.3.1	see comment on 2.2.2
2.3.2	Plan-economy !
2.3.3	
2.3.5	
2.3.6	
2.3.4	
Other	*(14)*
2.3.1	Has little effect, only for more products
2.3.2	Better would be a level playing field, having obligations for all products on the market with the compliance schemes Free people, free market
2.3.3	
2.3.5	Competing between schemes is good, when financing is balanced by paying the scheme over target its fee for higher than market share collection.
2.3.6	Easier (cross-border) transport rules both for waste and for materials made of these.
	Counter productive. Funds are used for other targets then meant

2.3.4 Other	*(7)*
2.3.1 2.3.2 2.3.3 2.3.5 2.3.6 2.3.4 Other	An economical incentive works on a consumer society *(15)*
2.3.1 2.3.2 2.3.3 2.3.5 2.3.6 2.3.4	Additional administrative and cost burden for producers Against spirit of a free market economy Fosters proper implementation of the directive with environmental, economic and societal benefits Risk of cost inefficiency and market distortion Could help addressing leakage problem Legal uncertainty and inefficiencies (negative cost impact with not necessarily significant environment benefits) *(4)*
3. What data can either support or reject/ falsify these?	
2.3.1 2.3.2 2.3.3 2.3.5 2.3.6 2.3.4 Other	See Lost in Transposition as recently published by Greenpeace. *(6)*
2.3.1 2.3.2 2.3.3 2.3.5	Slovakia

2.3.6 2.3.4 Other	Slovakia, funds are used to increase capacity without necessity or economics behind it. *(7)*
2.3.1 2.3.2 2.3.3 2.3.5 2.3.6 2.3.4 Other	Waste of mobile phones. Pay for return and works. *(15)*

Additional Comment Working Group 2 – Collection Targets:

According to their environmental impact, certain products and product categories should be prioritised. In some countries easily achieved or achievable but elsewhere absolutely challenging or un-reachable in the short term, the current 4 kg/inhabitant target does not specify which items of WEEE should be collected. It makes an environmental difference whether the amount collected includes large metal based household appliances only or whether a substantial numbers of smaller appliances with relatively high environmental priorities, like for instance mercury containing lamps, are included. The current setting could lead to a situation whereby the target is achieved but with very little improvement to environmental efficiency.

Working Group 3 Targets Reuse, Recycling and Recovery

Increase, Add, Maintain or Delete (entry-specific) requirements

- 3.1.1 Delete targets from the Directive
- 3.1.2 Decrease, maintain and increase targets levels for specific (sub) categories
- 3.1.3 Introduce targets for cat.8: medical equipment
- Other? Material Recycling should get priority over energy recovery *(10)*

Please fill this in where you think it is relevant:

	4. Is the option relevant or not? Why?
3.1.1	YES – because targets are not (only) achieved by environmental quality of products but dominantly from the recycling technology applied when treated.

3.1.2 3.1.3 Other	NO – how to define "relevance" – which aspects are relevant (toxidity, consumption of primary resources, od energy, of contribution to CO2-emmission …)? *(5)*
3.1.1 3.1.2 3.1.3 Other	NO YES: increase targets No opinion *(3)*
3.1.1 3.1.2 3.1.3 Other	NO: There is no evidence to suggest that current targets should be changed. NO: There is no evidence to suggest that current targets should be changed. *(6)*
3.1.1 3.1.2 3.1.3 Other	NO, it should be carefully evaluated if measurable targets should be removed, as market forces always looking for the cheapest way to get rid of the stuff and to get paid (very good example is Germany!) NO, possibility to really measure and maintain the aims of the directive (if not the only one) YES/ No; no comments, as no knowledge on medical equipment YES *(10)*
3.1.1 3.1.2 3.1.3 Other	YES/ NO YES/ NO No increase. Recycling targets for refrigerators and freezers are already challenging. *(14)*
3.1.1 3.1.2 3.1.3 Other	~~YES/~~ NO, it should be carefully evaluated if measurable targets should be removed, as market forces always looking for the cheapest way to get rid of the stuff and to get paid (very good example is Germany!) ~~YES~~/ NO, possibility to really measure and maintain the aims of the directive (if not the only one) YES/ No; no comments, no data could be submitted YES/ NO (13)
3.1.1 3.1.2 3.1.3	NO but should also be related to collection NO ?

Other	(7)
3.1.1	NO – Since the recycling industry has invested significant in achieving the recycling targets (for instance plastic separation for SDA) it will be unfair and even unacceptable to lower the targets.
3.1.2	NO
3.1.3	YES/ NO – Maybe, but differentiation is necessary
Other	(9)
3.1.1	YES (to be seen together with alternative proposal of developing environmental priorities for recycling, recovery, landfill and a divert from landfill policy for highly calorific waste)
3.1.2	NO for increase of present targets that are already challenging (and partly unrealistic)
3.1.3	NO, practice shows that it is B2C WEEE that is coming back (for B2B, end of life treatment of appliances is subject to bilateral agreement between business operators)
	(4)
5. What will the impacts be (environmental, economic, social)? Pro's and cons?	
3.1.1	Environmental criteria / standards for treatment plants will allow for minimum environmental performance and be an incentive to improve recycling technology. My interpretation is that basically you are not aiming at specific categories but on specific materials (in these cat.) and their effect on the environment. So question should be revised.
3.1.2	
3.1.3	
Other	*(5)*
3.1.1	No. What could possibly be the environmental benefit of deleting recycling targets, when recycling still needs a lot of support to develop further? Recycling targets are necessary, however reaching targets is poorly monitored today. Better monitoring of the achievement of the targets is needed.
3.1.2	Increase targets. Higher recycling targets are technically and economically feasible, and depend mainly of the amount collected and the quality of collection (separation, manual dismantling,…) Higher targets are better for environment, will help create jobs in recycling (especially manual dismantling activities) and make recycling more economically sustainable.
Other	(3)
3.1.1	It would be necessary to conduct a thorough environmental and economic assessment of any alternative targets.
3.1.2	It would be necessary to conduct a thorough environmental and economic assessment of any alternative targets.
3.1.3	
Other	*(6)*

3.1.1 3.1.2 3.1.3 Other	Increasing the target for large household appliances would mean that producers have to increase recycling cost that is paid by the consumers when buying new products. (14)
3.1.1 3.1.2 3.1.3 Other	Collection should be motivated more than zooming further into recycling. Producers should benefit from increasing collection. *(7)*
3.1.1 3.1.2 3.1.3	Would foster a level playing field with positive impacts on treatment costs and cost for the consumer while at the same time target real environmental problems Increased targets mean higher recycling costs; Quite different products with quite different materials will make it difficult to focus on special improvement measures of single product categories No negative environment impact since such WEEE is taken care of in B2B agreements, but increased costs for waste treatment of cat. 8 WEEE (4)
6. What data can either support or reject/ falsify these?	
3.1.1 3.1.2 3.1.3 Other	Higher recycling targets were proposed and defended by most recyclers already in 2000. (3)
3.1.1 3.1.2 3.1.3 Other	See LCAs of the WEEE Directive conducted by Price Waterhouse Coopers among others. See LCAs of the WEEE Directive conducted by Price Waterhouse Coopers among others. *(6)*
3.1.1 3.1.2	Environmental impact of increasing Current collection amount vs. increasing or changing recycling standards

3.1.3 Other	*(7)*
3.1.1 3.1.2 3.1.3 Other	Impact Assessments have shown that too rigid target setting in new waste stream based directives is not always effective (see Thematic Strategy Waste Prevention and Recycling). If policy makers provided clear cut environmental objectives for waste treatment, recycling , incineration and landfill, the necessity of setting targets, be they waste or material specific, could be revisited in general. Same as 3.1.1 "Key figures 2005" WEEE Forum *(4)*

Alternative Definitions of Requirements

- 3.2.0 Targets bound to waste streams
- 3.2.1 Keep current target definition
- 3.2.2 Targets for specific material fractions
- 3.2.3 Targets based on processes defined as BAT
- Other?

Please fill this in where you think it is relevant:

1. Is the option relevant or not? Why?	
3.2.1 3.2.2 3.2.3 3.2.0 Other	NO – see above YES/ medium YES best – recycling technology applied will define ecological quality of outcome **and** resources need to fulfil this outcome. Input/Output-Thinking should be practiced also here. NO – why? *(5)*
3.2.1 3.2.2 3.2.3 3.2.0 Other	YES for administrative easiness YES as added targets (eg. On plastics, metals) NO YES/ NO: YES *(3)*
3.2.1 3.2.2	YES/ NO UNKNOWN: Further detail and explanation of this option is required. In particular how

	producers' obligations would be calculated, and how producers could comply individually through this route.
3.2.3	UNKNOWN: Further detail and explanation of this option is required. In particular how producers' obligations would be calculated, and how producers could comply individually through this route.
3.2.0	UNKNOWN: Further detail and explanation of this option is required. In particular how producers' obligations would be calculated, and how producers could comply individually through this route.
Other	(6)
3.2.1	YES, keep distinction between recycling and recovery, increase volume targets to percentage of products put on market
3.2.2	NO
3.2.3	YES/NO; no idea how this could work with BAT that develops over time
3.2.0	NO, see above, propose to work on percentage of volume placed on the market
Other	*(10)*
3.2.1	YES/ The target should be "per appliance on average" as many different types of products are recycled together and it would difficult to brake down results into product categories
3.2.2	YES/ This could be an interesting alternative.
3.2.3	YES/ NO
3.2.0	YES/ This could be an interesting alternative.
Other	(14)
3.2.1	YES/ N.Q. to be clarified
3.2.2	YES/ N.Q. to be clarified
3.2.3	YES/ N.Q. to be clarified
3.2.0	YES/ N.Q. to be clarified
Other	YES/ N.Q. to be clarified
	(13)
3.2.1	YES
3.2.2	NO
3.2.3	NO

3.2.0 Other	yes (7)
3.2.1 3.2.2 3.2.3 3.2.0 Other	YES NO – Many member states have not even implemented the WEEE Directive. So more experience/time is needed before changing targets. NO – There are no BREF´s for WEEE recycling. (9)
3.2.1 3.2.2 3.2.3 3.2.0 Other	YES, maybe it's too early to change and more experience is necessary In principle interesting, though, considering the wide range of different EEE with different materials this may be complex and costly; in any case, duplication by two different systems running in parallel must be avoided (costs) NO, legislation should not prescribe technologies, but common reference standards could help to foster a level playing field (4)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
3.2.1 3.2.2 3.2.3 3.2.0 Other	There are no big problems right now with target definition, so keeping current definitions is better as it will not complicate the implementation of the directive. Maybe as added targets to improve e.g. recycling of plastics. Such as removal targets for specific toxic compounds? (4)
3.2.1 3.2.2 3.2.3	 According to findings of the WEEE Forum, the achievement of collection rates are influenced by different factors such as the "sources" of collection (private consumers, business consumers), general economic data as well as consumer awareness. Additionally, the value of the appliances and/or the material, convenience of the collection system, general basic data like population density and the legislation itself are important factors in this context. According to findings of the WEEE Forum, the achievement of collection rates are influenced by different factors such as the "sources" of collection (private consumers, business consumers), general economic data as well as consumer awareness. Additionally, the value of the appliances

	and/or the material, convenience of the collection system, general basic data like population density and the legislation itself are important factors in this context.
3.2.0	According to findings of the WEEE Forum, the achievement of collection rates are influenced by different factors such as the "sources" of collection (private consumers, business consumers), general economic data as well as consumer awareness. Additionally, the value of the appliances and/or the material, convenience of the collection system, general basic data like population density and the legislation itself are important factors in this context.
Other	*(6)*
3.2.1	
3.2.2	Current enforcement is already lacking this detail will not be enforced and work contra productive. It will also limit the possibilities to decrease total environmental impact
3.2.3	BAT is difficult to legislate since it is continuously changing for some fractions it might be feasible to define a target based on BAT
3.2.0	
Other	(7)
3.2.1	
3.2.2	Quite different products with quite different materials will make it difficult to focus on special improvement measures of single product categories; Parallel material and waste stream specific schemes can result in duplication of costs
3.2.3	
3.2.0	(4)
3. What data can either support or reject/ falsify these?	
3.2.1	Impact Assessments have shown that too rigid target setting in new waste stream based directives is not always effective (see Thematic Strategy Waste Prevention and Recycling). If policy makers provided clear cut environmental objectives for waste treatment, recycling , incineration and landfill, the necessity of setting targets, be them waste or material specific, could be revisited in general.
3.2.2	*(4)*
3.2.3	
3.2.0	

Alternative Options (instead of recycling/ recovery targets)

- 3.3.1 No targets, only use of BAT for WEEE processes
- 3.3.2 Deviation allowed under "Environmental Equivalency Principle"
- 3.3.4 Removal targets for specific potentially toxic components
- 3.3.0 Industry standards per category
- Other? No targets, but use of common reference standards for recycling

(4)

Please fill this in where you think it is relevant:

	1. Is the option relevant or not? Why?
3.3.1 3.3.2 3.3.4 3.3.0 Other	NO NO YES NO *(3)*
3.3.1 3.3.2 3.3.4 3.3.0 Other	UNKNOWN: Further detail and explanation of this option in required. In particular how producers' obligations would be calculated, and how producers could comply individually through this route. UNKNOWN: Further detail and explanation of this option in required. In particular how producers' obligations would be calculated, and how producers could comply individually through this route. UNKNOWN: Further detail and explanation of this option in required. In particular how producers' obligations would be calculated, and how producers could comply individually through this route. UNKNOWN: Further detail and explanation of this option in required. In particular how producers' obligations would be calculated, and how producers could comply individually through this route. YES/ NO *(7)*
3.3.1 3.3.2 3.3.4 3.3.0 Other	NO , targets should be defined, recovery/recycling YES/ NO – question to be clarified YES see Annex II guidance document YES/ NO for specific products it make sense (e. g. HC containing cooling and freezing appliances, but maybe not for all YES/ NO *(10)*
3.3.1 3.3.2	YES/ NO – no, who to measure the success of the treatment process without comparable figures YES/ NO – question to be clarified

3.3.4	YES/ NO – see Annex II guidance
3.3.0	YES/ NO yes/no, for specific products it make sense (e. g. HC containing cooling and freezing appliances, but maybe not for all (where to end?)
Other	
	(13)
3.3.1	NO
3.3.2	NO
3.3.4	Yes but described as bat (output of process not specify process)
3.3.0	YES/
Other	YES/ NO
	(7)
3.3.1	NO – First BREF´s should be developed.
3.3.2	NO – The environmental equivalency principle should be used for determining the scope. Recycling targets should simply be based on weight,
3.3.4	NO – Serious toxic components should be removed and collected in identifiable streams. The solution is not dilution.
3.3.0	(9)
Other	
3.3.1	See 3.2.6
3.3.2	?
3.3.4	NO, too descriptive, would increase treatment costs
3.3.0	See 3.2.6
3.3.6	Yes, is preferred option that would allow to focus on environmental problems while at the same time let the market play to develop competitive treatment technologies and thereby cost efficiency of treatment
	(4)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
3.3.1	BAT for recycler might be easier; however who will define and how will it be measured? WEEE contains many and various hazardous substances and consists of a very heterogeneous input.
3.3.2	Deviation for EEP opens a door without knowing what's behind. How and who will measure something is equivalent?
3.3.4	It is very important to have removal targets, as targets on the removal of certain toxic components would have a very high environmental value. For example for mercury and asbestos.
3.3.0	No, because not clear. What kind of standards? What's the intention? How defined? Industry will decide on the basis of economic reasons rather than the environmental reasons which are the

Other	reasons for having WEEE collected and recycled. (3)
3.3.1 3.3.2 3.3.4 3.3.0 Other	UNKNOWN: Further detail and explanation of this option in required. UNKNOWN: Further detail and explanation of this option in required. UNKNOWN: Further detail and explanation of this option in required. UNKNOWN: Further detail and explanation of this option in required. *(6)*
3.3.1 3.3.2 3.3.4 3.3.0 Other	This will lead to an uncontrollable situation (7)
3.3.1 3.3.2 3.3.4 3.3.0 3.3.6	Higher costs for treatment (dismantling activities) Could be used in context with option 3.3.6 Most cost effective option while at the same time ensuring protection of the environment and a level playing field; decreases administrative burden and related unnecessary costs *(4)*
3. What data can either support or reject/ falsify these?	
3.3.1 3.3.2 3.3.4 3.3.0 3.3.6	See impact assessments , Thematic Strategy Waste Prevention and Recycling (p.18) and "Key figures 2005" WEEE Forum (4)

Additional comment Working Group 3 – Targets Reuse, Recycling and Recovery:
The relevance of applying targets for recycling and recovery is to ensure environmentally safe treatment as it aims at recycling of materials, which would otherwise not be recycled due to economic reasons. However, the environmental analysis has shown where the targets form an incentive for better treatment and where not. Additionally, the availability of treatment technologies and future developments as well as other environmntal concerns and priorities needs to be addressed in order to determine the appropriateness of recycling and recovery targets. The options that will be proposed regard the introduction of new and raise of existing targets or deleting and decreasing targets , other ways of defining them and other incentives that would render the same effect. Additionally, the interpretation of recycling and recovery definitions across the EU and the way they are used in adjacent legislation is investigated.

(1)

Working Group 4 Targets Reuse of Whole Appliances

Options for improvement, reuse:

Define Requirements

- 4.1.1 Establish clear definition of "Re-use of whole appliances" term
- 4.1.2 Determine the scope of 'reusable' products (f.e. specific Product List)

- Other?

4.1.3 / Establish a accreditation system for product refurbishers
4.1.4 / A label with the name and address of the accredited refurbishing company should be added to products that are refurbished
4.1.5 / Reused and refurbished appliances sold commercially should have a energy label

(14)

Please fill this in where you think it is relevant:

	4. Is the option relevant or not? Why?
4.1.1 4.1.2 Other	YES: The current definition of reuse excludes considerable legitimate reuse activity. Considerable reuse occurs before producers enter the waste stream, through family and friends, ebay, classified ads, refurbishers and the social sector. Furthermore, it is unclear what is meant by reuse. A product which is reused as it has not yet reached the end of its useful economic life has not been waste. Therefore, it is difficult to see how the WEEE directive could regulate reuse activities. The EUP directive is probably better suited to encourage reuse through its ability to develop design mandates which have an impact on the life cycle of the product. (6)
4.1.1 4.1.2 Other	YES – and refurbishment criteria including the definition of who is responsible, defining minimum safety and performance requirements (eco-efficiency) to be applied NO – cannot be done by regulation (5)
4.1.1	411 Yes, very much needed. "ReUSe" is one of the covers of WEEE export to developing countries. Even ReUse is critical from that point of view of energy and water consumption (e. g.

	old computer and old washing machine/dishwasher). ReUse in a certain way is good and access products to people which they would not able to access in a first line, but it has to be clear that ReUse is a limited market, if you take into consideration energy consumption of reused products
4.1.2	412 yes, could be a first step, to sop misusing of the term "reuse"
Other	(13)
4.1.1	The Re-Use should only be accepted if it is done through the approved take back schemes. If not through take back scheme, it should not be considered as such. This will help to avoid illegal exports.
4.1.2	Yes, could be a first step, to stop misusing of the term "reuse"
Other	(10)
4.1.1	NO
4.1.2	NO
Other	(3)
4.1.1	YES The present definition of "reuse" of the directive includes both the activity of "reuse" and product "refurbishment". These are two very different activities and it is preferable if they are split in tow separate definitions. "reuse" is the continued use of appliance without having to modify or repair them. Functional verification and cleaning may be performed. "refurbishment" is the repair or modification of products to be able to continue to use them.
4.1.2	YES/ It must be secured that commercial activity of product reuse or refurbishment does not contradict other existing EU legislation or policies such as the fight against climate change, or chemical bans (RoHS and other). Criteria need to be established to determine when and what products are ok to reuse or refurbish.
4.1.3	YES/ For the reuse and refurbishment activity to become credible commercial alternatives to buying new products, it must be secured that actors work according to established methods that respect product safety, etc.
4.1.4	YES/ To create consumer confidence, and to secure traceability in case of any product liability issue, the name of the company performing the refurbishment must be given on the product. It must be clear to the consumer that they are not buying a product in original state from producer X, but a product that was refurbished/modified by company Y.
4.1.5	YES/ According to EU law consumers need to be informed about the energy consumption of new appliances through the EU energy label (A-G scale). The same should apply to products that are sold commercially for reuse or are refurbished. In fact the logical need to inform consumers about the energy consumption is higher the older the appliance is, as the old appliances have a higher energy consumption. (14)
4.1.1	YES – In order to overcome the fraudulous practices of today.
4.1.2	NO – Develop clear harmonized criteria.

Other	(9)
5. What will the impacts be (environmental, economic, social)? Pro's and cons?	
4.1.1	Policy better reflecting reality. Reuse and refurbishment is not the same activity and with separate definitions the policy can be arranged optimally for each.
4.1.2	Negative environmental and financial drawbacks, such as excessive energy consumption by putting a very old inefficient product back in operation, can be avoided. It must be avoided that products exceeding certain energy consumption are reused or refurbished.
4.1.3	Refurbishment and reuse can become credible and safe alternatives to buying new appliances.
4.1.4	If the liability concerns are addressed properly, original producer would start to feel less hesitant towards the concept of reuse and refurbishment.
4.1.5	Consumers need to be able to compare the energy consumption of refurbished products with new products. This is especially important for low income households.
Other	(14)
4.1.1	A determination of the scope of reusable products may still not make reuse measurable and manageable. In particular, it is difficult to see how producers can be held accountable for reuse of products to which it has no longer access/ownership or control.
4.1.2	
Other	(6)
4.1.1	Consumer protection – no hidden/ potential costs out of safety risks or environmental weak performance (energy costs, water costs)
4.1.2	
Other	(5)
4.1.1	No. Definition is ok. There is no problem, and thus no solution needed. More definitions within 'reuse' will complicate the small reuse-part of the WEEE -management. However in setting targets all forms/types of reuse of products or components should be counted together (see text below).
4.1.2	No, in principle each item is reusable depending on the age, quality, reparability but independent of product group - though there are some differences seen in the percentage of reused products between some categories. Excluding certain categories for reuse might even have perverse effects on the eco-design of these products as durability or reparability would not count (if targets are set). Reuse is cheaper than recycling, but as such cheaper for society. So maybe we could make the compliance cost for the producers lower the more is being reused? For producers reused products are delaying the consumption of a new product and as for logical economic a competition with new products and will strive to impede reuse. Industry needs a necessary legal obligation to do it. **„FABRIK DER ZUKUNFT"** eine Initiative des Bundesministeriums für Verkehr, Innovation und Technologie (BMVIT) und der Forschungsförderungsgesellschaft (FFG)

ENDBERICHT

Erstellt am
30.11.2006

Schaffung der Voraussetzungen zur Bildung eines Wiederverwendungskreislaufes für Elektro(nik)altgeräte
Projektnummer: 810532

Closing the loop of waste electrical and electronic equipment

The current project analysed the reusability of various waste electrical and electronic equipment (WEEE) which are collected separately by the Viennese Municipality. The project was carried out by the social economy enterprise "Dismantling and Recycling Centre D.R.Z" (D.R.Z) in cooperation with the "Institute of Waste Management of the BOKU-University of Natural Resources and Applied Life Sciences" (ABF-BOKU).
The aim of the project was to determine potentials for optimization as well as general frameworks by means of existing experiences in this field, to increase the overall share in devices disposed at the end of utilisation by the consumers. These devices could be reused, by selection from the WEEE flow, followed by maintenance and active marketing measures for second-hand devices.
In cooperation with MA48, D.R.Z obtains the WEEE from three waste disposal sites in Vienna. These devices are either reused after various processes of maintenance and commercialisation or manually dismantled and pretreated. The actual project analysed the devices handled in D.R.Z according to the collection categories "big electrical and electronic appliances" and "small electrical and electronic appliances". Devices of other collection categories have not been analysed.
One of the projects central targets was to get results concerning the question if it makes sense to select waste electrical and electronic equipment from the municipal collection of WEEE for reutilisation. The results of the project shown in chapters 4 to 6 proof that this question can definitely be answered positively,

- if the collection system is adapted for reutilisation, particularly that the collected devices are handled with care, as in the case of the actual pilot initiative.
- if the selection of devices, especially for small electrical and electronic appliances, is manpowered adequately and equipped with fitting infrastructure – in particular, sufficient room and zoned adequately from the maintenance and dismantling department.

All in all, the selection of devices could be identified as one of the key processes to increase the share of reusable devices in the WEEE flow. Primarily this process needs a social-communicative individual who

- views the working process of selection as an in-house service for the maintenance department
- has the expertise and authority to decide the selection of potentially reusable devices based on continuous updated professional and technical know-how combined with the knowledge of second-hand market demand and is aware of customer preferences
- has the advisory skills to inform the maintenance department consistently about the spectrum of devices found in the WEEE flow, as well as the changes in the composition of devices.

An important aspect for the reutilisation of waste electrical and electronic equipment is a physically acceptable condition, besides perfect operability. A survey conducted in the context

	of the project proofed only 20% of the big electrical and electronic household appliances (e.g. washing machine) collected at the waste disposal site, to be in a sound physical condition. Small electrical and electronic household appliances (e.g. coffee machine), information and telecommunication devices (e.g. computer) and home entertainment equipment (e.g. video cassette recorder) proofed 60% to be in good shape. As these devices contain all essential accessories, they fulfill the criteria to be sold as second-hand goods after a check of their operational reliability. In this regard, alternative take-back systems could lead to a bigger share in physically sound devices. It would be possible to select reusable devices already at the waste disposal site, for which human resources need to be provided for each served waste disposal site, expenses which can be justified only with a certain sales volume of reutilisation. Further options would be a take-back system in combination with a shop structure or a frequent pick-up service especially for big reusable devices at the collection site. Interviews carried out at waste disposal sites, showed repeatedly that, when persons start to live together, often results in a duplication of the equipment of electrical and electronic appliances in one household. While small appliances are often kept as replacements or are easily passed on to friends, big electrical and electronic appliances often cause problems due to restricted space. These appliances are less easily passed on as many households already contain a working dish washer, washing machine or refrigerator and have no need to replace them at that time. To transfer such big appliances beyond the immediate circle of friends was said to be too labour-intensive and time-consuming for the person concerned. The redundant big electrical and electronic appliances are then often disposed of immediately, although operating properly or, if possible, are stored (e.g. attic, cellar, tool shed….) and are disposed of at a later date. Then however these devices are not working (properly) any more (e.g. damages in the electronics due to damp or mechanical damages and rust, due to improper storage) making reuse impossible. In addition, the devices are not up-to-date in terms of technology, function, security and design. By informing the population that such well working big electrical and electronic appliances can easily be dispensed at a second-hand shop for a charity purpose, more appliances may be obtained that comply with the requirements for reutilisation without restrictions. To provide a possible additional incentive for disposal of fully functional devices, the negotiation of a fixed amount from a charitable donation could be considered – along the lines of the Austrian collection campaign for mobile phones (Ö3 Wundertüte). The already established infrastructure in both businesses, D.R.Z and "Repair and Service Centre R.U.S.Z" (R.U.S.Z), should be maintained for the commercialisation of the devices but be expanded by a shop structure. R.U.S.Z´s secondhand shop, where second-hand devices are offered for sale right in the place where they had been maintained and repaired, attracts quite a number of customers. These could be important disseminators for a future shop structure where devices are sold but not maintained. On the other hand such a shop structure could be easily carried on in connection with a take-back-system. By accepting damaged but still worth to be repaired devices in one shop the share in physically undamaged devices could considerably be increased. Aside the commercialisation via internet should be expanded. Especially used computer equipment, above all PC components and assembled computers can best be sold via an internet shop. All in all, it appears that the supply of second-hand devices turns to different target groups (from home constructor and aficionado to the ebay-user) who have to be addressed by various marketing strategies. A combination of supply in a repair workshop, internet and shop commercialisation should achieve the best results. The market analysis conducted in the context of the project resulted in an existing demand for second-hand devices but varies between the different models. Almost 47% of the interviewees can imagine buying a second-hand device, already one third of the respondents have bought a second-hand device before. The competitor analysis reveals that a number of suppliers of second-hand devices exist in Vienna but second-hand electronics constitute just a small part of

their assortment of goods.

The characteristics of the D.R.Z and R.U.S.Z are

- to have a comparatively low price approach to a high number of various reusable devices via the WEEE collection
- to possess know-how acquired over many years of maintaining various totally different types of devices
- to give the customer the feeling he is making a positive, social contribution by the purchase
- to be in charge of various sales and marketing strategies
- to possess already a high degree of popularity

These characteristics express strengths which cannot be achieved by any other supplier without enormous effort.

(3)

6. What data can either support or reject/ falsify these?

4.1.1 "Reuse" includes the second hand market, "refurbishment" does not. The policy needs to take this into account. Requirements to secure product safety can be different depending if a product is modified or repaired or sold as it is.

4.1.2 New household appliances are on average 40% more energy efficient compared to 10 year old appliances. A 20 year old refrigerator consumes 4 times more energy compared to a new eqivalent. Energy consumption from household appliances stand for 6% of EU's CO2 emissions. The EU should cut CO2 emissions with 20% until 2020. More and more appliances are used by the households. The equation can only be made to add up if the appliances used by households are changed to consume less, not consume more !

4.1.4 Example: refilling a old CFC refrigerator with flammable HC refrigerant is a potential fire and safety hazard.

4.1.5 The running cost of household appliances over a few years can by far exceed the purchasing cost of the appliance. Especially for low income households the focus should be on high energy efficiency of appliances installed. High income households can afford to run inefficient appliances.

Other

(14)

4.1.1 See STEP working group.

4.1.2

Other

(6)

4.1.1 Folgende, in Tabelle 1 aufgelisteten Gerätegruppen wurden gebildet:

4.1.2

Name der Gerätegruppe	Geräte-Untergruppen	entspricht den WEEE-Kategorien	Abteilung, in der diese Gerätegruppe instand gesetzt wird
Großgeräte	Waschmaschinen, Geschirrspüler, Herde/ Backöfen, Rasenmäher,	Sammelkategorie Großgeräte der EAG-VO	Abt. Weissware (R.U.S.Z), Direktverkauf als repara-turwürdige Geräte

Other		Mikrowellengeräte, sonstige Großgeräte		(D.R.Z)
	Unterhaltungs-elektronik	Videogeräte, Audiogeräte, TV-Geräte (bei Input des RUSZ berücks.), sonstige UHE-Geräte	WEEE-Kategorie 4 (Unterhaltungs-elektronik)	Abt. Braunware (R.U.S.Z), tw. Abt. Instandsetzung Flohmarktware (D.R.Z)
	Nostalgiegeräte		WEEE-Kategorie 4 (Unterhaltungs-elektronik)	Abt. Nostalgiegeräte (R.U.S.Z)
	IT-Geräte	PC, PC-Komponenten, PC-Peripherie (Tastatur + Maus), Drucker, Monitore (bei Input des R.U.S.Z berücks.) sonstige IT-Geräte	WEEE-Kategorie 3 (IT&T-Geräte)	Abt. Grauware (R.U.S.Z), NOC-Abteilung (D.R.Z)
	sonstige Elektro-kleingeräte	Staubsauger, sonstige Haushaltskleingeräte, Telekommunikationsgeräte, Beleuchtungskörper, Elektr(on)ische Werkzeuge, Spielzeug, Sport- und Freizeitgeräte, Überwachungs- und Kontrollinstrumente	WEEE-Kategorien 2-3, 5-7,9	Abt. Instandsetzung Flohmarktware (D.R.Z)
	Tabelle 1: Spezifikation der für die Analyse verwendeten Gerätegruppen (3)			

Increase, Add, Maintain or Delete (entry-specific) requirements

- 4.2.1 Business as usual – i.e. No Target.
- 4.2.2 Specific targets (per category)
- Other?

4.2.3 If targets are established, then they must at least be separate for "reuse" and "refurbishment"
4.2.4 Reuse/refurbishment should become one way for producer to reach their recycling targets (e.g. 5% refurbishment and 70% recycling = 75% recycling rate).
(14)

Please fill this in where you think it is relevant:

	1. Is the option relevant or not? Why?
4.2.1 4.2.2 Other	YES: Attempting to measure reuse is very difficult and therefore inaccurate. Setting targets for reuse is consequently meaningless. NO: Attempting to measure reuse is very difficult and therefore inaccurate. Setting targets for reuse is consequently meaningless. (6)
4.2.1 4.2.2 Other	NO NO YES: Re-Use should not be dealt with in a waste directive as **products and not waste** are being re-used - or quite – **being traded for a second time**. (5)
4.2.1	YES/ NO yes, a reuse target would also mean that products has to reused, even there is not market. No as reuse need to be specified in a very detailed way, to ensure that reuse is not covering waste exports to developing countries (As it happens today). Reuse has also take in

	consideration the energy and water consumption of the appliance that is reused (life cycle anylsis)
4.2.2	YES/ NO – no, see above
Other	(13)
4.2.1	YES and NO, Reuse could be considered in the same hierarchy and definition as recycling.
4.2.2	YES/ NO – no, see above
Other	(10)
4.2.1	YES
4.2.2	NO
	(4)
4.2.1	NO, targets for reuse are needed to be able to increase
4.2.2	YES, general target and specific targets
Other	YES, a general target as for collection
	(3)
4.2.1	YES/ For any target to be set it must be clearly spelled out who is responsible to reach the target and that the result can be measured.
4.2.2	NO. Targets are not possible to establish, see other arguments here.
4.2.3	YES/ Reuse and refurbishment are two very different activities with different constraints. As such different policy measures are needed for each and different results can be achieved.
4.2.4	YES/ This could make producers think about reuse/refurbishment constructively and apply it when useful.
Other	(14)
4.2.1	NO – It has to be addressed.
4.2.2	NO
Other	
	(9)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
4.2.1 and 4.2.2	Most products that have been discarded have little or no value and therefore cannot be reused, particularly once the costs of repairing parts, wiping data and providing guarantees as been considered. The environmental benefits of reusing IT products more than 5 years old is variable due to advances in energy efficiency. The reuse of refurbished appliance could act against targets to reduce CO_2 emissions. Where reuse is feasible the social and informal sector generally manages that, and producers have little control.
Other	*(6)*
4.2.1	Re-use has a certain importance, both, in waste policy and from a social perspective. However, the priority that the WEEE Directive gives to "re-use", causes concerns especially

	against energy efficiency aspects, which regulators have set in parallel as a priority for designing EEE. Refurbishment of appliances raises several concerns: For basically all EEE, analysis from a life cycle perspective demonstrates that the major environmental impact of an EEE relates to the use of the product, rather than to the production and even less to the recycling of an appliance, i.e.: new products are more energy efficient than preceding models. Promoting re-use without paying attention to these considerations may in fact raise energy consumption and therefore result in counterproductive environmental impacts. *The second and probably even more sensitive concern relates to the issue of who guarantees the safety of a refurbished appliance. When the product was originally put on the market it was assessed for safety and CE marked by its producer. This is only valid for a product in its original shape, with approved components assembled and connected in a tested and approved manner. After refurbishment, however, the original CE marking can no longer be guaranteed and the original producer cannot take on the responsibility for the safety of the refurbished product.* To be realistic, only few products that enter the waste stream are fit for refurbishment or re-use. At that moment, they are often worn-out: they should be treated as waste and the materials should be recycled. If a product is still performing properly, including on environmental aspects from a life cycle perspective and in comparison to state of art technology, it can and should be sold on the second hand market due to its value. (4)
4.2.1 4.2.2 Other	Targets are needed to start with, even a low target would do better than none. It means that Member States will start to think how they can promote it. There are differences in the amounts of the different categories of WEEE which are reused; in general the big white goods have a higher reusability than lamps. However specific targets are not easy to set, and more data are needed all over Europe about consumption, differences in consumer behaviour, A general target of 10% (in weight) might look demanding but is realistic. If all WEEE collected would be screened for reusability a much higher percentage would be easily achieved. (3)
4.2.1 4.2.2 4.2.3 4.2.4 Other	Clear legal obligations benefit all stakeholders and in the end the environment. Unclear legal obligations create cheating and chaos. Reuse and refurbishment are different. Treating them separate in the policy will give the best result in reality. Constructive consideration and development of the issue among producers as an alternative to recycling appliances. (14)
3. What data can either support or reject/ falsify these?	
4.2.1 4.2.2	See STEP working group on reuse. Reusing products which are more than five years old can have negative environmental impacts

	because of the lower energy efficiency of these products. For example a 10 year old refrigerator uses 582 kWh per year, three times as much energy as a new model (194kWh/year). At HP our latest PCs and workstations are more efficient than the HP products they replace. For example, our Blade PC incorporates low-voltage processors that are 10 times more efficient than those in a typical desktop PC. In addition, we now offer power supplies on several commercial PCs that are on average 15% more energy efficient than previous power supplies. Therefore replacing older equipment can significantly reduce global CO_2 emissions. The reuse of refurbished appliance could hinder increased energy efficiency and act against targets to reduce CO_2 emissions. (6)
4.2.1	Product analysis as foreseen in case of EuP directive (4)
4.2.1 4.2.2 Other	Scattered data are available, but in preparing targets for reuse, the Commission should start to collect all data on reuse from Member States, stakeholders, reuse-organisations,… *3*)
4.2.1 4.2.2 4.2.3 4.2.4 Other	Who of producer, refurbisher, authorities, recycler, citizen, should and can be made responsible for reuse/refurbishment ? As there is no evident answer targets can not be set. Any measurement or target on "reuse" (does not apply to "refurbishment") needs to include the second hand market if the policy should correspond to reality (and of course it is a prerequisite that policy should correspond to reality). As the second hand market is most likely impossible to measure, the consequence is that targets can not be set for "reuse" of appliances. Reuse and refurbishment is today not widely considered by producers. The reason is partly because reuse and refurbishment are not possible ways to reach the producers recycling targets. (14)

Alternative Options (instead of reuse targets)

- 4.3.1 Delay setting re-use targets until more information about the return status, environmental life-cycle consequences
- 4.3.2 Re-use targets linked to design
- 4.3.3 Promotion of rental of equipment
- 4.3.4 Promote collection points to take reuse products to 2nd markets
- Other? Promote reparability of EEE by making use of standard components, module-based products,…

(*3*)

Please fill this in where you think it is relevant:

	1. Is the option relevant or not? Why?
4.3.1	YES: This would seem a sensible option. However it should be recognised that applying targets may be inappropriate for the reasons given above.
4.3.2	NO: This is not the remit of the WEEE directive. The EUP directive is probably better suited to encourage reuse through its ability to develop design mandates which have an impact on the life cycle of the product.
4.3.3	NO: The WEEE directive is not a suitable tool to restrict market access to the EU by imposing rental/leasing obligations on producers and distributors.
4.3.4	NO: While we do not oppose this option, this option must be a result of market forces. Such a provision could easily be abused by municipalities, resulting in a demand for producers to subsidise their collection points.
Other	(*6*)
4.3.1	NO –you will find it hard to get information from that market
4.3.2	NO – please make use of other directives like EUP which investigate this already and take an life-cycle-approach
4.3.3	NO – by regulation?
4.3.4	NO – by regulation?
Other	(*6*)
4.3.1	YES/ NO – target in general as a question to be needed. If, in a very specific way.
4.3.2	YES/ NO – see above. Reuse has to be defined in a very detailed and specific way to avoid misuse e. g. for waste shipments to developing countries
4.3.3	YES/ NO – do you mean leasing? If yes, leasing is used more and more in the business sector – if not, question to be clarified
4.3.4	YES/ NO – it is even a difficulty to ask collection point to sort in the correct collection group (often miss linked WEEE devices in collection groups (e. g. TV in German´s collection group number 5 (small appliances)
Other	(*13*)
4.3.1	NO – include in re-use and recycling target.
4.3.2	NO – impracticle
4.3.3	NO – only valid and practicle for B2B products
4.3.4	YES – but only if managed by audited take back systems and their contract partners
Other	(*10*)

4.3.1	NO delay, better a low target than no target
4.3.2	?
4.3.3	Maybe, there are good and bad possible ways of leasing
4.3.4	YES
Other	Yes
	(3)
4.3.1	NO . This does not help much to resolve the obstacles with targets
4.3.2	NO. This would be an impossible task to measure and monitor in a objective way.
4.3.3	YES/ . That can be interesting in general, but would not specifically promote reuse or refurbishment of appliances. NO. Products can not go directly from collection points to second hand market. They need to be checked by refurbishes first to guarantee that products fulfil safety, function and energy and other performance criteria.
4.3.4	
Other	(*14*)
4.3.1	YES/ NO
4.3.2	YES/ NO
4.3.3	YES/ NO
4.3.4	NO – It is already the source for illegal practices.
Other	(*9*)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
4.3.1	This would ensure that any future options are supported by a coherent economic and environmental assessment.
4.3.2	
4.3.3	
4.3.4	
Other	
	(*6*)
4.3.1	Delaying never solves a problem, targets are needed to increase the current reused part of the WEEE, which is environmentally (e.g. less energy consuming) and socially (jobs, cheap equipment) and economically (cheaper) a better option than recycling and as such should receive at least some (!) attention.
4.3.2	
4.3.3	There are some arguments in favour of leasing; if repair and reuse of equipment and components keeps most products longer on the market. However that is not always the case, only one good example is known. Leasing without further criteria does not seem to be an

	option to be promoted in a directive.
4.3.4	Promoting reuse-centres as collection points or collection points as reuse-centres?? It is not a good idea to sell WEEE from a collection point without any quality and performance check done in a reuse-centre. Proper reuse in certified centres is needed to ensure quality for new owners. Creating reuse-centres aside or closely linked to collection points would be ideal and best promoted for those countries, regions or cities still developing both.
Other	If promoting of leasing is mentioned as option, than the option towards higher reusability in the design of products should be mentioned too. (3)
4.3.1	Makes no difference to delay targets as targets will not work any way..
4.3.2	Risk of unclear "design" rules that are not set in an objective way.
4.3.3	Most financially efficient products for the leasing company would be promoted. Is that good or bad? The leasing company could decide to continue or scrap products for other than environmental reasons.
4.3.4	If the appliances go from collection points to authorized refurbish centres to be checked or repaired, this could be one way to increase the volume of products available for reuse or refurbishment and therby be able to make a better selection of suitable appliances, improving the product offer from refurbishers.
Other	(14)
3. What data can either support or reject/ falsify these?	
4.3.1	See STEP working group.
4.3.2	
4.3.3	
4.3.4	
Other	(6)
4.3.1	See comment under 4.2.1
4.3.2	
4.3.3	
4.3.4	See comment under 4.1.3 and 4.1.4
Other	(14)

Additional comment Working Group 4 – Targets Reuse as whole appliances

The relevance of definition and scope is to establish clear and unequivocal understanding of which products should be considered for promotion of reuse (even considering other aspects like energy consumption of new products versus refurbished old-ones) and of which aspects in the treatment chain to which reuse refers. Definitions need to provide a clear understanding of not only what is covered by the term reuse but also what is meant by 'whole appliance'. Furthermore, experience from certain take-back and refurbishment trials has demonstrated that some products are more readily refurbish-able than others. Additionally, some market and other restraints will be discussed.

(1)

Working Group 5 Treatment Requirements

Increase, Add, Maintain or Delete (entry-specific) requirements

- 5.1.1 Delete current targets altogether
- 5.1.2 Delete specific (superfluous) targets
- 5.1.3 Maintain current targets
- 5.1.4 Specify removal efficiencies per entry
- 5.1.5 Introduce targets for other (new) hazardous components
- Other?

Please fill this in where you think it is relevant:

4. Is the option relevant or not? Why?	
5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 Other	NO Maybe, but only very few Basically, YES NO (not practicable) Yes, maybe (3)
5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 Other	 YES (15)
5.1.1	NO – At present there is insufficient experience in most of the member states with targets. Some countries just started other still have to start. So targets should remain.

5.1.2 5.1.3 5.1.4 5.1.5 Other	NO – Targets should be maintained. It is unclear what is meant with ´superflous`. YES YES – For specific toxic substances removal efficiencies could be defined. If this will be done it should be very clear how this will be measured ! YES – For instance for flat display screens. (9)
5.1.1 to 5.1.5 Other	See next page (input to 5.2.2-5.2.7) (4)
5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 Other	YES/ NO Essential to maintain current specification in Annex II.2 for products containing gases with GWP>15 and/or ozone depleting (14)
5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 Other	~~YES~~/ NO; targets enforce the directive, we should not reduce, target could be measured and therefore helpful. ~~YES~~/ NO what are "superfluous" target. Targets guide the treatment, as a measurable instrument YES/ ~~NO~~ maintaince is needed for current targets, as the first compliance period just ends in these days, and it looks that many stakeholder did not understand the targets, but continue "business as ususal" (run since the last twenty years, without improvements, which the WEEE aims for YES/ NO – yes and no. If you do the (treatment) business, somebody will know. The result (An identifiable output stream) is the way of measurement YES/ ~~NO~~ make sense (13)
5.1.1	YES It would make more sense to develop BAT guidelines for recyclers, on the basis of which they would need to get an operating license. The benefits of using BAT guidelines, such as the ones developed under the IPPC directive, is that they can be easily updated to reflect

	technological progress, while remaining technologically neutral. Adaptation to technological progress of the treatment Annex II seems too slow and complicated to reflect improvements in technological progress, furthermore it is not detailed enough and is subject to misinterpretation.
5.1.2	
5.1.3	
5.1.4	
5.1.5	
Other	
	(*6*)
5.1.1	~~YES~~/ NO
5.1.2	~~YES~~/ NO
5.1.3	YES/ NO
5.1.4	YES/ ~~NO~~
5.1.5	YES/ ~~NO~~
Other	YES/ NO
	(*7*)
5.1.1	NO – without targets, without measurement, the water goes to the lowest point. I.e. loss of valuable resources and increase of uncontrolled toxic discharge. YES anything "superfluous" is superfluous and therefore to be deleted by nature.
5.1.2	YES – continue distinction between recycling and recovery and link this to the "environmental weight" per "logic" re-categorized product list (for instance CRT)
5.1.3	YES On the basis of the re-catorgorized product listing on the basis of the "environmental, identifiable output streams could be defined. Measurement of removal efficiency as such is probably almost impossible and impractical
5.1.4	YES – if new hazardous components develop, these should be included in the Annex II, but is is important that a harmonized Guidance Document is created for a level playing field.
5.1.5	
Other	*(10)*
5. What will the impacts be (environmental, economic, social)? Pro's and cons?	
5.1.1	Other legislation is not sufficient to ensure proper treatment and separation of hazardous components, because general limit values can be reached by clever mixing of input streams and enforcement and control is much more difficult. Lower standards of environmental protection will be the consequence.
5.1.2	With proper pre-treatment, including test of reusability and dismantling for component reuse and removal of hazardous substances, it is no problem to maintain all requirements, even if

5.1.3	some are only weakly justified (as e.g. removal of external cables). Only if you want to apply cheap solutions, you have to get rid of as much of the requirements as possible.
5.1.4	This should be done for special substances, as e.g. CFCs from fridges.
5.1.5	E.g. brominated flame retardants in plastic housings make recycling difficult, expensive and unhealthy.
Other	(*3*)
5.1.1	
5.1.2	
5.1.3	
5.1.4	
5.1.5	Is critical to distinguish how look, where are, the safe manage and the potential risks of the potential hazardous components and substances (Annex II or controlled substances from RoHS)
Other	(15)
5.1.1	See next page (input to 5.2.2-5.2.7)
5.1.2	
5.1.3	
5.1.4	
5.1.5	
Other	(4)
5.1.1	
5.1.2	
5.1.3	HC Refrigerators and freezers would be cheaper to recycle without jeopardizing the environment. This gives the potential to let the new HC product prices reflect the environmental aspects of the products. This will promote the sales of refrigerators and freezers with HC !
5.1.4	
5.1.5	
Other	(14)
5.1.1	Every incentive is gone
5.1.2	Our target is 80% weight recycling, no superfluous identified.

5.1.3	Focus on increased collection
5.1.4	Main toxicity in lamps is mercury, this needs removal
5.1.5	Instead of focussing on products focus on lamps
Other	(7)
6. What data can either support or reject/ falsify these?	
5.1.1	Analysis shows that the collected mix of appliances contains varying amounts of hazardous substances. To make sure they are extracted, it is not enough to monitor concentrations in the output stream, because in many cases you do not know where and how to measure. Unless there is proof that no hazardous substances are contained in the input, separation and special treatment is necessary.
5.1.2	To monitor the removal efficiency for hazardous substances like mercury or asbestos, thorough analyses of the different treatment methods would be necessary (e.g. manual dismantling vs. shredding and sorting afterwards should be compared for similar inputs). Such data are not available right now.
5.1.3	
5.1.4	
5.1.5	
Other	(3)
5.1.1	
5.1.2	
5.1.3	
5.1.4	
5.1.5	Is critical to teach collectors, recyclers and officials who give authorisation about potential hazardous components and substances can be present on WEEEs. For instance: How to recognize a ceramic or asbestos fibre component? And a PCB capacitor?. In old industrial equipment (from developing countries for instance) are not unusual old PCB capacitors and Hg relays)
Other	(15)
5.1.1	See next page (input to 5.2.2-5.2.7)
5.1.2	
5.1.3	
5.1.4	
5.1.5	
Other	(4)

5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 Other	Collecting HC gases from refrigerators and freezers and sending the HCs to a gas destruction facility(burning the gas) gives more CO2 impact compared to releasing the HC at the recycling facility in the first place. This is because the burning of the HC emits the corresponding amount of CO2 as the GWP of emitting the HC itself, but in addition the transport of the HC to the destruction facility adds CO2 from the transport. This does NOT apply to CFC, HCFC or HFC that are above GWP 15 and/or ozone depleting (i.e. these should be collected and sent to destruction) (14)
5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 Other	Current collection is too low, in extreme 1 lamp is enough Mercury targets for LCD are caused by backlight, so determine recycling by putting the lamp into another identifiable waste stream (7)

Alternative Definitions of Requirements

- 5.2.1 Align Annex II with ROHS & Batteries Directives
- 5.2.2 Establish, reconfirm a clear definition of "remove"
- 5.2.3 Describe treatment technologies per entry
- 5.2.4 Define 'Before, after and part of treatment'
- 5.2.5 Apply concentration and system limits
- Other?
- 5.2.6 Introduce common obligatory monitoring system
- 5.2.7 Remove article 4 WEEE (design for recycling) (4)

Please fill this in where you think it is relevant:

1. Is the option relevant or not? Why?	
5.2.1	What would that mean?
5.2.2	YES
5.2.3	NO

5.2.4	YES
5.2.5	?
Other	O
	(3)
5.2.1	YES – Especially when there are contradictory statements
5.2.2	YES – In 2005 the TAC working group has developed guidelines on the interpretation of Annex II. These guidelines should be included in the revised WEEE Directive. "Remove" has been clearly defined in these guidelines.
5.2.3	NO – Not the treatment technologies should be defined but the outcome of the process. Like in the above mentioned guideline: ' a toxic substance must be removed as an identifiable stream`.
5.2.4	NO – The TAC guideline is sufficient. It is not in the Directive now and should not be in in the revised one.
5.2.5	YES/ NO – Please clarify. The problem with concentrations is that it may result in: `The solution is dilution`.
Other	YES/ NO
	(9)
5.2.1	YES/ NO: See 5.2.6
5.2.2	NO, avoid too descriptive treatment requirements (products as well as treatment technology change often and quickly); TAC working group on annex II in its definition of "have to be removed" confirms that emphasis has to be on issue of sound monitoring of hazardous substances, preparations, components at the end of life treatment process rather than prescribing particular treatment technologies, techniques or practices; therefore option 5.2.6 is most relevant
5.2.3	NO, policy should define environmental priorities, but technology developments should be driven by market forces
5.2.4	NO, same as 5.2.2/5.2.6
5.2.5	NO, define environmental priorities
5.2.6	YES, fosters legal certainty, fair competition and environmental protection (see also above comment on 5.2.2); Monitoring can be organised in the licensing or in the quality systems of the treatment facility. No new data would have to be collected because the data collected in accordance with the licence and other waste legislation could be used and thereby reduce unnecessary administrative costs.
5.2.7	YES, outdated with adoption of directive 2005/32/EC on Eco Design of Energy Using Products (EuP)
	(4)
5.2.1	YES/ NO Please note that there is a 15 year delay in product cycle between RoHS and Annex II for large household products !

5.2.2	YES/ Good idea
5.2.3	
5.2.4	
5.2.5	
Other	
	(14)
5.2.1	YES/ NO see Annex II guidance document
5.2.2	YES/ NO see Annex II guidance document
5.2.3	YES/ NO see Annex II guidance document
5.2.4	YES/ NO see Annex II guidance document
5.2.5	YES/ N.Q. to be clarified
Other	YES/ NO
	(13)
5.2.1	NO, see answer to question 1.
5.2.2	NO, this is bound to become outdated as new separation and treatment technologies develop.
5.2.3	
5.2.4	
5.2.5	
Other	(6)
5.2.1	~~YES~~/ NO
5.2.2	YES/ ~~NO~~
5.2.3	~~YES~~/ NO
5.2.4	~~YES~~/ NO
5.2.5	YES/ ~~NO~~
Other	YES/ NO
	(7)
5.2.1	YES absolutely, take the example of the Br-FR; the most commonly used Br-BDE is deca-BR-BDE and this is allowed in the RoHS and this is not at all in line with the Annex II
5.2.2	YES – A harmonized Guidance Document is required.

5.2.3	YES – A harmonized Guidance Document is required.
5.2.4	YES – A harmonized Guidance Document is required.
5.2.5	YES – A harmonized Guidance Document is required.
Other	YES/ NO
	(10)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
5.2.1	
5.2.2	Though it should be quite clear what is meant, existing interpretations make it necessary to clarify when and how substances or components should be removed.
5.2.3	That's a too static approach
5.2.4	Though treatment should mean the whole process after an appliance is received by a treatment facility, it might be useful to clarify which steps could or should be done before others (e.g. proof of reusability before cutting any cables)
5.2.5	
	(3)
Other	
5.2.1	
5.2.2 to 5.2.5	Technology development fostered by competition in the market place promotes innovative, cost efficient innovations; wide variety of products makes it impossible to develop one best practice for entire WEEE scope
5.2.6	Avoids detrimental effect on competitiveness and allows sustainable solution through technology and market forces (e.g.: raw material prices); see also comment 5.2.2 Fosters implementation of directive; would allow to remove annex II from directive, reduce unnecessary administrative burden and thereby simplify directive
5.2.7	Would simplify directive and avoid adverse environmental effects; EuP is quoted by COM as an example of Better Regulation that addresses environmental impacts of an EEE from a life cycle perspective and doesn't limit them to one stage of the life cycle only (such as Art 4 WEEE)
	(4)
5.2.1	Too ambitious
5.2.2	In some countries immobilizing of mercury suffices, in others pure mercury has to come back. The first option is the better
5.2.3	The quality (output & efficiency) of the process is important, not the process itself, that is free competition.
5.2.4	Output quality should not pose on the list and thus be a new raw material, not waste
5.2.5	Limts allow to differentiate between waste and natural materials
Other	(7)

3. What data can either support or reject/ falsify these?	
5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 Other	As said before, removal efficiencies have to be measured in relation to a known input. (3)
5.2.2to 5.2.6 5.2.7	See TAC working group annex II document; experiences of members of WEEE Forum Explanatory Memorandum to and legal body of Directive 2005/32/EC on Eco Design of Energy Using Products Directive (4)
5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 Other	Market has implemented 7 ways of processing lamps and 3 ways of treating mercury Legislation prohibits clean materials to travel over borders, due source being waste. This makes efficient useage and replacement of natural resources difficult. (7)

Alternative Options (instead of treatment requirements)

- 5.3.0 Environmental Equivalency principle
- 5.3.1 Prescribing BAT
- 5.3.2 Industry standards (outside the Directive itself)
- 5.3.3 Monitoring and enforcement
- 5.3.5 Coverage by other legislation
- 5.3.6 Criteria lists for technologies, outlets
- 5.3.7 Criteria list to promote reuse components/ whole appliances
- 5.3.8 Cover removal by licensing/ permit
- Other?

Please fill this in where you think it is relevant:

1. Is the option relevant or not? Why?	
5.3.1	YES/ NO

5.3.2	NO
5.3.3	YES
5.3.4	YES/ NO
5.3.5	NO
5.3.6	YES/ NO
5.3.7	YES/ NO
5.3.0	YES/ NO
Other	YES/ NO
	(3)
5.3.1	NO - The problem is that there are no registered BREF's (BAT reference documents) available at present and it will take a long time (> 1.5 year) to register in Valencia. In case there would be BREF's it could be used for permitting/authorized approval, etc.
5.3.2	YES – An example is the collection, transport and treatment requirements of HC cooling and freezing appliances by CECED, WEEE Forum and EERA. More standards will follow.
5.3.3	YES – Monitoring could be done by prescribing REPTOOL. Since it will be very difficult to have this accepted in every member state, the best solution would be that the WEEE Directive will become European legislation under article 95. Enforcement is extremely weak in Europe and should be improved and harmonized.
5.3.5	YES – It should become very clear were the WSR, the battery directive, etc. have overlap with the WEEE Directive and were possible the doubling should be omitted.
5.3.6	YES for technologies but only on output terms and not for the technology itself. For outlets it is recommended to set up criteria in terms of approved and authorized outlets on a European level. For instance CRT glass will not be allowed to be put in salt mines. Here again it can only be solved in case the WEEE Directive is under art 95 instead of art. 175.
5.3.7	YES – Reuse should be further defined. The IMPEL study reveals that the biggest fraud is taking place under the label of reuse. Harmonized criteria should be developed. i.e art 95.
5.3.0	YES/ NO – Please clarify what is meant.
5.3.8	NO – see also under 5.3.1. Decentralisation of control will create even more headaches since there will not only be national interpretations but also local, while harmonisation on European level is required.
	(9)
5.3.1 to 5.3.3	YES/ NO: see 5.2.2-5.2.6 previous pages
5.3.5	YES, overlaps with draft Waste Directive and IPPC/BREFs should be avoided (legal uncertainty)
5.3.6	NO, see 5.2.2-5.2.6, previous pages

5.3.7	NO, priority for re-use may not be best environmental option against other environment priorities, e.g.: energy efficiency
5.3.0	?
5.3.8	NO, too complex
	(4)
5.3.1	
5.3.2	
5.3.3	
5.3.4	
5.3.5	
5.3.6	
5.3.7	YES/ NO Certified refurbishes are needed who can make the correct distinctions of what products and components are suitable for reuse. See comments on reuse/refurbishment !
5.3.0	
Other	(14)
5.3.1	~~YES~~/ NO BAT define itself by best output stream quality. Should be referred to BREF if applicable
5.3.2	YES/ NO yes, welcome and support (e. g. initiative of EERA, WEEE Froum and CECED on HC containing cooling and freezing appliances
5.3.3	YES/ NO yes, strongly needed
5.3.4	YES/ No N.Q. available
5.3.5	YES/ N.Q. to be clarified
5.3.6	YES/ NO yes if output stream orientated (description of the output (e. g. purity, free from other materials (e. g. plastics on metal fraction)
5.3.7	YES/ NO clear definitions are needed. Reuse is partly used for waste exported to developing countries. The main stream is not treated in accordance with European legislation
5.3.0	YES/ N.Q. to be clarified
Other	YES/ NO if somebody remove anything from a WEEE, treatment started and – of course – he need a licence and a permit
	(13)

5.3.1	YES – see answer 1.
5.3.2	YES – good alternative to BAT.
5.3.3	YES/ NO
5.3.4	YES/ NO
5.3.5	YES/ NO
5.3.6	YES/ NO
5.3.7	NO – treatment should be kept technologically neutral and not specify techniques or technologies to achieve an environmental goal.
5.3.0	YES/ NO
Other	YES/ NO
	(6)
5.3.1	YES/ ~~NO~~
5.3.2	~~YES~~/ NO
5.3.3	YES/ ~~NO~~
5.3.4	YES/ NO
5.3.5	YES/ ~~NO~~
5.3.6	YES/ ~~NO~~
5.3.7	~~YES~~/ NO
5.3.0	~~YES/ NO~~
Other	YES/ ~~NO~~
	(6)
5.3.1	NO , this would require a BREF, which will take very long. Does not seem practical.
5.3.2	YES see initiative of EERA, WEEE Froum and CECED on HC containing cooling and freezing appliances.
5.3.3	YES – of course
5.3.5	YES – try to avoid double coverage – see Waste Transport Directive, which does not need to be repeated
5.3.6	YES/ N.Q. unclear
5.3.7	NO I cannot see how this can be made practical, as technologies develop

5.3.0	YES – see replies on re-use
5.3.8	YES – all companies in the downstream treatment should be licensed as such, which would also make the transport much easier (see also implementation of Waste Transport Directive) (10)
2. What will the impacts be (environmental, economic, social)? Pro's and cons?	
5.3.1 to 5.3.3	See 5.2.2-5.2.6 previous pages
5.3.5	Only legislation that is clear and unambiguous can deliver desired environmental, economic and societal results
5.3.6	See 5.2.2-5.2.6 previous pages
5.3.7	Refurbishment of appliances raises several concerns: For basically all EEE, analysis from a life cycle perspective demonstrates that the major environmental impact of an EEE relates to the use of the product, rather than to the production and even less to the recycling of an appliance, i.e.: new products are more energy efficient than preceding models. Promoting re-use without paying attention to these considerations may in fact raise energy consumption and therefore result in counterproductive environmental impacts. The second and probably even more sensitive concern relates to the issue of who guarantees the safety of a refurbished appliance. When the product was originally put on the market it was assessed for safety and CE marked by its producer. This is only valid for a product in its original shape, with approved components assembled and connected in a tested and approved manner. After refurbishment, however, the original CE marking can no longer be guaranteed and the original producer cannot take on the responsibility for the safety of the refurbished product. To be realistic, only few products that enter the waste stream are fit for refurbishment or re-use. At that moment, they are in principle worn-out: they should be treated as waste and the materials should be recycled. If a product is still performing properly, including on environmental aspects from a life cycle perspective and in comparison to state of art technology, it can and should be sold on the second hand market due to its value.
5.3.0	(4)
Other	
5.3.1	
5.3.2	
5.3.3	
5.3.4	
5.3.5	
5.3.6	
5.3.7	Refurbishers are best placed to judge the reusability of products, as this is governed by a complex and dynamic assessment of the age, value and market demand for the product.

5.3.0 Other	(6)
5.3.1	Prescribing performance, not technology is important
5.3.2	Limiting to country limits is not a good idea
5.3.3	Policing of standards is good for the environement
5.3.4	
5.3.5	Ecodesign can be defined elsewhere and more precise to new product designs Sensible, guarantees quality when audited
5.3.6	Not needed, lamp industry already applies glass coming from recycling
5.3.7	Option not understood
5.3.0	This obstructs (cross-border) efficiencies and makes replacement of raw materials difficult.
Other	(7)
5.1.1	Every incentive is gone
5.1.2	Our target is 80% weight recycling, no superfluous identified.
5.1.3	Focus on increased collection
5.1.4	Main toxicity in lamps is mercury, this needs removal
5.1.5	Instead of focussing on products focus on lamps
Other	(7)
3. What data can either support or reject/ falsify these?	
5.3.7	Different product analysis as foreseen in case of EuP directive
5.3.0 Other	(4)
5.1.1	Current collection is too low, in extreme 1 lamp is enough
5.1.2	
5.1.3	
5.1.4	
5.1.5	Mercury targets for LCD are caused by backlight, so determine recycling by putting the lamp

Other	into another identifiable waste stream (7)

Additional comment Working Group 5 – Treatments requirements:

Key issue here is whether the instrument of treatment rules effectively forms an incentive to realise toxic control within treatment processes, improves overall environmental and economic performance or ensures proper treatment. Mainly recyclers are affected by the treatment rules: thus the treatment rules should be reviewed by taking into account the fact that development in recycling infrastructure has happened in the past and will do so again in the future. Also the analysis shows that there is quite some other legislation tackling the most burdening Annex II components as well as lacking focus on the actual destination and/ or next step treatment steps which are affecting overall 'removal' performance.

(1)

Annex 10.5 Environmentally Relevant Materials

Put on market 2005

Arising ton TOTAL WEEE [t]	Cat 1a	Cat 1b	Cat 1c	2; 5a; 8	3a	3b	3c	4a	4b	4c	5b	6	7	TOTAL [t]
Ag	0.31	0.00	0.13	0.09	118.77	19.60	0.00	2.08	11.29	1.65	12.73	2.24	0.16	169
Au	0.07	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.70	0.11	4.90	0.55	0.01	7
Au	0.00	0.00	0.04	0.03	19.55	2.61	0.00	0.23	0.00	0.00	0.00	0.00	0.00	22
Be	0.00	0.00	0.00	0.00	1.29	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	1
Bi	0.00	0.00	0.00	0.00	11.88	9.80	0.00	0.00	51.07	0.41	0.00	0.00	0.00	73
Br	0.00	0.00	9.15	5.85	366.22	58.81	0.17	0.00	213.41	12.68	0.00	0.00	0.07	666
Cd	0.00	0.00	10.30	37.25	51.96	17.97	23.15	6.63	0.00	0.00	0.00	0.00	0.00	147
Cl	0.00	0.00	10.87	7.18	2.47	169.89	0.21	0.00	0.00	2.35	0.00	0.00	3.05	196
Co	0.00	0.00	13.16	47.89	66.81	22.87	3.48	8.36	9.68	0.13	0.00	0.00	0.00	172
Cr	0.20	0.00	0.80	0.53	155.89	6.86	0.02	0.00	203.20	2.33	2.01	3.09	0.15	375
CRT-glass cone	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	149496.83	3685.90	0.00	0.00	0.00	153,183
CRT-glass screen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	303562.97	7372.43	0.00	0.00	0.00	310,935
Cu	68201.40	33027.65	54694.57	128773.83	39343.88	69099.79	2903.34	737.68	38865.95	603.75	7587.25	4104.02	1589.81	449,533
Epoxy	0.00	0.00	480.58	313.95	0.00	2809.73	9.37	0.00	3418.91	395.45	0.00	0.00	109.44	7,537
Fluorescent powder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1365.17	1,365
Hg	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.15	0.37	3.69	4
Glass (LCD)	0.00	0.00	8.01	15.17	987.31	8.98	0.23	5.19	0.00	0.00	6069.80	0.00	0.00	7,095
Liquid Crystals	0.00	0.00	0.00	0.00	59.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59
Mn	0.00	0.00	0.69	2.66	3.71	1.23	0.19	0.46	0.00	0.00	0.00	0.00	0.00	9
Ni	0.98	0.00	36.04	122.39	779.45	145.39	36.46	35.18	478.97	7.15	90.31	15.94	0.81	1,749
Oil	66.00	7067.50	531.50	1021.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8,687
Pb	29.46	0.00	28.61	18.62	262.29	357.75	0.57	2.25	822.47	15.36	57.27	60.27	52.99	1,708
PCB	27.89	0.00	0.35	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29
Pd	0.04	0.00	0.08	0.05	7.42	0.47	0.00	0.02	0.26	0.04	1.00	0.17	0.01	10
PVC	7503.73	827.41	1161.40	1436.73	2128.03	127.42	55.91	0.00	2806.09	65.29	2246.81	1255.11	0.00	19,614
Sb	1.77	0.00	1.66	1.09	47.01	39.21	0.03	0.00	162.34	3.58	3.92	3.54	0.43	265
Sn	1001.81	0.00	16.02	244.78	979.89	269.54	5.56	21.63	43.54	8.08	12.97	91.15	63.36	2,758
Stainless steel	35632.87	34475.62	12929.89	18544.50	12743.46	27607.24	72.11	0.00	0.00	0.00	0.00	0.00	259.21	142,265
Cyclopentane	0.00	1620.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,620
Isobutaan	0.00	379.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	379
CFC11	0.00	8446.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8,447
CFC12	0.00	3351.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3,351
Zn	301.33	0.00	33.76	125.05	987.31	529.27	5.70	9.80	1392.29	3.99	25.21	114.55	9.79	3,538
Total [t]	1,269,894	925,677	470,233	413,618	695,159	395,607	9,940	113,778	580,670	12,824	66,708	56,981	5,146	**5,016,236** Total WEEE Arising 05

Figure liii: Environmentally relevant materials arising as waste

Currently collected and treated

Current Collected & treated [t]	Cat 1a	Cat 1b	Cat 1c	2; 5a; 8	3a	3b	3c	4a	4b	4c	5b	6	7	TOTAL [t]	
Ag	0.05	0.00	0.05	0.02	33.06	6.91	0.00	0.83	3.38	0.67	2.84	0.55	0.04	48	
Au	0.01	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.21	0.04	1.09	0.13	0.00	2	
Au	0.00	0.00	0.02	0.01	5.44	0.92	0.00	0.09	0.00	0.00	0.00	0.00	0.00	6	
Be	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0	
Bi	0.00	0.00	0.00	0.00	3.31	3.46	0.00	0.00	15.28	0.17	0.00	0.00	0.00	22	
Br	0.00	0.00	3.66	1.56	101.93	20.73	0.07	0.00	63.87	5.13	0.00	0.00	0.02	197	
Cd	0.00	0.00	4.11	9.92	14.46	6.33	9.36	2.66	0.00	0.00	0.00	0.00	0.00	47	
Cl	0.00	0.00	4.34	1.91	0.69	59.89	0.09	0.00	0.00	0.95	0.00	0.00	0.74	69	
Co	0.00	0.00	5.26	12.76	18.59	8.06	1.41	3.35	2.90	0.05	0.00	0.00	0.00	52	
Cr	0.03	0.00	0.32	0.14	43.39	2.42	0.01	0.00	60.82	0.94	0.45	0.76	0.04	109	
CRT-glass cone	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44743.57	1491.07	0.00	0.00	0.00	46,235	
CRT-glass screen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90854.71	2982.40	0.00	0.00	0.00	93,837	
Cu	11130.51	9018.55	21854.89	34303.69	10950.17	24359.24	1174.50	295.58	11632.36	244.24	1695.42	1004.50	385.88	128,050	
Epoxy	0.00	0.00	192.03	83.63	0.00	990.49	3.79	0.00	1023.26	159.97	0.00	0.00	26.56	2,480	
Fluorescent powder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	331.35	331	
Hg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.89	1	
Glass (LCD)	0.00	0.00	3.20	4.04	274.79	3.17	0.09	2.08	0.00	0.00	1356.34	0.00	0.00	1,644	
Liquid Crystals	0.00	0.00	0.00	0.00	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17	
Mn	0.00	0.00	0.27	0.71	1.03	0.43	0.08	0.18	0.00	0.00	0.00	0.00	0.00	3	
Ni	0.16	0.00	14.40	32.60	216.94	51.25	14.75	14.10	143.35	2.89	20.18	3.90	0.20	515	
Oil	10.77	1929.86	212.38	272.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,425	
Pb	4.81	0.00	11.43	4.96	73.00	126.12	0.23	0.90	246.16	6.21	12.80	14.75	12.86	514	
PCB	4.55	0.00	0.14	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5	
Pd	0.01	0.00	0.03	0.01	2.07	0.17	0.00	0.01	0.08	0.02	0.22	0.04	0.00	3	
PVC	1224.61	225.93	464.07	382.73	592.27	44.92	22.62	0.00	839.85	26.41	502.06	307.20	0.00	4,633	
Sb	0.29	0.00	0.66	0.29	13.09	13.82	0.01	0.00	48.59	1.45	0.88	0.87	0.10	80	
Sn	163.50	0.00	6.40	65.21	272.72	95.02	2.25	8.67	13.03	3.27	2.90	22.31	15.38	671	
Stainless steel	5815.31	9413.93	5166.53	4940.02	3546.75	9732.18	29.17	0.00	0.00	0.00	0.00	0.00	62.92	38,707	
Cyclopentane	0.00	442.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	442	
Isobutaan	0.00	103.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104	
CFC11	0.00	2306.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,306	
CFC12	0.00	915.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	915	
Zn	49.18	0.00	13.49	33.31	274.79	186.58	2.31	3.93	416.71	1.61	5.63	28.04	2.38	1,018	
Total [t]	207,006	252,766	187,896	110,104	192,092	138,044	4,018	45,098	169,254	5,077	13,922	13,563	1,174	**1,340,014**	Current Collected & treated [t]

Figure liv: Environmentally relevant materials currently collected and treated

Full Implementation [t]	Cat 1a	Cat 1b	Cat 1c	2; 5a; 8	3a	3b	3c	4a	4b	4c	5b	6	7	TOTAL [t]
ABS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53984.97	1318.33	5286.60	12386.78	0.00	72,977
Ag	0.05	0.00	0.10	0.05	71.26	14.70	0.00	1.25	8.47	1.24	7.64	1.34	0.12	106
Au	0.01	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.52	0.08	2.94	0.33	0.01	4
Au	0.00	0.00	0.03	0.02	11.73	1.96	0.00	0.14	0.00	0.00	0.00	0.00	0.00	14
Be	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	1
Bi	0.00	0.00	0.00	0.00	7.13	7.35	0.00	0.00	38.30	0.31	0.00	0.00	0.00	53
Br	0.00	0.00	6.87	3.51	219.73	44.11	0.13	0.00	160.06	9.51	0.00	0.00	0.05	444
Cd	0.00	0.00	7.72	22.35	31.18	13.48	17.36	3.98	0.00	0.00	0.00	0.00	0.00	96
Cl	0.00	0.00	8.15	4.31	1.48	127.42	0.16	0.00	0.00	1.76	0.00	0.00	2.29	146
Co	0.00	0.00	9.87	28.73	40.09	17.15	2.61	5.02	7.26	0.10	0.00	0.00	0.00	111
Cr	0.03	0.00	0.60	0.32	93.53	5.15	0.01	0.00	152.40	1.75	1.20	1.85	0.11	257
CRT-glass cone	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112122.63	2764.43	0.00	0.00	0.00	114,887
CRT-glass screen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	227672.23	5529.32	0.00	0.00	0.00	233,202
Cu	11130.51	24770.73	41020.93	77264.30	23606.33	51824.84	2177.51	442.61	29149.46	452.81	4552.35	2462.41	1192.36	270,047
Epoxy	0.00	0.00	360.43	188.37	0.00	2107.30	7.03	0.00	2564.19	296.59	0.00	0.00	82.08	5,606
Fluorescent powder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1023.87	1,024
Hg	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.09	0.22	2.76	3
Glass (LCD)	0.00	0.00	6.01	9.10	592.39	6.74	0.17	3.11	0.00	0.00	3641.88	0.00	0.00	4,259
Liquid Crystals	0.00	0.00	0.00	0.00	35.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36
Mn	0.00	0.00	0.51	1.60	2.23	0.92	0.14	0.28	0.00	0.00	0.00	0.00	0.00	6
Ni	0.16	0.00	27.03	73.43	467.67	109.04	27.35	21.11	359.23	5.36	54.19	9.56	0.60	1,155
Oil	10.77	5300.63	398.62	613.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6,323
Pb	4.81	0.00	21.45	11.17	157.38	268.31	0.43	1.35	616.86	11.52	34.36	36.16	39.75	1,204
PCB	4.55	0.00	0.27	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5
Pd	0.01	0.00	0.06	0.03	4.45	0.36	0.00	0.01	0.19	0.03	0.60	0.10	0.01	6
PVC	1224.61	620.56	871.05	862.04	1276.82	95.56	41.93	0.00	2104.57	48.97	1348.08	753.07	0.00	9,247
Sb	0.29	0.00	1.24	0.65	28.21	29.40	0.02	0.00	121.76	2.68	2.35	2.12	0.32	189
Sn	163.50	0.00	12.01	146.87	587.93	202.15	4.17	12.98	32.66	6.06	7.78	54.69	47.52	1,278
Stainless steel	5815.31	25856.72	9697.42	11126.70	7646.07	20705.43	54.08	0.00	0.00	0.00	0.00	0.00	194.41	81,096
Cyclopentane	0.00	1215.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,215
Isobutaan	0.00	284.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	284
CFC11	0.00	6334.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6,335
CFC12	0.00	2513.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,513
Zn	49.18	0.00	25.32	75.03	592.39	396.96	4.27	5.88	1044.22	2.99	15.13	68.73	7.34	2,287
Total [t]	207,006	694,258	352,675	247,994	414,111	293,692	7,450	67,532	478,118	10,731	42,668	45,634	3,626	**2,865,495** Max collection (t)

Figure Iv: Environmentally relevant materials maximum collection