

Building on the Eco-design Directive, EuP Group Analysis (I), Lot 3: Sound & Imaging Equipment

2nd Stakeholder Meeting

Assessment of Base Cases

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Base Cases

The four bases cases selected are:

- Video player
- Video recorder
- Projector
- Games console

Definition of Base Cases

Two base cases: one for a typical video player currently on the market suitable for home use, and the other for a typical video recorder. These are used typically about 1.04 hours/day and spend typically about 4.3 hours/day in idle mode and typically about 17.45 hours/day in standby mode. The remaining time these items are switched off.

The projectors base-case has been established on a typical LCD projector suitable for office or school use. These are used typically for 2 hours/day and are kept in standby for about 0.5 hours/day. The remaining time these items are switched off.

The games console base case has been taken to represent a typical games console currently marketed. These are actively used typically for just over 30 minutes per day, but trends indicate that this is increasing. In addition to this, typically about 1.4 hours/day is spent in idle mode and is kept in standby for about 10 hours/day. The remaining time these items are switched off.

BOM – Materials Content

Materials	Video player/recorder	Projector	Games console
Bulk Plastics	22.5%	18.3%	27.8%
Tech Plastics	-	21.2%	0.3%
Ferrous	29.8%	6.2%	8.8%
Non-ferrous	2.6%	11.0%	7.6%
Electronics	11.2%	14.4%	17.0%
Miscellaneous	33.9%	28.8%	38.5%
TOTALS	100%	100%	100%

Distribution

The packaging used for these products is predominantly cardboard material along with smaller amounts of plastics (e.g. LDPE bags).

Assumed dimensions of packaged product were:

Video player/recorder	Projector	Games Console
0.45m x 0.3m x 0.15m	0.3m x 0.3m x 0.45m	0.6m x 0.3m x 0.15m

Use Phase

Description	V Player	V Recorder	Projector	G Console
Lifetime	6 years	6 years	6 years	5.5 years
Electricity in use	0.008 kW	0.020 kW	0.250 kW	0.0515 kW
Time/year in use	379.6 hours	379.6 hours	500 hours	208.05 hours
Electricity in Standby	0.0008 kW	0.0025 kW	0.005 kW	0.0011 kW
Time/year in standby	6369.25 hours	6369.25 hours	125 hours	3650 hours
Electricity in Idle/Fast-start	0.006 kW	0.012 kW	-	0.0515 kW
Time/year in idle/fast-start	1573.15 hours	1573.15 hours	-	514.65 hours

End-of-Life Phase

Our assumptions for EoL phase are as follows:

- 25% EOL multimedia products are separately collected in accordance with the findings of the 2007 study reviewing the WEEE Directive.
- 75% of separately collected EOL multimedia products are recovered, complying with the WEEE Directive.
- 65% of separately collected EOL multimedia products undergo reuse and recycling, also complying with the WEEE Directive.
- Metals – 95% recycling is assumed (fixed in Eco-Report)
- Plastics – 1% reuse, closed loop recycling assumed. The percentage of material recycling is calculated so that an overall 65% reuse and recycling rate for multimedia products is achieved. The percentage of thermal recycling is such as to achieve an overall recovery rate for multimedia products of 75%.
- Landfill – 25% of separately collected multimedia products are not recovered.

These assumptions represent the minimum level for compliance with the WEEE Directive currently in force.

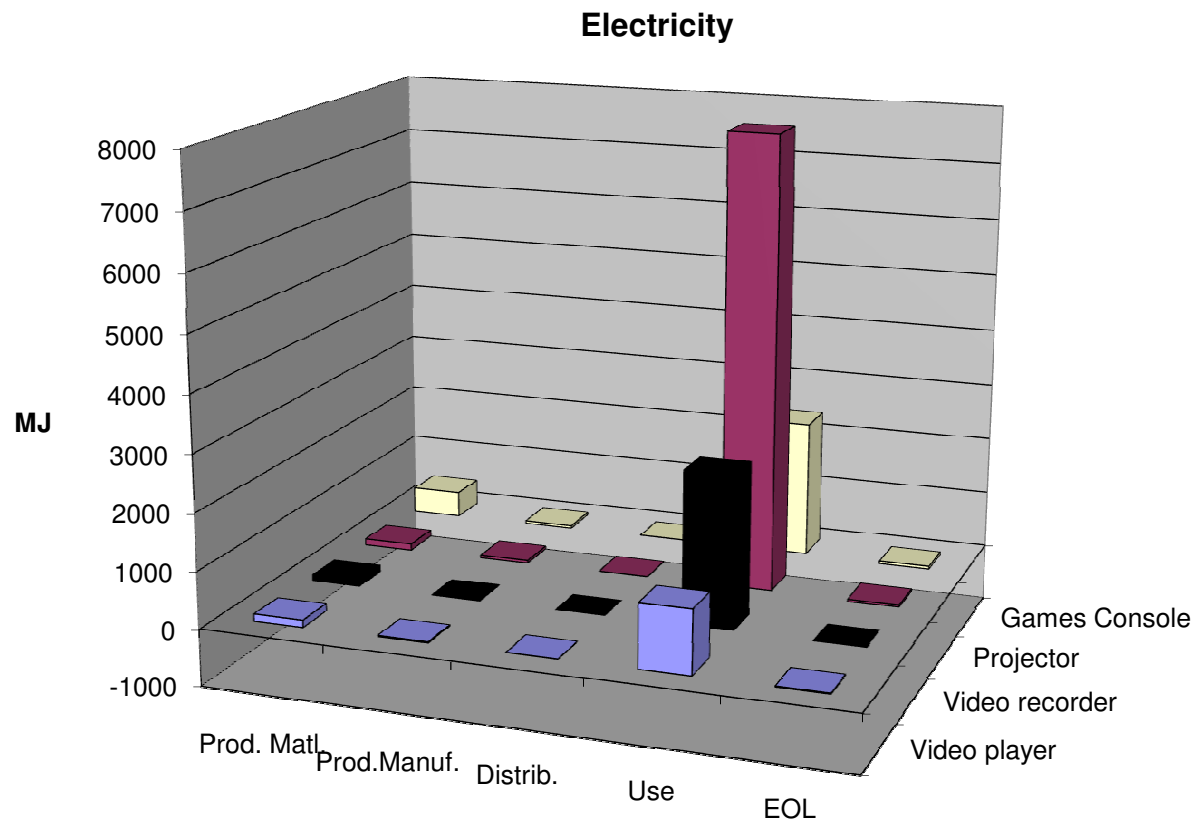
Annual Sales & Stock Model (EU-27)

	Video player/recorders	Projectors	Games consoles
Sales 2008	48,000,000	1,600,000	20,650,000
Sales 2014	45,000,000	1,900,000	13,500,000
Sales 2020	35,000,000	1,450,000	8,530,000
Stock 2008	216,500,000	7,700,000	59,650,000
Stock 2014	240,000,000	11,000,000	87,900,000
Stock 2020	238,000,000	6,500,000	65,000,000

[See Initial Screening for details](#)

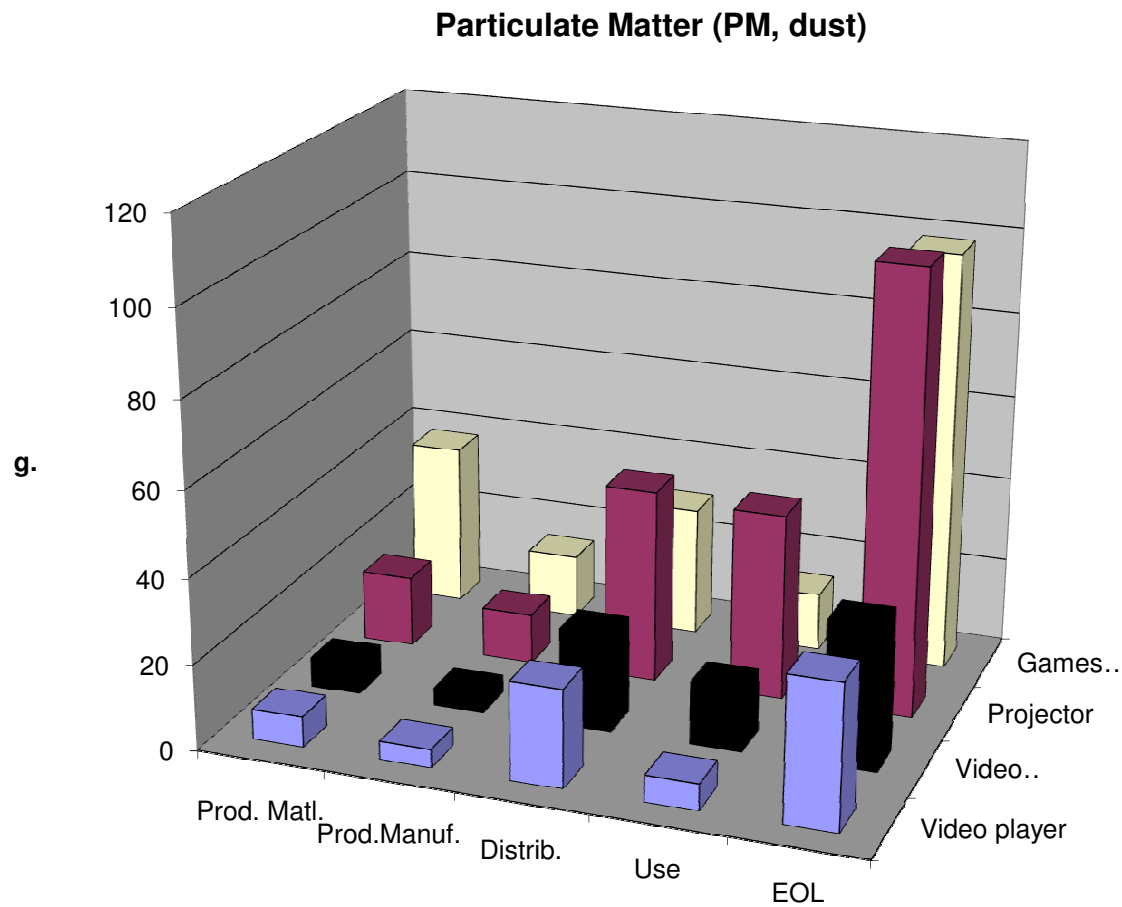
Impacts (EcoReport)

For some categories, the use phase dominates impact



Impacts (EcoReport)

...but not always



Summary of Total Impact

	Video players		Video recorders		Projectors		Games Consoles	
main life cycle indicators	value	unit	value	unit	value	unit	value	unit
Total Energy (GER)	45	PJ	19	PJ	12	PJ	51	PJ
<i>of which, electricity</i>	3.4	TWh	1.6	TWh	1.0	TWh	3.3	TWh
Water (process)*	4	mln.m3	2	mln.m3	1	mln.m3	10	mln.m3
Waste, non-haz./landfill*	127	kton	44	kton	24	kton	196	kton
Waste, hazardous/incinerated*	16	kton	5	kton	3	kton	23	kton
Emissions (Air)								
Greenhouse Gases in GWP100	2	mt CO2eq.	1	mt CO2eq.	1	mt CO2eq.	3	mt CO2eq.
Acidifying agents (AP)	13	kt SO2eq.	5	kt SO2eq.	3	kt SO2eq.	18	kt SO2eq.
Volatile Org. Compounds (VOC)	0	kt	0	kt	0	kt	0	kt
Persistent Org. Pollutants (POP)	1	g i-Teq.	0	g i-Teq.	0	g i-Teq.	1	g i-Teq.
Heavy Metals (HM)	2	ton Ni eq.	1	ton Ni eq.	0	ton Ni eq.	3	ton Ni eq.
PAHs	1	ton Ni eq.	0	ton Ni eq.	0	ton Ni eq.	3	ton Ni eq.
Particulate Matter (PM, dust)	2	kt	1	kt	0	kt	4	kt
Emissions (Water)								
Heavy Metals (HM)	1	ton Hg/20	0	ton Hg/20	0	ton Hg/20	5	ton Hg/20
Eutrophication (EP)	0	kt PO4	0	kt PO4	0	kt PO4	0	kt PO4

Life Cycle Costs (Euro per product)

	Video player	Video recorder	Projector	Games console
Product price	40	165	800	360
Installation costs	-	-	500	-
Electricity	15	36	105	32
Repair & maintenance	-	-	371	-
TOTALS	55	201	1,777	392

Total Annual Consumer Expenditure (M€)

	Video player	Video recorder	Projector	Games console
Product price	1,300	1,568	1,280	7,416
Installation costs	-	-	800	-
Electricity	481	234	161	393
Repair & maintenance	-	-	567	-
TOTALS	1,781	1,802	2,807	7,809

Comparison with EIPRO

	EIPRO	Eco Report Lot 3
Abiotic depletion	0.0076	No output information
Global warming	0.0115	0.0014
Human toxicity	0.0074	Indicate single indicators HM, PAH, POP, PM
Ecotoxicity	0.0071	Indicate single indicators HM, PAH, POP, PM
Acidification	0.0198	0.009

Figures expressed as a fraction of EU-25 Total

Potential Ecodesign Indicators

El (ref Annex 1)	Assessed El (Lot3 products)	Potential ecodesign indicator (for designers)
Consumption of energy	Electricity consumption significant for projectors and games consoles?	TEC, on/idle/standby consumption, auto power down or any other energy efficiency indicator
Consumption of materials	Significant PWB, ICs or other such as copper wire, Al sheet?	Less weight/volume, miniaturisation? Substitution of material? Use of hazardous substances (Covered by ROHS?) Use of recycled materials? Extension of lifetime? (such as minimum guaranteed lifetime or minimum lifetime for availability of spare parts, modules etc.)
Consumption of other resources	Significant process water and cooling water for all three products?	If the water consumption is only related to the electricity consumption or material production they are covered by energy/resource indicators above. If not, separate indicators may be discussed.
Emissions to air, water & soil	GHG, SO2, which POP, which heavy metals, which PAHs and PM for all three products?	If the emissions are only related to the electricity consumption covered by energy indicators above. If not, separate indicators may be discussed such as in ecolabel.
Physical effects (e.g. noise, vibration, radiation etc.)	Electromagnetic fields significant according to EMC. Radiation, noise, vibration significant or not? Covered by other safety and health directive such as LVD?	If fully covered by EMC, LVD etc. no ecodesign indicators. If not and not significant (noise?), no ecodesign indicator necessary. If not and significant (noise?), ecodesign indicator necessary, e.g. noise in dB(A).
Generation of waste	Non-hazardous and hazardous waste for all three products?	If fully covered by waste legislation (WEEE and ROHS) no ecodesign indicator necessary.
Possibilities for reuse, recycling & recovery	Significant environmental impact (waste, resource use) if no reuse, recycling and recovery?	If yes and not fully covered by WEEE, design for recycling indicators necessary e.g. Ease of reuse (whole item or components)? or recycling? Incorporation of used components?