



### Ranking criteria explained

As of the 8th edition of the Guide to Greener Electronics, Greenpeace scores electronics brands on a tightened set of chemicals and e-waste criteria, (which include new criteria) and on new energy criteria.

The ranking criteria reflect the demands of the Toxic Tech campaign to electronics companies. Our two demands are that companies should:

- (1) clean up their products by eliminating hazardous substances; and
- (2) take-back and recycle their products responsibly once they become obsolete.

The two issues are connected: the use of harmful chemicals in electronic products prevents their safe recycling once the products are discarded.

Given the increasing evidence of climate change and the urgency of addressing this issue, Greenpeace has added new energy criteria to encourage electronics companies to:

- (3) improve their corporate policies and practices with respect to Climate and Energy

### Criteria on Toxic Chemicals

Greenpeace wants to see electronics companies clean up their act.

Substituting harmful chemicals in the production of electronics will prevent worker exposure to these substances and contamination of communities that neighbour production facilities. Eliminating harmful substances will also prevent leaching/off-gassing of chemicals like brominated flame retardants (BFR) during use, and enable electronic scrap to be safely recycled. The presence of toxic substances in electronics perpetuates the toxic cycle – during reprocessing of electronic waste and by using contaminated secondary materials to make new products.

The issue of toxicity is overarching. Until the use of toxic substances is eliminated, it is impossible to secure 'safe' recycling. For this reason, the points awarded to corporate practice on chemicals are weighted more heavily than criteria on recycling.

Although there are five criteria on both chemicals and waste, the top score on chemicals is 18 points, as double points are awarded for vinyl plastic-free (PVC) and BFR-free models on the market, whereas the top score on e-waste is 15 points.

The criteria on Precautionary Principle and Chemicals Management remain the same. The criterion: BFR-free and PVC-free models on the market, also remains the same and continues to score double points.

The two former criteria: Commitment to eliminating PVC with timeline and Commitment to eliminating all BFRs with timeline, have been merged into one criterion, with the lower level of commitment to PVC or BFR elimination determining the score on this criterion.

A new criterion has been added, namely Phase out of additional substances with timeline(s). The additional substances, many of which have already been identified by the brands as suspect substances for potential future elimination are:

- (1) all phthalates,
- (2) beryllium, including alloys and compounds and
- (3) antimony/antimony compounds

## Criteria on e-waste

Greenpeace expects companies to take financial responsibility for dealing with the electronic waste (e-waste) generated by their products, to take back discarded products in all countries with sales of their products and to re-use or recycle them responsibly. Individual producer responsibility provides a feedback loop to the product designers of the end-of-life costs of treating discarded electronic products and thus an incentive to design out those costs.

An additional e-waste criterion has been added and most of the existing criteria have been sharpened, with additional demands. The new e-waste criterion requires the brands to report on the use of recycled plastic content across all products and provide timelines for increasing content.

## Criteria on energy

The five new energy criteria address key expectations that Greenpeace has of responsible companies that are serious about tackling climate change. They are:

- (1) Support for global mandatory reduction of greenhouse gas (GHG) emissions;
- (2) Disclosure of the company's own (GHG) emissions plus emissions from two stages of the supply chain;
- (3) Commitment to reduce the company's own GHG emissions with timelines;
- (4) Amount of renewable energy used
- (5) Energy efficiency of new models (double points)

**Click here to see more detailed information on the ranking**

**Ranking regrading:** Ranking regrading: Companies have the opportunity to move towards a greener ranking as the guide will continue to be updated every quarter. However penalty points will be deducted from overall scores if Greenpeace finds a company lying, practicing double standards or other corporate misconduct.

**Disclaimer:** Greenpeace's 'Guide to Greener Electronics' aims to clean up the electronics sector and get manufacturers to take responsibility for the full life cycle of their products, including the electronic waste that their products generate and the energy used by their products and operations.

The guide does not rank companies on labour standards, social responsibility or any other issues, but recognises that these are important in the production and use of electronics products.

**Change in ranking guide:** We first released our 'Guide to Greener Electronics' in August 2006, which ranked the 14 top manufacturers of personal computers and mobile phones according to their policies on toxic chemicals and recycling.

In the sixth issue of the Guide, we added the leading manufacturers of TVs – namely, Philips and Sharp – and the game console producers Nintendo and Microsoft. The other market leaders for TVs and game consoles are already included in the Guide.

In the eighth edition, we sharpened some of the existing ranking criteria on toxic chemicals and e-waste and added a criterion on each issue. We also added five new energy criteria.

For the latest version [greenpeace.org/greenelectronics](https://www.greenpeace.org/greenelectronics)

A penalty point has been deducted from Nokia's overall score for corporate misbehaviour as a result of Greenpeace re-testing of the company's take-back practice in India which continues to be unsatisfactory.

Philips also gets a penalty point for double standards. On its global website, Philips recognises the benefits of Individual Producer Responsibility for product eco-design, but in the U.S. Philips is part of the Electronic Manufacturers' Coalition for Responsible Recycling, which does not support Producer Responsibility and wants to put the financial burden for collection and recycling of e-waste on the consumer.

# SONY ERICSSON Ranking = 5.1/10

Sony Ericsson is in pole position despite barely scraping past the halfway mark with 5.1. It is the first company to score almost top marks on the chemicals criteria, missing this target by having unreasonably high threshold limits for brominated flame retardants in products that are allegedly BFR-free. All SE products are already PVC-free. SE has already met the challenge of the new criterion on chemicals, by banning antimony, beryllium and phthalates from new models launched since January 2008.

The company scores relatively high on energy criteria because all of its products meet and exceed the Energy Star standard. On all other energy issues, it scores badly.

Sony Ericsson falls down on e-waste issues scoring badly on all the criteria. It reports a pitiful recycling rate of 1%-13%.

## SONY ERICSSON Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## SONY ERICSSON Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				Sony Ericsson scores top marks for defining the Precautionary Principle and its commitment to it. <b>More information.</b>
Chemicals Management				Sony Ericsson is ahead of many companies by already eliminating substances from its new products that others have only identified for future action. The company has updated its list of Banned and Restricted Substances. <b>More information. SE's pdf List of Banned &amp; Restricted Substances.</b>
Timeline for PVC & BFR phaseout				All SE products are PVC free – except for cables in a few early models of chargers and accessories, and these are being phased out. All models placed on the market after 1 January 2008 are BFR free, older models may still contain BFRs in circuit boards and substrates. <b>More information. Banned &amp; Restricted Substances.</b>
Timeline for additional substances phaseout				Antimony, beryllium and phthalates are all listed as banned substances by Sony Ericsson, with a few exemptions for products placed on the market before 1 January 2008. <b>More information.</b>
PVC-free and/or BFR-free models (companies score double on this criterion)			Sony Ericsson scores 2.5 points out of 3 (doubled) on this criterion. All SE products are already PVC-free, with the exception of cables in early models of chargers. Since January 2008, all new SE models are BFR-free, but SE's threshold of 1000ppm is too high and needs to be lowered if it is to score full points on this criterion. Older models may still contain BFRs in circuit boards and substrates. <b>More information. Environmental product declarations. E.g. for J100</b>	

## SONY ERICSSON Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility		Sony Ericsson believes in the idea of “taking responsibility for our own products” but there is no explicit support for the principle of Individual Producer Responsibility. <b>More information.</b>		
Provides voluntary take-back where no EPR laws exist	Sony Ericsson does not provide a list of countries where it offers take-back. Instead its Product Declarations inform customers to contact local SE representatives. Testing of SE's take-back by Greenpeace revealed that no take-back services are offered in Thailand, Russia, Argentina or India. It seems the only voluntary programme to which SE refers its US customers to is USEPA's Plug-In to eCycling. <b>More information.</b> <b>Product (Environmental) Declaration</b> (e.g. J100). <b>USEPA's Plug-In To eCycling.</b>			
Provides info for individual customers on take-back in all countries where products are sold	Information on what customers should do with their discarded mobiles is not provided by country. <b>More information.</b> Instead, Product Declarations direct customers to local SE representatives. <b>More information.</b> <b>E.g. for J100.</b> <b>Info for US customers.</b>			
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled		Sony Ericsson provides estimates of the amount of mobile phones recycled as a percentage of current (not past) sales: 2 - 13% based on sales volume and 1 - 5% based on the number of subscribers. Although this information is collected only for Europe, it is based on data from those countries where mobile phones are collected or reported separately – i.e. Spain, Sweden and Switzerland. <b>More information.</b>		
Use of plastic recycled content across all products - and timelines for increasing content	No information			

## SONY ERICSSON Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions		<p>Sony Ericsson signed up in support of the Bali Communiqué, which calls for binding cuts of 50%. It identifies that industrialised countries need to make the greatest effort; however, no targets are specified. For full marks, SE needs to commit to concrete numbers and to industrialized countries cutting by at least 30% by 2020.</p> <p><b>More information here and here.</b></p>		
Company carbon footprint disclosure	<p>GHG emissions are not reported, only electricity consumption per product produced.</p> <p><b>More information.</b></p>			
Commitment to reduce own direct GHG emissions	<p>Sony Ericsson's goal to reduce is relative, namely to cut the carbon footprint from its own activities by 15% per employee to 2009 and 20% by 2011. No target for reducing absolute emissions is given. <b>More information.</b></p>			
Amount of renewable energy used	<p>No information on the use of renewable energy is given.</p>			
Energy efficiency of New Models (Companies score double on this criterion)				<p>All new models after 2005 meet the requirements of Energy Star, and "...67% are better than the EU CoC power requirements. The standby power is not more than 0.1 W for all new charger models after 2005." <b>More information.</b></p>

# SONY Ranking = 5.1/10

Sony comes in 2nd with the same total score of 5.1 as Sony Ericsson, but with fewer points on the chemicals criteria, which determines the ranking when total scores are tied. Sony still does relatively well on chemicals, its score boosted by having models on the market that are partially free of PVC and BFRs, including three models of video recorders and many models of the Personal Computer VAIO, "WALKMAN", Camcorder and Digital camera.

On waste issues, Sony scores relatively high by supporting Individual Producer Responsibility, providing some voluntary take-back and recycling of the e-waste generated by its branded products and reporting a recycling rate of 53% based on past sales of TVs and PCs.

On energy Sony still has room for improvement; it does score points for disclosing externally-verified greenhouse gas emissions for over 200 sites, reporting on its use of renewable energy (1.02% as a proportion of total electricity use) in 2006 and committing to absolute cuts in GHG emissions.

## SONY Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## SONY Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle			Sony scores 2 points for stating that it will take steps to reduce, substitute and eliminate the use of substances that are potentially hazardous to the environment. <b>More information.</b>	
Chemicals Management				Sony has set a timeline of 1st April 2008 for eliminating all uses of beryllium oxide. Information on SS-00259 (7th edition, March 2008) Management Regulations and Green Partner programme to ensure implementation of the Regulations. <b>More information.</b>
Timeline for PVC & BFR phaseout			Sony provides a timeline of end of 2010 to substitute PVC in all new models of Mobile products (excluding accessories), and BFRs in the casing and main PWBs of all new models of Mobile Products. <b>More information.</b>	
Timeline for additional substances phaseout		Sony is working to eliminate specific phthalates used as a plasticiser in PVC, although a timeline isn't specified. <b>More information.</b> Sony has banned beryllium oxide from April 2008, although beryllium copper is listed as a controlled substance with no timeline for elimination. Antimony is not listed. <b>More information.</b>		
PVC-free and/or BFR-free models (companies score double on this criterion)			Sony has several examples of products that are partially free of PVC and BFRs, including three models of video recorders to the many models of the Personal Computer VAIO, "WALKMAN", Camcorder and Digital camera. These models are free of PVC in the casings and internal wiring and free of BFRs in casings and main printed wiring boards. <b>More information.</b>	

## SONY Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility			Sony scores 2 points on this criterion because it 'respects' rather than supports the principle of extended producer responsibility – rather than individual producer responsibility. <b>More information.</b>	
Provides voluntary take-back where no EPR laws exist			Sony has now established a nationwide recycling program in the US, together with WM Recycle America. There is also a Sony Notebook trade-in program in the US and Canada. <b>More information.</b> <b>Sony offers recycling programs in Korea, Taiwan, Brazil and Australia.</b>	
Provides info for individual customers on take-back in all countries where products are sold			Sony provides information to individual customers in the EU, North America (including batteries) and Japan. <b>More information.</b> <b>Also see Sony Take Back Recycling Program website for the US.</b>	
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			In fiscal 2006, Sony recovered 36,355 tons of resources from e-waste from Japanese consumers, which included end-of-life TVs and PCs, equating to a "resource reuse/recycling ratio of around 53% for based on average lifespan of TVs and PCs." <b>More information.</b> Sony reports on the amounts of WEEE and batteries collected in N. America, recycling rates for TVs and PCs in Japan and recycling volumes for batteries in Asia & Australia. <b>More information here and here.</b> <b>Recycling in Europe and ERP</b>	
Use of plastic recycled content across all products - and timelines for increasing content		Sony currently uses approximately 10,000 tons recycled plastics annually in various products, including televisions, recording media, audio products, PCs and digital video cameras. Sony has set its reused/recycled materials ratio targets at 12% or higher. <b>More information.</b> In 2006 Sony used 16,000 tons of recycled plastics (mainly recycled polystyrene). Sony's target is to double its use of recycled polystyrene by fiscal 2010 (relative to fiscal 2006). <b>More information.</b>		

## SONY Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions		<p>Sony loses points because the Tokyo Declaration it co-signed uses a baseline year of 2000 (not 1990) and fails to differentiate between the higher cuts in GHG emissions required by industrialised countries. <b>More information.</b></p>		
Company carbon footprint disclosure			<p>Sony discloses third party verified GHG emissions from its own operations (over 200 sites), from part of its logistics and estimates emissions from the use of its products by consumers. <b>More information.</b> <b>Enlarged version of chart.</b> <b>Methods and approach.</b> <b>Verification is detailed.</b></p>	
Commitment to reduce own direct GHG emissions		<p>Sony is committed to reducing emissions from business sites by 7% or more by 2010, but uses emission data from 2000 as baseline – not 2006-2008 baselines specified by Greenpeace. Data and targets could be presented more clearly. <b>More information.</b></p>		
Amount of renewable energy used		<p>The proportion of renewable energy used by Sony was 1.02% in 2006. <b>More information.</b> No specific target for renewable energy use is set, although this is included in the target for offsetting GHG emissions. <b>More information.</b></p>		
Energy efficiency of New Models (Companies score double on this criterion)	<p>Sony lists 22 VAIO notebooks that qualify for Energy Star, but does not provide the percentage of new models (put on the market since 20 July 2007) that comply with or exceed the Energy Star standard. <b>More information.</b></p>			

# NOKIA Ranking = 5.8/10 - 1 Penalty Point = 4.8/10

Nokia comes in 3rd place, despite continuing to have a penalty point deducted from its overall score of 5.8, for corporate misbehaviour on its take-back and recycling practice, bringing it down to 4.8. Further testing of Nokia's take-back programme by Greenpeace revealed that staff are still not informed about its take-back service in India.

Nokia scores very well on toxic chemical issues, launching new models free of PVC since the end of 2005 and aiming to have all new models free of brominated flame retardants by the end of 2009.

Nokia does quite well on e-waste issues despite reporting a recycling rate of 2%.

Its energy score is boosted by sourcing 25% of its total energy needs from renewable sources in 2007 and a target to increase use of renewables to 50% by 2010.

## NOKIA Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## NOKIA Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				<p><b>Nokia's definition of the precautionary principle earns them top points.</b></p>
Chemicals Management				<p>Nokia has already phased out some harmful chemicals and identified future substances for elimination, including beryllium, nonyl phenols and NPEs (nonyl phenol ethoxylates) and antimony trioxide.  <b>Nokia substance list.</b></p>
Timeline for PVC & BFR phaseout				<p>Nokia has now eliminated remaining uses of PVC.  <b>PVC elimination case study.</b>                      Nokia aims to have all new products launched after the end of 2009 free of restricted flame retardants (all brominated and chlorinated compounds and antimony trioxide).  <b>More information.</b>                      The substance list shows that 'bromine and compounds' are being eliminated; schedule shows components where BFRs are already restricted.  <b>More information.</b></p>
Timeline for additional substances phaseout			<p>Antimony trioxide, beryllium oxide and phthalates (with exemption for die attach adhesives to less 0.1%) are banned in mobile equipment/accessories. For all Nokia products, antimony, other beryllium compounds and phthalates are expected to be reduced or gradually phased out. However, no timeline is specified.  <b>More information.</b></p>	
PVC-free and/or BFR-free models (companies score double on this criterion)			<p>Nokia gives the example of the Nokia 3110 Evolve which is 99.5% free of restricted flame retardants (all brominated and chlorinated compounds and antimony trioxide)  <b>More information.</b>                      New models are PVC-free since the end of 2005. Since January 2007, the first products without components containing BFRs were introduced. Nokia aims for all new models to be free of BFRs by the end of 2009.  <b>See previous version of substance list.</b>  <b>Eco-declarations</b> are provided for all Nokia products.</p>	

## NOKIA Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility				Nokia scores top marks for supporting and lobbying for IPR. To stay on top points, Nokia will need to explore options for operationalising IPR. <b>More information.</b>
Provides voluntary take-back where no EPR laws exist			The number of countries covered by Nokia's take-back and recycling programme has increased in Africa, Latin America as well as the number of collection points within countries. <b>More information.</b> E.g. <b>free mail-back for US. Greenbox, China. In Chinese.</b> The penalty point served on Nokia and deducted from Nokia's overall score in November 2007 stays. The penalty is for corporate misbehaviour on the company's take-back practice. Although the take-back service has improved in the Philippines, Thailand and Russia, the service is still not functioning on the ground in India.	
Provides info for individual customers on take-back in all countries where products are sold			The information provided is very good, with addresses and phone numbers of Care Centres, as well as updates about where new take-back programmes are being developed. <b>More information.</b>	
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled		Nokia provides a figure of 2% for mobiles recycled, but it unclear if this is as a percentage of all Nokia sales, or all brands of mobiles returned – and over which period and geography. <b>More information here and here.</b>		
Use of plastic recycled content across all products - and timelines for increasing content	No information			

## NOKIA Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions		Nokia has signed a communiqué at the Climate Change Conference in Bali in December 2007. For full marks, Nokia needs to support specific targets (numbers) and industrialized countries cutting emissions by at least 30% by 2020. <b>More information.</b>		
Company carbon footprint disclosure		Nokia reports on energy consumption, 'direct' CO2 emissions and 'indirect' CO2 emissions. It is unclear how this relates to scope 1,2 and 3 of the GHG Protocol. The second link provides clarification in footnotes. Verification of the data is not apparent. <b>More information here and here.</b>		
Commitment to reduce own direct GHG emissions			Nokia is committed to reducing the overall energy use of its sites by 6% by 2012 – using data from 2006 as baseline. <b>More information.</b> Nokia has joined the WWF Climate Savers initiative. <b>See press release.</b>	
Amount of renewable energy used				Nokia's target for renewable electricity is to cover 25% of its total needs during 2007 – 2009, increasing to 50% in 2010. The 2007 target has been achieved. <b>More information. See also Climate Savers Initiative.</b>
Energy efficiency of New Models (Companies score double on this criterion)	Nokia states that its AC-3 and AC-4 chargers have an Energy Star certificate. In addition, standby energy consumption of chargers is about one quarter of the amount consumed in 1999 and exceeds all existing energy efficiency requirements and recommendations. However, the percentage of new models that meet or exceed the ES requirements is not given. <b>More information.</b>			

# SAMSUNG Ranking = 4.5/10

Samsung comes in fourth place with 4.5, scoring well on chemicals and waste criteria.

Since November 2007, all new models of LCD panels are PVC-free, important in driving the market to phase out PVC, with Samsung being the #1 supplier globally. The company has launched partially BFR-free models of mobile phone and developed halogen-free memory chips and semiconductors for certain applications.

Samsung's score on e-waste is helped by getting top marks for reporting recycling rates of 137% for TVs (based on past sales 10 years ago, the average life span, since when Samsung's TV sales have increased 10-fold), 12% for PCs (based on 7 year lifespan) and 9% for mobile phones (based on 2 year lifespan). It also scores the highest marks on its use of recycled plastic, which is 16.1%, though only 0.2% is post-consumer plastic.

On energy, Samsung scores pathetically, only gaining points for disclosing total GHG emissions from its operations in Korea (the majority of its operations).

## SAMSUNG Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## SAMSUNG Detailed Scoring

Chemical Score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Precautionary Principle				Samsung scores top marks on its support for and understanding of the Precautionary Principle. <b>More information.</b>
Chemicals Management				Samsung scores full marks on this criterion, by also identifying future chemicals to be targeted for elimination, adding beryllium, phthalates, chlorinated flame retardants and antimony to the list. <b>Identification and management of targeted substances.</b> <b>SEC Standard (10th edition) OQA-2049.</b> <b>Eco-Partner Certification Program.</b>
Timeline for PVC & BFR phaseout				Full marks for providing a timeline of end of 2010 for phasing out PVC. The first totally PVC-free mobile phones to be launched in April 2008. All new models of LCD panels are PVC-free since November 2007. <b>More information here.</b> Timeline for phasing out BFRs in all new models is January 2010. <b>More information.</b>
Timeline for additional substances phaseout		Samsung has set a timeline for the phase out of phthalates from new models of PCs, TVs and mobile phones only, of 31st December 2012. Beryllium oxide is not used, Restrictions on antimony and beryllium copper are under consideration. <b>More information.</b>		
PVC-free and/or BFR-free models (companies score double on this criterion)		Since 1st November 2007, all new models of LCD panels are PVC-free. Since 1st July 2007 all new models of mobile phones use BFR-free materials in most if not all circuit boards. The housings of all mobile handsets and peripherals are BFR-free. Samsung has developed halogen-free memory chips and semiconductors for certain applications. <b>More information.</b>		

## SAMSUNG Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility				Samsung scores top marks for its support for IPR. To stay on top marks, Samsung needs to explore options for the operationalisation of IPR e.g. brand differentiation. <b>More information.</b>
Provides voluntary take-back where no EPR laws exist		Samsung provides voluntary take-back only in a few countries and only for some product groups – mobile phones and printer cartridges are just a tiny part of Samsung's product portfolio. <b>Voluntary initiatives.</b> <b>Mobile phone recycling.</b> In May 08, Samsung launched its US mobile phone take back program. This take back program will accept Samsung mobile phones as well as any other branded mobile phones. <b>More information.</b> <b>See also regional compliance.</b> <b>Domestic (Korean) recycling.</b>		
Provides info for individual customers on take-back in all countries where products are sold		Samsung provides accessible information to consumers on what to do with their discarded products, especially for mobile phones. For more points Samsung needs to increase the number and range of its take-back points and provide more information to consumers about take-back services for its whole range of products. <b>More information here and here.</b> <b>Mobile phone take-back.</b>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled				Samsung estimates its recycling rates for 2007, based on sales and recycled amounts from Korea, Japan, Europe and North America: TVs – 137% (based on average life-span of 10 years, since when Samsung's TV sales have increased 10-fold). Computers – 12% (7 years) Mobile phones – 9% (2 years). To stay on full marks, more information needs to be provided on how EU data is used in the calculation of global recycling rate, given that producers in EU pay by current market share. <b>More information.</b>
Use of plastic recycled content across all products - and timelines for increasing content			Samsung's current use of recycled plastics across all products is some 15.9% of post-industrial plastic and only 0.2% of post-consumer plastic. It is looking to increase its use of post-consumer recycled plastics, while ensuring this material does not contain hazardous substances, such as brominated flame retardants (BFRs), that it is committed to removing from products. Samsung plans to set a timeline this year to reach 25% of recycled plastics of total plastics used. <b>More information.</b>	

## SAMSUNG Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	<p>Samsung refers to the reductions required by the Kyoto Protocol but does not mention support for greater global mandatory cuts in GHGs in the post-Kyoto process. <b>More information.</b></p>			
Company carbon footprint disclosure		<p>Samsung reports on total GHG emissions from its operations in Korea (the majority of its operations) of 8,21 million tonnes/year, and breaks these down by emission source. There is no reporting of product supply chain emissions and no verification. <b>More information.</b></p>		
Commitment to reduce own direct GHG emissions	<p>In 2000, SAMSUNG Electronics became signatory to the Korean government-initiated Voluntary Agreement on reducing green house gases; each Samsung Electronics factory in Korea has implemented a plan to save energy annually and reduce CO2 emissions. At part of this Catch CO2 project, Samsung's revised target is to: "reduce GHG by 45% from 2001 levels by 2010 (per unit production basis)". There is no target for absolute reduction of GHG emissions. <b>More information.</b></p>			
Amount of renewable energy used	<p>No information.</p>			
Energy efficiency of New Models (Companies score double on this criterion)	<p>Samsung provides the percentage of models (released in 2008) that meet or exceed the Energy Star criteria as follows:                      - TVs 93%                      - Computers 64%                      - Mobile phone external power supply 100%                      Samsung loses points because figures for models meeting or exceeding the criteria since the inception of the relevant Energy Star standard are not given. <b>More information.</b></p>			

# DELL Ranking = 4.5/10

Dell is in 5th position with middling scores on chemicals and e-waste, and less on energy issues.

The company fails to do better on chemicals because it has yet to put on the market products free of PVC and BFRs. On waste, Dell reports a recycling rate of 12.4%, based on sales 7 years ago.

On energy Dell gets points for reporting that over 42 % of laptops and 57 % of desktops (consumer and client) introduced since 20 July 2007 offer configurations that meet or exceed Energy Star requirements. Dell also scores points for disclosing its GHG emissions from global operations.

## DELL Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## DELL Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				Definition of precautionary principle reflects need to eliminate potentially harmful chemicals even without full scientific certainty of cause and effect and earns Dell top marks. <b>More information.</b>
Chemicals Management				Dell's chemicals management programme lists substances targeted for substitution and provides a good description of how it manages its supply chain to achieve its substitution goals. <b>Guidance Document on Restricted Materials. More information.</b>
Timeline for PVC & BFR phaseout				Dell has committed to eliminate all remaining uses of PVC and BFRs in new products by 2009. <b>More information.</b>
Timeline for additional substances phaseout	Dell has identified Antimony, Phthalates and Beryllium as substances of concern. They are not currently restricted but suppliers are required to disclose their use. See p.4 Guidance Document on Restricted Materials. <b>More information.</b>			
PVC-free and/or BFR-free models (companies score double on this criterion)	No products fully free of PVC and BFRs. Dell provides an update on progress towards eliminating PVC and BFRs. BFRs in plastic parts are eliminated for all products developed after June 2006, and PVC is prohibited in mechanical plastic parts. Dell recently launched the UltraSharp 2009W the first Halogen-Reduced Dell flat panel monitor that offers multiple printed circuit boards containing halogen-free laminates. <b>More information. Environmental data sheets for products here and here.</b>			

## DELL Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility				<p><b>Strong support for IPR and legislation embracing IPR.</b> To stay on top marks, Dell needs to explore options for the operationalisation of IPR i.e. brand differentiation e.g. by sampling of return share. <b>More information on policy.</b> <b>Additional info on their support of IPR in the US.</b></p>
Provides voluntary take-back where no EPR laws exist			<p>Dell is striving for a free global voluntary take-back service and has added Columbia and expanded its service in Mexico and Brazil. <b>More information here.</b> <b>Worldwide Asset Recovery Services Map.</b> <b>Links to various countries and regions.</b></p>	
Provides info for individual customers on take-back in all countries where products are sold			<p>Information provided to Dell's individual customers, but not yet worldwide: <b>Dell Recycling Program.</b> <b>Asset Recovery Service.</b> <b>Links to various countries and regions.</b></p>	
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			<p>Dell scores 2 marks for reporting its recycling rate of 12.4%, based on sales 7 years ago, even though it is not clear what their EU data is based on (e.g. samples of return share) and if EU data is included in global volumes. <b>More information.</b> Figures are presented in their <b>2007 sustainability report</b> (see p.66). <b>Recycling figures.</b></p>	
Use of plastic recycled content across all products - and timelines for increasing content	<p>Dell is researching the use of post-consumer plastic that is BFR-free and will meet fire safety requirements. <b>More information.</b></p>			

## DELL Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	<p>"Dell's climate strategy is aligned with the fundamental elements of the Kyoto Protocol including designing and implementing climate change programs, measuring emissions, promoting energy efficient technologies, observing climate science, assessing impacts, and developing response strategies." However, Dell does not identify support for mandatory cuts of GHG emissions as part of this. <b>More information.</b></p>			
Company carbon footprint disclosure		<p>Dell reports (non-3rd party verified) GHG emissions from its operations globally of 385,000 metric tons of CO2. No product supply chain data is provided, although Dell has requested that its primary suppliers begin reporting greenhouse gas (GHG) emissions data. <b>More information.</b> More detailed figures on electricity usage regionally are in <b>Dells Sustainability Report 2007 (see p 45 &amp; 46).</b></p>		
Commitment to reduce own direct GHG emissions	<p>Dell has established a goal to reduce its carbon intensity an additional 15 percent by 2012. However, a target for reducing the absolute quantity of emissions is not given. <b>More information.</b></p>			
Amount of renewable energy used	<p>Dell is now using 100% "green power" at its global headquarters. The amount of renewable energy used by its Austin Parmer Campus is 17 percent. Dell also is powering its Twin Falls, Idaho, facility with 100 percent green power, 97 percent of which is wind power and three percent solar. <b>More information.</b> Dell is committed to carbon neutrality by maximising the purchase of renewable power. However, no figures on the amount of renewable energy used globally, or targets for increasing its use, are given. <b>More information.</b></p>			
Energy efficiency of New Models (Companies score double on this criterion)			<p>More than 42 percent of Dell laptops and 57 percent of desktops (consumer and client) introduced since July 20, 2007 offer configurations that meet or exceed Energy Star requirements. <b>More information.</b></p>	

# TOSHIBA Ranking = 4.3/10

Toshiba is in 6th place with 4.3 points, due mostly to its score on chemicals, for committing to introduce alternatives to phthalates, beryllium and antimony by 2012 – though only in its PCs. It has also launched models of laptops whose circuit boards are free from brominated flame retardants (BFRs), EcoMark-certified products without PVC, and makes other components and parts that are free from these harmful substances.

The company does not do as well on e-waste, although it reports a recycling rate of 12% for a group of 5 types of products that includes TVs, PCs and 3 types of home appliances, and is based on current (not past) sales.

On energy, Toshiba only scores points for disclosing greenhouse gas emissions from its own operations and committing to an absolute reduction in GHG emissions.

## TOSHIBA Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## TOSHIBA Detailed Scoring

Chemical Score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Precautionary Principle				Toshiba scores top marks for committing to the total eradication of specified chemical substances, regardless of lack of full scientific certainty. <b>More information here.</b> <b>See commitment 4.</b>
Chemicals Management				Toshiba has <b>Green Procurement Guidelines</b> for suppliers and ranks suppliers. Toshiba's <b>PC and Network Company Guidelines for Green Procurement v.6.</b>
Timeline for PVC & BFR phaseout				Toshiba has now committed to phasing out PVC and BFRs from all their products, with a timeline of 2009 – not only from their notebook PCs and mobiles. <b>More information here and here.</b>
Timeline for additional substances phaseout			Toshiba will introduce alternatives to phthalates for all remaining uses, and beryllium and/or antimony alternatives for beryllium and/or antimony in notebook PCs by 2012, as alternatives are identified. But this commitment and timeline is only for Toshiba's PC business. <b>More information.</b>	
PVC-free and/or BFR-free models (companies score double on this criterion)		Toshiba make a range of notebook PCs with circuit boards free of halogens and antimony. Toshiba also make EcoMark-certified products, some of which do not contain PVC. The information can be found in ' <b>Factor T</b> ' brochure (large pdf file) (p.15 for Dynabook info and p.26 for mobile phones). <b>Halogen-free Notebook PC, the Portégé.</b> <b>New information on mobile phones</b> which use PVC/BFR alternatives.		

## TOSHIBA Detailed Scoring

EPR/recycling score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Support for Individual Producer Responsibility			<p>Toshiba believes that IPR provides incentives for Design for Recycling. For full marks, a stronger commitment to and lobbying for IPR are needed, as well as exploring how IPR can be operationalized.</p> <p><b>More information.</b> In January 2008, Toshiba withdrew from the Electronic Manufacturers Coalition for Responsible Recycling (EMCRR).</p>	
Provides voluntary take-back where no EPR laws exist		<p>Voluntary take-back of PCs and TVs is offered in US. PC take-back is also provided in Canada, South Korea, Australia, New Zealand, China and Singapore. Toshiba claims to have "recycling programs in regions that cover 80% of total (PC) sales volume."</p> <p><b>More information here and here.</b> <b>Info about Toshiba's new recycling joint venture MRM in US.</b></p>		
Provides info for individual customers on take-back in all countries where products are sold		<p>Improved geographical coverage and comprehensive information to customers in those countries with take-back programmes in place.</p> <p><b>More information.</b> <b>Information on US, Canada, Europe, Australia and New Zealand, Japan (in Japanese), Korea (in Korean), China (in Chinese), Singapore.</b></p>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			<p>Toshiba now reports its ratio of "recycling weight to the sales weight" for specified products (including TVs, PCs and 3 types of home appliances) based on current (not past) sales. For 2006, the recycling rate is 12.2%, and 12% for 2007. Although Toshiba provides figures for the quantities recycled per product category globally, it does not provide a calculation of % recycled by product type (TVs and PCs), although this can be deduced from the data supplied and is below 25% per product group.</p> <p><b>More information.</b></p>	
Use of plastic recycled content across all products - and timelines for increasing content		<p>Toshiba is used 1,800 tons of recycled plastics in the manufacture of Toshiba washing machines, Multi-Function Peripherals (MFPs), and other products in fiscal 2006.</p> <p><b>More information.</b> <b>An example of recycled plastic parts used in a PC case.</b> <b>Example in multi-function printers.</b> <b>p.49 of CSR report 2007.</b></p>		

## TOSHIBA Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	<p>Toshiba supports cuts of 50% from current levels by 2050, rather than cuts from 1990 levels, which is against the science. Also, it welcome APEC's initiatives which are positively harmful to the international process. <b>More information.</b></p>			
Company carbon footprint disclosure		<p>Toshiba reports on emissions from R &amp; D, through procurement, manufacturing, use &amp; disposal, <b>see P.43 of CSR report 2007.</b> Greenhouse gas emissions are calculated in accordance with ISO14064, but there is no third party verification. <b>More information.</b></p>		
Commitment to reduce own direct GHG emissions		<p>Toshiba has a target of reducing GHG other than CO2 by 35% and CO2 by 25% by 2010, (baseline year 1990) from 'business processes' (manufacturing). However, Toshiba does not use the baseline year specified by Greenpeace of 2006/7/8. <b>See P. 42 CSR report 2007.</b></p>		
Amount of renewable energy used	<p>At least 4% of the electricity demand at the Toshiba headquarters building is met by biomass power generation, but this is for one facility only. No figure of renewable energy used as proportion of overall electricity use is provided and no commitment to increase use of renewables. <b>More information.</b></p>			
Energy efficiency of New Models (Companies score double on this criterion)	<p>No data provided on the percentage of Toshiba's models meeting/exceeding the ES standard.</p>			

# ACER Ranking = 4.3/10

Acer is in joint 7th place with Panasonic, with 4.3 points. It owes this position to its efforts on toxic chemicals with a commitment to phase out all phthalates, beryllium and compounds and antimony and compounds in all new products by 2012.

Acer scores poorly on e-waste even though it is reporting a recycling rate of 31.7% based on past sales, for desktops and notebooks sold and recycled in Taiwan.

On energy, Acer only scores on energy efficiency. Since 20 July 2007, 75% of Acer's notebook PCs, 10% of desktop PCs and 100% of LCD monitors have been verified as Energy Star compliant.

## ACER Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## ACER Detailed Scoring

Chemical Score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Precautionary Principle				Acer scores a 'yes' on its statement on the precautionary principle that recognises the need for preventive action, even if scientific evidence is not conclusive. <b>Precautionary principle.</b>
Chemicals Management				Top marks for describing the mechanisms for identifying <b>future substances of concern.</b> <b>Supply chain management HSF Plan.</b>
Timeline for PVC & BFR phaseout				Acer pledges to prohibit PVC and BFRs from use in new products by 2009, in their <b>Hazardous Substances Free (HSF) plan.</b> <b>HSF implementation report.</b>
Timeline for additional substances phaseout				Acer has adopted a timeline of 2012 for the phase out of all phthalates, beryllium and compounds and antimony and compounds in all new products. Certain phthalates are to be phased out by 2009. <b>More information.</b>
PVC-free and/or BFR-free models (companies score double on this criterion)	No PVC-free or BFR-free models on the market. <b>More information.</b>			

## ACER Detailed Scoring

EPR/recycling score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Support for Individual Producer Responsibility				Acer scores top marks for supporting and actively striving for IPR. To stay on top marks, Acer needs to explore options for the operationalisation of IPR. <b>More information.</b>
Provides voluntary take-back where no EPR laws exist		Acer provides take-back services where required to do so by national EPR laws. Exceptions are US where Acer provides contacts to SVTC and India, where Acer now takes back and recycles for free. <b>More information.</b>		
Provides info for individual customers on take-back in all countries where products are sold		Recycling information provided for EU, Japanese, Taiwanese, Indian and US customers only. <b>More information here, here, here and here for India. Terms and conditions.</b>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled		Acer now reports a recycling rate 31.7% based on past sales, for desktops and notebooks sold and recycled in Taiwan – but ONLY Taiwan. There is no information on how the percentage is calculated. <b>More information.</b>		
Use of plastic recycled content across all products - and timelines for increasing content	Currently no Acer products contain recycled plastics, however Acer is following technological advancements in applications of secondary plastics. <b>More information.</b>			

## ACER Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	<p>Acer “commits to support the global efforts on the deep cut of greenhouse gas (GHG) emissions and on the negotiation for a sound climate policy framework” but doesn’t specify the cuts required or differentiate the cuts needed in industrialised countries, in the post-Kyoto process. <b>More information.</b></p>			
Company carbon footprint disclosure	<p>Acer is compiling a GHG inventory starting with operations within Taiwan in summer 2008 and extending to global operations in autumn 2008. The “Inventory” will cover manufacturing, distribution and operations, and will extend to the supply chain, through the Supply Chain Leadership Collaboration (SCLC) of the Carbon Disclosure Project (CDP). <b>More information.</b></p>			
Commitment to reduce own direct GHG emissions	<p>Acer expects to finalize its mid- and long-term GHG reduction targets in winter 2008. <b>More information.</b></p>			
Amount of renewable energy used	<p>A global survey will be conducted in 2008 on purchasing renewable energy. Acer is also assessing the feasibility of using renewable energy such as solar power and wind power in its global operations. <b>More information.</b></p>			
Energy efficiency of New Models (Companies score double on this criterion)			<p>Since Energy Star published its updated standards on July 20, 2007, 75% of Acer’s notebook PCs, 10% of Acer’s desktop PCs and 100% of Acer’s LCD monitors have been verified as Energy Star compliant. <b>More information.</b></p>	

# PANASONIC Ranking = 4.3/10

Panasonic comes in joint 7th with Acer, scoring 4.3 points, most of them on chemicals issues. It has added six more product groups to its many models of PVC-free products, including DVD players and recorders, home cinemas, video players and lighting equipment. Panasonic gives two examples of products free of BFRs – fluorescent ceiling lamps and a kitchen lamp. Despite putting these PVC-free and BFR-free products on the market, Panasonic has yet to commit to fully eliminating all PVC and BFRs in its whole product portfolio.

The company scores poorly on e-waste and only slightly better on energy. Panasonic discloses greenhouse gas (GHG) emissions from its own operations and commits to absolute reduction in emissions. It scores well on energy efficiency, with 99.2% of main models of TVs launched in 2005 meeting Energy Star and 64% exceeding by 50%. 100% of PCs launched since 2007 meet the latest Energy Star standard and 30% exceed. Despite this excellent performance, Panasonic fails to score full marks on energy efficiency, because it does not provide data on external power supplies used in the mobile phones that it sells.

## PANASONIC Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## PANASONIC Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				Panasonic endorses the Precautionary Principle as defined in the 1992 Rio Declaration. <b>More information.</b>
Chemicals Management				Panasonic's web pages on chemicals management contain a lot of detailed information. Managed substances include: antimony, beryllium, bismuth and phthalate esters. <b>More information.</b> <b>Chemical Substances Management rank guidelines Ver. 5 for products.</b> <b>Green Procurement Standards.</b> <b>Chemical Substances Management Rank Guidelines for Factories.</b>
Timeline for PVC & BFR phaseout		Panasonic has committed to eliminating PVC in internal wiring of all products for the Japanese market by end of March 2009 and globally by end of March 2011. No timelines yet for substitution of PVC external cables, except for notebooks which should be globally PVC-free (including AC power cords) by 2011. All new models of mobile phones and computers should be free of BFRs by 2011, but there is no commitment to eliminate BFRs from Panasonic's whole product portfolio at. <b>More information.</b>		
Timeline for additional substances phaseout		Panasonic states that its commitment to eliminating PVC will reduce or eliminate the use of phthalates, used primarily as softeners in PVC. Likewise, use of antimony trioxide will be reduced as BFRs are eliminated. No timelines are given. <b>More information.</b> Beryllium is a Managed Substance whose use (above 1000 ppm) needs to be monitored. <b>More information.</b>		
PVC-free and/or BFR-free models (companies score double on this criterion)			Panasonic has added six more product groups to its many examples of PVC-free products, including DVD players and recorders, home cinemas, video players and lighting equipment. Panasonic gives two examples of products free of BFRs – fluorescent ceiling lamps and a kitchen lamp, & are manufacturing halogen-free printed wiring boards for certain applications and markets. <b>The PVC free models are listed here.</b>	

## PANASONIC Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility	<p>Panasonic now supports Extended Producer Responsibility and demonstrates this by creating recycling companies, namely ENE EcologyNet Europe GmbH in Europe and MRM in the US. But it is not fully committed to supporting Individual Producer Responsibility.</p> <p><b>More information.</b> Panasonic is still a member of EMCRR a coalition of manufacturers based in the US which does not support EPR, but is demanding that consumers pay ARFs (Advanced Recycling Fees).</p> <p><b>More information.</b></p>			
Provides voluntary take-back where no EPR laws exist		<p>Voluntary take-back programmes are not worldwide and do not cover all Panasonic's product groups, mainly mobiles and toner cartridges. Panasonic's recycling services for PCs now offered in countries where 95% of sales of new PCs. <b>More information.</b></p> <p><b>Information on the different regions.</b></p> <p><b>B2B take-back systems in the US.</b></p> <p><b>Info on MRM recycling,</b> Panasonic's joint venture with Sharp &amp; Toshiba in the US.</p>		
Provides info for individual customers on take-back in all countries where products are sold		<p>Information to customers is available in European countries with EPR laws and for electronics, batteries and toner cartridges in US, as well as mobile phones and cartridges in Australia. There is information on take-back and recycling programmes in Korea (many product groups) and Japan (PCs and household appliances). However, the webpages are difficult to navigate and hence the information is not easy to access.</p> <p><b>More information here and here.</b></p> <p><b>US trade-in programme.</b></p> <p><b>Recycling events in US.</b></p> <p><b>Battery recycling.</b></p>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled		<p>Panasonic provides data on home appliances and PCs recycled in Japan (2007) and recycling quantities for the US (PCs, batteries and other) and Korea. Information on recycling rates based on current sales is provided, but for just a few countries: Germany (59%) UK (34%) and France (20%). <b>More information.</b></p> <p><b>US recycling volumes.</b> Data on fiscal year 2007 for Japan and the US: <b>link 1, link 2, link 3, link 4.</b></p>		
Use of plastic recycled content across all products - and timelines for increasing content		<p>Panasonic states that in fiscal 2007, it used 3,000 tons of recycled resin mainly in washing machines and refrigerators. No target for increasing use of recycled plastics.</p> <p><b>More information.</b></p>		

## PANASONIC Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	Panasonic supports global cuts of 50% by 2050 from current levels, rather than 1990 levels, which is against the science. Also, it welcomes APEC's initiatives that are positively harmful to the international process. <b>More information.</b>			
Company carbon footprint disclosure		Panasonic reports its total emissions as 4.5 million Global Warming Potential tons. There is no apparent external verification and no data from its product supply chain. <b>More information here and here.</b>		
Commitment to reduce own direct GHG emissions		Panasonic is committed to reducing the absolute amount of CO2 emissions by 300,000 tons between fiscal year (FY) 2008 to FY2010 compared to FY 2007 level. In addition it also promised to lower CO2 emissions to the level of FY 2001 by the end of FY 2011 which is equal to 12% reduction in an absolute amount and 36.3% reduction in per basic unit, compared to the level of FY 2004. <b>More information at link 1, link 2, link 3, link 4.</b>		
Amount of renewable energy used	Panasonic reports that the renewable energy consumed in Japan in fiscal 2007 was 64,000 kWh. The figure isn't given as a percentage of electricity consumption and no targets are set. <b>More information.</b>			
Energy efficiency of New Models (Companies score double on this criterion)			For full marks, Panasonic also needs to provide the proportion of new models of external power supplies for mobile phones that meet or exceed the Energy Star standard. 99.2% of 388 main models of TVs (LCD-TV and PDP-TV) launched from 2005 to 2007 meet the latest Energy Star requirement (ver.2.2 phase III). 64% of 388 main models exceed the standby mode requirement (1W) by 50% or more. (Amounts of power consumption of these products in the standby mode are 0.5W or less.) PCs 1. 100% of new products launched in 2007 meet the latest Energy Star requirement (ver. 4.0). 2. 30% of the products in (1) exceed OFF mode ("Wake-on-LAN" (WOL) disabled) requirements by 30%, and by 41% in Sleep (WOL disabled) mode. Product numbers are: CF-R7, CF-T7, and CF-W7. <b>More information.</b>	

# MOTOROLA Ranking = 4.3/10

Motorola is in joint 9th place with HP, scoring 4.3 points, which are spread evenly across all the issues.

The company has launched 55 models of mobile phone whose circuit boards are free of BFRs. On waste issues, Motorola reports a global take-back rate of 3% of total handsets sold in 2005.

Motorola scores relatively well on energy for disclosing greenhouse gas emissions, committing to cuts, reporting a 5.4% renewable energy use (as proportion of all electricity purchased) in 2007 and reporting on the energy efficiency of its products. Globally, all Motorola mobile phone chargers meet Energy Star Level 4 requirements since March 2007 – not since the standard came into effect in 2005. In the U.S, all Motorola’s mobile phone chargers exceed ENERGY STAR Tier 2 requirements by more than 50 percent in sleep and standby/no-load modes – but what about chargers sold outside the US?

## MOTOROLA Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## MOTOROLA Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				Motorola has a definition of the precautionary principle which identifies precautionary measures to be taken. <b>More information.</b>
Chemicals Management				Motorola provides a list of banned and reportable substances in its Global Common Specification No. 12G02897W18 (updated 15 May 2008) <b>More information.</b> <b>As a pdf.</b>
Timeline for PVC & BFR phaseout	By June 2008, Motorola is to restrict use of PVC and BFRs in newly designed mobile devices parts and products – only restrict, not eliminate and only in ECOMOTO mobile phones, not Motorola's whole product portfolio. <b>More information.</b>			
Timeline for additional substances phaseout	By June 2008, Motorola is to restrict the use of phthalates in newly designed mobile devices parts and products – only restrict, not eliminate and only in mobile phones, not Motorola's whole product portfolio. <b>More information.</b> Phthalates (and Arsenic) are listed as 'controlled', for ECOMOTO line only, in Motorola's list of banned and reportable substances. Antimony and compounds and Beryllium and compounds are listed as reportable. <b>More information.</b>			
PVC-free and/or BFR-free models (companies score double on this criterion)		Motorola lists 55 models of mobile phone whose circuit boards are free of BFRs. No models free of PVC are listed. Moreover, Motorola's product portfolio includes home network equipment (e.g. set top boxes, wireless routers) and network equipment (e.g. base stations), as well as walkie-talkies. <b>More information.</b>		

## MOTOROLA Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility		Motorola makes a clear statement in support of Individual Producer Responsibility, but there is no reference to the need for brand differentiation and no evidence of active lobbying for IPR. <b>More information.</b>		
Provides voluntary take-back where no EPR laws exist			Motorola offers recycling services in 72 countries, representing over 90% of global mobile phone unit sales. Motorola has still to offer take-back services for the rest of their products e.g. network equipment, although in the US it is now taking back modems, routers and cordless phones. <b>More information.</b>	
Provides info for individual customers on take-back in all countries where products are sold			Information is provided to individual customers in the countries where Motorola offers voluntary programmes. <b>More information.</b>	
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			In 2007 Motorola's global take-back rate was an estimated 3% of total handsets sold in 2005. The end-of-life mobiles are collected via regulatory and voluntary programmes, including Motorola's own 'bring back' events. <b>More information.</b>	
Use of plastic recycled content across all products - and timelines for increasing content	One of Motorola's product design goals is to increase the use of recycled materials in its products. However, no examples or quantities are given. <b>More information.</b>			

## MOTOROLA Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	Motorola makes no reference to supporting global mandatory cuts of GHG emissions. <b>More information.</b>			
Company carbon footprint disclosure		Motorola calculates that direct and indirect greenhouse gas emissions were 375324 tonnes CO2 equivalent. But there is no external verification and no data about product supply chain emissions. <b>More information.</b>		
Commitment to reduce own direct GHG emissions		As a founding member of the Chicago Climate Exchange (CCX), a voluntary emissions-reduction program, Motorola has committed to a 6 percent reduction in its absolute greenhouse gas emissions by 2010, compared with 2000 – not 2006-2008 baselines specified by Greenpeace. <b>More information.</b>		
Amount of renewable energy used		In 2007, 5.4 percent of Motorola's total electricity purchases were from renewable energy sources. Motorola will continue to try to increase use of renewable energy globally. <b>More information.</b>		
Energy efficiency of New Models (Companies score double on this criterion)			Globally, all Motorola mobile phone chargers meet Energy Star Level 4 requirements – since they were certified in March 2007 – not since the standard came into effect in 2005. In the U.S., all Motorola's mobile phone chargers exceed ENERGY STAR Tier 2 requirements by more than 50 percent in sleep and standby/no-load modes – but this pertains only to US models. <b>More information.</b>	

# HP Ranking = 4.3/10

HP is in joint 9th place with Motorola, scoring 4.3 points, most of which were gained for its chemicals and e-waste policies and practice. Although HP provides a timeline for eliminating polyvinyl chloride (PVC) plastic and all brominated flame retardants (BFRs) by 2009, it is only in computing equipment – not for its entire product portfolio. HP still has to put on the market products that are entirely free from the worst substances.

On e-waste, HP reports a reuse and recycling rate in 2007 of 15% of relevant sales and some use of recycled plastics.

HP discloses externally verified greenhouse gas emissions from its own operations and has made a commitment to reduce greenhouse gas (GHG) emissions from HP-owned and HP-leased facilities worldwide to 16 percent below 2005 levels by 2010. HP's overall goal is to reduce the combined energy consumption and associated GHG emissions of HP operations and products to 25 percent below 2005 levels by 2010.

## HP Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## HP Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				HP's definition of Precautionary Principle reflects the need to eliminate potentially harmful chemicals even without full scientific certainty of harm . <b>More information.</b>
Chemicals Management				HP scores top marks on its chemical management. <b>More information.</b> <b>General Specification for the Environment.</b>
Timeline for PVC & BFR phaseout			HPs goal is to eliminate all remaining uses of BFRs and PVC from new computing products as technologically feasible alternatives become readily available. It expects to achieve this goal for new computing products – but not for entire product portfolio - launched in 2009. <b>More information.</b>	
Timeline for additional substances phaseout	Beryllium and beryllium compounds, and phthalates have been identified for future possible restriction, depending, in part, on acceptable alternative materials, but no timeline for their elimination is given. There is no reference to antimony. <b>More informations here and here.</b>			
PVC-free and/or BFR-free models (companies score double on this criterion)	No HP products are completely free of PVC or all BFRs. Although no BFRs are used in external casings, they are still used in the circuit boards. Some products are free of PVC except for external cables. Substitution of BFRs and PVC in these key applications is needed before substantial progress is recognised. <b>More information.</b> <b>Computer systems here, here and here</b>			

## HP Detailed Scoring

EPR/recycling score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Support for Individual Producer Responsibility				<p>HP supports and lobbies for IPR. <b>More information here and here.</b></p> <p>In Europe, Hewlett Packard is a founding member of the European Recycling Platform that supports IPR. <b>More information.</b></p>
Provides voluntary take-back where no EPR laws exist		<p>Voluntary take-back - not for all products and not in every region of the world. Also corporate customers get a better service than individuals. For PC hardware take-back, major gaps in Africa and South America.</p> <p><b>More information here and here.</b></p> <p><b>Trade in and product reuse.</b></p> <p>Byteback programme in <b>Victoria Australia, China, Thailand.</b></p>		
Provides info for individual customers on take-back in all countries where products are sold			<p>No information for HP's individual customers in Latin America, Africa, India, New Zealand.</p> <p><b>More information here, here and here.</b></p> <p><b>Info on a range of options (asset recovery, donation).</b></p>	
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			<p>HP reports a reuse and recycling rate in 2007 of 15% of relevant sales, and no longer includes consumables in the calculation.</p> <p><b>More information.</b></p> <p>More information is needed on how the 15% is calculated, specifically for EU where companies currently pay for recycling by current market share. Is HP doing sampling to get an estimate of return share or doing estimates of past market share?</p>	
Use of plastic recycled content across all products - and timelines for increasing content		<p>HP used more than 5 million pounds (2,300 tonnes) of recycled plastic in its original HP inkjet cartridges in 2007, and the company has committed to using twice as much in 2008.</p> <p><b>More information.</b></p>		

## HP Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions		<p>HP is a signatory of the Bali Communiqué. For top marks, HP needs to support concrete targets (numbers) and industrialized countries cutting emissions by at least 30% by 2020.</p> <p><b>More information here, here and here.</b></p>		
Company carbon footprint disclosure			<p>HP reports its GHG emissions from its operations, estimates its supplier GHG emissions and reports on product transport.</p> <p><b>More information.</b></p> <p><b>Details of emissions from operations.</b></p> <p><b>External verification details.</b></p> <p>HP's goal for 2008 is to report energy use and associated greenhouse gas emissions (GHG) in HP's first-tier suppliers.</p> <p><b>More information.</b></p>	
Commitment to reduce own direct GHG emissions			<p>HP aims to reduce GHG emissions from HP-owned and HP-leased facilities worldwide to 16 percent below 2005 levels by 2010.</p> <p>HP's overall goal is to reduce the combined energy consumption and associated GHG emissions of HP operations and products to 25 percent below 2005 levels by 2010. <b>More information here and here.</b></p> <p>Though the number of HPs employees increased 10 percent in 2007, its global GHG emissions from operations decreased 5 percent in absolute terms and 17 percent per unit of revenue.</p> <p><b>More information.</b></p> <p><b>Detailed information on its use of 2005 (see footnote #2).</b></p>	
Amount of renewable energy used	<p>HP has greatly increased its purchases of renewable energy. However, there is no information on the amount of renewable energy used globally, or targets for increasing its use.</p> <p><b>More information.</b></p> <p>In 2007, HP purchased 61.4 million kWh of renewable energy and renewable energy credits in the United States.</p> <p><b>More information.</b></p> <p>HP's investment in renewable energy, such as its new solar installation in San Diego, is further complemented by an internal incentive plan to foster employee adoption of the technology.</p> <p><b>More information.</b></p>			
Energy efficiency of New Models (Companies score double on this criterion)	<p>Many of HP's products qualify for ENERGY STAR®, but no data on percentage of 'new models' meeting or exceeding Energy Star 4. <b>More information.</b></p>			

# APPLE Ranking = 4.1/10

Apple comes in 11th position scoring 4.1 points, mainly due to putting products on the market whose key components are free of brominated flame retardants (BFRs) and PVC vinyl plastic. For example, all new models of iMac and the MacBook Air have bromine-free casings and printed circuit board laminates as well as PVC-free internal cables. Millions of iPods now have bromine-free enclosures and printed circuit board laminates. The MacBook Air also has mercury free LCD display with arsenic-free glass. Some MacBook Pros come with mercury-free LED backlit displays.

Apple scores poorly on most e-waste criteria, except for reporting a recycling rate in 2006 of 9.5% as a percentage of sales 7 years ago.

It does only slightly better on energy criteria, failing to score on all criteria except energy efficiency of products, where it scores top marks (doubled) for all desktop computers, portable PCs and displays complying with Energy Star 4.0 and their iPod and iPhone power adapters not only exceeding the Energy Star standard, but already meeting California's stricter efficiency regulations that take effect 1 July 2008.

## APPLE Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## APPLE Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle		Definition of precautionary principle reflects poor understanding of this principle in chemical policy. <b>More information.</b>		
Chemicals Management			Apple provides examples of additional substances that it plans to eliminate with timelines e.g. arsenic in LCDs and mercury by moving to LEDs. Apple has added beryllium to its list of substances targeted for phase out, but so far without a timeline. It also provides Material Safety Data Sheets for its product portfolio. However Apple still fails to disclose it Substance Specification 069-0135. <b>More information.</b>	
Timeline for PVC & BFR phaseout				Apple plans to completely eliminate the use of PVC and brominated flame retardants in its products by the end of 2008. <b>More information here and here.</b>
Timeline for additional substances phaseout	Apple states that it has made its small remaining applications of beryllium a future target for phase-out. However, no timeline is given. Antimony trioxide is not used in plastic parts weighing more than 25g. Phthalates are not mentioned. <b>More information.</b>			
PVC-free and/or BFR-free models (companies score double on this criterion)			All new iMacs and the MacBook Air have bromine-free enclosures and printed circuit board laminates as well as PVC-free internal cables. Millions of iPods now have bromine-free enclosures and printed circuit board laminates. <b>More information.</b> The MacBook Air also has mercury free LCD display with arsenic-free glass. <b>More information.</b> Also MacBook Pros with mercury-free LED backlit displays in Chronology. <b>More information.</b> New models of MacBook, (and) MacBook Pro and iMac have the majority of internal cables PVC-free and majority of circuit board laminates free of BFRs. <b>More information here and here.</b>	

## APPLE Detailed Scoring

EPR/recycling score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Support for Individual Producer Responsibility		Apple refers to its “individually responsible approach” to recycling through its own take-back initiatives and national collective take-back programmes. The definition of IPR needs to be more explicit. <b>More information.</b>		
Provides voluntary take-back where no EPR laws exist		Most of Apple's voluntary take-back programmes are in <b>US and Canada</b> including <b>free recycling for iPods &amp; mobile phones</b> of all brands. <b>New free recycling</b> of old monitors and PCs of any brand from Apple stores & online sales (seems to be still US only). <b>Apple product batteries take-back</b> (US only)		
Provides info for individual customers on take-back in all countries where products are sold		Information to customers in US and 'Old Europe' is much improved, but what about the 'New Europe' and customers outside US? <b>More information here</b> and <b>here.</b> <b>US &amp; Canada.</b> <b>Europe.</b> <b>Japan.</b> <b>Taiwan.</b>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			Apple scores 2 points for reporting a recycling rate in 2006 of 9.5% as a percentage of sales 7 years ago – not enough for top marks. Apple has set goals to recycle 13% in 2007, 20% in 2008 and nearly 30% in 2010. <b>More information.</b> It's not clear if Apple is using EU data in its calculation of recycling rate, and if so what this is based on (e.g. estimates of return share). Is any real data from other parts of the world (e.g. US, Japan) used in the 9.5% figure?	
Use of plastic recycled content across all products - and timelines for increasing content	No information on the amount of recycled plastic used except in packaging of MacBook Air. <b>More information.</b>			

## APPLE Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	No information			
Company carbon footprint disclosure	Apple reports electricity consumption at its manufacturing facility in Cork, no figures on GHG emissions.   <b>More information here</b> and <b>here</b> .			
Commitment to reduce own direct GHG emissions	No information			
Amount of renewable energy used	No information			
Energy efficiency of New Models (Companies score double on this criterion)				All Apple desktop computers, portable computers and displays conform with the requirements set out in the stricter Energy Star version 4.0 standard. iPod and iPhone power adapters exceed Energy Star efficiency requirements and already meet California's stricter appliance efficiency regulations that take effect July 1, 2008. <b>More information.</b>

# SHARP Ranking = 3.9/10

Sharp is in 12th place with a score of 3.9, mainly due to its policy and practice on toxic chemical issues.

Sharp has launched many models of LCD TVs and solar modules that are free of PVC and has committed to eliminating phthalates from all products by the end of 2010.

On e-waste criteria, Sharp scores pitifully gaining points only for information provided to consumers in a few countries on what to do with their discarded Sharp branded products and for use of small amounts of recycled plastic.

Sharp discloses third party verified greenhouse gas (GHG) emissions from its own operations and scores well on energy efficiency by having most LCD TVs meeting Energy Star requirements, with over 60% of models being at least 30% more energy efficient than the Energy Star baseline, and one-quarter of models being at least 50% more energy efficient.

## SHARP Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## SHARP Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				Sharp scores top marks for its commitment and understanding of the Precautionary Principle. <b>More information.</b> <b>Basic Environmental Philosophy</b> (point 2.2).
Chemicals Management			To achieve top marks Sharp needs to define the criteria for identifying substances for future elimination. <b>Manual for Survey of Chemical Substances and Green Procurement Guidelines.</b> <b>Manual for Survey of Chemical Substances Contained in Parts and Materials.</b> <b>Green Procurement Guidelines.</b>	
Timeline for PVC & BFR phaseout				Sharp commits to eliminate PVC and BFRs from all products by the end of 2010, provided it can find suitable alternatives. <b>More information.</b>
Timeline for additional substances phaseout			Sharp commits to eliminate phthalates from all products by the end of 2010, provided it can find suitable alternatives. Sharp is still using beryllium in 'managed' applications, namely in alloys, ceramics, glass. Antimony is a managed substance. <b>More information.</b> <b>For beryllium and antimony, see P.14.</b>	
PVC-free and/or BFR-free models (companies score double on this criterion)		Sharp provides a list of many models of LCD TVs and solar modules that are free of PVC, except accessories. Many models of LCD TVs, DVD projectors, audio and video products have casings free of BFRs, but none are totally free of BFRs. <b>More information.</b>		

## SHARP Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility	<p>Sharp refers to Producer Responsibility but only in the context of complying with EU WEEE Directive.</p> <p><b>More information here and here.</b></p>			
Provides voluntary take-back where no EPR laws exist	<p>Sharp stays on zero as the voluntary take-back efforts to date are insufficient to score one point. Sharp is part of US EPA's Plug in to eCycling, offers voluntary take-back of toner cartridges in Canada, EU, Japan, Thailand and Australia and participates in voluntary take-back of mobiles (Mobile Muster) in Australia. Sharp has also helped to establish a company in Australia, PSA, to design and recommend end-of-life recycling for TVs, and is involved in construction of recycling systems in Thailand, in response to future legislation.</p> <p><b>More information.</b></p> <p>In Canada, Sharp also recycles old electronic equipment for a small fee, through a recycling partner, Accu-Shred.</p> <p><b>More information.</b></p>			
Provides info for individual customers on take-back in all countries where products are sold		<p>Links to local Sharp contacts are now provided for customers in EU, US and Canada, and now also Japan and Australia. However, Sharp provides customers only with email addresses; no telephone contacts.</p> <p><b>More information.</b></p>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled	<p>Although Sharp provides figures for recycling of TVs, copiers, PCs &amp; washing machines (in units and wt) in Japan for 2007, it does not report this as a percentage of past (or even current) sales:</p> <p><b>More information here and here.</b></p> <p>Sharp also reports on amounts of used electrical products collected in Maine, Minnesota and as part of the EPA Plug-in to eCycling program, and the amounts recycled in Europe and Germany in 2007.</p> <p><b>More information.</b></p>			
Use of plastic recycled content across all products - and timelines for increasing content		<p>In 2006 Sharp recycled 620 tons of plastic collected from used home appliances and used it in new home appliances.</p> <p><b>More information.</b></p> <p>Sharp aims to use 1000 tons of recycled plastic in new products in 2008, and is researching LCD TV recycling technology.</p>		

## SHARP Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	<p>Sharp refers to Cool Earth 50, a global initiative for reducing GHG emissions of all countries to half the current level by 2050, supported by all those attending the G8 Summit in Heiligendamm in June 2007. However, the 50% cut is from current, not 1990, levels and does not specify by how much industrialized countries need to cut their emissions.</p> <p><b>More information.</b></p>			
Company carbon footprint disclosure			<p>Sharp reports on GHG emissions from its own operations (per production unit) and in absolute terms. <b>More information.</b></p> <p><b>Verification details.</b></p> <p><b>Absolute GHG emissions are reported.</b></p>	
Commitment to reduce own direct GHG emissions	<p>Sharp has a target to reduce relative CO2 emissions (per adjusted production unit) by 28% compared to fiscal 1990 by 2010, but for domestic production sites only. There is no target for an absolute reduction of emissions of all GHGs. <b>More information.</b></p>			
Amount of renewable energy used	<p>Sharp does not identify the proportion of renewable energy used, but gives examples of photovoltaic power systems, including the Kameyama plant, where the world's largest photovoltaic power system has been installed. <b>More information.</b></p>			
Energy efficiency of New Models (Companies score double on this criterion)			<p>Sharp states that most LCD TVs meet Energy Star requirements; over 60% of models are at least 30% more energy efficient than the Energy Star baseline, and one-quarter of models are at least 50% more energy efficient.</p> <p><b>More information.</b></p>	

# LENOVO Ranking = 3.9/10

Lenovo is in 13th position with a score of 3.9 points, gained mainly on the toxic chemical criteria. However, Lenovo has yet to put on the market products free of brominated flame retardants and PVC vinyl plastic and needs to commit to the phase out of beryllium (including alloys and compounds), antimony and its compounds and all phthalates.

On the e-waste criteria, Lenovo reports a recycling rate of 2.16% of the weight of products shipped in 2007 and 7.74% of the weight of products shipped in 2000.

Lenovo discloses greenhouse gas (GHG) emissions from global operations in 2007, although these are not externally verified. Lenovo also scores double points on energy efficiency, for having all global models of notebook, desktop and monitor introduced since the effective date of Energy Star 4, meeting the current Energy Star requirements, either in the basic models or as an option. However, Energy Star compliance is not supplied as standard for all models; for some models, customers can opt for non-Energy Star compliant PCs.

## LENOVO Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## LENOVO Detailed Scoring

Chemical Score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Precautionary Principle				Lenovo scores top marks on its definition of the Precautionary Principle in its new <b>Environmental Report 07/08 (p. 6)</b>
Chemicals Management				Lenovo's Engineering Specification 41A7731 reflects its commitments on eliminating PVC and BFRs. <b>More information here and here.</b>
Timeline for PVC & BFR phaseout				Lenovo's target for elimination of all uses of PVC and BFRs by 2009 earns the company top marks, in its <b>Environmental Report 07/08 (p.6/7)</b> . See also <b>suppliers letter</b> .
Timeline for additional substances phaseout	Antimony, beryllium and phthalates are listed as reportable substances, which may be candidates for further restrictions in the future. The threshold for reporting is 1000 ppm except for beryllium that is 200 ppm, due to the requirements of European recyclers. <b>See p 12/13 of Environmental Report. pdf file (p.12).</b>			
PVC-free and/or BFR-free models (companies score double on this criterion)	Lenovo provides Product Environmental Data Sheets, but no products are free of PVC or BFRs. <b>More information.</b>			

## LENOVO Detailed Scoring

EPR/recycling score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Support for Individual Producer Responsibility		Lenovo's reference to IPR fails to specify that each producer should be responsible for treating his/her own branded e-waste. For full marks Lenovo needs to make public its advocacy for IPR and provide more information on how IPR can work in practice. <b>See new Environmental Report 07/08 (p. 10).</b>		
Provides voluntary take-back where no EPR laws exist		Voluntary take-back is offered in 56 countries where Lenovo sells products directly, but not in countries where re-sellers sell its products. Moreover, some take-back services are time-limited <b>e.g. Thailand.</b> <b>More information.</b> Product take-back has been extended in <b>India.</b>		
Provides info for individual customers on take-back in all countries where products are sold		Lenovo provides take-back information to both business and individual customers in countries where the company sells its products directly. <b>More information.</b>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			Lenovo recycled 2.16% of the weight of products shipped in 2007 and 7.74% of the weight of products shipped in 2000. It's not clear whether EU data is included in the calculations, and if so, how it is estimated e.g. sampling return share. Is any real data included from non-EU countries? <b>See Environmental Report p.12</b>	
Use of plastic recycled content across all products - and timelines for increasing content		Recycled resins, ranging in recycled content from 10% to 50%, are used in a number of Lenovo hardware applications. See p. 9, Environmental Report! Lenovo's target for use of recycled plastic in 2007/8 was not met. Lenovo has a goal for 2008/2009 but details are not given. <b>More information.</b> <b>See p.5, Environmental Report.</b>		

## LENOVO Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	Lenovo does not refer to support for global mandatory reductions in GHG emissions. <b>More information.</b> <b>See p.9. Environmental Report.</b>			
Company carbon footprint disclosure		Lenovo reports GHG emissions of 73,566 metric tons from global operations in 2007; this includes scope 1 and 2 emissions, and scope 3 emissions from employee travel. No reference to external verification. <b>More information.</b> <b>See p. 14 – 18 Environmental Report.</b>		
Commitment to reduce own direct GHG emissions	Lenovo has pledged to increase carbon efficiency by 10% by 2012 based on 2007 emissions. However, these reductions are not absolute. <b>More information.</b> <b>See p.14 Environmental Report.</b>			
Amount of renewable energy used	Lenovo is increasing its purchase of renewable energy at its Morrisville facility by 20% in 2008, accounting for 7.8% of its electricity consumption. However, no figures on the amount of renewable energy used globally, or targets for increasing its use, are given. <b>More information.</b> <b>See p.18. Environmental Report.</b>			
Energy efficiency of New Models (Companies score double on this criterion)			All Lenovo notebook, desktop and monitor global models introduced since the effective date of Energy Star 4 satisfy the current Energy Star requirements, either in the basic models or as an option. However, ES compliance is not supplied as standard for all models; for some models customers can opt for non-ES compliance. <b>More information.</b> <b>See p. 8, Environmental Report.</b>	

# PHILIPS Ranking = 3.7/10

Philips is in 14th place, scoring 3.7, having had a penalty point deducted from its overall score of 4.7 points for double standards on Individual Producer Responsibility (IPR): on its global website Philips recognises the benefits of IPR while in the US, Philips is a member of the Electronic Manufacturers' Coalition for Responsible Recycling, which does not support Producer Responsibility but demands that consumers pay ARFs (Advanced Recycling Fees). Philips also scores zero on all the other e-waste criteria.

Philips scores well on both toxic chemical and energy issues. On chemicals, Philips has committed to eliminating all phthalates and antimony by December 31 2010. Beryllium and its compounds are already restricted and arsenic is to be phased out of TV glass and other display products from 2008.

Philips scores the highest marks of all the brands on energy criteria, disclosing externally verified carbon dioxide equivalent emissions, committing to absolute cuts in its operational carbon footprint by 25% by 2012 (using a baseline year of 2007) and sourcing 10% of its electricity in 2007 from renewable sources. Although Philips scores well on energy efficiency, reporting that some 71% of all TV models put on the US market after 2005 met the Energy Star standard, these data are only for US models and not all their new models globally. 10% of Philips current battery charger models fulfil the Energy Star requirements. These models exceed the technical Energy Star requirements by 5-15%.

## PHILIPS Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## PHILIPS Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				Philips' definition of the Precautionary Principle now identifies the need to take preventative measures without full scientific certainty. <b>More information.</b> <b>Environmental Policy.</b> <b>Sustainability Report.</b>
Chemicals Management				Philips scores top marks for providing Product and Process Specs, criteria for identifying 'future substances' for elimination and examples, namely 'reported' substances. <b>More information.</b> <b>Framework document.</b> <b>Restricted substances in Products list.</b> <b>Restricted substances in Processes list.</b> <b>Criteria for identifying 'future' substances for phase out.</b> <b>List of "reported" substances.</b>
Timeline for PVC & BFR phaseout				Philips aims to have certain models of consumer products free of PVC and BFRs by the end of 2008 and to phase out PVC and all BFRs in new models by the end of 2010. Philips has eliminated BFRs in TV housings for the EU market. <b>More information.</b>
Timeline for additional substances phaseout				All phthalates and antimony will be eliminated by December 31 2010. <b>More information.</b> Beryllium and its compounds are already restricted with a threshold of 1000 ppm. <b>More information.</b> Arsenic is to be eliminated from TV glass and other display products from 2008. <b>More information.</b>
PVC-free and/or BFR-free models (companies score double on this criterion)	Green Flagship products are listed but there are no examples of BFR free or PVC free products. <b>More information.</b> <b>See Sustainability Report 2006</b> (p84-85).			

## PHILIPS Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility	<p>Philips acknowledges that IPR can be a mechanism to improve product design:  <b>More information.</b>                      However, Philips scores no points on this criterion because in the US, it is a member of the Electronic Manufacturers' Coalition for Responsible Recycling which does not support EPR, but is demanding that consumers pay ARFs (Advanced Recycling Fees).  <b>More information.</b></p>			
Provides voluntary take-back where no EPR laws exist	<p>No voluntary take-back offered by Philips, although in the US Philips lists local recyclers for customers to contact.  <b>More information here and here.</b></p>			
Provides info for individual customers on take-back in all countries where products are sold	<p>Philips provides general advice to customers on recycling.  <b>More information.</b></p>			
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled	<p>Philips has published amounts (in tons) of WEEE recycled (for displays and other consumer electronics) in EU countries for 2005, 2006 and 2007 and provides recycling rates for displays of 65% in 2007, 47% in 2006, and 26% in 2005, based on an average lifespan of 10 years. Although the recycling rates are high, Philips fails to score any points because the figures are only for the EU where companies pay for recycling according to current market share. Philips needs to provide more information about how the calculation is done e.g. sampling return rate.  <b>More information.</b></p>			
Use of plastic recycled content across all products - and timelines for increasing content	<p>No information is given on use of recycled plastics.</p>			

## PHILIPS Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions		Philips supports cuts of 50% of global emissions by 2050, and proposals for cuts of between 20 and 30% by 2020 from industrialised countries. However, science dictates that cuts of at least 30% are needed in the industrialised world. <b>More information.</b>		
Company carbon footprint disclosure			Philips discloses its CO2 equivalent emissions to be approximately 2.35 million tons that are verified by KPMG in its Sustainability Report. However, no product related supply chain stages are reported. <b>More information. Sustainability Report 2007 (pp.24-25 and 68-96).</b>	
Commitment to reduce own direct GHG emissions				Philips is committed to reducing its operational carbon footprint by 25% by 2012, using 2007 as a baseline. <b>More information here and here.</b>
Amount of renewable energy used			Approximately 10% of purchased electricity in 2007 was generated by renewable sources. By 2012, the number of sites that use green electricity should be raised to the level needed to achieve the 25% carbon footprint reduction target by 2012. <b>More information.</b>	
Energy efficiency of New Models (Companies score double on this criterion)			Some 71% of all TV models put on the US market after 2005 met the Energy Star standard. But data are only for the US market. <b>More information.</b> 10% of Philips current battery chargers models fulfil the Energy Star requirements. These models exceed the technical Energy Star requirements by 5-15%. <b>More information.</b>	

# FUJITSU-SIEMENS Ranking = 3.7/10

Fujitsu Siemens Computers comes in 15th place with a score of 3.7 points, most of which are gained on the toxic chemical criteria. FSC sells a range of green-certified products, which use halogen-free flame retarded plastics and halogen-free circuit boards for mainboard and power supply, but there is no information on PVC-free components.

FSC scores poorly on the e-waste criteria, and even worse on energy issues. The company reports a recycling rate of 22.5% based on past sales, using a 7-year average lifespan of a computer, but the figure is only for Germany. FSC expects to achieve a recycling rate of 25% by 2010.

On energy, FSC only scores on one criterion, getting top marks for its political support for global mandatory cuts of greenhouse gas emissions of at least 50% by 2050 (from 1990 levels) and cuts by industrialized countries of at least 30% as a group by 2020.

## Fujitsu-Siemens Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## FUJITSU-SIEMENS Detailed Scoring

Chemical Score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Precautionary Principle				FSC's definition of the precautionary principle recognises the need to eliminate potentially harmful substances "even if the full extent of harm has not been definitively established". <b>More information.</b>
Chemicals Management				Fujitsu Siemens provides comprehensive lists of banned and restricted substances, materials specifications and associated documents and gets top marks. <b>Environmental Guideline FSC03230. List of prohibited substances.</b>
Timeline for PVC & BFR phaseout		No final timeline for complete elimination of PVC and all BFRs. <b>More information.</b>		
Timeline for additional substances phaseout		FSC does not use beryllium. Antimony will be phased out when BFRs are eliminated as its use is linked to BFRs; phthalates will be eliminated with the phase out of PVC. However, FSC provides no timelines for the phase out of PVC and BFRs. <b>More information.</b>		
PVC-free and/or BFR-free models (companies score double on this criterion)		Fujitsu Siemens Computers sells a wide range of green-certified products such as its FUTRO thin clients, ESPRIMO professional PCs and CELSIUS workstations. 'Green Products' use halogen-free flame retarded plastics and halogen-free circuit boards for mainboard and power supply but there is no information on PVC-free products. <b>More information.</b> <b>Green models.</b> <b>History of green products.</b>		

## FUJITSU-SIEMENS Detailed Scoring

EPR/recycling score	<b>BAD</b>	<b>PARTIALLY BAD</b>	<b>PARTIALLY GOOD</b>	<b>GOOD</b>
Support for Individual Producer Responsibility			FSC makes a <b>clear statement</b> in support of Individual Producer Responsibility, but fails to explore options for operationalisation of this principle and to actively lobby for it.	
Provides voluntary take-back where no EPR laws exist		FSC will extend its voluntary take-back and recycling programme to the whole EMEA region (Europe, Middle East and Africa) and provides an e-mail address for countries outside EU and South Africa. NOTE, the FSC brand is only marketed in EMEA. <b>More information here and here.</b>		
Provides info for individual customers on take-back in all countries where products are sold			FSC now provides a list of <b>recycling schemes</b> in 30 countries, all European, except for South Africa. It also provides an e-mail address for countries outside EU. <b>More information here and here.</b>	
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled		FSC is now reporting according to the weight of WEEE recycled as a percentage of previous sales, using a 7-year lifespan, but the figure is only for Germany. <b>More information.</b> <b>See also: 2005-2006 Environmental Report</b> (p.14-15) <b>More information in German.</b>		
Use of plastic recycled content across all products - and timelines for increasing content	FSC does not use recycled plastic in its products. <b>More information.</b>			

## FUJITSU-SIEMENS Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions				FSC states that it "clearly supports global mandatory cuts of Greenhouse Gas emissions of at least 50% by 2050 (from 1990 levels) and cuts by industrialized countries of at least 30% as a group by 2020." <b>More information.</b>
Company carbon footprint disclosure	FSC reports on energy consumption at its two manufacturing sites in Germany only. There is no information on emissions from 2 stages of product supply chain. <b>More information.</b>			
Commitment to reduce own direct GHG emissions	FSC has documented significant reductions in emissions of CO2 since 2001, but makes no concrete commitment to further cuts. <b>More information.</b>			
Amount of renewable energy used	FSC sources 26 % of electricity from renewable energy at its production facility in Augsburg. However, this is only one of its two production facilities. No figures on the amount of renewable energy used globally, or targets for increasing its use, are given. <b>More information.</b>			
Energy efficiency of New Models (Companies score double on this criterion)	80% of Business Line professional notebooks and 60% of PCs meet ES4. For Consumers, two SCALEO models meet Energy Star and all next generation CELCIUM will be EPA 4.0 compliant. Also SCENICVIEW AND SCALEOVIEW displays are ES qualified. However FSC provides no calculation of percentage of ALL new models (put on the market since 20 July 2007) that meet or exceed Energy Star 4. <b>More information.</b>			

# LG ELECTRONICS Ranking = 3.3/10

LG Electronics comes in 16th position with a score of 3.3, gaining most of its points on chemicals and e-waste and scoring zero on all the energy criteria.

LGE has launched new models of mobile phones with halogen-free housings, packaging and main printed wiring board. The company has compiled figures for e-waste recycling in Europe, Asia and North America and reports a recycling rate in relation to current sales for all regions. Globally, the recycling rate for total IT and telecom equipment is 13.2% and consumer equipment (that includes TVs) is 13.7%.

## LG ELECTRONICS Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## LG ELECTRONICS Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle				LGE provides a strong definition of the precautionary principle reflecting the need to take action to eliminate harmful chemicals even though their effects may not be scientifically proven. <b>More information.</b>
Chemicals Management				LGE's product specs in the Manual for Preparation of Environmental Regulations earn them top marks. <b>More information here and pdf here.</b> LGE provides a substance list that includes <b>future substances to be reduced</b> , including beryllium and antimony.
Timeline for PVC & BFR phaseout				The first PVC-free products are to be launched in 2008; the remaining uses of PVC are to be phased out by the end of 2010. All new models released in 2010 are to be BFR-free. <b>More information.</b>
Timeline for additional substances phaseout	Phthalates are listed as Level A-II, substances that are banned from use. Beryllium and Antimony are listed as substances that are to be either monitored or reduced. <b>More information.</b>			
PVC-free and/or BFR-free models (companies score double on this criterion)		Mobile phones now have halogen-free housing, packaging and main printed wiring board. <b>More information here and here.</b>		

## LG ELECTRONICS Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility			LGE supports individual producer responsibility, although it recognises that for IPR to be operationalised, technically and economically feasible identification solutions are needed. There is no evidence of LGE lobbying for IPR. <b>More information.</b>	
Provides voluntary take-back where no EPR laws exist		LGE now provides voluntary take-back of its discarded mobile phones in some 50 countries with 392 drop off points globally. However, large gaps still exist in Africa, Middle East and Latin America. <b>More information.</b> LGE has added a free mailing service in the US for mobile phones and accessories. <b>More information.</b> To score higher marks, LGE needs to provide voluntary take-back of more product types. Info about take-back of other end-of-life products. <b>More information.</b>		
Provides info for individual customers on take-back in all countries where products are sold		<b>Information</b> to customers on what to do with discarded mobile phones. <b>Information on other discarded products here.</b>		
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled			LGE has compiled figures for e-waste recycling in Europe, Asia and North America. A total figure is also given, as well as the recycling rate in relation to current sales for all regions. Globally, the recycling rate for total IT and telecom equipment is 13.2% and consumer equipment (that includes TVs) is 13.7%. <b>More information.</b>	
Use of plastic recycled content across all products - and timelines for increasing content	There is no reference to the use of recycled plastics in LGE products.			

## LG ELECTRONICS Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	LGE makes no reference to support for global mandatory cuts of GHG emissions. <b>More information.</b>			
Company carbon footprint disclosure	LGE is in the process of establishing an inventory for greenhouse gases for all its domestic facilities by November 2008. <b>More information.</b>			
Commitment to reduce own direct GHG emissions	LGE has reduced some 5000 tons of greenhouse gases at its Chang-Won facility and will begin reduction activities for all its other domestic facilities when the inventory establishment is complete (see E2), through an integrated greenhouse gas management system. <b>More information.</b> More details of LGE's plan for reducing energy costs are in its 2005 sustainability report (p. 20). <b>More information.</b>			
Amount of renewable energy used	LGE gives some examples of its use of renewable energy, but no data on generating capacity or CO2 emissions avoided or targets for increasing use of renewable energy. <b>More information here and here.</b>			
Energy efficiency of New Models (Companies score double on this criterion)	LGE states that the majority of its products meet the standards of Energy Star, and provides links to the Energy Star product lists for Battery chargers, TVs and computers. However, no info is provided on the percentage of new models meeting the ES standards. <b>More information.</b>			

# MICROSOFT Ranking = 2.2/10

Microsoft is in 17th position with a miserable score of 2.2 points, mainly on toxic chemicals criteria. The company provides a timeline of the end of 2010 for eliminating phthalates.

On e-waste, Microsoft scores only on its weak support for Individual Producer Responsibility. On energy, the company reports its total carbon dioxide equivalent emissions, from its own operations.

## MICROSOFT Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## MICROSOFT Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle			Microsoft now has a definition of the Precautionary Principle, as defined in the UN Rio declaration. However, for top marks, the policy needs to be made more prominent on the website. It is currently hidden away on the last (p.14) of Microsoft's H00594 Restricted Substances Specification. <b>More information here and here.</b>	
Chemicals Management				Microsoft lists its Chemical Specifications and has added a procedure for identifying future substances for elimination (see Section D, page 14 of H00594 Restricted Substances Specification). Suspect substances for potential future elimination include those on California Proposition 65 List and the Canada Environmental Protection Act Domestic Substance List. However the California Proposition 65 List includes 100s of substances, most of which are not even used by the electronics industry. <b>Restricted Substances Specifications.</b> <b>Restricted Substance Specification for Hardware Products and Packaging (H00594).</b> <b>Restricted Substance Control System (H00642).</b> <b>California Proposition 65 List.</b>
Timeline for PVC & BFR phaseout				Microsoft is committed to eliminating PVC and brominated flame retardants from all of its hardware products by or before 2010. <b>More information here and here.</b>
Timeline for additional substances phaseout		Microsoft provides a timeline of the end of 2010 for eliminating phthalates. See Section D, page 14 of H00594 <b>Restricted Substances Specification.</b> Microsoft currently restricts certain phthalates and antimony in line with the EU Toys Directive, for use in selected products such as game controllers Beryllium compounds, antimony and phthalates are all listed as reportable substances. See p.10, 11 & 12 of <b>Restricted Substances for Hardware Products.</b>		
PVC-free and/or BFR-free models (companies score double on this criterion)	No products free of PVC and BFRs.			

## MICROSOFT Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility		Although Microsoft now states that it “supports the mandatory collection and recycling of consumer electronics funded by individual producers...”, for full marks, Microsoft needs to support the principle of Individual Producer Responsibility more explicitly and lobby for its operationalisation. <b>More information here and here.</b>		
Provides voluntary take-back where no EPR laws exist	Microsoft now provides a link to <b>CEA's recycling website</b> for its US customers. <b>CEA's recycling pages.</b> <b>Microsoft's Authorised Refurbisher (MAR) Programme</b> extends the lifespan of otherwise obsolete PCs. <b>More information.</b>			
Provides info for individual customers on take-back in all countries where products are sold	Microsoft provides a link to CEA's recycling site @ <b>mygreenelectronics.org</b> which gives information about recycling in the US, although Microsoft/Xbox is not one of the companies/products listed. A link listing <b>Microsoft's recycling partners</b> in the EU is too large to download. Links to individual EU country sites are not very helpful, as they connect to main government websites and not even the respective Environmental Ministries responsible for WEEE Directive enforcement or to the Producer Responsibility Organisations in each EU Member State. E.g. For UK links to UK govt website – not even DEFRA E.g. for Poland, link to main PL govt website – not even MOS, the Env Ministry.			
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled	In 2006, Microsoft funded the direct recovery and recycling of over 1.3 million kgs of consumer electrical and electronic goods from European households, which represents some 37% of their year 2000 hardware sales volume in Europe. This metric available only for Europe. However, in Europe Microsoft pays for recycling historical waste by current market share and not for the actual amount recycled. So, there is no relationship between what Microsoft pays for recycling and the amount actually recycled. To score any points, Microsoft needs to demand that PROs (Producer Responsibility Organisations) sample MS waste going to recycling facilities to get an estimate of the real return share of MS e-waste. <b>More information.</b>			
Use of plastic recycled content across all products - and timelines for increasing content	No information.			

## MICROSOFT Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	<p>Microsoft makes no reference to supporting mandatory global cuts of GHG emissions. <b>More information.</b></p>			
Company carbon footprint disclosure		<p>Microsoft reports its total CO2 equivalent emissions at 416170 metric tonnes globally (scope 1 and 2) but these are not third party verified. <b>More information. Carbon Disclosure Project, see p.4.</b></p>		
Commitment to reduce own direct GHG emissions	<p>Microsoft has not set specific emissions reduction targets. <b>More information. Carbon Disclosure Project, see p.7.</b></p>			
Amount of renewable energy used	<p>Microsoft does not state the percentage of renewable energy used. However, several of its utility providers have renewables in their portfolios and the Quincy site is served by a utility with 100% hydro power. <b>More information. Carbon Disclosure Project, see p.5.</b></p> <p>Elsewhere, Microsoft gives many examples of use of renewable energy at its facilities, including hydropower, solar panels, wind power and the purchase of 100 percent renewable electricity. It also has plans to extend these renewable resources, however targets for increasing its use of renewable energy are not given. <b>More information here and here.</b></p>			
Energy efficiency of New Models (Companies score double on this criterion)	<p>No information on whether the Xbox meets or exceeds EnergyStar. <b>More information.</b></p>			

# NINTENDO Ranking = 0.8/10

Nintendo comes in last in 18th place with a pitiful 0.8 points out of 10, scoring zero on all e-waste criteria. The company has banned phthalates and is monitoring use of antimony and beryllium.

Nintendo discloses carbon dioxide (CO<sub>2</sub>) emissions from its own operations and commits to cutting CO<sub>2</sub> emissions and other greenhouse gases by 2% over each previous year. However, Nintendo admits that an increase in business led to a 6% rise in CO<sub>2</sub> emissions in 2006.

## NINTENDO Overall Score

	<b>BAD (0)</b>	<b>PARTIALLY BAD (1+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models (companies score double on this criterion)				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

## NINTENDO Detailed Scoring

Chemical Score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Precautionary Principle	No reference to the Precautionary Principle. <b>More information.</b>			
Chemicals Management		No Product Specification or List of Banned/Restricted Substances. Nintendo now state that they have established Green Procurement Standards for Suppliers, but these are not provided. No mechanism for identifying substances for future elimination or examples of these substances. <b>More information.</b> Nintendo publishes its list of 'Environment-Related Substances in its <b>CSR report (p22)</b> . It also states that its products comply with the EU Toy Safety Directive (although not traditionally defined as toys) and that endocrine-disrupting chemicals are avoided. (p.14).		
Timeline for PVC & BFR phaseout	PVC is listed as a substance 'subject to early withdrawal', although no timeline is given for its phase-out. BFRs are listed as 'substances under application control, which are monitored for content amount. <b>More information.</b> Nintendo is in the process of phasing out PVC in its packaging. <b>More information.</b>			
Timeline for additional substances phaseout		Phthalates are listed as banned substances by Nintendo on their <b>Environment-Related Substances List</b> . Antimony and Beryllium are listed as substances to be monitored.		
PVC-free and/or BFR-free models (companies score double on this criterion)	No information			

## NINTENDO Detailed Scoring

EPR/recycling score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for Individual Producer Responsibility	No reference to Individual Producer Responsibility or recycling of used Nintendo products. <b>More information.</b>			
Provides voluntary take-back where no EPR laws exist	Nintendo now links to the USEPA's eCycling hardware and battery recycling programmes. It also provides a phone number with business hours given in Pacific time for hardware and battery recycling. <b>More information.</b>			
Provides info for individual customers on take-back in all countries where products are sold	Nintendo gives links to US EPA disposal and recycling pages, and provides a freephone number to call. <b>More information.</b>			
Reports on amount of waste electrical and electronic equipment (WEEE) collected and recycled	No information			
Use of plastic recycled content across all products - and timelines for increasing content	No information			

## NINTENDO Detailed Scoring

Energy score	BAD	PARTIALLY BAD	PARTIALLY GOOD	GOOD
Support for global mandatory reduction of GHG emissions	No information			
Company carbon footprint disclosure		Nintendo reports on emissions of CO2, both absolute and per unit of output, but these are not externally verified (p.19 CSR report). <b>More information.</b>		
Commitment to reduce own direct GHG emissions		Nintendo aims to reduce CO2 emissions and other greenhouse gases by 2% over each previous year. However, an increase in business led to a 6% rise in 2006. <b>More information.</b>		
Amount of renewable energy used	No information			
Energy efficiency of New Models (Companies score double on this criterion)	No information			