

Ranking Criteria Explained

January 2010

Since the 8th edition of its Guide to Greener Electronics, Greenpeace scores electronics brands on tightened sets of chemicals and electronic waste (e-waste) criteria (both of which include new criteria), and on new energy criteria.

The ranking criteria reflect Greenpeace's demands to electronics companies to:

- clean up their products by eliminating hazardous substances; and
- 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 improve their corporate policies and practices with respect to Climate and Energy.

Criteria on Toxic Chemicals

Greenpeace wants electronics companies to 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 e-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 for corporate practice on chemicals are weighted more heavily than criteria on recycling.

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

Two former chemicals 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, 'Phase-out of additional substances with timeline(s)'. The additional substances, many of which have already been identified by the brands for potential future elimination are:

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

In the 14th edition (January 2010), the criterion C1, which evaluates companies on support for the Precautionary Principle (in the context of corporate chemicals policy) was amended, requiring companies to also actively lobby for the addition of an end-of-life methodology for further restrictions of hazardous substances and for organochlorines and organobromines to be added to the list of substances already banned by the EU RoHS (Restriction of Hazardous Substances in electronics) Directive, currently being revised (RoHS 2.0).

Criteria on e-waste

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

In the 8th edition, an additional e-waste criterion was added and most of the existing criteria were 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 energy criteria added in the 8th edition address key expectations that Greenpeace has of responsible companies who 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; and
- (5) Energy efficiency of new models (double points)

All the criteria are described in full detail below.

Toxic Chemicals criteria in depth

Criterion					Points to be scored for each
C1. Precautionary Principle	C2. Chemicals Management	C3. PVC and BFR phase-out and timeline ¹	C4. Phase-out of additional substances with timeline(s)	C5. PVC-free and BFR-free models (product systems) on the market	
Support for the precautionary principle and public support for RoHS 2.0 in line with the public statement (in box below), and <i>proactive</i> support for RoHS 2.0 ² to introduce end-of-life focused methodology and, consequently, ban on organo-chlorine and organobromine substances	Lists restricted/ banned substances and communications along supply chain, plus a list of substances in consideration for future restriction and criteria used for identifying 'future substances' for elimination	Commitment to complete PVC and BFR phase-out and reasonable timeline for ALL applications	3 named substances ³ and reasonable timelines for all new models ⁴	Yes, both PVC-free and BFR-free (double points)	3

¹ The lower level of commitment on either PVC or BFRs will determine the score

² 'Proactive support' means *physically* influencing the political process by calling for an organohalogen-free RoHS 2.0 during conferences and workshops, influencing the position of trade associations and joining with NGOs and other companies to lobby EU decision-makers.

³ 'Named substances' are those substances already identified by many brands as 'future substances' for elimination, and include ALL phthalates, beryllium including alloys and compounds, and Antimony/antimony compounds

⁴ 'Reasonable' means by end of 2012

C1. A chemicals policy based on the Precautionary Principle and support for an end-of-life focused methodology for organohalogens to be added to the revised EU RoHS Directive

Precautionary Principle

Greenpeace believes that companies should embrace strong principles that dictate decision-making on their environmental practices.

A chemicals policy underpinned by the Precautionary Principle means that companies would take action to substitute/eliminate a suspect chemical or group of chemicals, even if the scientific jury is still out on whether these chemicals are definitely causing environmental harm. Implementing a precautionary chemicals policy requires a system for collecting information on new suspect chemicals, and mechanisms for triggering corporate action to phase them out and begin looking for safer substitutes.

The Precautionary Principle needs to be prominently defined on corporate websites and include taking action to substitute a chemical or group of chemicals despite scientific uncertainty (e.g. 'potential' effects) of environmental and health effects.

Top marks on this criterion go to companies whose definition of the Precautionary Principle is prominent on their corporate website and includes taking action to substitute a chemical or group of chemicals despite scientific uncertainty (e.g. 'potential' effects) of environmental and health effects.

What is the Precautionary Principle?

The Precautionary Principle is not a new idea. It has been adopted by a number of international environmental treaties, conventions and political declarations. But what does it mean?

In the context of chemicals management, it means that when (on the basis of available evidence) the use of a chemical or groups of chemicals may harm human health or the environment, action to eliminate the use of the chemical(s) should be taken even if the full extent of harm has not yet been fully established scientifically. It recognises that such proof of harm may never be possible, at least until it is too late to avoid or reverse the damage done.

Candidate chemicals for precautionary action are those whose intrinsic properties include carcinogenicity, mutagenicity or reproductive toxicity, chemicals that are persistent, bio-accumulative and toxic (PBTs) and those that are very persistent and very bio-accumulative (vPvBs). They can also include substances identified as having serious and irreversible effects to humans and the environment, for example certain endocrine-disrupting substances (substances disturbing the body's hormone system).

As of the 14th edition of the Guide, full marks go to companies having chemicals policies based on the precautionary principle and proactively supporting a revised EU RoHS Directive that includes an end-of-life focused methodology for adding new groups of substances and a ban on organohalogens

Passive support for this stricter RoHS 2.0 means a public statement in support of strengthening the RoHS Directive (see box, below) to be reflected on the corporate website.

The content of the public statement in support of strengthening the RoHS Directive

[Company name] is committed to the elimination of the most toxic chemicals, starting with BFRs and PVC, from our entire product range. In order to ensure this is achieved across our industry as quickly as possible, we ask EU regulators to amend the European Commission proposal of December 2008 for a revised RoHS Directive to:

Introduce a systematic approach/methodology, with clear end-of-life (EOL) and use-phase environmental criteria for addressing the restriction of additional hazardous substances, taking into consideration both the direct impact of substances and the so-called 'indirect' impacts of transformation substances formed at end-of-life, in addition to impacts from use, and foreseeing that this can be applied to whole groups or families of substances, as well as individual substances.

In line with the above approach, reflecting the urgency of current social and environmental realities of sub-standard waste EEE treatment and the availability of existing technical solutions, introduce an immediate restriction on all brominated and chlorinated organic substances and materials⁽¹⁾, more specifically in category 3 & 4 products⁽²⁾, with a timeline for assessment and expansion to the rest of the RoHS product categories.

These amendments to RoHS are vital in order to continue to address the reality of EOL impacts of the most hazardous and potentially hazardous substances and materials used in electronics today. Clear EOL impacts criteria/methodology will also enable manufacturers and material suppliers to perform their own predictive assessment on future materials and substances and thus avoid investing unnecessarily in materials that are later identified as hazardous and then banned.

1 This should include both additive and reactive uses of flame retardant substances

2 Category 3 = IT and telecommunications equipment, Category 4 = consumer equipment

C2. Chemicals Management

This criterion examines how companies manage their supply chain, in order to ensure that suppliers do not continue to use substances that are banned or restricted. Companies need to describe what systems they have in place to implement the phase-out of harmful substances (such as PVC and BFRs) and thus be in a position to meet their commitments.

A chemicals policy embracing the Precautionary Principle needs, at minimum, a system for collecting information on new evidence about suspect chemicals and mechanisms for triggering corporate action to phase out these chemicals and begin looking for safer substitutes.

Certain substances are already being considered for future elimination by both governments and companies. These include other halogenated chemicals, in addition to PVC and BFRs, such as PFOS (perfluorooctane sulphonate) and related compounds, many of which have known hazardous properties. PFOS, for example, is a persistent, bio-accumulative and toxic substance. Other substances under consideration are antimony and beryllium compounds. As stated above, companies need to work towards the elimination of all hazardous substances, based on the Precautionary Principle.

Top marks in this criterion go to companies that make their lists of restricted/banned substances publicly accessible and describe how these requirements are enforced along their supply chain. In addition, companies need to provide lists of substances being considered for future restriction or elimination. They must also provide information explaining the factors they consider when making these lists.

C3. Timeline for phasing out all use of PVC and BFRs

Greenpeace wants companies to eliminate all hazardous substances, based on the Precautionary Principle, but as a start, to phase out all substances on the OSPAR+ list. The 1998 'List of Chemicals for Priority Action' was drawn up by governments as part of the OsloParis Commission for the Protection of the Marine Environment of the North-East Atlantic.

The OSPAR list already includes all BFRs and not just those banned by the European Union's RoHS Directive. Greenpeace extended this OSPAR list to include PVC in the so-called 'OSPAR+' list.

PVC is a chlorinated plastic used in some electronic products, including for insulation on wires and cables. PVC is one of the most widely used plastics but its production, use and disposal can create toxic pollution. Chlorinated dioxins and furans are released when PVC is produced or disposed of by incineration (or simply burning). Dioxins and furans are classes of chemical compounds widely recognised as some of the most toxic chemicals ever made by humans and many are toxic even in very low concentrations.

BFRs are used in circuit boards, plastic casings and other plastic materials. Many do not break down easily and can build up in the environment. Some BFRs can bio-accumulate. Long-term exposure to certain BFRs, particularly in the womb, has been linked with abnormal brain development in animals, with the potential for impaired learning and memory functions. Some BFRs also interfere with thyroid and oestrogen hormone systems. TBBPA, a type of BFR used in circuit boards, has been linked to neurotoxicity.

The presence of BFRs in electronic products has the potential to generate brominated dioxins and furans, when the electronic waste comes to be smelted, incinerated or burnt in the open. Such dioxins and furans are classes of chemical compounds widely recognised as some of the most toxic chemicals ever made by humans and many are toxic even in very low concentrations.

Top marks in this criterion go to companies that have committed to eliminating PVC and all BFRs in all applications, with a reasonable timeline by which phase-out will be complete, or to those who have already fully implemented this commitment.

C4. Phase-out of additional substances with timelines

Greenpeace wants companies to eliminate all hazardous substances, based on the Precautionary Principle. This should be an iterative process with new candidate substances being considered for elimination, triggered by new evidence of their inherent hazards, such as persistence or bio-accumulation.

As part of their chemicals management system, companies have identified suspect substances as potential chemicals of concern. Examples of suspect chemicals include: beryllium/beryllium compounds, arsenic/arsenic compounds, mercury in light bulbs, bismuth/bismuth compounds, antimony/antimony compounds, nickel/nickel compounds and all phthalates.

Greenpeace has prioritised three groups of suspect chemicals that it wants companies to commit to eliminating within a reasonable timeframe, namely by the end of 2012. These substances are:

- All phthalates
- Beryllium, including alloys and compounds
- Antimony/antimony compounds

Phthalates are not necessary in electronics. Their major use is as softeners in flexible PVC plastic. So by switching from PVC to other materials, manufacturers should also be able to eliminate the use of most phthalates. Other uses of phthalates in electronics are as a constituent of some glues.

The phthalate mixtures that Greenpeace has found when analysing laptops and a mobile phone were generally dominated by di-isononylphthalate (DiNP) and di-isodecylphthalate (DiDP), with lesser amounts of diethylhexylphthalate (DEHP). These chemicals are able to migrate out of the plastic materials over time, and there is evidence for the toxicity of these phthalates, especially DEHP, which is classified as 'toxic to reproduction' within Europe.

Antimony is often used to enhance BFR formulations, primarily as antimony trioxide. There are substantial concerns regarding the toxicity and carcinogenicity of this form of antimony. Exposure to high levels in the workplace, as dusts or fumes, can lead to severe skin problems and other health effects. Antimony trioxide is recognised as a possible human carcinogen.

Beryllium is used in electrical equipment, typically in the form of a copper-beryllium alloy containing 2% beryllium. The processing of such alloys, including through recycling processes, can produce dusts and fumes of beryllium and beryllium oxide. Exposure to these, even at very low levels and for short periods of time, can cause beryllium sensitisation that can lead to chronic beryllium disease (CBD), an incurable debilitating lung disease. Beryllium and beryllium compounds are recognised as known human carcinogens.

Top marks in this criterion go to companies that commit to eliminating all three of the above groups of chemicals (more substances may be added) with a reasonable timeline, defined by Greenpeace as by the end of 2012.

C5. PVC-free and BFR-free models of electronic products on the market

Companies score double points for meeting this criterion. For top points, a company's whole product portfolio needs to be both PVC-free and BFR-free. PVC-free and/or BFR-free peripherals and accessories do not score points because they are not product systems.

Greenpeace definition of 'PVC-free' and 'BFR-free'

Greenpeace defines 'PVC-free' as zero use of PVC, with no exceptions and 'BFR-free' as zero use of brominated flame retardants, with no exceptions.

The ultimate goal must be zero levels of total chlorine and total bromine. Some recycled plastics presently contain very low trace levels of total chlorine and total bromine. Both chlorine and bromine belong to halogens. For recycled materials, any maximum allowable limit for 'halogen-free' must be demonstrated to be consistent with currently achievable minimum levels and must incorporate stepped decreases in the limit, with a defined timeline towards the ultimate goal of zero. Such a limit should apply to recycled plastics only, not to new or virgin materials, and only where truly halogen-free recycled materials are not available. Manufacturers must be able to demonstrate that recycled plastics used do not exceed their maximum allowable limit.

Various industry association standards use a definition of 'halogen-free' that allows up to 900 ppm (parts per million) of total chlorine and 900 ppm of total bromine, with a maximum total halogen level of 1500 ppm. These standards include JPCA's (Japan Printed Circuit Association) JPCA-ES-01-1999, IEC's (International Electrotechnical Commission) 61249-2-21 and IPC's (Association Connecting Electronics Industries) 4101B. Greenpeace does not accept such high levels of halogens in materials that are misleadingly defined as 'halogen-free'. A material containing total bromine below 900 ppm, and described as 'halogen-free', could still contain certain BFRs (e.g. penta-BDE) over 1000 ppm – exceeding the level banned by the European RoHS Directive.

E-waste criteria in depth

Criterion					Points to be scored for each
W1. Support for Individual Producers Responsibility ⁵	W2. Provides effective ⁶ voluntary take-back where no EPR laws	W3. Provides info for individual customers on take-back in all countries where sales of product	W4. Reports on amount of e-waste recycled ⁷	W5. Use of recycled plastic content across all products and timelines for increasing content	
Public and explicit demand and support for IPR from all actors ⁸ , such that the end-of-life management systems ⁹ support own-brand differentiation ¹⁰ and internalisation of real own-brand end-of-life costs, including ensuring high recycling standards	Free, easy and GLOBAL take-back for ALL products in all countries where products are sold	Clear info on what individual customers can do with e-waste accessible to customers in every country where products are sold	Reports on the global ¹¹ amount recycled as percentage of past sales by product type and achieves over 25% recycling rate for at least one specified product group ¹²	At least 15% of all plastics sourced is recycled plastic ¹³ , AND timeline for increasing to 25%	3

W1. Support for Individual Producer Responsibility

It is important for a company to support and demand Individual Producer Responsibility (IPR) as this shows positive action in getting its own-branded products back for re-use and recycling, to be able to profit from product eco-design. Companies supporting IPR believe that their product design innovations should be rewarded. Greenpeace expects responsible companies to support, at minimum, financial responsibility for their own-branded end-of-life products. Physical responsibility is not always feasible and could result in duplicated infrastructures e.g. for e-waste collection.

⁵ See W1. Support for Individual Producer Responsibility for full clarification.

⁶ 'Effective' means free and convenient for the customer. 'Free' means 'no recycling fee', but companies can charge a shipping fee.

⁷ Reporting is targeted at specific product groups: mobile phones, PCs, TVs and game consoles (depending on brand portfolio), for which companies need to report the global recycling rate.

⁸ Support means support in the EU and globally, with the intention to participate fully in IPR systems and supporting a revision of the WEEE directive that does NOT change Article 8 and recitals 12 and 20, keeps a clear OEM-focused definition of producer, proposes IPR suitable register and clearing house systems, supports appropriate guarantees to ensure there are funds to cover future end-of-life costs and no dilution of the de-pollution requirements in Annex II of the WEEE directive (if necessary maintaining a pro-manual disassembly approach). All actors means: Producer Responsibility Organisations (PROs), EU and national governments and all players in end of life (EoL) management chain.

⁹ 'EoL Management Systems' means Producer Responsibility Organisations for collection and management/ treatment of e-waste, including the financial guarantees accepted by authorities.

¹⁰ 'Differentiation' means take-back and recycling systems that enable and promote individual distinction of own-brand product information and costs. Support for IPR must recognise the need for feedback of the economic and information signal (via brand differentiation) and for the economic signal to reflect fully end-of-life costs, including those implied by high quality material separation by adhering to Annex 2 of WEEE Directive (de-pollution standards).

¹¹ Global means using recycling figures from at least 3 regions: EU, North America and Japan/Korea.

¹² Brands should report how they arrived at recycling rate. See W5 for clarification.

¹³ 'Recycled plastic' means both post-industrial and post-consumer plastic (for definitions, see W5) but the source needs to be specified.

Active support and demand for IPR requires:

- Take-back and recycling systems that support branded end-of-life product differentiation
- High collection and take-back levels (e.g. aiming for above 95% of all e-waste generated), at least of own-branded waste
- Support revision of the WEEE directive that:
 - does NOT change Article 8 and recitals 12 and 20;
 - keeps a clear OEM-focused definition of producer;
 - proposes IPR suitable register and clearing house systems;
 - supports appropriate guarantees to ensure there are funds to cover future end-of-life costs; and
 - ensures no dilution of the de-pollution requirements in Annex II (if necessary maintaining a pro-manual disassembly approach)
- Continuation of this same approach globally.

Companies supporting IPR should be influencing governments (for example, national and regional government such as the EU, US state and federal government) and all actors along the end-of-life chain, such that the collective e-waste collection and recycling systems (e.g. in the EU, the Producer Responsibility Organisations) enable and promote differentiation of own-brand product information and costs. Support for IPR must recognise the need for feedback of the economic and information signal (via brand differentiation) and for the economic signal to reflect full costs of end-of-life treatment, including those implied by high quality material separation. At minimum, companies should ensure that material separation standards globally adhere to Annex 2 of WEEE Directive (de-pollution standards). In summary, brands supporting IPR should be striving to internalise the real own-brand end-of-life costs into the company business model.

Companies opposing IPR, (or even the principle of Extended Producer Responsibility) and calling for collective producer responsibility or for consumers to pay recycling fees are driven by wanting the costs of treating their end-of-life products to be carried by taxpayers/consumers and/or cross-subsidised by the other companies on the market.

Top marks in this criterion go to companies that state explicit support and demand for IPR that creates incentives for eco-design, including the key elements that need to be in place to put this principle into operation.

W2. Provides voluntary take-back of e-waste in countries not legally required to do so

This criterion scores companies on their voluntary take-back and recycling programmes in countries/states where there are no laws requiring them to do so. The EU has the WEEE Directive (Waste from Electrical and Electronic Equipment), which requires producers to take back and recycle their waste. Likewise, Japan has the Household Appliance Recycling Law, which makes producers responsible for recycling waste from household appliances and computers. Taiwan and South Korea also have EPR programmes for large household appliances and PCs. A growing number of States in the US and Provinces in Canada have take-back legislation.

Top points in this criterion go to companies who provide free, easy and global take-back and recycling services for all their discarded products, both for business and individual customers, in every country where their products are sold.

W3. Provides information for individual customers on take-back

This criterion rates companies on the information they provide to individual customers on what to do with their discarded electronics products, e.g. free postal service, collection depots etc.

Top marks in this criterion go to companies who provide easily accessible information to individual customers on what to do with their branded discarded electronics in every country where their products are sold.

W4. Reports on the amount of e-waste collected and recycled

This criterion scores companies on reporting on the amounts of e-waste recycled globally. Traditionally, many companies that report on e-waste recycling do so by providing annual or cumulative weight of e-waste recycled. This metric does not allow an evaluation of a company's recycling performance based on (past) sales. It also makes it impossible to compare the recycling rates of different companies, given that every company makes a different portfolio of products of various weights e.g. mobiles only versus wide range of household appliances. Many companies are now reporting on recycling volumes/units based on the sales in year X (where 'X' is the average age of the product when it becomes electronic waste). Accepted average lifespans are: 7 years for PCs, 10 years for TVs and 12 years for mobile phones.

The tightening of this criterion requires the brands to report their recycling rate according to the above metric for the following types of products (where applicable):

- Mobile phones
- Computers
- TVs
- Game consoles

Full information needs to be provided about the source of the data used to calculate the recycling rate.

For example:

- Is the recycling rate based on data from collection and recycling programmes in just a few countries or regions and extrapolated globally? Does it include e-waste collected at 'recycling events'?
- Is the recycling rate based on all own-branded e-waste or mixed brand? Is the recycling rate based solely on fees paid to Producer Responsibility Organisations (in the EU), recyclers or other collective systems? In the EU, given that 'historical WEEE' is financed by current market share of producers, the fees paid bear no relation to the amount of own-branded WEEE actually collected and recycled. To calculate any 'real' amount of own-branded WEEE collected and recycled, companies would need to do at minimum, random sampling to determine their own-branded return share of WEEE.
- Does the recycling rate reflect the amount of e-waste collected or material recovered or actually recycled into new products?

Top marks in this criterion go to companies that report their recycling rate as a percentage of past sales per specified product type, and achieve over 25% recycling rate for at least one product group and disclose full information on the data used to calculate the global recycling rate i.e. using recycling data from at least three regions: the EU, North America and Japan/Korea.

W5. Use of recycled plastic content across all products and timelines for increasing content

This criterion scores companies on the recycled plastic sourced as a proportion of the total plastic used for manufacture of a company's whole product portfolio. The recycled plastic can be both post-industrial and post-consumer, but amounts from each source need to be specified.

Post-Industrial Recycled plastic means plastic from product parts or materials that have been diverted from the production stream and are industrial waste or byproducts (sometimes referred to as factory scrap). Post-industrial scrap can be used to produce materials or parts in the same or a different process than the original.

Post-Consumer Recycled plastic means using material that has completed its original life cycle and has been recycled into another part or product rather than having been disposed of as solid waste.

Top marks in this criterion go to companies who source at least 15% of all plastics from recycled plastic streams and provide a timeline for increasing use of recycled plastic to 25%.

Energy criteria in depth

Criterion					
E1. Support for global mandatory reduction of GHG emissions	E2. Disclosure of carbon footprint (GHG emissions) of company's own operations and two stages of the product supply chain	E3. Commitment to reduce GHG emissions from a company's own operations with timelines ¹⁴	E4. Amount of renewable energy ¹⁵ used as proportion of total electricity use in own operations	E5. Energy efficiency of new models of specified products ¹⁶	Points to be scored for each
Supports global mandatory cuts of at least 50% by 2050 (from 1990 levels); cuts by industrialised countries of at least 30% as a group by 2020 ¹⁷ and for greenhouse gas emissions to peak by 2015	Disclosure of ISO 14064-certified ¹⁸ GHG emissions from company's own operations and those of at least two supply chain stages ¹⁹	Commitment to reduce GHG emissions from own operations by at least 20% by 2012	Proportion of renewable energy in total electricity use of company's own operations above 25%	All new models of specified products meet the latest Energy Star standard and 30% exceed the Energy Star standard (by 50% or more in sleep and standby/no-load modes, where applicable) (double points)	3

E1. Support for global mandatory reduction of GHG emissions

This criterion requires companies to support a political commitment in line with Greenpeace's demands for the post-Kyoto process.

Top marks go to brands that state clear support for industrialised countries as a group to accept mandatory domestic cuts of at least 30% by 2020 and call for global greenhouse gas emissions to peak by 2015. A penalty point will be deducted from a company's overall score if we find evidence of a company lobbying against these climate change targets.

E2. Disclosure of carbon footprint (GHG emissions) of company's own operations and two stages of the product supply chain

This criterion scores companies on disclosure of greenhouse gas emissions. Companies should use the GHG Protocol Corporate Standard at: <http://www.ghgprotocol.org/files/downloads/Publications/ghgprotocolrevised.pdf> to calculate emissions from their own operations (Scope 1 and 2) and at least two stages of their supply chain (Scope 3). See p.25 of the GHG Protocol Corporate Standard. Greenpeace does not accept emissions from employee travel (scope 3) as a part of product supply chain emissions. The two stages of the supply chain

¹⁴ Commitment to percentage cut in GHG emission using GHG emission data calculated in E1 as baseline.

¹⁵ The definition of 'renewable energy' is the RECS internationally accepted standards at: <http://www.recs.org/>

¹⁶ Greenpeace uses the Energy Star program requirements and definitions for the following 'specified products': External Power Adapters, Computers and Televisions at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product

¹⁷ A penalty point will be deducted from a company's overall score if we have evidence of a company lobbying against the climate change targets that science demands, as this constitutes corporate misbehaviour.

¹⁸ Certified to the GHG Protocol-based ISO 14064 at www.ghgprotocol.org/standards/corporatetestandard. Scope 1 and 2 emissions are from the company's own operations; Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company.

¹⁹ The two stages of supply chain must be fully described when calculating Scope 3 emissions (as per GHG Protocol Corporate Standard).

should be fully described with respect to the exact operations taking place e.g. details of manufacture of specific component or subassembly including processing steps.

Full marks in this criterion go to companies who not only disclose GHG emissions from their own operations and two stages of the supply chain, but also get the calculations ISO 14064 certified.

E3. Commitment to reduce absolute GHG emissions from a company's own operations with timelines

This criterion rates brands on their corporate commitment to reduce GHG emissions from their own operations, using GHG emission data (GHG Protocol Corporate Standard Scope 1 & 2) calculated in E1 as a baseline. The baseline should be GHG emission data from 2006, 2007 or 2008.

Full points go to brands who commit to reducing their own GHG emissions by at least 20% by 2012.

E4. Amount of renewable energy used as proportion of total electricity use in own operations

This criterion rates the company's use of renewable energy in its own operations.

The RECS definition of renewable energy, as used in the Proposal for an EU Directive on the promotion of electricity from renewable energy sources in the internal electricity Market (RES Directive) at:
<http://www.recs.org/doctree/EU%20documents/RESelectricity%20directive.pdf>

'Renewable energy sources' shall mean renewable non-fossil fuels (wind, solar, geothermal, wave, tidal, hydroelectric installations with a capacity below 10 MW and biomass which means products from agriculture and forestry, vegetable waste from agriculture, forestry and from the food production industry, untreated wood waste and cork waste).

Top marks in this criterion go to companies whose use of renewable energy in their own operations is more than 25% of total electricity use.

E5. Energy efficiency of new models of specified products

This criterion rates the company's performance on energy efficiency, using the Energy Star latest standards as a baseline and rating the energy performance of three broad groups of products: external power adapters, computers (including gaming consoles) and televisions, using the Energy Star programme's definitions of product scope. More information at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.

The Energy Star requirements for External Power Adapters (effective 1 January 2005) are at:
http://www.energystar.gov/ia/partners/product_specs/program_reqs/EPS%20Eligibility%20Criteria.pdf

For Computers (effective 20 July 2007), at:

http://www.energystar.gov/index.cfm?c=computers.pr_crit_computers

http://www.energystar.gov/ia/partners/product_specs/program_reqs/Computer_Spec_Final.pdf

For TVs (effective 1 July 2005) at:

http://www.energystar.gov/ia/partners/product_specs/eligibility/tv_vcr_elig.pdf

New requirements (v.3.1) for TVs (effective 1 November 2008) at:

http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/tv_vcr/FinalV3.0_TV%20Program%20Requirements.pdf

Full score on this criterion goes to companies, all of whose new models of chargers, PCs, consoles and TVs (where applicable) meet the latest Energy Star requirements and 30% exceed these Energy Star requirements by 50% or more in sleep and standby/no-load modes (where applicable). The dates from when the calculation of what proportion of new models meet the new standard are 1 January 2005 for External Power Adapters, 20 July 2007 for PCs, 1 July 2005 for TVs. The new standard for TVs and External Power Adapters is released on 1 November 2008; for these new standards, companies will only be scored on new models released as of 1 November 2008 in the Q1 2009 edition of the ranking guide.

To score full points, companies need to report:

- (1) the percentage of new models (of specified products) that meet the latest Energy Star requirements
- (2) the percentage of those models in (1) that exceed Energy Star requirements and specify by what percentage they exceed the Energy Star standard for the particular mode
- (3) list the names and numbers of the models exceeding the latest Energy Star requirements

Ranking regarding

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, practising 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 e-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 electronic products.

For the latest version, see www.greenpeace.org/rankingguide