

Guide to Greener Electronics

Ranking Criteria Explained

August 2012, v. 18 onwards

Introduction

The latest version of Greenpeace's Guide to Greener Electronics ranks companies from the electronics industry across three areas, Energy & Climate, Greener Products and Sustainable Operations. This raises standards on environmental leadership within the sector which has shown significant improvement since the first Guide to Greener Electronics in 2006.

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

- Reduce emissions of greenhouse gases by implementing a Clean Electricity Plan
- Clean up their products by eliminating hazardous substances;
- Take-back and recycle their products responsibly once they become obsolete,¹ and;
- Stop the use of unsustainable materials in their products and packaging

Given the urgency of tackling climate change, Greenpeace has re-focused and updated its energy criteria to encourage electronics companies to improve their corporate policies and practices with respect to Energy and Climate.

Previous versions of the Guide ranked companies on Chemicals, E-waste, and Energy criteria. The current ranking, updated substantially in version 17, reorganizes the individual criteria under the new headings. In areas where we have seen some progress, we have folded multiple criteria together into one overall criterion, putting the focus on the implementation of previous commitments, for example, through products on the market or take back programmes for e-waste. In places where the industry needs to make further progress, such as energy policy and practice, we have re-written and strengthened the current criteria. Finally, new criteria on the sourcing of paper products and conflict minerals have been added under Sustainable Operations and on product life cycle under Greener Products.

In addition to these structural changes starting with version 17, the scoring system has been changed. Depending on the complexity of the criteria and the focus of Greenpeace campaigns, the maximum points awarded per criteria will vary between 3, 5 and 8 points. There will no longer be double points for any criteria in the new scoring system. Version 18 of the Guide possess no criteria changes, only cosmetic changes and sharpening of definitions based on previous company feedback in the reporting process.

Criteria on Energy and Climate

The new criteria that companies will be evaluated on are:

1. Disclosure of GHG emissions, based on previous criteria (E2).² This criteria also evaluates companies' commitment to reduce the its own Greenhouse Gas (GHG)

¹ Note: The two issues are connected: the use of harmful chemicals in electronic products prevents their safe recycling once the products are discarded.

² The previous five energy criteria were added in the 8th edition and addressed key expectations that Greenpeace had of responsible companies who are serious about tackling climate change. They were:

- E1. Support for global mandatory reduction of greenhouse gas (GHG) emissions;
- E2. Disclosure of the company's own GHG emissions plus emissions from two stages of the supply chain;
- E3. Commitment to reduce the company's own GHG emissions with timelines;
- E4. Amount of renewable energy used; and

emissions, with both short term and long term timelines. Criteria focuses on actual verifiable cuts to date together with an ambitious target and timeline for increasing companies' use of Renewable Energy (RE) as a percentage of total electricity use for own operations

2. Measure and reduce embedded energy in the supply chain.
3. A Clean Energy Plan to implement these cuts in GHGs, focusing on an Energy Efficiency strategy for companies own operations and the use of Renewable Energy, together with a ambitious target and timeline for increasing its use for own operations
4. Advocacy for a Clean Energy Policy at national and sub-national level.

Criteria on Greener Products

These criteria focus on the environmental performance of consumer electronics, across a number of different issues.

1. Energy efficiency of new models of specified products (the percentage of devices exceeding Energy Star standards) based on the previous criterion E5.³
2. Products on the market free from hazardous substances; specifically Poly Vinyl Chloride (PVC or vinyl) plastic, brominated flame retardants (BFRs), antimony, beryllium and phthalates. This criterion is based on two previous criteria – C4 and C5, and also takes into account commitments made to phase out PVC and BFRs in the previous criterion C3.⁴
3. Current use of recycled plastic as a percentage of plastics used in total sales with % used in specific products as examples, based on the previous criterion W5.⁵
4. Product Life Cycle: the extent to which companies consider durability, streamlining of devices, re-usability and ease of repair. New criteria in Version 17.

Criteria on Sustainable Operations

These criteria examine how companies implement environmental considerations during manufacture in their supply chain through to the end-of-life phase of a product: the use of chemicals and other materials – paper products and conflict minerals - in the supply chain; and the implementation of Producer Responsibility for products at the end of their lives - e-waste.

1. Chemicals Management and Advocacy (adapted from the previous chemicals criteria C1 and C2).⁶
2. A paper sourcing policy that prohibits the use of fibre from rainforest sources (new criteria).
3. Supply chain disclosure and enforcement for conflict free minerals. (new criteria)
4. Take-back programmes and information to consumers for end-of-life products, in every country where products are sold (a combination of previous criteria W2, W3 and W4, and implementation of W1).⁷

E5. Energy efficiency of new models (double points)

³ E5. Energy efficiency of new models (double points)

⁴ The relevant previous criteria were as follows:

C3. PVC and BFR phase out and timeline - Commitment to complete PVC and BFR phase-out and reasonable timeline for ALL applications

C4. Phase out of additional substances with timeline 3 named substances and reasonable timelines for all new models

C5. PVC-free and BFR-free (product systems) on the market (double points)

⁵ W5. Use of recycled plastic content across all products and timelines for increasing content

⁶ C1. Precautionary Principle and; C2. Chemicals Management

⁷ W2. Provides effective 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

W1. Support for Individual Producer Responsibility

Energy criteria in depth

	E1. Disclose and set targets for operational GHG emissions and RE supply	E2. Disclose and set targets for supply chain GHG emissions and RE supply	E3. (CEP) Clean Electricity Plan	E4. Clean Energy Policy Advocacy
Criteria for scoring maximum points	Companies must present certified disclosure of the GHG emissions from their own operations (scope 1 & 2) and business travel (scope 3). Companies also must commit to reducing their own emissions by at least 30% by 2015, with ambitious targets for renewable energy use by 2015 that would drive 100% RE consumption in the next 10 to 15 years. GHG cuts must be actual and verifiable.	Full marks require both: 1. reporting verified GHG emissions by the production supply chain (to at least 80% of energy used in the supply chain), and 2. set targets to reduce these emissions and power more of its supply chain with renewable energy.	A CEP must include 1.a strategy for energy efficiency which sets targets for reducing GHG ⁸ emissions and 2.a strategy for increasing the use of renewable energy in own operations and supply chain. Full marks go to companies with an integrated plan and detailed strategies to address 100% of expected energy demand without relying on dirty energy sources.	Advocacy for a clean energy policy that companies have engaged in within the preceding 12 months. Company advocacy will be evaluated for the strength, level, and specificity of their clean energy advocacy and policy positions at the national and sub-national level in their countries of direct operations, and where appropriate, countries connected to their supply chain. See policy advocacy priorities, (provided separately).
Maximum number of points for criterion	8	8	8	8

E1. Disclose and set targets for operational GHG emissions and RE supply

Companies are scored on their disclosure of greenhouse gas emissions; the method of reporting should be based on 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 emissions from employee travel (scope 3). See p.25 of the GHG Protocol Corporate Standard Other scope 3 emissions (from the supply chain), are addressed in the criterion E2.

Full marks on this criterion go to companies who not only disclose GHG emissions from their own operations, but also get the calculations ISO 14064 certified. For full marks, companies should provide as much background information and analysis possible on the breakdown and source of these GHG emissions.

Companies are also assessed on the ambition of their targets to reduce their own GHG emissions and to supply their operations with renewable energy. Based on previous reporting of data amongst assessed companies that was varied and mixed (different metrics, different GHG baselines, differing growth trends), **companies should report as much of its GHG reduction history as possible to paint the most comprehensive picture of its efforts to reduce its emissions profile.** Companies, as much as possible, should report all historical GHG reduction goals and company performance, by year,

⁸ The baseline should typically be GHG emissions data from 2008, 2009 or 2010.

dating back as far as possible. Companies should report both intensity and absolute emission reduction targets and performance results, and be transparent in the unit measurements for intensity reduction targets. If GHG intensity goals are not set, reporting of GHG intensity data over time is still encouraged to assess trends. Any current long-term GHG reduction targets should include complementary short term targets of 3 to 5 years (or less) into the future to better gauge progress. Full points go to brands who commit to reducing their own GHG emissions by 30% or more by 2015, or have commensurate reduction history as early actors in reducing greenhouse gases.

Similarly, companies should report on their goals to raise the amount of renewable energy (RE) used in their operations. Companies should report as much information about historical goals associated with increasing RE supply and their performance meeting those goals. Full marks go to companies that set an ambitious short term target for RE supply by 2015 that will allow them to increase RE use as a percentage of electricity consumed to 100% in the next 10 to 15 years. Companies should breakdown the RE supply by as much detail (region, business group, etc.) as possible.

E2. Disclose and set targets for supply chain GHG emissions and RE supply

Greenhouse gas emissions from the external supply chain (Scope 3) contribute a significant portion of consumer electronics overall energy footprint. Companies should publish verified Scope 3 emissions from their supply chain, to whichever stage or rung represents at least 80% of energy used in the production of the company's consumer products. The relevant stages of the supply chain 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. Top marks go to companies that (1) report verified emissions up to or exceeding 80% of the embedded energy in their supply chain and (2) showcase GHG reduction targets achievable either through efficiency work with their suppliers and/or increased renewable energy use in the supply chain.

E3. Clean Energy Plan

As E1 and E2 assess company disclosure of GHG emissions and goals associated with GHG reduction and increased renewable energy use, E3 complements these criteria by assessing *how* these goals are being met. This criterion evaluates the robustness of a company's implementation plan for achieving its GHG commitments through energy efficiency and renewable energy investment and deployment, both in its operational and supply chain footprint.

Companies must provide evidence of their mitigation strategies and demonstrate measurable progress towards meeting an aggressive GHG reduction target for their own operations. Efforts to meet electricity demand with the direct application of renewable energy, and to conserve energy with higher efficiency, will receive the highest marks. The purchasing of offsets and renewable energy credits will be recognised, but higher merits will be awarded to those companies that directly manage their environmental impact.

The strength of actions and investments to operationalise an implementation plan to achieve GHG reductions in their own operations will be evaluated in the following order of importance:

- Energy efficiency and avoided emissions by locating in greener grid locations;
- Direct installation or investment in renewable energy supply;
- Investments to reduce electricity demand from existing consumers within the load centre of major company electricity infrastructure, offsetting in part/whole its local electricity demand;⁹
- Renewable energy credits (RECs) should not be used as the primary strategy for increasing renewable energy consumption (max of 25% recognized) and need to be clearly proven to be additional to other sources of renewable energy in the company's electricity supply or they will not be counted at all.

⁹ This innovative approach could spur deep cuts in the existing baseload and peak electricity demand to help stop new power demand on the grid associated with electronic companies from driving demand for dirty energy. Companies could consider investing in local government or state-sanctioned programmes (such as a revolving loan programme that drives down the cost and speed of building retrofits).

Full points go to companies with proof of a comprehensive clean energy plan, with a long-term goal and detailed strategy to reach 100% of its own operations electricity demand through the use of energy efficiency measures and renewable energy.

E4. Clean Energy Advocacy

IT companies can complement the work done in driving emissions reductions in their operation and supply chain footprint by being active in the policy arena. IT companies can drive fast progress towards a clean energy economy by aligning their policy advocacy with scientifically established greenhouse gas reduction targets, along with renewable energy and energy efficiency mandates and incentives. The implementation of IT product solutions and services will require policy support and financing mechanisms, and IT companies must apply their considerable political influence towards achieving these conditions.

This criterion evaluates clean energy policy advocacy that companies have engaged in within the preceding 12 months. Companies will be evaluated for their clean energy advocacy and policy positions at the national and sub-national level in their countries of direct operations, and where appropriate, countries connected to their supply chain.

Companies should proactively submit examples of advocacy leadership. Top marks will be given for advocacy related to the priority energy policy reform areas defined in Greenpeace's Energy [R]evolution blueprint.¹⁰ These priorities will be reviewed and updated with each new version of the Guide to reflect the most current political realities.

Greener Products criteria in depth

	P1. Product Energy Efficiency	P2. Avoidance of Hazardous Substances in Products	P3. Use of Recycled Plastic in Products	P4. Product Life-Cycle
Criteria for scoring maximum points	All new models of specified products meet the latest Energy Star standard and 30% exceed the Energy Star Standard or other specified international standard when no ES standard exists (by 50% or more in sleep and standby or no-load modes, where applicable). Includes an assessment on energy management suggestions/tools during the use phase and evidence of positive support for higher energy efficiency standards.	All products on the market are free from PVC and BFRs, antimony, beryllium and phthalates. Commitments to phase out these substances within a timeline have been implemented.	At least 5% of all plastics (as a percentage of all plastics used in products on the market) is post-consumer recycled plastic with a timeline for increasing its use; examples of specific products using post-consumer recycled plastic and its percentage are provided.	Full marks for companies with both of the following: 1. above average length of product warranty for best-selling products; 2. an example of innovation for life-cycle extension.

¹⁰ See: <http://www.greenpeace.org/international/en/campaigns/climate-change/energyrevolution/>

Possible penalty points	Penalty points(1-2) will be assessed if company lobbies against stricter product efficiency standards, member of a trade association or other business institution that is undermining political support for stronger energy efficiency standards for products, and the company does not speak in favor the standards or publicly contradict the institution	For backtracking on a previous commitment to phase out the use of PVC, BFRs, antimony, beryllium or phthalates		Putting products on the market that make it impossible to upgrade components and extend the life of the product.
Maximum number of points for criterion	5	5	3	3

Greenpeace wants electronics companies to clean up their act and put products on the market that prove it.

P1. Product energy efficiency

This is based on the previous criterion **(E5) Energy efficiency of new models of specified products**, which rates the company’s performance on energy efficiency, using the latest Energy Star standards as a baseline and rating the energy performance of three broad groups of products: computers, monitors and televisions. The Energy Star programme’s definitions of product scope are used. More information at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.

Full marks on this criterion go to companies which have all new models of PCs, consoles and TVs (where applicable) meeting the latest Energy Star requirements and 30% exceeding these Energy Star requirements by 50% or more in sleep and standby/no-load modes (where applicable). Companies are asked to provide information on the proportion of new models meeting the latest Energy Star standards.

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

With external power supplies (EPS) no longer covered by current Energy Star standards, companies should report the percentage of its models achieving Level V rating on the International Efficiency Marking Protocol for External Power Supplies. More information: http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/International_Efficiency_Marking_Protocol.pdf

In addition to the previous criteria, companies will be assessed on their energy management suggestions/tools during the use phase. In addition, evidence of positive support for higher energy efficiency standards will be considered.

P2. Avoidance of hazardous substances

Three of the former chemicals criteria are taken into account in this new criterion, which assesses companies' progress in rolling out products free from a range of hazardous substances.

The former criterion 'PVC and BFR free products on the market' (C5) is the basis of this new criterion, which assesses the number of products on the market that are PVC and BFR free. In addition, the number of products free from other hazardous substances (from the previous criterion C4) will be assessed. The additional substances are: (1) all phthalates, (2) beryllium, including alloys and compounds and (3) antimony/antimony compounds. **Full marks (five points) will be given** only for meeting current commitments on time.

The former chemicals criteria (C3), 'Commitment to eliminating PVC and BFR with timeline' and (C4) 'Phase-out of additional substances with timeline(s)' will continue to be monitored as companies make progress towards implementing their commitments to phase out PVC, BFRs, antimony and compounds, beryllium and compounds and phthalates.

Backtracking on any of these previous commitments will continue to receive a penalty point and will be monitored for progress towards meeting their commitment timelines. The implementation of previous commitments within the defined timeline will also be taken into account in the scoring.

Box 1. 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, to be achieved by no intentional use of PVC or BFRs.. 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.

Substituting harmful chemicals in the production of electronics prevents worker exposure to these substances and contamination of communities near production facilities. Eliminating harmful substances also prevents leaching/off-gassing of chemicals such as brominated flame retardants (BFRs) during use, and enables electronic scrap to be more safely recycled. The presence of toxic substances in electronics perpetuates the toxic cycle; they are released during reprocessing of e-waste and lead to contamination of secondary materials which in turn are used to make new products. See Box 1.

The issue of toxicity is overarching. Until the use of toxic substances is eliminated, it is impossible to secure 'safe' recycling. (See Take-Back Programmes under the Sustainable Operations criteria).

Box 2. Hazardous substances used in electronics

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.

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.

P3. Use of Recycled Plastic

This criterion is similar to the former e-waste criterion (**W5) Use of recycled plastic content across all products and timelines for increasing content, which** scored companies on the recycled plastic sourced as a proportion of the total plastic used for manufacture of a company's whole product portfolio. Whereas the previous criterion specified recycled plastic from both post-industrial and post-consumer sources, the new criterion evaluates the use of post-consumer recycled plastic only. 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 5% of all plastics from recycled plastic streams (net). A new requirement of the criterion is for companies to provide information on products that have post-consumer recycled plastics content, with details of the percentage of recycled plastics used in the products. Companies are also

expected to provide a plan and timeline for increasing use of post-consumer recycled plastic to 15% of total plastics used by 2020 (net).

P4. Product life-cycle

Many of the environmental impacts associated with electronics are exacerbated by the increasingly short life cycles of products. For example, shorter life-cycles lead to larger quantities of e-waste as consumers update their systems for the latest technological innovations. The manufacturing stage, including GHG emissions from the energy used in manufacturing as well as increased use of chemicals and raw materials, makes up a substantial part of a product’s impact on the environment. Shorter life cycles for electronics products increase these impacts; the energy impacts can only be partly offset by the greater energy efficiency of new devices during use. Coupled with shorter life cycles is the manufacturing of numerous devices which perform similar functions, such as power adapters for mobile phones, other small electronic devices and computers.

This new criterion addresses the average length of product warranty for a company’s best- selling products or product groups by volume (ie. mobile phones, desktop PCs, laptop PCs, netbooks, TVs, or other consumer electronic products), with points awarded for above average length of product warranty. **Companies need to identify their global top three best-selling products per relevant consumer electronic product category and submit to Greenpeace the length of product warranty for these products, as well as the length of time replacement parts are available.** This information should be based on data publicly available to consumers on company websites.

In addition companies will be awarded points for examples of innovation for life-cycle extension – for example, the active use of universal chargers for mobile phones, extended battery life and replaceable parts that will enable longer life-cycles and the possibility of easily updating components and/or software. Companies should proactively submit examples of these innovations.

Sustainable Operations criteria in depth

	O1. Chemicals Management and Advocacy	O2. Policy and practice on sustainable sourcing of fibres for paper.	O3. Policy and practice on avoidance of conflict metals	O4. Provides effective voluntary take-back and reports e-waste collection
Criteria for scoring maximum points	In addition to a comprehensive chemicals management programme, companies must be actively identifying new chemicals for elimination/restriction to operationalise the precautionary principle in their own operations and advocate for strong chemicals legislation and the use of substitutes to hazardous	Companies must have and implement a public paper procurement policy which excludes suppliers that are involved in deforestation ¹¹ and illegal logging and includes a plan with targets and timelines to (1) reduce paper use (2) increase use of both recycled and FSC fibre and (3) report on progress towards these targets.	Companies have taken the following steps to resolve the conflict minerals problem 1) traced and published their smelters; ¹² 2) audited suppliers of minerals; 3) have been active to develop in-region tracing, monitoring, and certification processes for conflict minerals; 4) have supported relevant legislation; and 5)	Full marks require (1) free, easy and GLOBAL take-back for ALL products in all countries where products are sold (2) clear info on what individual customers can do with e-waste accessible to customers in every country where products are sold and (3) reporting of the quantities of e-waste recycled,

¹¹ For example: Asia Pulp and Paper

¹² the key chokepoint in the conflict minerals - electronics supply chain

	chemicals across the industry.		have actively engaged stakeholders in their work on conflict minerals. ¹³	as a percentage of past sales, with a specific case study of India (see attached letter).
Possible Penalty Point				If a company is found to be lobbying against the principle of Individual Producer Responsibility.
Maximum number of points for criterion	5	3	5	8

This new category gathers together existing and new criteria that address the impact of a company's wider operations, from sustainable supply chain management through to programmes to deal with end-of-life branded products.

01. Chemicals Management and Advocacy

Definition: Companies make lists of restricted/banned substances publicly accessible and describe how these requirements are enforced along their supply chain and 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. Top marks are only given to those companies who also publicly advocate for the use of alternatives to hazardous substances, for example, by providing case studies on the process of substituting these substances (see the REACH authorisation list for substances that are relevant for the electronics sector, e.g. BFRs, phthalates) with safer alternatives.¹⁴ Evidence of advocacy for strong chemicals legislation in Europe or elsewhere across the sector will also be considered.

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) in their products and thus be in a position to meet their commitments. The management of chemicals in the supply chain is not limited to the content of hazardous substances in a product; this new criterion now specifically includes the need to implement bans and restrictions on the use and discharge/emission of hazardous substances in manufacturing, in order to fully implement the Precautionary Principle.

A chemicals policy embracing the Precautionary Principle¹⁵ needs, at minimum, a system for collecting information on new evidence about suspect chemicals and mechanisms for

¹³ Scores based on Enough project scores plus updated public information.

¹⁴ For v. 18 of the Guide, case studies can be submitted to the SUBSPORT Case Story Database, which provides substitution examples as well as information on alternative substances and technologies from enterprises, published reports and other sources. SUBSPORT is a substitution support portal set up in Europe by the NGO ChemSec, consultancies Grontmij and Kooperationstella Hamburg, and trade union research branch ISTAS, to facilitate the substitution of hazardous substances. <http://www.subsport.eu/case-stories-database>. For v. 19 onwards, companies can also provide information on substitution as part of the REACH authorisation process (for example BFRs and phthalates, see <http://echa.europa.eu/web/guest/addressing-chemicals-of-concern/authorisation/recommendation-for-inclusion-in-the-authorisation-list/authorisation-list>, for a list of substances for authorisation) by ensuring that applications are made publically accessible, including the information on substitution, see <http://echa.europa.eu/web/guest/addressing-chemicals-of-concern/authorisation/applications-for-authorisation>

¹⁵ The Precautionary Principle is not a new idea. It has been adopted by a number of international environmental treaties, conventions and political declarations. 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

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.

Companies need to make their lists of restricted/banned substances in products and manufacturing 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.¹⁶ They must also provide information explaining the factors they consider when making these lists.

O2. Policy and practice on sustainable sourcing of fibres for paper.

Greenpeace actively campaigns on Forest issues in the effort to prevent deforestation and to promote sustainable and responsible forest management. This includes identifying suppliers that are involved in deforestation, such as Asia Pulp and Paper and asking major users of paper products to avoid using fibre from such sources.

This new criteria in the Guide asks companies to examine the source of fibre used in their supply chain (including packaging) and to develop a paper procurement policy to prevent the sourcing of paper from suppliers involved in deforestation. Companies should also set targets for reducing paper use and increasing the percentage of recycled fibre used, as well as FSC certified virgin fibre when appropriate. Other aspects of a policy should include commitments to third party verification and reporting, not using paper from high conservation value forest areas, and a ban on conflict timber. Companies will be assessed on both policy language and implementation of policies.

O3. Conflict free minerals

Greenpeace believes the growing social and environmental dangers around the sourcing of what is commonly known as conflict minerals must be identified and mitigated by the electronics industry. This criterion expects companies to take the following steps to resolve the conflict minerals problem; trace from where the minerals used in their products are sourced, audit their supply chain, and support legislation that incentivizes the sourcing of minerals in regions where conflict is not escalated due to mineral sourcing. Reasonable timelines are needed to successfully achieve these actions.

Minerals extracted from eastern Congo—the ores that produce tin, tantalum, tungsten, or the 3Ts, and gold—are essential to the electronics devices we use and depend on every day. Tin is used as solder on circuit boards in every electronic device we use; tantalum stores electricity and is essential to portable electronics and high-speed processing devices; tungsten enables cell phone vibration alerts and is in LCD screens; and gold is not only made into jewellery, but is also used in the wiring of electronic devices.

Greenpeace is partnering with the Enough Project to include this criterion in the updated Guide to Greener Electronics, basing scores on the Enough Project score card and updated public information provided by companies. The Enough Project scored electronics companies on actions in five categories in December 2010 that have significant impact on the conflict minerals trade: tracing, auditing, certification, legislative support, and stakeholder engagement. The survey focused on the electronics industry

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.

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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).

because it is the main combined end-user of the four conflict minerals from eastern Congo: the 3Ts and gold.

O4. Provides effective voluntary take-back and reports e-waste collection

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)¹⁷ provides a feedback loop to the product designers and thus an incentive to design out those costs.

This criterion is a combination of three previous criteria that addressed programmes for the take-back of e-waste globally: **W2. Provides voluntary take-back of e-waste in countries not legally required to do so** and **W3. Provides information for individual customers on take-back**; in addition, elements of the former criterion **W4. Reports on amount of e-waste recycled**¹⁸ are also included, to show implementation of e-waste programmes through the quantities of e-waste collected and recycled.

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. Most recently, India has agreed national take-back legislation. Companies are also scored 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 (8 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 and who also provide easily accessible information to individual customers on what to do with their branded discarded electronics in every country where their products are sold.

To achieve top marks companies also need to publish data showing the quantities of e-waste recycled on a regular basis (at least annually), which should show the global¹⁹ amount recycled as % of past sales by **product type**; over 25% recycling rate needs to be achieved for at least one specified product group. Starting in version 18, there will be a special case study focus on e-waste collection in India,²⁰ please also see attached letter requesting specific information.

¹⁷ 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.

¹⁸ 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

¹⁹ Global means using recycling figures from at least 3 regions: eg. EU, North America and Japan/Korea.

²⁰ For v.18 and subsequent editions of the Guide, for companies with business in India part of the evaluation on criteria O4 will be based on how well they are complying with India's new E-waste rule on Extended Producer Responsibility Principle Implementation. Specifically, we are looking for answers to the following questions:

1. How much e-waste was collected, disposed and recycled for year 2010-11 and year 2011-12 in India?
2. Can you detail your e-waste recycling partners and the processes they are managing to avoid any kind of chemical leakage?
3. Can you share audit reports for dismantlers/recyclers for year 2010-11 and year 2011-12, including downstream vendors/recyclers for the dismantlers?
4. What is your road-map for implementation of new e-waste rule, including benchmarks and review?
5. What details can you share about the take back and recycling process followed in India?
6. Do you publicly support a 20 % collection target under the current E-waste Rule in India?

Because the support for Individual Producer Responsibility (previously ranked as W1) is a crucial part in the development of legislation that implements this principle, any company which is lobbying against this principle will receive a penalty point.²¹

Company scores

Companies have the opportunity to improve their score, as the Guide will be periodically updated. 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 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

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For example, 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