

## O2 Eco rating

This Eco rating background document answers these questions:

1. What is the Eco rating project and why does it matter?
2. What is the scientific approach behind the Eco rating assessment?

This document has been prepared by Ilka Weissbrod, [i.weissbrod@forumforthefuture.org](mailto:i.weissbrod@forumforthefuture.org); James Taplin, [j.taplin@forumforthefuture.org](mailto:j.taplin@forumforthefuture.org); and Gareth Rice, [gareth.rice@o2.com](mailto:gareth.rice@o2.com).

James led on the development of the Eco rating methodology, Ilka project managed Eco rating and led on embedding the tool in O2's processes. Forum for the Future's Finance and Metrics Intern Thalia Vounaki provided additional research. O2's Marketing and Sustainability teams have been involved in the Eco rating project from the outset.

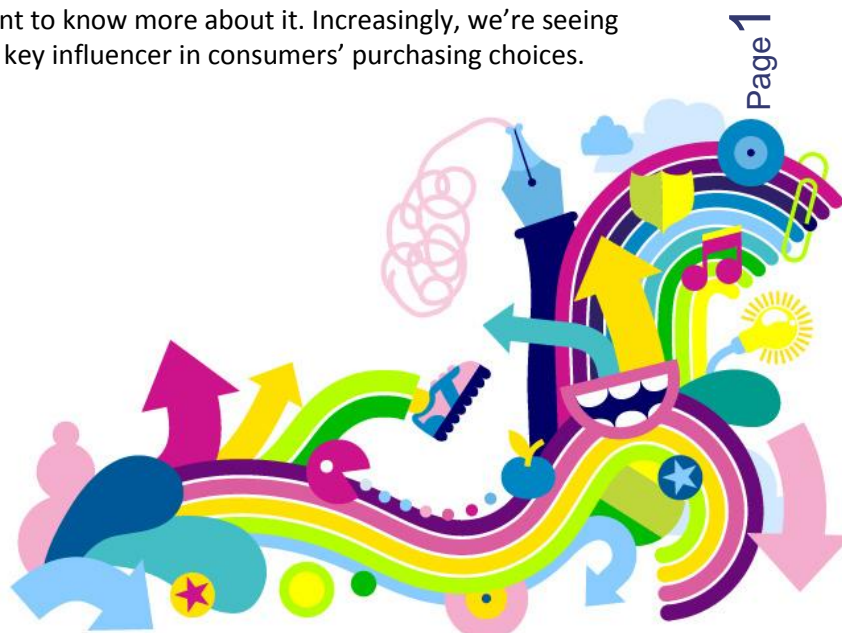
### Foreword from O2

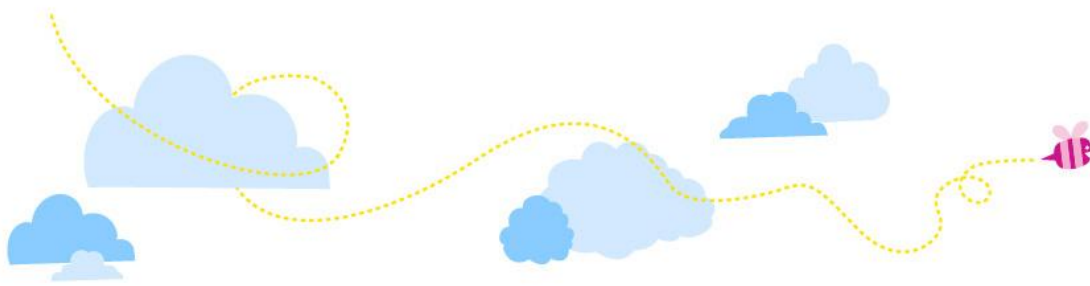
O2's aim is to be recognised as a UK leader on sustainability by 2012.

O2 Think Big ([www.o2.co.uk/thinkbig](http://www.o2.co.uk/thinkbig)) represents our way of making this happen with a range of community and environmental initiatives under the broad areas of People and Planet. Think Big for Planet is about fresh ideas – about looking at problems differently, and using technology to improve the world around us. O2 Eco rating is an example of this.

The O2 Think Big strategy involves a number of focal points: getting our own house in order; engaging our people; and delivering products, services and community involvement that are the visible customer touch-points of our commitment to sustainability.

From our customers' point of view, the tangible element of our service is the product they choose; it's their gateway to our network, and they want to know more about it. Increasingly, we're seeing overall sustainability performance becoming a key influencer in consumers' purchasing choices.





Our own research tells us that sustainability credentials have some influence on the purchasing decisions of 44% of consumers; 11.5% state that this would have a strong influence on them deciding to buy a phone from O2.

O2's ambition is to help to inform our customers on the impact of their purchases. We asked our customers, and they told us that when they choose a handset, they want to see the whole picture. It's not just one issue that concerns them; it's not only carbon, it's the environment as a whole. And it's more than just the environment, it's about ethical performance and supply chain issues too. In short, they told us that they wanted an indication of the producers' and their products' overall sustainability performance.

We were mindful that there were other rating systems already out there, but they didn't have such a diverse scope, they weren't independently developed, and they weren't a collaborative exercise involving the people most affected by the tools: the manufacturers themselves.

This independent rating tool is a response to our customers' expectations and offers a simple and accessible tool for them to assess their phones. We've developed it in partnership with the respected sustainable development NGO Forum for the Future and with device manufacturers.

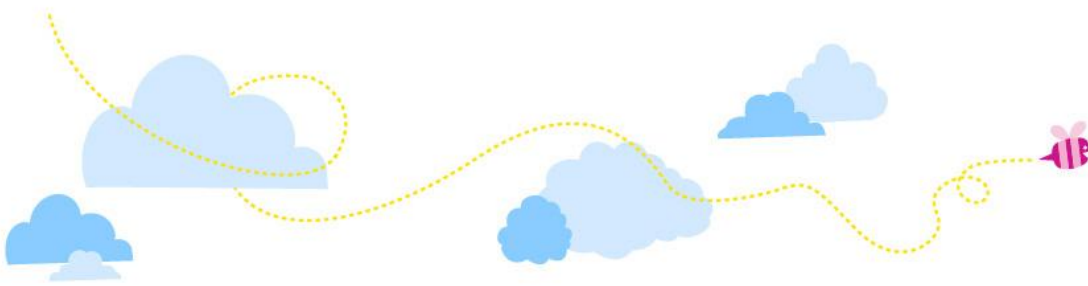
## 1. What is the Eco rating project and why does it matter?

### What is the Eco rating project?

This project is a collaboration between Forum for the Future, the UK's leading sustainable development NGO, and O2 in the UK. Forum for the Future supports O2's aim to become a UK leader on sustainability by 2012 by critiquing and aiding its progress towards this ambition.

The purpose of this project was to develop a simple and transparent rating system that evaluates the sustainability credentials of handsets and rewards innovation. The ultimate goal of this work is to enable O2's customers to evaluate phones' sustainability credentials along with their other features. O2's vision is to use Eco rating to inform its customers of handsets' sustainability performance. It expects that consumers' interest in this aspect of their mobile phones will in turn encourage manufacturers to take a leadership role in driving forward sustainability.





## Timings

The Eco rating project began in August 2009 and was launched on 25 August 2010 both on the O2 website ([www.o2.co.uk](http://www.o2.co.uk)) and within its UK stores.

The tool is specific to O2 in the UK. As part of the Telefónica group, the next step is to review the potential to apply the tool at a global Telefónica level [see 'What's next for the Eco rating methodology'; page 16].

## The case for measuring

Sustainability is difficult to pin down. We use this working definition:

*Sustainable activity "meets the needs of the present without compromising the ability of future generations to meet their own needs"*

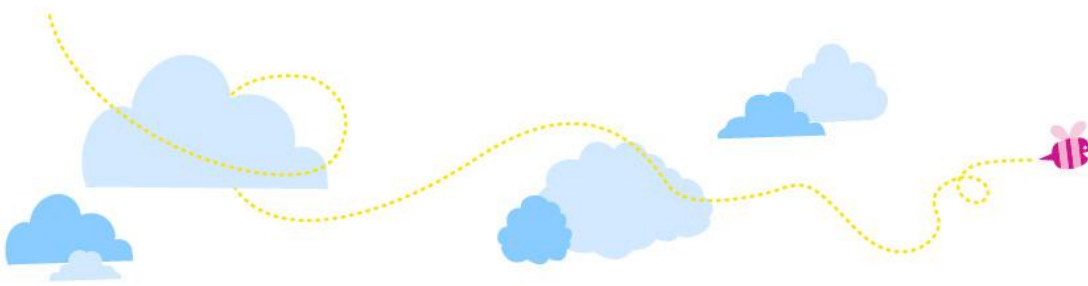
But how do we know what the route to sustainable development looks like? How do we know when we get there? How do we even know that we are heading in the right direction? And to stretch the journey analogy – how do we know if we are going fast enough?

Forum for the Future uses metrics and measurement to help people set a course and answer these questions. This brings sustainability to life, makes it real, tangible and manageable. Measurement helps people to understand and talk about what is important and, if used well, can speed up innovation.

## Why didn't O2 use another, existing sustainability assessment methodology?

O2 in the UK conducted detailed research with consumers, asking them what information they would like to know about handset sustainability performance. The message that came back was that consumers wanted a method that gave them access to the whole sustainability picture, not just one or two elements of environmental performance.





Existing assessment methodologies are often very onerous, don't allow for easy and transparent comparison between devices and don't reward leaders in manufacturing. Currently there are two main approaches to assessment:

1. Labels (e.g. EU Green Label and the U.S. Energy label).

These evaluate performance benchmarked against current requirements. They tend to set minimum requirements for obtaining the label, and then reward devices which meet them. They say nothing about leadership or going beyond minimum compliance. They don't reward great innovations or the leaders of the pack and don't encourage manufacturers to stretch the boundaries in sustainability terms.

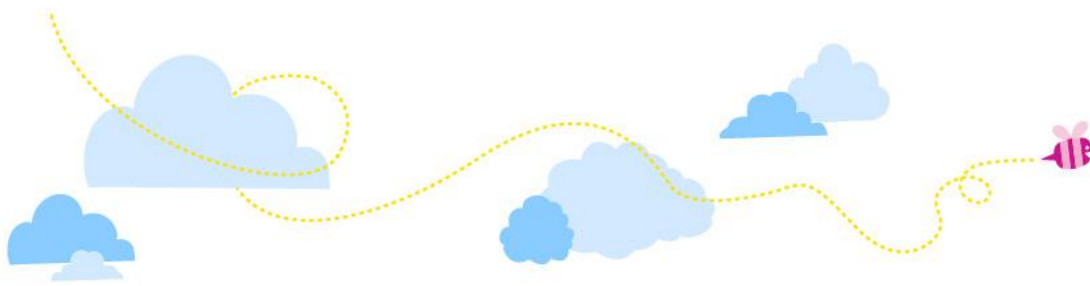
2. Detailed life cycle analysis tools.

These are more thorough and work-intensive assessment methodologies that look in detail at one or more aspects of sustainability. They can provide very granular data, but frequently rely on a large amount of technical information and take a long time (think months rather than weeks) to complete. Life cycle analysis tools can also suffer from problems of non-comparability between manufacturers if the information used in the assessments doesn't cover the same boundaries of impact.

Eco rating takes the best bits of both approaches - and highlights best performance. The assessment combines benchmarking of handsets with life cycle thinking, and uses transparent, robust and non-contentious measures to do away with the need for detailed technical data. Forum for the Future thinks that this alternative approach should appeal to tool users who don't have a sustainability specialist scientific background (e.g. procurers, product designers).

Filling in the Eco rating assessment shouldn't take more than 20 minutes per handset. It is based on standard published data that manufacturers already routinely collect and report.





## 2 | Thinking and science behind Eco rating

This section gives more details about the thinking and science behind the Eco rating methodology.

### The methodology development boundaries

From the outset of the Eco rating project both O2 and Forum for the Future were clear that the assessment methodology should champion sustainable innovation. We hope that this approach encourages manufacturers to look at the sustainability impacts of their handsets holistically.

This means the Eco rating assessment looks at environmental and social impacts throughout the whole handset life cycle.

### Umbrella principles

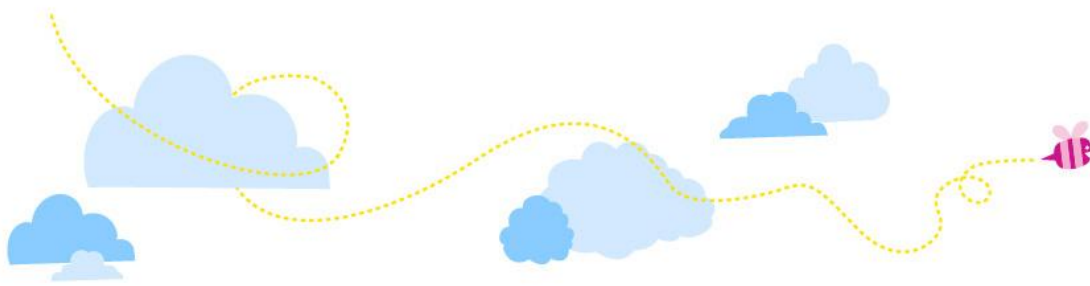
The following three over-arching principles apply to all parts of the Eco rating methodology:

1. The handset assessment is based on entering simple information that acts as a robust proxy for detailed life cycle analysis data. This approach is based on the 80/20 Rule<sup>1</sup>.
2. The 'Yes' answer to any question in the assessment sheet always indicates the more sustainable handset option. There is no option to answer 'Don't Know'.
3. The Eco rating assessment spreadsheet (in Excel format) is designed on the principle that most of the information should be publicly available.

### Principles of the 'Corporate' Eco rating section

Eco rating is not only looking at company products (i.e. mobile phones) but also at the business conduct of the companies producing these products. Forum for the Future believes that engaging with manufacturers at the company level is an essential element of the Eco rating methodology since it is the corporate ethos that dictates how and why a device is made.





The questions in the 'Corporate' Eco rating section are based on O2's corporate assessment questionnaire, plus sustainability leadership principles derived from Forum for the Future's work with business and industry, and its thought leadership on sustainability in information and communication technology<sup>ii</sup> since 1997.

The areas in which handset manufacturers answer questions are:

- Policy
- Management systems
- Supply chain requirements
- Supplier management
- Communications
- Social inclusion and community
- Climate change and energy
- Resource use – handset obsolescence and waste kit
- External recognition

The 'Corporate' Eco rating assessment is comprised of 34 questions. In combination, these questions contribute 15% to the direct handset impacts (or 11% of the Eco rating score). See page 7 for more details on the weightings.

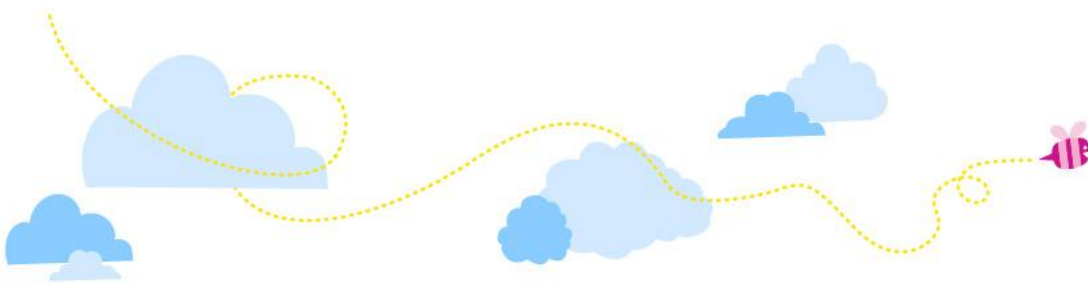
### Development of the 'Product' Eco rating section

The product rating takes a whole-life thinking approach to handset environmental impacts and functionality. Forum for the Future used two main sources as the starting points for Eco rating:

1. The European Commission's Integrated Product Policy Pilot Project 2005 reports 'Stage 1 Final Report: Life Cycle Environmental Issues of Mobile Phones<sup>iii</sup>' and 'Stage 2 Final Report: options for Improving Life-Cycle Environmental Performance of Mobile Phones<sup>iv</sup>'.
2. Forum for the Future looked at what manufacturers are reporting on in the public domain. The charity also had conversations with a number of handset manufacturers between September 2009 and July 2010 to discover what else they might be looking at in private and what the industry as a collective felt were the key sustainability issues.

This two-tier approach is designed to ensure that the Eco rating methodology is relevant, workable





and accepted by handset manufacturers.

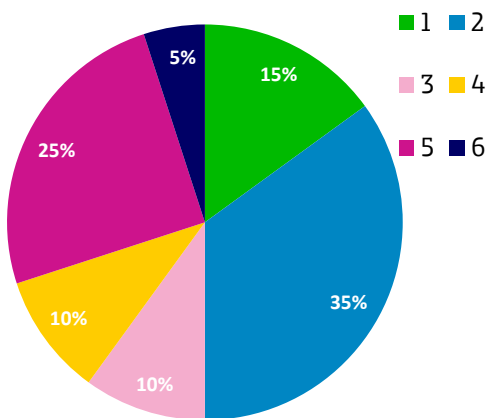
The Eco rating 'Product' rating section is divided into six areas, each of which has a set of questions allocated:

1. Raw materials and manufacturing impacts
2. Substance impacts
3. Packaging and delivery
4. Use impacts
5. Disposal impacts
6. Functionality

The first five areas of the above, together with the 'Corporate' Eco rating section, account for the direct handset impacts. Direct handset impacts account for 75% of the Eco rating score. Functionality accounts for 25% of the Eco rating score. To illustrate the weightings:

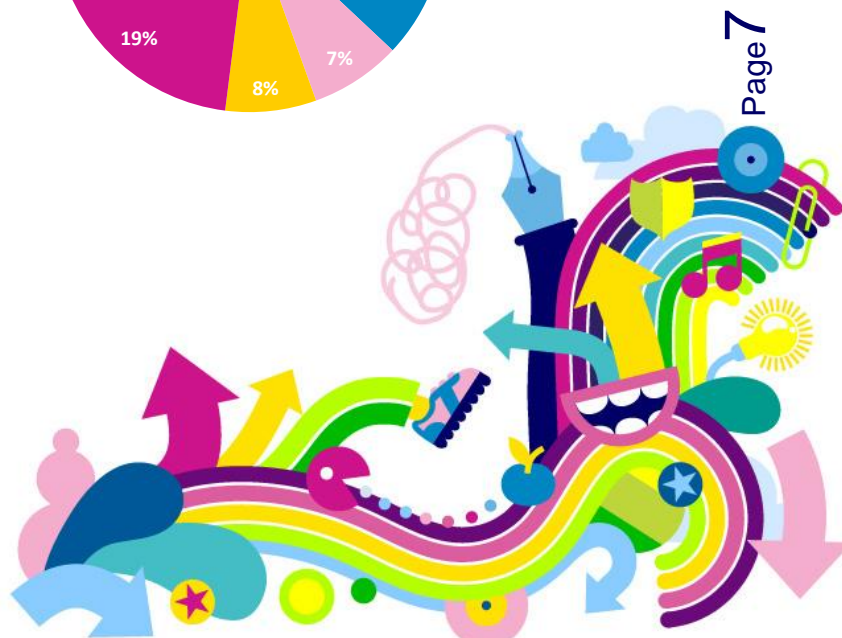
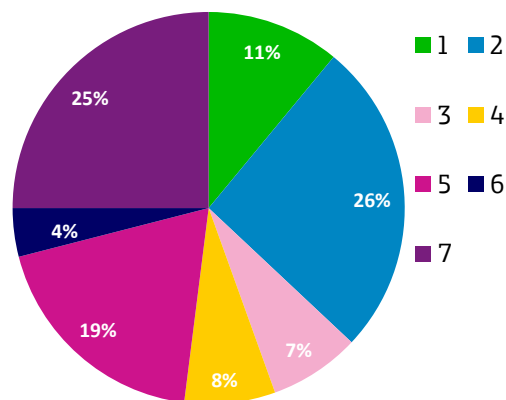
**Direct handset impacts**

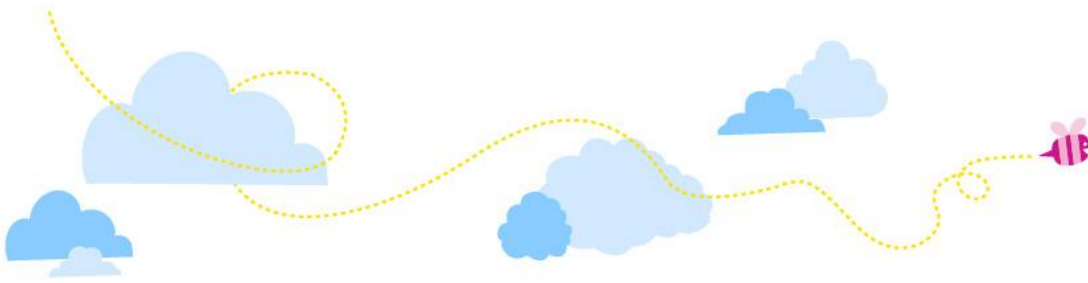
1. Corporate impacts: 15%
2. Raw materials and manufacturing impacts: 35%
3. Substance impacts: 10%
4. Packaging and delivery: 10%
5. Use impacts: 25%
6. Disposal impacts: 5%



**Eco rating score (i.e. includes handset functionality)**

1. Corporate impacts: 11%
2. Raw materials and manufacturing impacts: 26%
3. Substance impacts: 7.5%
4. Packaging and delivery: 7.5%
5. Use impacts: 19%
6. Disposal impacts: 4%
7. **Functionality: 25%**



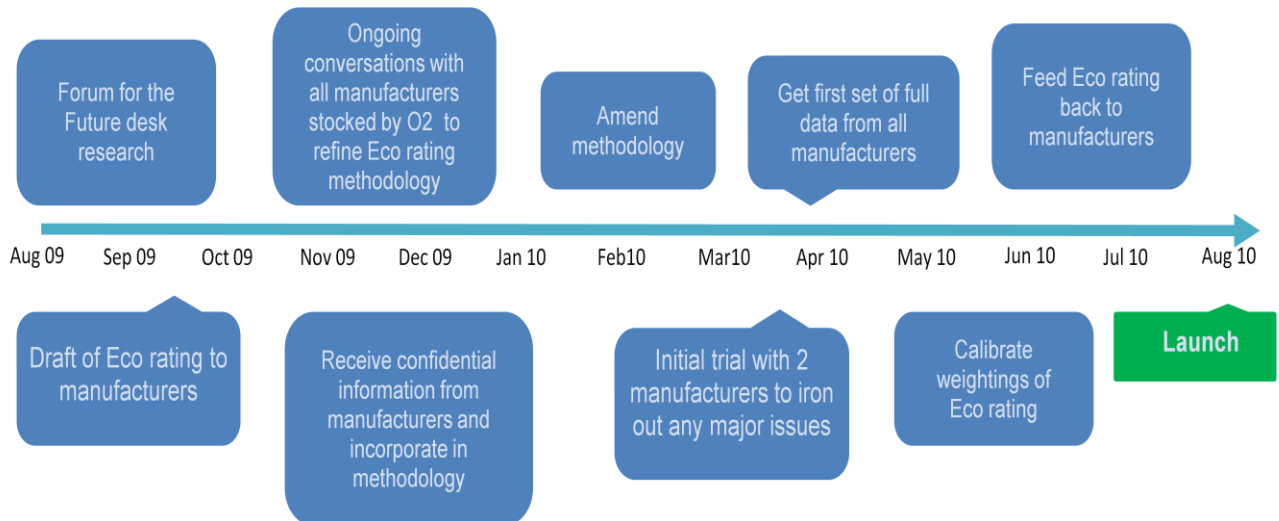


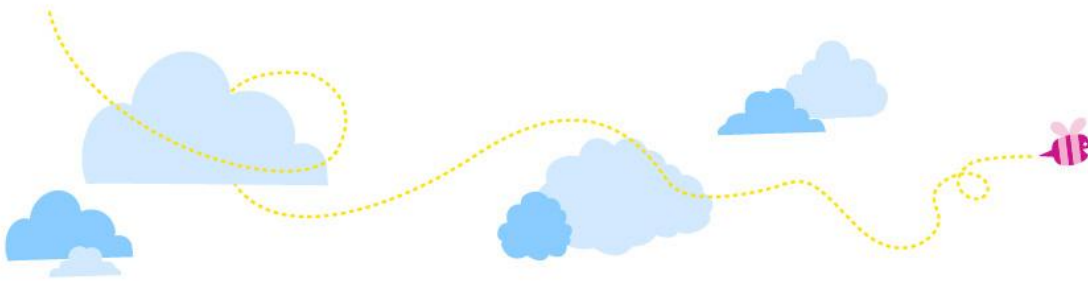
The weightings allocated to the direct handset impacts and the Eco rating score as shown above are derived from

- the European Commission studies (see above);
- publicly available manufacturers' life cycle data
- life cycle data received in confidence from manufacturers;
- current best practice in the industry as shown by the Eco rating data itself.

Current best practice also helped to set the weightings of the individual questions. For example, if all manufacturers answered 'Yes' to a question the weighting allocated to this question within the respective assessment section was very small. However, Forum for the Future did not omit questions on the account of all manufacturers answering 'Yes'. This will ensure that any new manufacturers who join the Eco rating scheme will be exposed to the same holistic approach to sustainability as the seven<sup>v</sup> that have provided data<sup>vi</sup> since October 2009.

Even in the very first Eco rating draft tool from September 2009 it quickly became obvious that no manufacturer opposed the overarching tool structure and impact categories. During ongoing discussions Forum for the Future, very gratefully, received unpublished information from some manufacturers which confirmed the impact categories and weightings of these categories against each other. To illustrate how the product Eco rating evolved since the beginning of the project:





## Details on handset impacts

The underlying sustainability principle for each of the 'Product' Eco rating sections are explained in further detail in this section. 'We' refers to Forum for the Future and O2.

### Raw materials and manufacturing impacts

The Principle → Minimise the environmental impacts that arise from production and use of raw materials and manufacture of device components.

Eco rating score percentage → 26%

This is the section that stimulated most discussion around the Eco rating methodology; especially around the integrated circuit (IC) indicator. We decided to offer manufacturers two alternative ways to enter this information:

- total area of silicon in the ICs or
- total area of IC enclosures

As of August 2010 one handset manufacturer was able to enter the total area of IC silicon; all others chose to enter the total area of IC enclosure instead.

### Substance impacts

The Principle → Minimise use of toxic materials in devices and don't source from mines in regions of conflict.

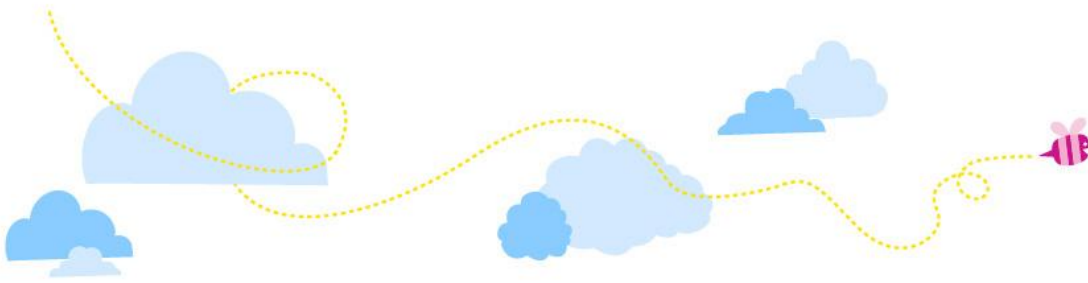
Eco rating score percentage → 7.5%

Devices can have harmful impacts<sup>vii</sup> because of the substances<sup>viii</sup> used in their manufacture. This Eco rating section captures the most significant substances and encourages their omission. We looked at information from manufacturers and industry<sup>ix</sup>, NGO<sup>x</sup> and EU commissioned<sup>xi</sup> publications to determine which substances we should include in this section.

Substances and compounds in the tool fall under three categories. They are either

1. substance groups referenced under the European RoHS legislation<sup>xii</sup>;
2. classified as dangerous under EU law or release dangerous substances at the end of a device's life when it is being disposed of; or
3. substances which may be mined in regions of conflict.





1. Referenced under the European RoHS

Substances restricted under the RoHS are amalgamated in Eco rating as one parameter. If any of these substances is used, the handset is automatically flagged.

2. Classified as dangerous

All substances in the table below are restricted<sup>xiii</sup> under EU law except for PVC and antimony compounds. Polyvinyl Chlorine (PVC) has been at the centre of European debate for the past two decades because of its effects on human health and the environment. Recently a green paper on the environmental issues of PVC has been adopted by the European commission<sup>xiv</sup>.

Although antimony is not likely to be restricted under EU law, industries have taken action to phase it out<sup>xv</sup> as, depending on its state of oxidation, it can be very toxic<sup>xvi</sup>. Furthermore, it can be found in plastics containing brominated flame retardants in concentrations as high as 30%<sup>xi</sup>, presenting a clear risk of human exposure.

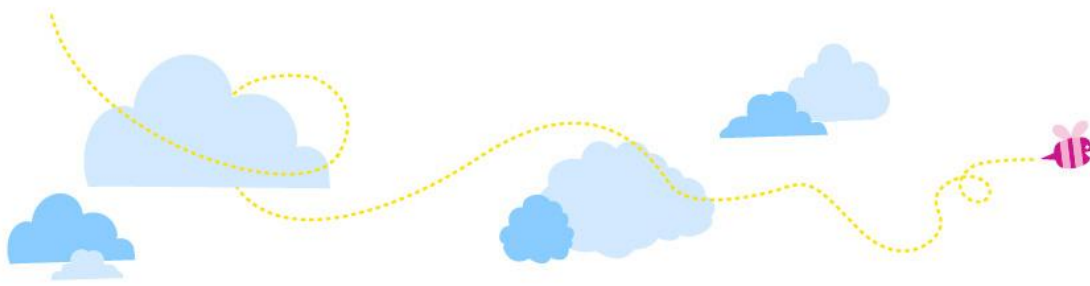
These substances are the same ones that were investigated for inclusion in the RoHS list by a study commissioned by the EU. The study concluded that there was enough evidence to restrict the use of some phthalates, brominated flame retardants and chlorine compounds in electric and electronic equipment under the RoHS directive.

All of the substances assessed by the tool are capable of being phased out of the IT and telecommunications sector, but some are easier to remove than others.

3. Conflict regions

Conflict minerals are minerals that are mined under the control of armed groups, who violate human rights (e.g. through forced labour, killings and rape). The vast majority of these conflict minerals come from certain African states. The trade in these minerals fuels violence by empowering those militia to continue and expand illegal operations<sup>xvii</sup>. The origin



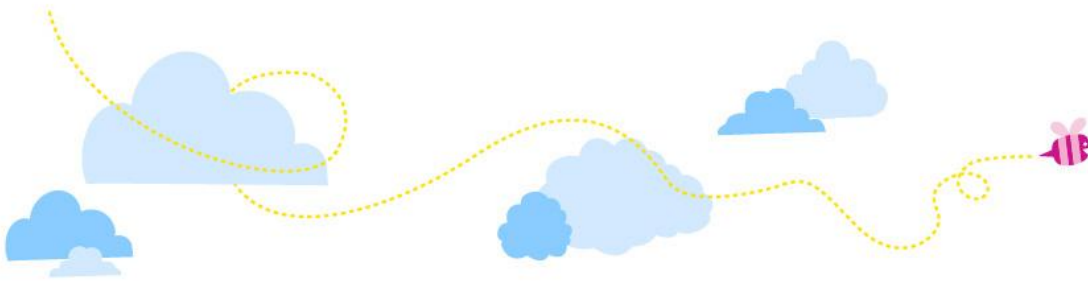


of conflict minerals is hard to identify: minerals are mixed in with those produced in other countries within the African sub-continent. Furthermore, minerals are processed with metals from other countries, the majority of which are in Asia, Eurasia and the Middle East.

Substance	Use in telecom <sup>xi</sup>	Classification/ Impact <sup>xi,xviii</sup>	Use status under EU law <sup>xviii</sup>
PVC	Major plastic, Cables & wires	Toxic if dioxin & furan released when combusted	Substances that make PVC are restricted
Brominated flame retardants (FR) (excl. those in RoHS)	Ignition inhibitor of materials	PBT, toxic if dioxins & furans released when combusted	Restricted
Chlorine & chlorine compounds  (Chloro-paraffins)	Plastics  Secondary plasticiser for PVC	Carcinogen, toxic if dioxins & furans released when combusted  Endocrine disruptor, PBT, vPvB	Some restricted  Some restricted
Antimony trioxide	FR synergist, wires & cables, connector switch	Possible carcinogen	Not restricted
Beryllium & compounds	Current carrying springs	CMR	Restricted
Phthalates	Plasticiser for PVC cables	CMR	Restricted
Other bromine compounds (e.g. Bromoacetic acid)	FR & chlorinated polymers	CMR, toxic if dioxins & furans released when combusted	Restricted
Other antimony compounds (e.g. sodium antimonate)	FR connector switch, FR for PVC	Harmful	Not restricted

CMR=carcinogenic, mutagenic, and toxic for reproduction, PBT= persistent, bio-accumulative and toxic for the environment, vPvB= very persistent and very bio-accumulative





**Packaging and delivery**

The Principle → Minimise packaging materials, make the transport of device components and the transport of the finished device as efficient as possible.

Eco rating score percentage → 7.5%

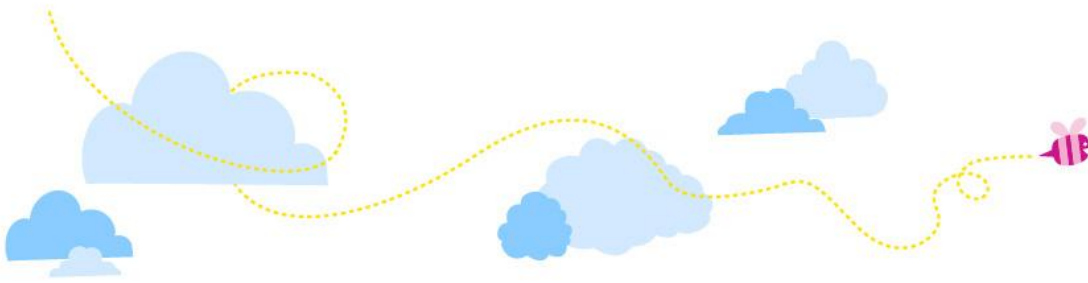
Packaging and delivery has a relatively small environmental impact in the total handset lifecycle. However, we have currently given it a more significant weighting in the overall score for two reasons:

1. This is a key consumer-facing element of the handset and manufacturers often get pressured on this impact area: ask consumers what sustainability impact they are most concerned about and packaging is sure to be given a much higher priority than the science would suggest.
2. There are quick and easy wins for manufacturers and we wanted this first iteration of the Eco rating tool to encourage them to make improvements in this area.

There are a number of different sustainability principles within the packaging section which we have prioritised based on this hierarchy:

	Goal	Attribute	Outcome
<p><b>Most important</b></p> <p><b>Least important</b></p>	Minimise packaging	Preventative	Least amount of material used
	Simplify packaging	Predominantly ameliorative/ Part preventative	Maximise recyclability
	Sustainable materials	Predominantly ameliorative/ Part preventative	Encourage material innovation and sustainable sourcing
	Recyclable materials	Predominantly ameliorative/ Part preventative	Helps to promote closed material loop
	Other treatment of packaging [i.e. colours/ink used]	Ameliorative	Helps to reduce water and substance impacts





The hierarchy is drawn from a number of industry<sup>xi</sup> and manufacturer research studies.

**Use impacts**

The Principle → Minimise environmental impacts while the device is used by the consumer  
Eco rating score percentage → 19%

This category is based on three key desirables:

- 1 | increase the device lifespan as much as possible;
- 2 | encourage the standardisation of electronic device accessories such as plugs and chargers;
- 3 | minimise energy wasted during operation.

This section does not currently include energy use during device operation by the handset itself. Energy use during operation is highly dependent on a range of variables such as user behaviour and network strength, and it soon became clear in our discussions with manufacturers that there is no robust and widely agreed method of measuring this impact. It is a measure which we will look at in more detail going forward, but we felt that assessment boundaries vary too widely at the moment to meaningfully include it.

**Disposal impacts**

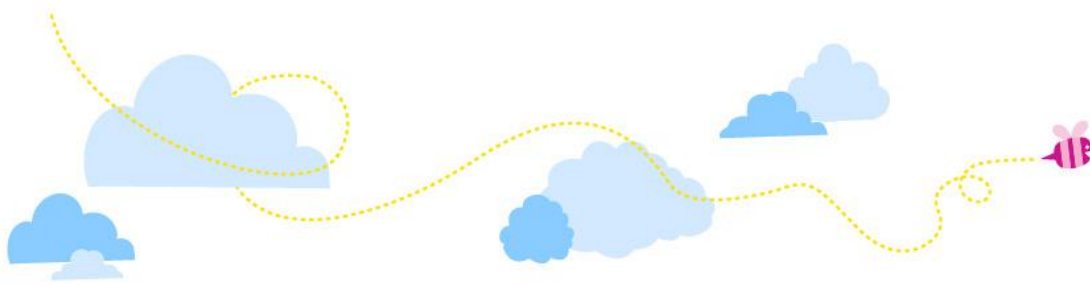
The Principle → Maximise the benefits of device disposal  
Eco rating score percentage → 4%

This category is based on the general waste hierarchy<sup>xx</sup> and device specific research.

The waste hierarchy:

	Goal	Attribute	Outcome
<p>Most important</p> <p>↓</p> <p>Least important</p>	Reuse device	Preventative	Longer device lifespan
	Reuse materials	Predominantly ameliorative/ Part preventative	Reduces need for virgin device components
	Recycle materials	Predominantly ameliorative	Reduces need for virgin materials





### Functionality

The Principle → Optimise device function to enable the user to embrace more sustainable behaviour.

Eco rating score percentage → 25%

Devices can have great potential to positively enable more sustainable behaviour. All the other categories deal with the direct impacts of devices which are easier to control. The indirect impacts – how we all live our lives – are greater and more difficult to manage<sup>xxi</sup>.

Throughout the development of the rating system we have been encouraged by many manufacturers, vendors and experts to take these indirect impacts into account through a functionality section. Including functionality in the Eco rating assessment methodology has two main benefits for industry users:

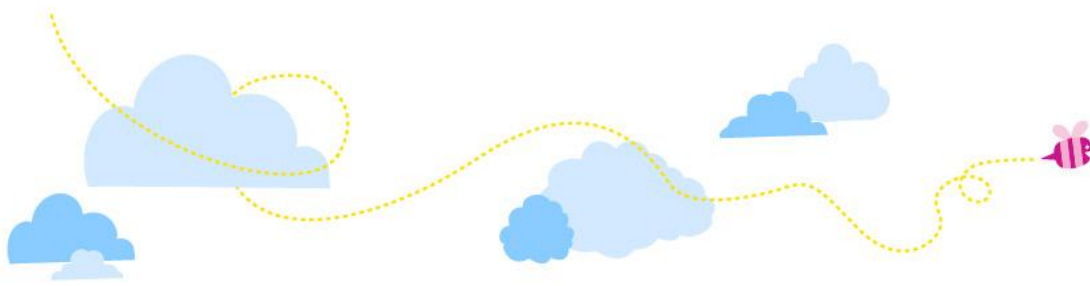
1. devices like smartphones don't necessarily get rated worse than simpler devices with smaller IC and screen impacts if their increased functionality helps people live their lives in other more sustainable ways; and
2. software innovations can be incorporated in the Eco rating methodology.

Since the very first draft of the Eco rating methodology, manufacturers supported including functionality in the final score. All accept that functionality is a key to enable more sustainable customer lifestyles.

The functionality part of Eco rating includes 11 individual questions and is subdivided into three sub-sections:

1. replaces the need for other hardware devices – such as Sat Navs
2. provides pre-loaded software applications that enhance sustainable lifestyles – like point-to-point walking maps
3. contains hardware innovations that have been proven to encourage direct sustainable behaviours – such as near field communications for easier public transport use, or videoconferencing capabilities to replace the need for some travel





## Frequently asked questions

### **Are there plans for an industry initiative?**

This project has been successful because of the cooperation between all the stakeholders involved; there has been an open and collaborative approach throughout.

We at O2 want to encourage debate and engagement across the industry on how we empower consumers to understand the sustainability impact and performance of their phones through the development of a common approach.

Before any industry initiative can be considered, this Eco rating tool will need to be tried, tested and refined before involving a huge number of stakeholders. The UK launch represents the start of that test and refining phase. Moreover, the next step in the wider application of this tool must be the review of its application within the Telefónica Group.

O2 in the UK supports the concept of developing a common approach to informing UK consumers about handsets' sustainability performance. We recognise the importance of collaboration to achieve this, and anticipate that lessons learnt from Eco rating can help form the foundations for a common approach.

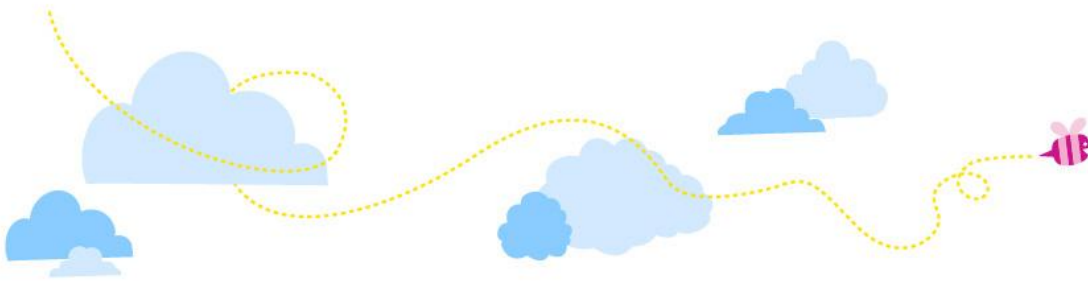
### **Did handset manufacturers feed into the development of the Eco rating tool?**

Yes. Conversations with manufacturers did not always include representatives of O2; many conversations were held in confidence between Forum for the Future and the manufacturers. This trust-based relationship enabled Forum for the Future to obtain deep insights into manufacturer desires and detailed feedback, including confidential LCA assessment that helped to inform Eco rating score weightings. Forum for the Future could not have developed a well-functioning Eco rating methodology without input from the manufacturers.

From the outset of O2's cooperation with Forum for the Future on the development of O2's Eco rating, the vision shared by both organisations was that:

- O2's Eco rating should be a tool supported by all those who participate in it;





- the development of the tool must be a cooperative venture, influenced and steered by device manufacturers to ensure that it is easy to use, and to ensure that the methodology, while based on scientific research, would be simple to understand;
- O2's Eco rating should be based on the concept of life cycle thinking and able to examine the majority of the sustainability issues facing the telecoms and ICT sector.

Over a year on, and after 12 iterations of the methodology, we believe that this launch edition of Eco rating delivers on those ambitions.

### Were there any manufacturers who did not participate?

O2's approach in the UK has been to develop a voluntary partnership initiative with the handset manufacturers. At this stage Apple has decided not to participate as they publish their own data on their website.

RIM has been involved in the research phase behind Eco rating from the outset; RIM remains committed to the initiative and intends to participate in 2011, if not earlier.

### What's next for the Eco rating methodology?

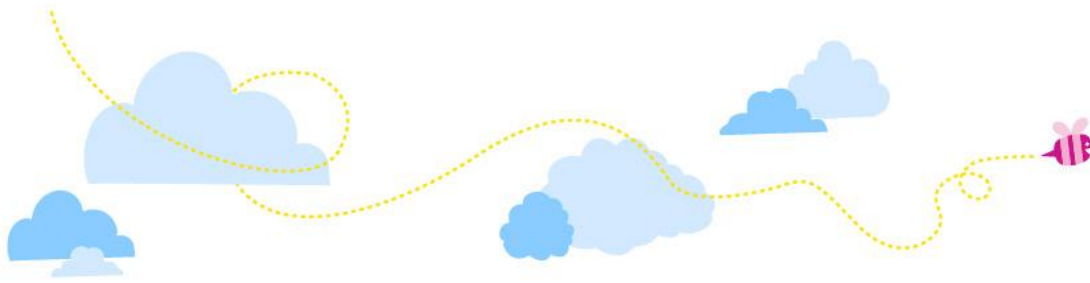
O2 in the UK wants to develop the tool further in partnership with its parent company Telefónica SA. The first step is to examine the system's application at a wider level. This means Telefónica SA must examine its applicability to a global company and all the associated markets. After this, O2 can consider applying the tool at a wider industry level.

As the industry advances, the sustainability issues that we face change. So too do products and the functions on offer. As best practice transfers into 'business as usual', what represents product sustainability excellence today will no longer represent excellence in 24 months.

That's why O2's Eco rating must be a dynamic tool. It needs to be able to evolve to consider a number of issues including:

- new types of telecoms products;
- new functionality offered, and secondary products that this functionality replaces;
- further improving methodologies for comparing state-of-the-art smart phones with more rudimentary handsets;





- stakeholder expectations (everything from extending product lifetimes to improved recyclability; from chemical substances removal to improved battery performance);
- further improving the weightings between environmental performance of the handsets and the ethical performance of the manufacturing organisations;
- products other than mobile phones;
- the strengths and weaknesses of this tool and others to deliver a single solution for industry;
- potential verification methodologies.

### Who will ensure that the methodology stays relevant and can evolve?

O2 in the UK will take an inclusive and transparent approach to the tool's development by engaging key stakeholders beyond the industry, including consumers and other organisations. The cooperation with Forum for the Future and publication of the detailed methodology is part of that contribution.

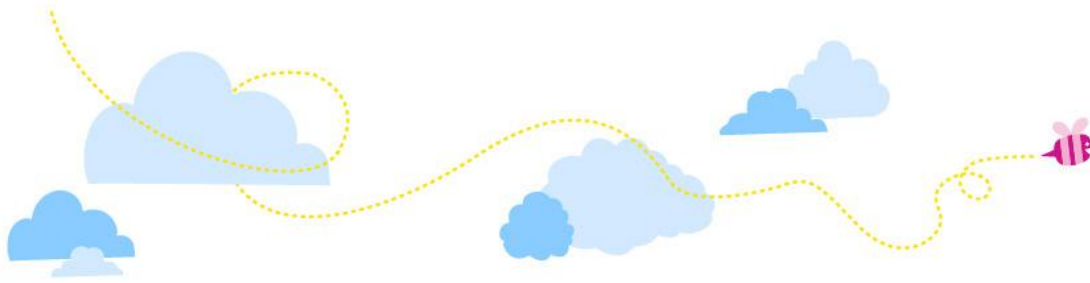
Subsequent to internal Telefónica Group review, to allow for the above considerations and changes, O2 will establish a forum to work with key stakeholders on the development of Eco rating methodology. The intention is that this forum can consider all aspects of the tool's evolution to deliver a tool which remains relevant to the mobile phones of the future and which can extend its scope into other areas of communications technology.

In time the forum should represent a range of stakeholders, some invited to participate from the outset, some who may chose to join later. This should include representatives of the handset manufacturers, consumers, NGOs and action groups, network operators and others. We anticipate having the first stakeholder forum by the beginning of 2011, and meeting regularly thereafter. We from O2 in the UK are open to merging the Eco rating methodology with sustainability rating methodologies of other network operators to ensure that the whole industry can move forward.

### How can I get hold of an assessment sheet?

O2 in the UK wishes to enable the rollout in the wider Telefónica Group; hence the full details of each question are commercially sensitive at this point in time. However, the full assessment sheet will be available later in 2010. If you are keen to get hold of a blank Excel assessment sheet earlier, please contact [ThinkBig@O2.com](mailto:ThinkBig@O2.com)





Forum for the Future is a charity and its main objective is to further sustainability. Please don't hesitate to get in touch with Ilka Weissbrod or James Taplin if you have any follow-up questions on the content in this document.

### **Why will Forum for the Future not own the methodology going forward?**

Because Forum for the Future believes that after the launch its voice should be equal to that of other stakeholders. The charity is keen that the Eco rating methodology will be developed and owned by the largest and most influential group of people.

### **Won't Eco rating penalise smart phones?**

No. It will rightly show that they have higher raw materials and manufacturing impacts, but it will also show that they have far higher functionality and as a result can enable more sustainable lifestyles. We are not currently looking the energy consumption of devices in use. So there is no reason why a smart phone shouldn't do equally well or better than any other phone in the areas of hazardous substances, packaging, use or end of life.

We think that Eco rating has found the right parameters to enable a comparison between smart phones and standard phones. Mobile phones represent a spectrum of technologies, but this project has shown that, through dialogue with manufacturers and careful consideration of functionality and other parameters, it is possible to compare smart phones and standard phones.

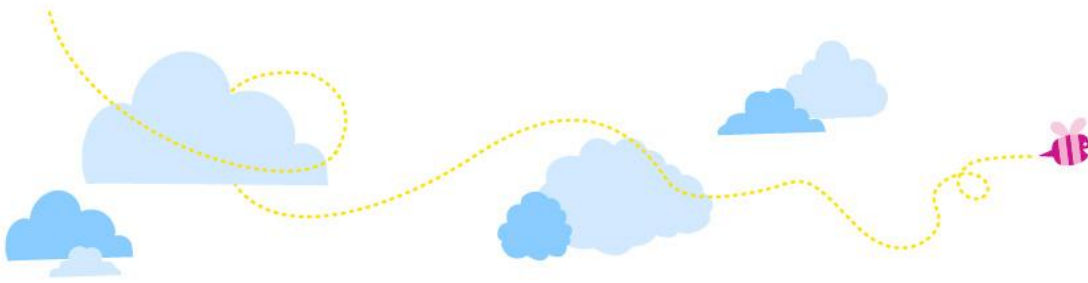
### **Will the O2 Eco rating further confuse consumers about sustainability?**

No. This project has been founded on dialogue with consumers and other stakeholders. We at Forum for the Future and O2 believe it's an innovative way of telling consumers about the sustainability impact of their phones.

### **How is the data verified?**

This is a self-reported assessment and Forum for the Future believes the risk of being 'found out' misreporting aspects of company or product sustainability will ensure accuracy. All of the questions are based on publicly available information or can be verified by looking at products in detail.





**Why do manufacturers only obtain points for complete removal of substances?**

Because a substance is either undesirable or it's not. We don't want to assess devices which may only be "a little bit undesirable" as far as a particular substance is concerned. This is the view shared by the manufacturers, who made it clear that 100% phasing out is where best practice in the industry is going.

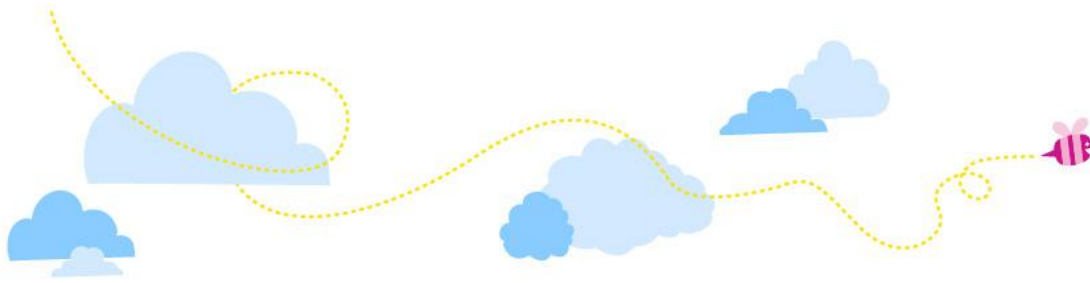
**Can an App become a functionality point?**

Only if it is pre-loaded on the device. The boundary for functionality is point of sale; i.e. no customer action is required to benefit from sustainability features.

**Why does the Eco rating give decimal points when round numbers would be much easier to understand for the customer?**

Because in a system that rates handset out of 5 total points, decimal points are significant. Rounding to whole numbers would wrongly suggest a greater degree of similarity or difference between devices than was really the case, and so mislead the consumer – the opposite of what the Eco rating is designed to do.





## Appendix

<sup>i</sup> 20% of something is responsible for 80% of the results. Also known as Pareto's Principle. By taking this approach we can focus on getting the most important information with the greatest sustainability impact, and not get side-tracked by spending undue time and attention on chasing non-critical data that may lead to spurious levels of increased accuracy

<sup>ii</sup> See for example [www.forumforthefuture.org/files/Connected.pdf](http://www.forumforthefuture.org/files/Connected.pdf)

<sup>iii</sup> <http://ec.europa.eu/environment/ipp/mobile.htm> and  
[http://ec.europa.eu/environment/ipp/pdf/nokia\\_mobile\\_05\\_04.pdf](http://ec.europa.eu/environment/ipp/pdf/nokia_mobile_05_04.pdf)

<sup>iv</sup> [http://ec.europa.eu/environment/ipp/pdf/nokia\\_st\\_II\\_final\\_report.pdf](http://ec.europa.eu/environment/ipp/pdf/nokia_st_II_final_report.pdf)

<sup>v</sup> In alphabetical order: HTC; LG Electronics; Nokia; Palm; Research in Motion; Samsung; Sony Ericsson

<sup>vi</sup> The manufacturer data was provided in confidence to Forum for the Future up to April 2009; i.e. Telefónica UK Ltd did not have access to the detailed data.

<sup>vii</sup> See [www.unep.org/hazardoussubstances](http://www.unep.org/hazardoussubstances)

<sup>viii</sup> Substances here refer to substances and compounds

<sup>ix</sup> Including [www.cleanproduction.org/library/GreeningConsumerElectronics.pdf](http://www.cleanproduction.org/library/GreeningConsumerElectronics.pdf)

<sup>x</sup> Including <http://www.greenpeace.org/international/Global/international/planet-2/report/2010/1/Switching-on-Green-Electronics.pdf>

<sup>xi</sup> See for example

[http://ec.europa.eu/environment/waste/weee/pdf/hazardous\\_substances\\_report.pdf](http://ec.europa.eu/environment/waste/weee/pdf/hazardous_substances_report.pdf)

<sup>xii</sup> RoHS: [http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002L0095:20090611:EN:PDF)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002L0095:20090611:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002L0095:20090611:EN:PDF)

<sup>xiii</sup> Not necessarily relating to mobile phone handsets

<sup>xiv</sup> See [http://ec.europa.eu/environment/waste/pvc/green\\_paper\\_pvc.htm](http://ec.europa.eu/environment/waste/pvc/green_paper_pvc.htm)

<sup>xv</sup> <http://www.greenpeace.org/international/Global/international/publications/toxics/2010/ranking%20tables%20may%202010-all.pdf>

<sup>xvi</sup> <http://www.greenpeace.org/international/Global/international/planet-2/report/2008/9/chemical-contamination-at-e-wa.pdf>

<sup>xvii</sup> <http://www.enoughproject.org/files/publications/minetomobile.pdf>

<sup>xviii</sup> [http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2006R1907:20090627:EN:PDF)

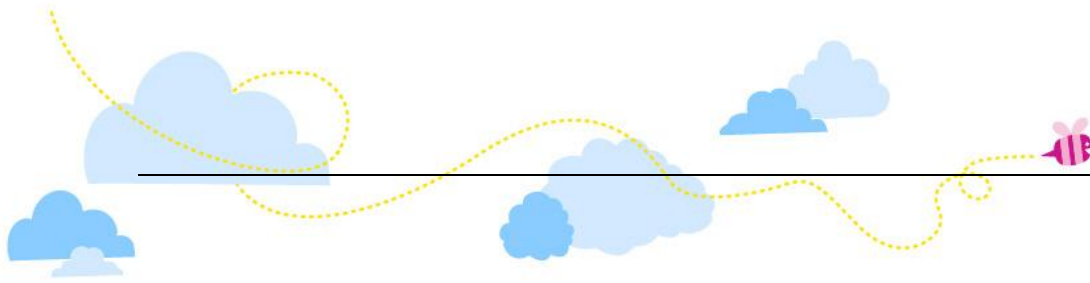
[lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2006R1907:20090627:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2006R1907:20090627:EN:PDF)

<sup>xix</sup> [www.sustainablepackaging.org](http://www.sustainablepackaging.org)

<sup>xx</sup> See for example [www.defra.gov.uk/environment/waste/topics](http://www.defra.gov.uk/environment/waste/topics)

<sup>xxi</sup> See for example the joint WWF and European Telecommunications Network Operators' Association [etno] publication 'Saving the Climate at the Speed of Light';  
[http://assets.panda.org/downloads/road\\_map\\_speed\\_of\\_light\\_wwf\\_etno.pdf](http://assets.panda.org/downloads/road_map_speed_of_light_wwf_etno.pdf)





think  
**big**  
with O<sub>2</sub>

*Telefonica*

 **forum for  
the future**  
action for a sustainable world

