Carbon labelling

Report on roundtable
3rd-4th May 2007, St Anne’s College, University of Oxford

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Executive summary

It was agreed that the aim of any carbon labelling strategy developed would be to reduce greenhouse gas (GHG) emissions across the whole chain, through informing and influencing producers, retailers and users (consumers, government, caterers). The need for a coherent vision and broad set of mechanisms to drive down carbon emissions was recognised, with the expectation that significant savings are possible.

There are two separate components to this carbon labelling strategy: the detailed, precise collation of data on the carbon embodied in the product (called carbon analysis) and, separately, the way this information is conveyed to users (carbon display). There may or may not be a ‘label’.

The carbon analysis would be based on Life Cycle Assessment. It was agreed that data be collected for all stages of a product’s life-cycle, but that the carbon display would not necessarily reflect all of these (eg perhaps omitting food’s home cooking phase).

The aim is to reflect the total carbon impact, in terms of all greenhouse gases. It may be necessary to start with just carbon dioxide, in the interests of speed. This will be clarified by research into the breadth and depth of data available, whether they are representative and stakeholder agreement on the process and values. Some numbers are highly contentious (mainly pre-farm gate).

It was agreed that a multi-stakeholder expert working party is needed to examine existing institutional models and facilitate the creation of appropriate, permanent bodies.

There was strong support for only one standardised UK scheme (both for carbon analysis and carbon display) underpinned by robust independent institutions.

Separate Institutions are needed to manage the whole carbon labelling process and to support aspects of the carbon analysis (eg establishing a reference data set, the methodology for using it and accreditation procedures), as well as to organise research (for instance into consumer preferences for the carbon display).

The reference data set would contain general carbon figures for processes and inputs. These could be used for initial product carbon profiles, but data would progressively be replaced with primary data. The quality of data within the reference set would improve over time as the pool of embodied carbon data grows, and did not need to be perfect from the beginning.

The expertise of workshop participants centred on food, though carbon labelling could cover all products. With respect to which products were profiled first, a number of options were put forward. The most popular were: components of a standard shopping basket; products where data are available; where there is the biggest potential for carbon savings; and where there is supply chain interest and enthusiasm.

If the carbon display is a label, the brand owner is likely to put it on the product. The type of label might evolve, as the carbon analysis becomes more precise. Initially, it will be voluntary, but the aim would be to use UK experience to inform either EU or international approaches.

There are both synergies and conflicts between carbon labelling and consumer issues (eg organic, fairtrade) and producer policies (eg carbon trading, corporate social responsibility and farm-based renewable generation).
Workshop background

The rising profile of carbon labelling has caught the attention of many in business, policy and academic circles. An increasing number of companies have expressed an interest in helping customers understand the carbon embodied in the products they buy. Tesco and the Environmental Change Institute of Oxford University co-hosted a two-day residential workshop, organised by the UK Energy Research Centre’s Meeting Place, to explore the practicalities, complexities and implications of carbon labelling. There were 19 participants from academia, business and government, mainly representing food products (Annex A). A briefing document was circulated beforehand together with an appendix¹.

It was always the intention to look at all aspects of the process that would enable ‘carbon labelling’ (ie including data collection and measurement) and to recognize that what is meant by a ‘label’ had to be clarified— it could include information in any presentation or a logo. Thus, ‘carbon labelling’ is used as shorthand and does not indicate a predetermined or narrow approach. The debate clearly distinguished between the two separate activities of ‘carbon analysis’ and ‘carbon display’.

More specifically the roundtable aimed to:
- define the aim of carbon labelling;
- debate issues relating to, for example, scope, feasibility, implementation, user information;
- consider methodological approaches;
- identify policy linkages and
- outline research requirements.

As indicated in January 2007, Tesco is keen to tackle the issue of carbon labelling with the widest possible collaboration on the issue. To enable this, Tesco and the Environmental Change Institute of Oxford University, with the support of the UKERC Meeting Place, will also co-host a half-day symposium on 18 May where the output from the 3-4 May workshop will be shared with a wider group of stakeholders and interested parties. Audience questions will be answered by a panel, drawn from the attendees at the roundtable.

The context, aims and objectives

The atmosphere at the workshop was deliberative but positive. The group recognised the myriad of complexities involved in carbon labelling and that alternative approaches would be possible. However, the commitment to mitigating climate change was evident and it was accepted that the task, at this workshop, was to explore the potential of carbon labelling as an approach. This assumption is based on the early evidence that there are substantial opportunities to achieve carbon reductions throughout the supply chain. The roundtable participants framed their discussion in terms of how carbon labelling could contribute, as part of a wider framework, to the reduction of greenhouse gas emissions (GHGs) across the entire product chain, including producers, retailers and users (eg consumers, government and caterers). The aim is to both inform and influence the different players. The collection of data across the supply chain is essential, as it would help to raise awareness as to how specific activities contribute to climate change and it can be used to drive change in the supply chain, irrespective of how it is communicated to consumers.

¹ http://wwweci.ox.ac.uk/research/energy/downloads/carbonlabelling_workshop.pdf and http://wwweci.ox.ac.uk/research/energy/downloads/carbonlabelling_workshop_apx.pdf
Participants took the view that the maximum benefit from a carbon labelling process would occur if all the actors in the chain are supportive and contributing. It should also be introduced within the context of more general communication with consumers (eg at the point of sale) concerning how GHG emissions may be reduced.

If a label is used on food in the UK, it would have to be voluntary at this stage, because food labelling is an area subject to EU legislation. Given the global nature of many sectors, including the food and grocery sector, the participants supported aiming towards an international scheme. In the shorter term however, a universal standard and methodology should be developed for use in the UK. There was strong support for only one UK scheme, so whilst it would be voluntary, those who participated would have to use the same carbon analysis procedure. This would provide the UK with experience to inform development of an EU or international system. It was not clear whether and at what point the scheme would be mandatory, but wide coverage is required if users are to be able to make comparisons.

**Collaboration and governance**

The inclusion of all components of the chain was seen as important, in order for this to be a collaborative, inclusive process. The participants agreed that robust, independent institutions and processes would be required to underpin even a voluntary approach. These bodies would need to collectively cover the following functions:

- Maintain the coherence and consistency of the whole scheme and co-ordinate the process (research, trials, implementation across categories, etc);
- Oversee the creation and maintenance of a reference data set (described below);
- Define the rules and oversee data combination methodology;
- Set and oversee the framework for certification to the measurement standard (including necessary accreditations);
- Identify research requirements.

The group suggested different existing models that could be possible exemplars for, or take on the role of, the new institutions in carrying out these different functions, eg British Standards Institute (BSI), Suppliers Ethical Data Exchange (SEDEX), British Retail Consortium (BRC), the UK Accreditation Service (UKAS), Marine Stewardship Council (MSC), McCance and Widdowson (contains information on the nutritional content of over 1,200 foods), Valpak and other compliance organisations that hold and manipulate data from many sources. It is obviously sensible to learn from past experience (positive and negative).

It was suggested that Government support should be clearly identified. One proposal is that Defra could set up these institutions (where they do not already exist) in consultation with key stakeholders. In order to maintain the momentum, one option could be to set up a multi-stakeholder expert working party shortly, which would analyse potential institutional models and define the required functions in more detail. The members could be appointed, or the participants of the Oxford roundtable could form the initial working party, having developed a common understanding of the issues. Another route would be for industry to set up its own, self-appointed steering group. There has been some prior discussion about setting up a Carbon Stewardship Council, as the long-term guardian, and that is what the steering group could become.

Participants were supportive of incorporating the Carbon Trust and their newly formed Technical Advisory Group (CTAG) into the process. It was acknowledged that, following analysis of the most appropriate model, it might be necessary to adapt the Carbon Trust’s methodology in some way. The participants agreed that it would not be desirable to have two parallel exercises.
Scope and boundaries
This debate covered primarily both the scope (which greenhouse gases?) and the boundaries (which stages of the chain?).

Which greenhouse gases?
The participants agreed that the aim is to have a single, universal approach for a carbon measurement methodology and for any related carbon display. All greenhouse gases should be included in the assessments. This is particularly true with the food sector, where GHG emissions relating to the production of meat and dairy are significant (both methane and nitrous oxide). However, information about carbon dioxide emissions may be easier to obtain and is generally less contentious. Therefore, most participants felt that aspects of the scheme may need to be in two stages: data on carbon dioxide are introduced first and extended to the other GHG as soon as possible. Depending on the accuracy requirements, the alternative view is that it should be all GHG from the beginning. All gases should be reported as carbon dioxide equivalent (CO$_2$e) based on their 100-year global warming potential and this is the basis of the phrase ‘carbon’.

The benefit of generating data in the short term (even if these data are more generic) is that it would identify where hotspots lie in a supply chain: which part of the life cycle causes the greatest emissions for different products. This would help to prioritise collective action, although hotspots might not always be the areas to tackle first, particularly if they are not the most cost-effective areas to address or refer to low volume items.

Whichever approach is taken, there was uncertainty as to whether enough data are currently available. For instance, it is difficult to measure GHGs accurately in many situations, as nitrous oxide emissions vary with fertiliser use. So, it may be sensible to start with estimates and then move onto accurate measurements later, where possible. The group felt it is important to avoid delay, without causing consumer confusion.

There was little discussion about the issues raised by UK-based emissions in comparison with those from overseas, though it is thought both would be included in the measurements.

Most participants felt that a carbon display should not include data on other environmental or social impacts. However, it was noted that some labels already exist, and that for some products, other impacts were arguably more important than GHG emissions. However, information on other environment impacts (eg water) could sensibly be collected at the same time as collecting GHG data when conducting a product life cycle assessment and then used to reduce the wider impacts through other non-carbon mechanisms.

The participants did not specifically rule out the inclusion of GHG from the manufacture of capital goods used (eg a tractor), but it was implied that the carbon content of capital equipment would not be included. The use of on-site generation (eg from anaerobic digestion) could be an allowable offset; green tariffs were discussed but no consensus was reached, partly because of accreditation problems. Other forms of offsetting were not discussed.

Which stages of the chain?
The majority of the group thought that consumer use-phase data (ie the energy used by consumers in getting the product home and in storing and cooking it) should be included in the carbon analysis as this can sometimes be a carbon-intensive stage of product life cycle assessment (eg with washing powder). Data on home use are important with
respect to influencing consumer behaviour and product design (eg clothes that can be washed at 30°C).

Whether consumer use-phase data should be included in carbon display is a different matter. It is difficult to allocate a figure for actual household energy use to specific products, because there are so many permutations. Taking how a product is cooked for example – it may be microwaved or oven cooked. The cooker may be gas or electric and, therefore, contribute very differently to greenhouse emissions. Participants felt that if these data were not used to calculate embodied carbon on the carbon display (and most participants felt that it should not be) then other information on products or policies would be required to alter consumer behaviour (eg personal carbon allowances).

The inclusion of waste and recycling, at the end of the product’s life, was not discussed sufficiently to reach firm conclusions. Any waste during the production cycle would be reflected in the emissions figures used at each stage, though care is needed when waste becomes another product (eg food for pigs). Participants thought that data regarding waste-related GHGs should be collected, but that avoidable waste at the consumer end (ie good food not eaten) should not be included. For example, it might not be sensible to make assumptions about the average proportion of a loaf that is eaten or thrown away. As with use phase impacts, different approaches would be needed to tackle consumer waste (but the impact of packaging disposal could be included in the methodology).

**Data issues**

There was clear recognition that the data collection and objectives of the scheme interact: the data have to be ‘fit for purpose’. For instance, less accuracy is needed for product life cycle hotspot identification, whereas a consumer-facing label has to be sufficiently accurate to avoid legal challenges. (Trading standards can advise on the appropriate level of accuracy, given objectives of label and data reliability.) There was some uncertainty about how detailed the process will have to be – should the label vary with the seasons, in order to encourage consumers to purchase low-carbon, seasonal food?

The group discussed the level of detail that can be attained for embodied carbon and therefore the extent to which there can be a comparison between different brands of the same product. It was realised that initially data resolution will be lower and so differentiation between brands or even products less likely. Over time this will improve as data become more refined and differentiation possible.

There was no doubt among participants that a standardised methodology would be required for collecting and manipulating data along the chain. This includes:

- a reference data set for the individual emission factors;
- a methodology for using data to get the product-specific impact;
- verification procedure.

**Reference data set**

The first task is to assemble a reference data set (similar to McCance and Widdowson – the nutritional data set). This would provide a series of spreadsheets so that the appropriate emission factor can be identified (eg carbon from a kWh of electricity or methane from a cow). Simplistically, the number from the reference data set is then multiplied by the quantities used in a particular process (eg the number of kWh used or cows producing this milk). The advantages of a reference data set are consistency and comparability.

There was a general feeling that quite a lot of these numbers already exist (for example in LCA reference databases), though there is uncertainty about how many are universally valid.
acceptable or representative. It is clear that the distribution of different effects (the best and the worst), and therefore the average, is rarely known. An early task would be to collate all existing numbers (some are unpublished and would come from suppliers directly) and identify what coverage (on a common basis) they provide.

The group agreed that a universal measurement system and common metric should be used, so that the results are comparable. The first data collected may be relatively crude in terms of reliance on secondary data sources for the data reference set and so not suitable for communicating to consumers, whereas subsequent reviews will bring in more primary/refined data. There should be a bias towards conservative assumptions in the early data (ie worse than average) to give producers an incentive to introduce their own specific data. Over a defined timescale, a significant proportion of the reference data used in a product life cycle assessment should be replaced with primary data. If this primary data is entered through a secure site, such as the ethical data in SEDEX, then it could be used to improve the calibre of the reference data set without breaching supplier confidentiality. Only data verified as being in accordance with the agreed methodology would go into the shared database. This would enable own brand products to have accurate information on the retailer’s emissions, as the producer knows which retailer is selling the product. In some cases, for instance where produce is pooled, auctioned or its destination is not known, there may never be information to replace the reference data set and averages will continue to be used.

Ideally, there would be a process to discourage producers from using the reference data set to disguise their own, higher-emission activities. Conversely, small and medium-sized enterprises (SMEs) should be protected from having to undertake onerous measurements.

There are other identified issues relating to the detail in the reference data set, for instance, how often it is updated, how it can be ‘peer reviewed’ and how it should be funded – all have practical and cost implications. They also interact with the speed with which numbers in the reference data set are changing, for instance because supply chains are not stable. There are additional complications in relation to household activity, for instance how and whether to factor in discount rates when products have a long shelf life in the home. The group’s general perspective was that the reference data set would evolve over time: it did not need to be perfect from the beginning, particularly if it was not used for the carbon display.

The reference data set could be supported by a library of sources explaining how the numbers have been derived, to facilitate making sure the right reference number is being used.

**Calculation methodology**

The assumed approach is one based on life cycle assessment (LCA). Each brand owner would multiply product specific numbers (eg distance travelled) by the appropriate emission factor in the reference data set and sum the components to give the overall carbon impact. This still involves several delicate issues, usually relating to averages, boundaries, co-products and allocation.

For ingredients from multiple suppliers, the emissions factor used would be their average. Where there is no significant difference in the carbon intensity of the separate suppliers, there is no benefit to the brand owner to do otherwise. Where there is a significant difference, then separate brands could be produced to reflect the variation, eg a lower-carbon Bolognese sauce using Mediterranean tomatoes and a higher-carbon one with Chilean tomatoes.

The brand owner should have the flexibility to update the label when improvements are achieved – as this provides an incentive for change.

UK Energy Research Centre
Benchmarking (both best and worst practice) of different products and processes would help to identify for producers where improvements could be made and how their products compare to those of their competitors. This will take time to develop.

**Verification and costs**
The participants felt that verification is essential to ensure appropriate use of the reference data set and of primary data. Independent advisors may be necessary to help suppliers (producers) learn how to use the system and to produce specific empirical figures later.

A lot of questions remain as to the likely size of the costs and how these are allocated. Some of these are general, eg start up costs of central IT system and reference data set assembly. Other costs would be specific to a supplier or brand owner, eg site measurements. Some costs could be collected via a levy (perhaps not limited to only those participating in scheme), or the scheme would be at least partly self-financing with producers paying to use the reference data set, or government could contribute to the cost. The route partly depends on the extent to which the customers or taxpayers should pay.

**Which products first?**
The participants put forward various possible criteria which would help determine which products to begin carbon profiling. The participants identified their priorities and the results are ranked below - those in bold were most strongly supported:

- **components of a standard shopping basket (as for the retail price index)**
  (this implies that a standard shopping basket of particular goods could be introduced as a way of comparing the carbon footprint of retailers)
- **products where data available**
- **biggest potential for carbon saving**
- **where there is supply chain interest / enthusiasm**
- **simplest to measure**
- **where greatest GHG variation within category**
- **organic products**
- **entire categories rather than products**
- **highest sales volume**
- **where consumers most likely to switch**
- **low food mile products**
- **non-food vs food**
- **non-contentious**
- **most carbon intensive**

There was some debate within the group about how to proceed: should all retailers focus on the same products or is it better for each retailer to choose a preferred route, so we all gain experience? Do interested producers inevitably drive the process, to start with? How to work towards consistency, whilst avoiding consumer confusion? The links with procurement (see below) may be a way of starting quickly, particularly with non-food products.

**Who puts the label on what?**
If it is a carbon label, the group agreed that the brand owner should put it on the product for practical reasons. Emissions which take place further downstream (ie after the label has been placed on the product) would still be captured by a label, so it is crucial that there is some way of knowing what these downstream emissions will be and how detailed they need to be. The brand owner would collate the information for a specific production chain and this would be independently verified. Alternative schemes, for instance the...
retailer putting the label on the shelf or access to information on an independent, public website, were also discussed.

There was insufficient time to discuss some of the more specific issues:

- Is the information shown for the whole of the purchased item (eg linked to the pack weight, as the Carbon Trust are doing), per kilogram (eg loose apples) or per portion size (as for nutritional labels) or to daily diet (eg 2000kcal)?
- How is the information integrated with products packaged abroad, but sold in the UK?

**If a label – what format?**

Whilst accepting that a label is not the only way to interface with consumers, the group discussed what type of consumer-facing label it could be, if there is one. There was a general appreciation that such a label could be based either on the full life-cycle or a subset of the stages in the chain, for instance not including the emissions from household energy use. This depends on the objectives for the use of the label. There was a relationship between views on the usefulness of labels and perspectives on choice editing: if retailers were going to reduce embodied carbon within the supply chain and remove carbon-intensive products from the shelves, there is less need for a label. Some of this debate also reflects evidence about the ability of labels to change mass consumer behaviour (as opposed to niche markets) and the importance of informing all consumers. A label that identifies the range in the carbon intensity of products is the pre-requisite for many subsequent policies (eg incentives, education).

The main outcomes from the group’s deliberations were largely research needs, including relevant international experience to:

- bring together existing evidence on the effectiveness of different types of label, eg ‘award’ labels (only products meeting a certain standard may use it – analogous to fairtrade or Marine Stewardship Council labels), or comparative labels (all products must carry a label – analogous to nutritional ‘Guideline Daily Amounts’);
- investigate consumer responses to potential formats, for instance would they prefer a comparative label to cover all products within one scale, or a comparative label for each sector (eg meat) or for each sub-sector have its own comparative range (eg for beef)? Or some combination of these? A guiding principle might be that the boundaries should reflect ways in which consumers might switch (for instance, floor polish cannot be used for washing clothes).
- examine the ways in which consumers are responding to the growing number of labels on products already and how they prioritise. This should extend to wider social and environmental information (eg Marine Stewardship Council, fairtrade), and assess how consumers respond to the simultaneous display of information, particularly where this could give conflicting evidence. How do consumers handle these conflicts? This research should try and identify any myths, eg fairtrade is high carbon, that are influencing consumer choices;
- investigate consumer preferences for the way in which product information is made available, for instance the Carbon Trust label is portrayed on the product, the shelf, or the web;
- investigate how consumers are switching between and within food categories, in response to nutritional labels and what they say they might do if given a carbon label;
- examine whether consumers would find lifestyle information (for instance a daily carbon allowance) helpful;
- identify practical issues in relation to the size of the label and the space available on existing packages. Also, any banding approach cannot be reliably employed until the distribution is known, (ie data are available on a wide-range of products in that category). A numerical approach could be deployed more quickly, but would be more challenging for consumers to interpret.
Delivering change

There was some discussion about the need for a stronger sense of vision across the supply chain – some retailers, such as Tesco, and some producers such as PepsiCo have given commitments - but the opportunities that exist for substantial carbon savings require a clear, broad, overarching sense of purpose. The different suppliers may not yet be aware of the potential implications of the scheme for them. Some changes will require new investments and help might be needed to assist with these (for instance for farmers). In some cases, retailers might invest in their own supply chains. The group confirmed that the need to inform participants and increase their awareness of carbon and GHG should be a priority.

The participants identified opportunities for influencing retailers, producers and consumers to drive down carbon emissions. The following ideas indicate the range:

Retailers, distributors and caterers

*New visions and questioning existing model*
- New vision for sustainable retailing
- Shelf space for low carbon products
- The members of trade associations, such as British Retail Consortium (BRC), adopt a commitment to sell less carbon
- Understand need to adapt to a carbon-constrained future
- Commitment to choice edit for lower carbon products

*Monetary and non-monetary mechanisms:*
- Mandatory ‘cap and trade’ emissions trading scheme
- Build into planning policy guidelines the carbon intensity of a retailer’s own premises, which is voluntary, but very effective when above national regulations.
- Financial sector interest in future profit opportunities/risk of carbon product choices. Links to sustainable and responsible investment (SRI) and the city
- Government to produce new eco-nutrition guidelines: carbon + other environmental + nutrition

*Benchmarking retailers:*
- Awards for the low-carbon supermarket of the year
- Retailers to publish annual statement of achievement independently verified
- Build carbon into buying policies and include in rating indices eg. FTSE4Good, carbon disclosure, GHG protocol

Producer/supplier/brand owner

*Long-term security:*
- Government to set vision for sustainable food chain - clear framework that has stated milestones thus enabling corporate forward plans to be set and agreed.
- Removes fear of legislation
- Business support services for small and medium-sized enterprises (SMEs)
- Facilitate innovation and early adaptation to future business conditions

*Producer chain:*
- Information design: allowing for easy comparison between goods
- Collaboration helps build relationships
- Enable supply chain investment in low carbon technology
- Information on carbon in product or service being a term or condition of supply to distributor
- Publish league table eg Carbon Disclosure Project (CDP)
- Show examples of lower carbon impacts and business (best practice sharing)
**Trading/ Finance**
- Mandatory ‘cap and trade’ emissions trading scheme
- Financial sector shareholder interest in future profit opportunities/risk re product carbon
- Funding change, eg what is the incentive to farmers?
- Allow renewable energy generation within the supply chain to be included in carbon footprints, but not off-site carbon offsetting
- Saving carbon = saving money = incentive

**Consumers**

*Information/ education:*
- Information needed on how to construct a lower carbon diet eg eat less meat, more fresh fruit and vegetables;
- Better understanding of climate change and plethora of wider issues
- Knowledge of carbon footprint;
- Messages to buy less “stuff” - make it cool to be low carbon;
- Feedback to consumers as to how this information/label is creating change on the larger scale;
- Removal of ‘subjective’ low carbon schemes such as free-range and organic.

*Personal carbon allowances and quotas*
- Link to individual personal carbon quotas/allowances
- Personal household carbon budgets
- Simple carbon calculators for individuals
- Print out total carbon purchased on consumer’s bill or feedback via loyalty card based communication that is sent to the home.
- Education on carbon allowance from credible sources

*Choices/empowerment:*
- Belief that their actions make a difference
- Empower the consumer, perhaps with rewards and incentives
- Appeal to deep values not superficial attitudes
- Credible third party endorsements by people I trust for specific choices
- Lower carbon product has greater utility for the consumer – cheaper, functional, less packaging and waste etc

**Mechanisms:**
- Variable household charging for municipal rubbish (encouraging us to waste less)
- Carbon-based pricing mechanism for products
- Extend scope of new house building regulations to cover appliances and fittings in the house as sold
- Loyalty card points

**Links with other policies**

The group discussed ways in which carbon labelling could both interact with existing incentives or commitments to reduce carbon (both conflicts and synergies) and what additional opportunities exist. The participants felt that the real benefits of carbon labelling could depend on developing these synergies.

**Public sector procurement and purchasing policies**

The group agreed that the scheme would help with achieving sustainability improvements in both government (central and local) and the public sector (eg health, education), as it provides information for decision-making and purchasing. The following specific points were raised:
the needs of the procurement agencies may affect the priorities for product labelling (e.g., food or non-food);
procurement procedures could help drive and promote scheme implementation, by demanding the provision of embodied carbon information;
most purchasers have to demonstrate 'best monetary value'. This may have to be amended, to incorporate low carbon, so buyers can reflect both value sets;
auditing and compliance bodies could monitor whether departments and agencies achieve carbon reductions through procurement (e.g., National Audit Office, Audit Commission, Sustainable Development Commission);
food service suppliers could put low carbon options on menus.

**UK and EU policies: conflicts and synergies**
The group agreed that there is a need to look at how different dimensions interlink, where synergies/conflict lie and how consumers respond to conflicting info/messages. Greater awareness will develop of linkages, including synergies and conflicts, as more data are measured and collected. The table summarises the views of the group at the meeting and is not intended to be a comprehensive list.

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Can carbon labelling support wider social and environmental debates and policies?

There is potentially a wide-range of interactions and research is needed to explore these varying dimensions, for instance in relation to:

**The environment:**
- recognise that climate change is only one of the dimensions;
- ecological sustainability (including organic – many of the carbon penalties associated with organic systems relate to the long-term quality of the soil);
- biodiversity, to include issues like deforestation in order to plant palm oil;
- water use and resource depletion;
- fish stocks – where fish is low carbon, this could conflict with the need to preserve dwindling fish stock and the Marine Stewardship Council’s label;
- Waste, disposal and packaging.

**Social:**
- fair trade and development issues generally, especially with growing consumer concern about air miles;
- health (what synergies are there between a balanced diet, healthy food and low carbon food?).

**Animal welfare**
- animal welfare (more intensive animal rearing usually results in lower GHG);

**Economics**
- additional costs for the British consumer;
- impacts on trading with other countries (New Zealand, Kenya).

Not all of the wider social and environmental issues have a carbon link and so are unlikely to be directly influenced by a carbon labelling scheme. Where there is a potential carbon link, it was understood that this will not affect the methodology of data collection for the UK system, but by using the opportunity to collate a wider range of data synergies/ conflicts can be highlighted. Consumer concern about these social and environmental factors will be helped by simple, clear communications.

Where there are clear conflicts between low-carbon policies and other objectives, the Government may have to give guidance, for instance on relative contributions to sustainability. The carbon label is only one policy.

There was some discussion about the role of choice editing within the supply chain, as opposed to the effects that result when consumers switch products. Choice editing can involve taking products off the shelf, but also includes the reformulation of products – redesigning by the supply chain to reduce the carbon-intensity. The extent of retailer choice editing will interact with the type of label or information provided to consumers: the more that retailers and suppliers do, the less the label is needed. There was some discussion about the extent to which consumers want decisions taken for them (ie retailer choice editing) and the extent to which the label provides an important information tool for consumers to exercise their own choices. The information / label should be empowering, not confusing.
Research questions identified during discussions

Those in bold were given priority by the attendees, but there is no significance to the order.

**Greenhouse gases**
- How easy is it to measure non-carbon GHG? Eg nitrous oxide from soils.
- Does extending from carbon to all greenhouse gases alter product ranking?
- Is it easier to reduce carbon impacts in the short term, whereas it takes longer to limit other GHG and over what time scales? Synergies with Climate Change Bill, which is framed in carbon terms only.
- Investigate the trade off between the complexity and delay of bringing in GHGs now and potential consumer confusion if brought in later. The latter would require consumers coping with a 2-stage labelling system.
- Is there a correlation between calorie-dense and carbon-dense products?

**Data Collection**
- Data collection for database and secondary data.
- Need more reference data particularly for agriculture/primary production – there are too few calculations of carbon footprint.
- Explore the implications of collecting data of different resolution: Will methodology provide sufficient accuracy to enable product comparisons eg within a product sector (eg snack foods) or can it only safely discriminate between wider sectors (chicken vs beef)?
- Clarify cost mechanism (model/system) – cost learning from other systems.
- Which products to investigate first?
  - criteria for deciding which products to introduce first (some existing work).

**Scope and boundaries**
- Understanding other international schemes already in place. Should the carbon label scheme be developed as an international scheme?
- Trade off between simple hot-spot analysis that predominantly affects the supply chain versus a detailed carbon analysis that is sufficiently accurate to influence/present to consumers.
- Where can significant carbon reductions be made? With consumers, suppliers and retailers equally? How does the answer affect the design of the scheme, governance etc.

**Updating**
- In which stages or processes is it important to have site-specific numbers versus stages or processes where reference numbers can be used?
- Case studies to verify – how often to update?
- Seasonality – will this be reflected in carbon data? How to make sure annual averages do not lose the impact of seasonality?
- Biofuels as an early adopters case study for how referencing might work
- SEDEX system – how it works, how it can be expanded, how it can be used as a reference system for carbon calculation
- What do level of detail is required, with unique carbon figures? Tomatoes or tomatoes from a specific country etc?
- Is it appropriate to use McCance and Widdowson (nutrient value reference data set) as exemplar?
- Does eco-label type 3 guidance help? ISO14025?
- Is a low carbon diet a healthy diet?
If a label – what format? (see section on labels also, p7)
  o Use existing research about effectiveness of different types of label: absolute or relative comparison; award label.
  o How to relate numbers to people’s lives (personal carbon allowances)?
  o How consumers respond to simultaneous display of (conflicting) info/labels eg nutrition; organic; fairtrade; carbon. Also consumer response to existing and potential labelling / information
  o Restricted physical space on packaging – which labels to emphasise?
  o How people switch within and between categories (nutrition research available).

Consumers
  o How to handle confusion of consumer use of carbon data.
  o Will carbon labels alone influence consumer behaviour?
  o What would equal a useful trial of consumer responses to the carbon label?

Other
  o How will a carbon label integrate with and be impacted by other label schemes? eg will consumers respond mostly to the carbon figure?
  o Explore dimensions of how carbon relates to:
    o animal welfare
    o environmental sustainability
    o health
    o fair-trade
    o water
  Where conflict with GHG reduction and how to handle? But more information leads to clearer linkages – learning
  o Inform versus influence. Are the data requirements and methodology the same for both objectives?
  o Are there specific drivers for timing? eg linking to Climate Change Bill.
  o Modelling of different drivers in chain.
  o A clear definition of ‘product’ is required eg will British tomatoes be a different product to Spanish tomatoes.
  o What is the best approach for allocation eg supplier waste allocated across multiple supplied products.
  o How information from energy in the use-phase could stimulate supply chain innovation?
### Annex A – Attendees

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Organisation</th>
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<tbody>
<tr>
<td>Adrian</td>
<td>Arnold</td>
<td>Energy Saving Trust</td>
</tr>
<tr>
<td>Simon</td>
<td>Aumonier</td>
<td>Environmental Research Management (ERM)</td>
</tr>
<tr>
<td>Alison</td>
<td>Austin</td>
<td>Sainsbury's Supermarkets</td>
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<tr>
<td>Brenda</td>
<td>Boardman</td>
<td>ECI</td>
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<tr>
<td>Chris</td>
<td>Brown</td>
<td>ASDA</td>
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<tr>
<td>Barney</td>
<td>Burgess</td>
<td>TESCO</td>
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<tr>
<td>Sue</td>
<td>Dibb</td>
<td>Sustainable Development Commission</td>
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<tr>
<td>Jonathan</td>
<td>Gorman</td>
<td>TESCO, Head of Policy Initiatives</td>
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<tr>
<td>Bronwen</td>
<td>Jones</td>
<td>Defra</td>
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<tr>
<td>Henry</td>
<td>King</td>
<td>Unilever</td>
</tr>
<tr>
<td>Tim</td>
<td>Lang</td>
<td>Centre for Food Policy, City University</td>
</tr>
<tr>
<td>Euan</td>
<td>Murray</td>
<td>The Carbon Trust</td>
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<tr>
<td>James</td>
<td>Northen</td>
<td>IGD</td>
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<tr>
<td>Kevin</td>
<td>Ramm</td>
<td>ECI</td>
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<tr>
<td>Mike</td>
<td>Rayner</td>
<td>British Heart Foundation</td>
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<tr>
<td>Jonathan</td>
<td>Scurlock</td>
<td>National Farmers' Union</td>
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<tr>
<td>Martyn</td>
<td>Seal</td>
<td>Pepsico Int UK</td>
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<tr>
<td>Chris</td>
<td>Smith</td>
<td>HRH The Prince of Wales Office</td>
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<tr>
<td>Rebecca</td>
<td>White</td>
<td>ECI</td>
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