



**GLOBAL FORUM ON TRADE
TRADE AND CLIMATE CHANGE**

Paris, 9 and 10 June 2009

JAPAN'S CARBON FOOTPRINT SYSTEM

by

*Takako Ikezuki, Market Analysis and Research Section, International Trade Centre (ITC)**

* The views expressed in this study are those of the author and do not necessarily reflect those of the International Trade Centre, the OECD, or of any Member government. This document is not available for public distribution.

TABLE OF CONTENTS

JAPAN'S CARBON FOOTPRINT SYSTEM.....	3
Introduction.....	3
Brief overview of Japan's climate policy	4
The genesis of Japan's carbon footprint system	4
Government's role.....	4
Outside the government	5
Implementation of the Carbon Footprint System in Japan	6
Design features	6
Scope of a life-cycle assessment	7
Calculating the footprint and collecting data	8
Considerations relating to verification	12
How information on the label is displayed.....	12
Conclusion	13
REFERENCES	14

JAPAN'S CARBON FOOTPRINT SYSTEM

Takako Ikezuki, Market Analysis and Research Section, International Trade Centre (ITC)¹

Abstract: In April 2009, the Japanese Government launched the trial of a Carbon Footprint System aimed at providing information on the life-cycle emissions of greenhouse gases associated with the production, processing and use of consumer products. This followed shortly after a short period in which a number of retail products were sold with labels indicated their estimated “carbon footprints”. During the trial period, the Government, in consultation with major stakeholders, is encouraging affected industries to develop rules for conducting life-cycle assessments for product categories and, once those are completed, to start labelling their products. Participation in the scheme will remain voluntary, unconnected to any climate-related regulations. The Government’s expectation is that, by providing information on a product’s carbon footprint, the scheme will encourage companies to compete for custom by reducing their carbon emissions, as well as change consumer behaviour.

Introduction

1. Carbon-footprint labelling is becoming prevalent worldwide, especially after the British Carbon Trust Fund’s launched its experimental scheme in December 2006. Throughout Asia, Europe, and North America, a number of new carbon-footprint labelling schemes — both private and public — are expected to emerge over the coming years.

2. The Ministry of Economy, Trade and Industry (METI) announced its “Guidelines on the Carbon Footprint System” on 3 March 2009, issued simultaneously with “Standards for Establishing Product Category Rules”. Japan began developing its own carbon-footprint (CF) system in June 2008. Since then, the METI has been working in collaboration with participating corporations and independent experts to develop a uniform method of calculating carbon emissions associated with the full life-cycle of specific products. A Trial Project period, which commenced in the spring of 2009, initially covers non-durable consumer products, foods and beverages.² Participation in the system is on a voluntarily basis.

3. This report describes Japan’s Carbon Footprint System, focusing on the government’s involvement in the design of the scheme, challenges to data collection and measurement, and the information provided on the label. Given that Japan’s Carbon Footprint System is in a constant state of flux, the information contained herein should be regarded as provisional.

¹ The views expressed in this study are those of the author and do not necessarily reflect those of the International Trade Centre, the OECD, or of any Member government. The author would like to thank Professor Atsushi Inaba (Department of Environmental and Energy Chemistry, Kogakuin University), Mr. Yuichi Kishida (Mizuho Information & Research Institute, Inc.), and government officials in the METI for their invaluable time in providing very useful information. The author would also like to thank Mr. Michael Jensen (World Bank), Mr. Paul Brenton (World Bank) and Mr. Anders Aeroe (ITC) for their comments on the previous (December 2008) version of this report, and Mr. Ronald Steenblik (OECD Trade & Agriculture Directorate) for his comments and editorial assistance, on this updated version of the report. Any remaining errors and omissions are the fault of the author.

² Initially, the trial project intended to start in April 2009, but it seems that the actual implementation of the scheme has been slightly delayed.

Brief overview of Japan's climate policy

4. Japanese climate diplomacy has closely followed international developments, observing a careful balance between the positions of the European Union and the United States. Japanese climate policy has been strengthened through a step-by-step approach as opposed to a sudden introduction of policies or measures.³

5. On 9 June 2008, a month prior to the G8 Hokkaido Toyako Summit, the then Japanese Prime Minister Fukuda released his new vision, "Towards a Japan Low-Carbon Society (LCS)", stressing the need to halve global CO₂ emissions by the year 2050.⁴

6. Curbing the greenhouse-gas emissions of households and businesses is a major challenge for Japan.⁵ Increasing awareness of the environmental consequences of their purchasing decisions, through the provision of information, has long been part of the Government's strategy. In April 2002, Japan launched an environmental labelling programme "EcoLeaf"⁶ which encourages companies to provide quantitative information on the environmental impact of the products and services they sell. More recently, the Japanese government decided to introduce carbon-footprint labelling as one of ways to help reduce CO₂ emissions throughout each stage in a product's supply-chain. The expectation is that, by providing information on a product's carbon footprint, it will encourage companies to compete for custom by reducing their carbon emissions, as well as change consumer behaviour.

The genesis of Japan's carbon footprint system

7. METI has been working in collaboration with experts, businessmen, and consumers to design the rules and practical use of its Carbon Footprint System. Academics take a leading part in the drafting of the guidelines through Study Groups consisting mainly of representatives from companies. METI and its Study Groups also take into account public comments and information provided through consumer surveys.⁷

Government's role

8. As part of its efforts to reduce greenhouse-gas (GHG) emissions, METI has played a leading role in supporting Japan's activities in this area. In June 2008, it organized and convened two Study Groups in order to discuss what kind of carbon footprint system Japan should develop and promote. The purpose of

³ Hitomi Kumura and Andreas Tuekr, "Emerging Japanese Emissions Trading Schemes and Prospects for Linking", *Climate Strategies*, October 2008.

⁴ "Japan as a Low-carbon Society", Speech by H.E. Mr Yasuo Fukuda, Prime Minister at the Japan Press Club, 9 June 2008: www.kantei.go.jp/foreign/hukudaspeech/2008/06/09speech_e.html.

⁵ "Japan PM targets cutting carbon emissions by 60-80 percent by 2050", *International Herald Tribune*, 9 June 2008.

⁶ EcoLeaf belongs to the Type III category of labelling schemes, as defined by ISO 14025.

⁷ On 8 October 2008, METI published the Draft Interim Report on the Carbon Footprint Scheme and sought public comments. Concerning consumer surveys in the mid-December, there was an event "Eco-Products 2008" in Tokyo. Participating companies introduced their products with carbon footprint labels. The METI and experts in the Study Groups conducted consumer surveys, which are available in METI's website.

each of the Study Groups was to design and develop guidelines for Japan's Carbon Footprint System, particularly rules relating to the calculation of emissions and labelling.⁸

9. While METI has played the pivotal role in Japan's Carbon Footprint System, other Japanese ministries have also started to organize their own study groups. These include the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Ministry of Environment. MAFF, naturally, has been closely following METI's activities relating to agricultural products, and provided extensive comments on METI's proposed guidelines. The Ministry of the Environment, for its part, has entered into a formal agreement of co-operation with the UK's Department for Environment, Food and Rural Affairs (Defra) regarding the exchange of information on calculating carbon footprints and carbon offsetting.⁹

Outside the government

10. In July 2007 Japanese companies became aware of the idea of carbon-footprint labels after learning about the activities of foreign companies. In October of the same year, the Japan Environmental Management Association for Industry (JEMAI), along with several academics, met to discuss carbon footprinting.^{10,11} They subsequently met four times over the following six months.¹² During this period, meetings on carbon-footprint measurement were organized by the International Organization for Standardization (ISO) in Mexico (April 2008) and Vienna (April 2008), which contributed to raising Japanese-government interest in carbon footprinting.¹³ METI follows discussions in the ISO closely, and intends to develop its Carbon Footprint System consistent with ISO's recommendations.

11. According to METI, several foreign countries have contacted them seeking information on Japan's trial Carbon Footprint System. However, of the 87 comments received during the three weeks following the publication of its Draft Interim Report on the Carbon Footprint System on 8 October 2008, all came from Japanese companies, NGOs, or private individuals.¹⁴ The main concerns expressed by these commentators related to the environmental effectiveness of the proposed scheme, the reliability of data throughout the supply-chain, and the scope of computation. METI responded to these comments formally,

⁸ One study group "Practical use and diffusion of the Carbon Footprint Scheme" discussed basic concepts of the scheme. About 30 companies participated in the study group in order to test the CF scheme on their products for the tenth Eco-Products 2008 Exhibition. The other group, "Rules of Carbon Footprint Scheme", consisting mainly of experts, focused on the rules for calculating GHG emissions, labelling, evaluating, etc (Ibaba, December 2008). In parallel to the two study groups, METI has also formed a domestic committee for international standardisation of the carbon footprint system. These two study groups completed their task, which was to create the guidelines for the Japanese Carbon Footprint Scheme. According to an official in the Ministry, METI plans to form a new study group in order to discuss the remaining issues related to the program.

⁹ See Statement of Cooperation by DEFRA, UK and MoE, Japan regarding Exchange of Information on Calculating Carbon Footprints and Carbon Offsetting (www.env.go.jp/en/earth/ets/defra081009.pdf), of September 2008.

¹⁰ The Japan Environmental Management Association for Industry (JEMAI) is a public corporation with a membership of about 1 100 companies. JEMAI's activities include environmental assessments, technology developments and surveys regarding air and water pollution, noise, vibration and hazardous chemical substances as well as global environmental issues (<http://www.jemai.or.jp/english/about/index.cfm>)

¹¹ Inaba, Atsushi, "カーボンフットプリントのあり方と課題" ["Carbon footprinting: current status and future tasks"], 環境管理[*Environmental Control*], Vol. 44. No. 12, December 2008.

¹² Inaba, *ibid.*

¹³ Inaba, *ibid.*

¹⁴ <http://www.meti.go.jp/committee/materials2/downloadfiles/g81114a17j.pdf>

and took many of them into account when developing its final guidelines, which were released in March 2009.¹⁵

Implementation of the Carbon Footprint System in Japan

12. Japan's experience with actual carbon footprinting and labelling has had a brief history. For the tenth Eco-Products 2008 Exhibition (Tokyo, 11-13 December 2008), 30 companies, mainly engaged in the manufacturing or retailing of commodities, food or beverage products, estimated life-cycle CO₂ emissions for their products and put labels on them for display at the Exhibition.¹⁶ A total of 54 products from 40 product groups, including coffee, men's shirts, toothpaste, packaging, and noodles were labelled for the event. A few of these companies later sold carbon-footprint labeled products in shops during a short trial period between February and March 2009.¹⁷

13. Japan's Carbon Footprint System began officially, and on a voluntary basis, decoupled from any regulation, in April 2009.¹⁸ Even though the government acts as a main program manager of the System during FY 2009, METI announced on 3 April 2009 that it had commissioned JEMAI to serve as the organizing body of the Carbon Footprint System during its trial period.¹⁹ JEMAI, which has expertise in life-cycle assessment (LCA) and environmental labelling (namely, for the "Eco-Leaf" programme), will play an important role in providing expert support to companies who wish to participate in the Carbon Footprint System.²⁰

14. As of early May 2009 no products displaying carbon-footprint labels were yet on sale in Japan. Neither could government officials say how many companies planned to apply a carbon-footprint label to one or more of their products. During this trial period, the government and the companies will continue to refine the methodology and data, and attempt to resolve other issues that are still uncertain at this stage.²¹

Design features

15. Japan's Carbon Footprint System counts the total amount of greenhouse gases produced to directly and indirectly support human activities over the full life cycle (from raw materials to end of the product or recycling) of a product or service based on the concept of LCA, usually expressed in equivalent

¹⁵ Correspondence between METI and the public is available on the Internet.

¹⁶ Its aim was to accelerate the expansion of green markets by exhibiting environmentally friendly products and services (www.eco-pro.info/eco2008/english/index.html).

¹⁷ In cooperation with several companies that participated in the tenth Eco-Products 2008 Exhibition, METI carried out its market research; several products such as toothpastes, potato chips with CF labels were sold in shops in selected areas in Japan in March 2009 (<http://www.meti.go.jp/press/20090303003/20090303003-1.pdf>). Also, Sapporo sold its beer with a CF label exclusively in Hokkaido, Japan (<http://www.sapporobeer.jp/CGI/newsrelease/detail/00000113/>)

¹⁸ Initially, the trial project intended to start in April 2009, but it seems that the actual implementation of the scheme has been slightly delayed.

¹⁹ METI website: www.meti.go.jp

²⁰ Details on JEMAI are <http://www.jemai.or.jp/english/>

²¹ METI plans to form a new study group in order to discuss about the remaining issues related to the program according to an official in the METI.

grams, kilograms or tonnes of CO₂.²² The scheme puts a strong emphasis on ensuring that the information displayed on the labels is concise and simple to grasp.

16. Japan's Carbon Footprint System is open to all products and services. However, initially it will cover mainly non-durable consumer goods with few components or ingredients. Concerning durable products, Japan has already implemented the Eco-Leaf system (*i.e.* equivalent to Environment Product Declaration in Europe) under the ISO-14025 (2006) standard. The system is based on the LCA method, which covers not only CO₂ emissions but also other emissions. Given that they use the same methodological approach, many products that are already part of the Eco-Leaf system could be integrated into the CF system at an early stage. As of May 2009, approximately 450 industrial products were already participating in the Eco-Leaf System.²³

Scope of a life-cycle assessment

17. Measuring CO₂ emissions requires identifying which stage of a product's life-cycle should be included in its LCA, which defines the *system boundary*.²⁴ The Guidelines indicate that the concept of a system boundary should be applied to determine the scope of calculation for each stage. These stages normally include the production and transport of raw materials, the manufacturing of the final product, its distribution, its use and maintenance stage, its recycling and (if applicable) its ultimate disposal.

18. For the purpose of defining the scope of CO₂ emissions to be measured at each stage of a product's life cycle, the Japanese Carbon Footprint System requires companies (industry associations) to create a Product Category Rule (PCR).

Product Category Rule (PCR)

19. The key to the development of carbon-footprint estimates for products is the Product Category rule (PCR). METI released its "Standards for Establishing Product Category Rules" on 3 March 2009, at the same time as it published its "Guidelines on the Carbon Footprint System". The PCR allows companies (or industry associations) to create their own methodologies for calculating CO₂ emissions based on LCA and labelling. The idea of a PCR is developed to deal with the reality that companies are likely to encounter difficulties in collecting data and calculating emissions pertaining to single products. In this regard, companies can set up a PCR taking into consideration the characteristics of each individual product or service. The PCR can provide companies with standard rules, while allowing them to exercise some flexibility in the measurement of life-cycle emissions. The PCR is also intended to facilitate comparisons of CO₂ emissions across similar products.²⁵

20. Some standards and concepts will be common across all PCRs. The PCR plays an important role in defining rules for companies in order to identify the functional and performance characteristics of the product. Furthermore, it aims to define the criteria (e.g. setting specific data requirements at each stage) for

²² The uniqueness of carbon footprint scheme is to focus exclusively greenhouse gas (GHG) emissions of a product across its life cycle, from raw materials through product, distribution, consumer use and disposal/recycling. The targeted gases include carbon dioxide (CO₂), methane (CH₄), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulphur hexafluoride (SF₆) which are the same-targeted gases in the Kyoto Protocol.

²³ Inaba, *op cit.*

²⁴ For instance, the PAS 2050 guideline published in October 2008 indicates that it would exclude CO₂ emissions from capital goods.

²⁵ Correspondence between the author and a Japanese expert on 14 December 2008.

undertaking an LCA, for one or more products in the same category of product groups (e.g. different kinds of beers in the beer industry). During the Carbon Footprint System’s trial period, participating companies formulate a PCR in order to determine what they would have to include or not in the calculations of CO₂ emissions at each stage of a product’s life cycle. Participating companies need to have at least a PCR in order to label the carbon footprint of their products.

21. Any company involved with the Carbon Footprint System can propose establishing a PCR. Companies (or industry associations), which plan to create a PCR, would have to register with the government and the JEMAI. METI plans to provide participating companies with technical support on how to create a PCR for a product for those in need of such assistance. The content of the proposed PCR would then need to be reviewed and approved by a PCR committee organized by METI and JEMAI. Once approved, the PCR would be published on the Internet. As of early May 2009, METI was not aware of any companies actually creating a PCR for any product group.

Table 1. Contents in a PCR (examples)

Category	Items
The definition of targeted items	Type of products Range of Assessment (LCA stage, System Boundary)
Setting up of each stage in the LCA	Items to collect data on each stage Allocation method Cut-off criteria The concept of waste and recycling (setting up scenario etc) How to deal with changes of weather conditions Scope of indirect area (whether or not include production facilities etc) Sales (by vending machines, shops etc) etc....
LCA calculations	Emission factor
Labelling	Location of label in the product, Size of label, Additional information.

Source: METI.

Calculating the footprint and collecting data

22. A carbon footprint of a product is estimated by summing, for all materials used over a product’s life cycle, the amount of the material used multiplied by its emission unit. In principle, the Guidelines mention that companies make use of available common LCA databases for its emission unit.²⁶ If companies use different emissions units, they have to explain why.

23. Participating companies will be responsible for gathering data pertaining to each stage in a product’s life-cycle, and reporting the data to METI. METI will not be responsible for maintaining the data, however.

24. There are two types of data in the scope of an LCA, primary and secondary. *Primary data* are data that are collected by companies implementing the Carbon Footprint System from activities at a particular stage in the life-cycle of their product. Data collection based on a scenario are also considered as primary data. *Secondary data* are obtained from established databases or from the literature, and are intended to be used when companies cannot obtain primary data. As a general rule, participating companies are required to gather both primary and secondary data.

²⁶ Currently available databases include the LCA Japan Forum database, the JEMAI-LCA database, and the ECO-Leaf database.

Data collection

25. Ideally, companies should try to use primary data as much as possible. The Standards for Establishing Product Category Rules specifically mention that the scope of data collection (i.e. what activity should be included or not included), the location where data are collected (i.e. domestic, abroad, factory, etc), and the time of data collection (i.e. year, season, months, etc) should be defined in a PCR for each product. Sources of secondary data should also be defined. CO₂ emissions arising from capital goods are to be included in the estimation of the life cycle emissions of the product only where they are directly involved in production (e.g., processing machinery). Emissions associated with changes in land use are excluded, except when they heavily contribute to overall CO₂ emissions.

26. For situations in which it is difficult to obtain primary or secondary data, the government is considering under what conditions other kinds of data could be used. This kind of situation is expected to arise when a new product is launched, or a product has undergone significant change. One proposal is that companies could use estimated data from similar goods produced previously, or from products still in the development stage.

27. Companies often procure raw materials from more than one supplier. Ideally, they are supposed to collect primary data from all their suppliers. However, where that is not possible, companies are allowed to collect primary data from their major suppliers, which can then be applied to other suppliers as secondary data, as long as certain criteria (major suppliers represent more than 50%) are met.

28. There are no specific limitations placed on the use of secondary data (e.g., such as requiring companies to use a minimum percentage of primary data). Unlike PAS 2050, the Guidelines do not specifically mention any rules about the most relevant source of secondary data to be used, for instance. During the trial period, the government will continue to discuss whether or not any limitations on the use of secondary data should be imposed.²⁷

Key points of measuring CO₂ emissions

29. The Guidelines mention a number of additional considerations specific to individual stages of a product's life-cycle, indicating key points for each stage.

1. *Raw-material stage* — In the case of recycling, it is important to distinguish between the raw-material stage and the recycling stage when products are created from recycled material. To avoid double counting, the characteristics of the products and the way that recycling is addressed should be defined in the PCR.

2. *Production and manufacturing stage* — It is necessary to gather information on CO₂ emissions from activities directly involved in production. For example, a production facility may share its site with administrative offices and R&D laboratories. In such cases, it may not be easy to separately identify emissions associated only with production activities. Companies are advised to utilize an appropriate allocation methodology to estimate CO₂ emissions from the direct production activities.

²⁷ Correspondence between the author and an official in the METI on 4 December 2008.

3. *Distribution, storage and marketing* — At the distribution stage, the CO₂ emissions should be calculated either by identifying paths (routes) from the site of production of goods to the primary distribution centre, or by identifying the impact on the environment due to transport modes (air or sea), where possible.

Concerning the storage and marketing of a product, the CO₂ emissions can vary according to how it is presented to the consumer. For example, orange juice may be sold in cans or bottles requiring no refrigeration, in refrigerated cartons, or as a frozen concentrate. Frequent changes in packaging and presentation complicate the estimation of life-cycle emissions and may necessitate costly re-labelling for companies.

To deal with the different contingencies, companies can define a common “scenario” in a PCR, which can then form the basis for measuring CO₂ emissions across a range of similar products. Given that no PCRs have been made public yet, how they will be specified and applied remains a matter of speculation. Using the example of orange juice, it could be that the scenario would be designed to enable a company to display the same CO₂ emissions on the label irrespective of how the product is presented (e.g., refrigerated, non-refrigerated, frozen, etc.). It is thought that additional information would then be provided indicating, for example, that “when the juice is refrigerated, CO₂ emissions would be XXX grams per litre.” Alternatively, an industry association might develop a standard “scenario” that would apply to all participating companies in the same industry, and vary the carbon footprint depending on the product’s characteristics, such as presentation.

When formulating its scenarios, a company is expected to consult with stakeholders and be prepared to revise its scenarios in light of experience and new information.

4. *Final use and maintenance* — Consumers purchase goods for diverse reasons. Thus, as with storage and marketing, it may be necessary to create standardized scenarios in the product’s PCR.

5. *End of life and recycling* — This concerns the question of whether to include the waste-recycling stage in either the raw-material stage of the disposal or recycling stages. In order to avoid any double counting, the Standard requires that the raw materials and the disposal or recycling stages be distinguished in the PCR. CO₂ emitted from the combustion of biomass, such as wood, is not counted. However, CO₂ emissions created during the growing, harvesting, transformation and transport of biomass should be measured.

Allocation

30. Rules for allocating emissions are required where a process contributes to a given product’s life cycle results in one or more co-products.²⁸ For such products, the emissions can be allocated proportional to the weight, economic value, or area associated with each co-product. The allocation method should be defined in the PCR, taking into account the characteristics and processing of each co-product.

De minimis criterion (Cut off)

31. When measuring the emissions associated with raw materials, companies must measure each component on the basis of materials that may themselves be derived from several other materials. When the numbers of individual components or ingredients are large, the data requirements and the number of calculations involved can impose an excessive burden on companies. Thus, in the LCA, components which fall below a certain threshold value (such as the percentage of overall weight, or the percentage

²⁸ Definition from PAS 2050.

contribution to total emissions) may be excluded from the analysis if by so doing it would not substantially influence the estimation of total CO₂ emissions. The exclusion criterion is below 5% of CO₂ emissions at each stage. The scope of area to which the criterion would apply should be set out in the PCR.

32. The Guidelines stress that the PCR should avoid creating the temptation for companies to arbitrarily choose certain materials to exclude as a way to artificially lower their CO₂ emissions.

Data collection of imported parts and components

33. It is almost certain that some of the products labelled during the trial period will contain imported components or ingredients. Japan's imports of consumer goods and non-durable goods account for about 12% of its total imports, of which 5% come from developing countries (Table 3).

34. Companies are required to gather data on imported parts, including transport, just as for domestic products. In the absence of common data, or reliable data sources in the literature, related to imported components or ingredients from specific countries, companies are allowed to use data derived from similar products, or to estimate values on the basis of the product's characteristics. According to an official in METI, some companies measured CO₂ emissions associated with imported products for the "EcoProducts 2008" event in December 2008.²⁹ The companies used secondary data to derive the CO₂ emissions from marine transport, however.³⁰

Table 2. 2007 Japan's imports of consumer goods and non-durable goods***

	Value (USD Million)	Share (%)	Growth rate (2003-07) of imports (p.a. %)	Trade Balance (%)
1. Developed	43,868	7.2	3.8	-35,206
2. Developing (incl. LDC)	31,212	5.1	6.6	-28,281
3. LDC	581	0.1	6.7	-555
China	14,746	2.4	7.1	-13,374
ASEAN	8,087	1.3	5.2	-6,862
ASEAN Non-LDC	7,943	1.3	5.1	-6,724
ASEAN LDC	144	0.0	16.2	-138
Consumer goods and non-durable goods (1+2)	75,080	12.3	4.9	-63,487
Total (all products)	612,252	100	12.8	68,486

Source: COMTRADE derived from WITS.

Note: ***Products are selected from the Broad Economic Categories (Consumer Goods, Non-Durable Goods) and agricultural products (HS 01-24).

Challenges to collecting data

35. METI points out that whether the planned system succeeds or fails will depend on the reliability of its database.³¹ Due to the obscurity of the rules and procedures for calculating GHG emissions and the confidentiality of information at the level of individual producers, it will not be easy for companies to collect primary data. Thus, it is necessary to develop common LCA databases and data distribution systems to promote LCA. One idea that has been proposed is that the government could be put in charge of

²⁹ The tenth Eco-Products 2008 Exhibition was held from 11-13 December 2008 in Tokyo.

³⁰ Correspondence between the author and an official in the METI on December 4th 2008.

³¹ "Carbon labels a work in progress / But reliable emissions totals on goods will need uniform database", *The Yomiuri Shimbun*, 10 March 2009.

maintaining databases on emission units. Japan's government and its key partners are currently examining how databases on secondary data might be organized, so as to both provide in-depth coverage and be easily accessed and updated.³²

Considerations relating to verification

36. The Guidelines specifically point out the necessity of including mechanisms to evaluate and validate the Carbon Footprint System in order to ensure its effectiveness and the reliability of the estimated CO₂ emissions. To this end, METI is considering establishing the use of a third-party audit system to ensure that the guidelines are being consistently applied.

How information on the label is displayed

Basic rules on labelling

37. As a general rule, information displayed on a label should be precise and easy for consumers to understand. Companies participating in the Carbon Footprinting System must adhere to certain common rules. They must:

- use a commonly agreed label design;
- affix the label to the product itself or to its wrapping materials;
- display the total, life-cycle CO₂-equivalent emissions of the product;
- express emissions in grams, kilograms or tonnes of CO₂ equivalent. (On the actual labels, units are displayed as “g” (grams), “kg” (kilograms), or “t” (tonnes).) The choice of the units and number of significant digits displayed depends on the space available on the label.

Companies using the label must also endeavour to keep reducing their CO₂ emissions. However, Japan's Carbon Footprinting System does not require participating companies to set any specific reduction targets.

38. Detailed information about each stage of a product's life-cycle should be made available on the Internet. The method of disclosing information about the labelling scope and contents is one of the topics under discussion.

Options for indicators

39. Displaying simple and concise labelling information is important for consumers. If the labelling scheme results in a positive outcome (i.e. encourages a reduction in CO₂ emissions), Japan may consider providing additional information on the labels. The general rule, however, is that the label should display only information relating to CO₂ emissions, and not confuse the consumer by providing information on other features, such as the product's functionality.

1. Additional information

For the purpose of conveying to consumers their efforts to reduce their CO₂ emissions, companies may display a reduction rate over a specified period (e.g. year) next to the information on their carbon footprint. Depending on the product, information on CO₂ emissions could be broken down by each stage of its production or components.

³² Correspondence between the author and a Japanese expert on 1 May 2009.

Examples of additional indicators that may be considered for the future include:

- reduction rates compared with standard products;
- comparison with a standard industry or sector value;
- information on emissions at each stage in the product's life-cycle, or for each component or ingredient;
- information on how to use the product in order to reduce CO₂ emissions (if the emissions depend on how the product would be used);
- information on how best to recycle the container (e.g. if a consumer recycles a container, the CO₂ emissions can be smaller than the amount of CO₂ emissions displayed on the container);
- the amount of CO₂ emitted if the product is not recycled.

2. Providing detailed information on regions, seasons, and suppliers

More detailed information such as on the region in which the product was grown, the season in which it was grown, and the name of the supplier(s), can be displayed if it can be argued that this would lead to a reduction in CO₂ emissions. The Guidelines specify that, when provided, this additional information should be displayed clearly. In particular, for primary commodities such as perishable fruit or vegetables, the actual CO₂ emissions from greenhouses can vary greatly, depending on the weather conditions at the time.

Where a company uses different suppliers of raw materials for the same product, it is often the case that the emissions may vary across those suppliers. The government is deliberating on whether companies should be allowed to differentiate the carbon footprint labelling of final products by supplier.

Conclusion

40. In the coming years, the Japanese government plans to make concentrated efforts to promote the Carbon Footprint System as part of Japan's climate policy. METI and its Study Groups will be continually refining and developing data sources and estimation methods during the System's trial period. They will also continue to observe international developments, including those in France, the UK, and at ISO.

41. As they begin to implement the System, collecting reliable data will be very costly and challenging for participating companies. Yet the collection of reliable and valid data (including for imported components and ingredients) is essential for the measurement of CO₂ emissions for products and for establishing consumer confidence in the scheme. Thus, developing an extensive, well-organized database will be a key factor in the ability of companies to estimate CO₂ emissions in an accurate manner.

42. The role played by the Product Category Rule in life-cycle assessment — in setting specific rules, requirements, and guidelines, including a system boundary for products — is clearly critical. Yet, at the time of the writing of this report (May 2009), not one PCR for a product had yet been published.

REFERENCES

- British Standards (BSi), “PAS 2050: 2008 Specification for the assessment of the life cycle greenhouse gas emissions of goods and services”, October 2008.
- British Standards (BSi), “Guide to PAS 2050 How to assess the carbon footprint of goods and services”, October 2008.
- Ministry of Economy, Trade and Industry (METI), “Carbon Footprint Scheme Guideline”, Available at <http://www.meti.go.jp/committee/materials2/data/g90209aj.html>, 3 March 2009.
- Ministry of Economy, Trade and Industry (METI), “the Standards for Establishing Product Category Rules (PCR)”, Available at <http://www.meti.go.jp/committee/materials2/data/g90209aj.html>, 3 March 2009.
- Inaba, Atsushi, “カーボンフットプリントのあり方と課題” [“Carbon footprinting: current status and future tasks”], 環境管理 [*Environmental Control*], Vol. 44. No. 12, December 2008.
- Hitomi Kumura and Andreas Tuekr “Emerging Japanese Emissions Trading Schemes and Prospects for Linking”, *Climate Strategies*, October 2008.