

## DRAFT Summary of Example Product Environmental Footprint Initiatives

The following list identifies examples of initiatives taken on by governments, non-government organizations (NGOs) or industry to support, advance, or accelerate product environmental footprinting. These examples are intended only to be an illustration of the type of initiatives that are possible. For each initiative example, an effort was made to provide the following information, when possible:

- Organizer: who leads or runs the initiative?
- Participants: who is involved in the initiative? How many participants?
- Location: what geographic location is involved?
- Year: when did the initiative begin?
- Outcomes: what are the results of the initiative, if any have been evaluated yet? Are there any case studies?
- More information: Is there more information available online?

### Carbon Trust UK pilot projects for PAS 2050 evaluation report

The Carbon Trust initiated a pilot testing project for the British Standards Institution (BSI) Publicly Available Specification (PAS) 2050<sup>1</sup>:2008. PAS 2050 specifies requirements for the assessment of the life-cycle GHG emissions associated with the life cycle of goods and services (“products”), based on life cycle assessment techniques and principles (i.e., ISO 14040/44).

- Organizer: Carbon Trust (non-government organization)
- Known participants: UK's DEFRA and Department of Health, and approximately 75 product ranges and 20 companies including Aggregate Industries, Boots, The Co-operative Group, Cadbury Schweppes, Coca-Cola, Halifax, innocent, Kimberly-Clark, Scottish & Newcastle, Tesco, Walkers, Colors, Continental Clothing Company Ltd., Coors Brewers Ltd., Danone Waters UK Limited, Mey Selections, Morphy Richards
- Location: United Kingdom
- Year: 2008

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<sup>1</sup> PAS 2050 is a Publicly Available Specification put out by the British Standards Institution (BSI), Department for Environment, Food and Rural Affairs (Defra), for the assessment of the life cycle greenhouse gas emissions of goods and services. It was first published in 2008 and then updated in 2011. It was originally developed over 18 months through a consensus building process involving technical knowledge/expertise from a wide group of international stakeholders. It was overseen by an independent Steering Group of experts, representing academia, NGO, Government, industry, etc. It was also supported by working groups of experts, market research and pilots with companies.

The PAS 2050:2011 specifies requirements for the assessment of the life-cycle GHG emissions associated with the life cycle of goods and services (“products”), based on life cycle assessment techniques and principles (i.e. ISO 14040/44). Requirements are specified for identifying the system boundary, the sources of GHG emissions that fall inside the system boundary, the data requirements for carrying out the analysis, and the calculation of the results. It includes the six GHGs identified under the Kyoto Protocol and covers the whole life cycle of products, including the use phase and emissions from direct land-use changes that have taken place over the past two years.

- Outcomes: evaluation report and case studies. Marshall's example: <http://www.marshalls.co.uk/sustainability/publications/pdfs/Carbon%20Labelling.pdf>. Some participants reported financial savings due to operational changes resulting from opportunities identified during the footprinting effort.

## World Resources Institute Product Life Cycle Accounting & Reporting Standard development and pilot testing

A joint initiative of World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), the Greenhouse Gas Protocol produces standards and tools for GHG management, accounting and reporting for stand-alone use or as part of reporting/reduction programmes. The GHG Protocol Product Life Cycle Standard was developed to provide a uniform basis for product carbon footprinting and reporting. In 2010, 42 companies "Road Tested" the Product Standard in the context of many product categories, including: aluminum products, insurance services, auditing services, intermediate materials, beverages, magazines, building materials, meat and dairy products, chemicals, network services, clothes, packaging materials, detergents and cleaning services, paints and coatings, electronics, and transport services .

According to the WRI website, the companies that road tested the Product Life Cycle Accounting and Reporting Standard reported they had little difficulty completing an inventory in conformance with the requirements and found the guidance provided in the draft helpful.

- Organizers: World Resources Institute and World Business Council for Sustainable Development (non-government organizations)
- Product Standard Road-testing participants: 3M, Acer Inc., AkzoNobel, Alcoa, Amcor, Anvil Knitwear, Inc., Bao Iron & Steel Co. Ltd, BASF SE, Belkin International, Bloomberg LP, BT plc, Deutsche Post DHL, Deutsche Telekom AG, Diversey, DuPont, Ecolab, Edelweiss, General Electric, Gold'n Plump Poultry, LLC, Herman Miller, Inc, Italcementi Group, Kun Shan Tai Ying Paint Co, Ltd., Lenovo, Levi Strauss & Co., Mitsubishi Chemical Corporation, New Belgium Brewing, PepsiCo, Inc., Procter & Gamble Eurocor, Rogers Communications, Shanghai Zidan Food Packaging and Printing Co., Ltd., Shell International Petroleum Company Ltd., Suzano Pulp and Paper, Swire Beverages, TAL Apparel Limited, Tech-Front (Shanghai) Computer Co., Ltd. / Quanta Shanghai Manufacturing City, Verso Paper Corp., and WorldAutoSteel:  
[http://www.ghgprotocol.org/files/ghgp/public/Product\\_standard\\_road\\_testers.pdf](http://www.ghgprotocol.org/files/ghgp/public/Product_standard_road_testers.pdf)
- Location: worldwide
- Year: ~2010
- Outcomes: A summary document of Road Testing Feedback was developed in August 2010: <http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-summary-of-the-product-standard-road-testing-feedback1.pdf>
- More information about the Product Standard can be found here: <http://www.ghgprotocol.org/standards/product-standard>

# The International Wine Industry Greenhouse Gas Protocol and Accounting Tool

The Protocol and Calculator are designed primarily as an enterprise and/or facility level calculating tool for the International Wine Industry in compliance with current international standards and practices for Greenhouse Gas accounting. The goal of the project partners was to provide a free, easy-to-use, wine industry specific, greenhouse gas (GHG) protocol and calculator to measure the carbon footprints of winery and vineyard operations of all sizes. Development was led by the Wine Institute of California as a service to help members identify “hot spots” to focus greenhouse gas reduction efforts, to manage and reduce greenhouse gas emissions over the life cycle of their products, and also to respond to misleading information about the greenhouse gas impacts of wines.

It is not expected that the use of this Protocol will define product level carbon emissions to the extent necessary to satisfy the expected international standards for lifecycle analysis. However, it will provide general guidance on the significant emissions associated with individual products.

The Calculator breaks emissions into three levels: Scope 1; Scope 2; and Scope 3. Scope 1 emissions are those over which a company has direct control via ownership of activities. Scope 2 is purchased electricity, heat or steam and Scope 3 is the emissions from all activities that are purchased from other companies. This separation of Scopes is critical to manage mandatory reporting.

- Organizers: Wine Institute of California, New Zealand Winegrowers, South Africa 's Integrated Production of Wine program, and the Winemakers' Federation of Australia (industry associations)
- Participants: a member list can be found here: [http://www.wineinstitute.org/files/WI\\_Membership\\_3.11.14.pdf](http://www.wineinstitute.org/files/WI_Membership_3.11.14.pdf)
- Location: international scope
- Year: began in 2007-2008
- Outcomes: A protocol document and a calculator tool
- More information: <http://www.wineinstitute.org/ghgprotocol>

## Earthsure Brewers Software

The Institute for Environmental Research and Education (IERE) developed a software program that allows breweries to easily and cost-effectively calculate the environmental footprint of different beers, down to the level of individual batches of microbrews. The software has been used by several Pacific Northwest breweries, including Hopworks Urban Brewery, Fort George Brewery, Cliff's Vashon Brewing, Harmon Brewing, and The Ram Brewing. Software results are designed to serve as an environmental product declaration (EPD), or eco-label.

- Organizer: Institute for Environmental Research and Education, Washington (non-profit)
- Participants: Hopworks Urban Brewery, Fort George Brewery, Cliff's Vashon Brewing, Harmon Brewing, and The Ram Brewing.
- Location: United States
- Year: Started 2013
- Outcomes: Not yet evaluated.

- More information: <http://sustainablebusinessoregon.com/articles/2013/11/software-allows-brewers-to-tout-eco.html?page=all>

## Province of Quebec Carbon Footprint Pilot Project

The Québec government announced as part of its 2010 and 2011 budget a \$24 M plan aimed at promoting the marketing of products whose carbon footprints have been measured and certified. This plan was motivated in part by a desire to retain access to the French export marketplace (and other markets that might require footprinting; see below) and also a perception that Québec-made products might enjoy an inherently low carbon footprint due to the province's extensive reliance on hydroelectricity. The Ministère des Finances et de l'Économie (MFEQ) was mandated to implement this measure. Some obstacles were identified in advance, notably the young state of carbon footprint labeling internationally but also the lack of harmonization of calculation methodologies. Faced with these limitations, the MFEQ partnered with the Interuniversity Research Centre for the Life Cycle of Products, Processes and Services (CIRAIG) in order to conduct a product carbon footprint pilot project in 2012 and 2013. The pilot included twelve companies that took on quantifying the carbon footprint of one or more of their products. The participating companies were selected in an effort to cover a large scope of products, types of businesses and sensitive calculation parameters. The MFEQ also benefited from the expertise of the Bureau de Normalization du Québec (BNQ) in greenhouse gas verification in order to explore necessary auditing mechanisms for carbon footprint calculations. The aim of the pilot was ultimately to determine the feasibility of large scale carbon footprint labeling in Québec and guide subsequent actions.

- Organizer: Province of Québec (MDDEFP) (government)
- Participants: Alcoa, Aliment Ultima, Alouette, Bell Canada, Ecolopharm, Elkem Metal, Enerkem, Fibrek, Interplast, Laboratoire M2, Nordic Chantiers Chibougamau, Rio Tinto Alcan<sup>2</sup>  
(<http://www.empreintecarbonequebec.org/fr/acteurs.php>)
- Location: Province of Quebec
- Year: 2012
- Outcomes:
  - Unfortunately, the project has not finished very well. The minister concluded that there was too much variability in the results to go forward with a program. The official results can be translated from this site: [http://www.economie.gouv.qc.ca/objectifs/informer/par-secteur-dactivite/environnement/page/le-secteur-17924/?tx\\_igaffichagepages\\_pi1%5bbackPid%5d=152&tx\\_igaffichagepages\\_pi1%5bcurrentC at%5d=&tx\\_igaffichagepages\\_pi1%5bparentPid%5d=17525&cHash=7c3e4d213c922bee38f80fe9a31fc7fc&tx\\_igaffichagepages\\_pi1%5bmode%5d=single](http://www.economie.gouv.qc.ca/objectifs/informer/par-secteur-dactivite/environnement/page/le-secteur-17924/?tx_igaffichagepages_pi1%5bbackPid%5d=152&tx_igaffichagepages_pi1%5bcurrentC at%5d=&tx_igaffichagepages_pi1%5bparentPid%5d=17525&cHash=7c3e4d213c922bee38f80fe9a31fc7fc&tx_igaffichagepages_pi1%5bmode%5d=single)
  - Quantis disagrees to some extent with the interpretation of the results and the conclusion, and feels that the variability cited by the minister was overestimated in terms of what would occur in a real context.
- More information:
  - [http://www.empreintecarbonequebec.org/en/index.php#.UyB7R\\_lDVft](http://www.empreintecarbonequebec.org/en/index.php#.UyB7R_lDVft)
  - [http://www.empreintecarbonequebec.org/en/methodo\\_tests.php#.U2kqlfIdVft](http://www.empreintecarbonequebec.org/en/methodo_tests.php#.U2kqlfIdVft)

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<sup>2</sup> Quantis worked with Alcoa, Alouette, Rio Tinto Alcan, Bell Canada and Interplast

## Province of Quebec Life cycle inventory database

Recognizing the importance of developing a life cycle inventory (LCI) database for the province, the Québec Government (MDDEFP) has sponsored the Centre interuniversitaire de recherche sur le cycle de vie des produits, procédés et services (CIRAIG) with funding of \$1.5 million Canadian dollars to develop a database for life cycle inventory (LCI). A complete and reliable database is the cornerstone of footprinting and declarations. The Québec LCI Database will support government efforts in sustainable development while working to enhance the competitiveness of the industry. The starting point of this three-year project is adaptation of existing datasets to Quebec's pulp and paper, energy, mining and metals industries. This funding provides support for companies to provide data.

- Organizer: Province of Québec (MDDEFP) (government)
- Participants: Province of Quebec, CIRAIG University
- Location: Province of Quebec
- Year: 2010
- Outcomes: not yet known
- More information:
  - [http://www.empreintecarbonequebec.org/en/projet\\_base\\_de\\_donnees\\_icv.php#.U2Au8vldVFs](http://www.empreintecarbonequebec.org/en/projet_base_de_donnees_icv.php#.U2Au8vldVFs)

## National Experimentation for the environmental display on products in France

The French Grenelle Laws of 2009 and 2010 decided that there would be an experimental phase for products labeling. The French standardization agency AFNOR developed an umbrella standard, BPX 30-323, outlining how to develop French Product Category Rules (PCRs) to facilitate product footprinting. The experimentation initiative focuses on the Consumer Goods product category, including the products themselves as well as their packaging, taking into account the entire product life cycle in terms of multiple criteria (climate change and a selection of indicators relevant to the product category). The goal of the initiative is to influence uptake of green products on the part of consumers, as well as ecodesign on the part of brands.

The French labeling initiative is comprised of two parallel actions :

- a) Labeling experimentation (has been completed). Companies were free to test any type of life cycle multi-criteria labeling.
  - b) Development of Product Category Rules (PCR) repository and development of the French database (Base IMPACT) (ongoing). Lately, the focus of PCR development work has been taken off of this French initiative and placed onto the European Commission-driven PCR development (see below). However, there is ongoing funding and motivation for the French database initiative. (The reason this is so is that even if no labeling law is ever passed in France, the country will still need updated and new datasets.)
- Organizers:
    - The labeling experimentation was led by the French Ministry of Ecology, Sustainable Development, Transport and Housing (government)

- The PCR and database projects were led by ADEME (French Environmental Agency). ADEME reports to the Ministry of environment.
- Known participants (out of 168 participating companies) include Anne de Joyeuse (wine cave cooperative), Auchan/ATAC France, BioCoop, Brasseries Kronenbourg, Carrefour, Château Larose-Trintaudon, Descours & Cabaud, Discounteo, E.Leclerc : Greentag, Groupe Casino, Heineken France, Leroy Merlin France, Les Mousquetaires, RONA, Vignerons de Buzet. Quantis worked with L'Oréal on their piloting efforts.
- Location: France
- Year: Testing began in July 2011 and pilot phase ended in 2012. Evaluation was carried out in 2013 and transferred to parliament at the end of 2013.
- Outcomes and more information:
  - Some labeling experimentation tests are shown here: [http://www.developpement-durable.gouv.fr/spip.php?page=affichage\\_environnemental](http://www.developpement-durable.gouv.fr/spip.php?page=affichage_environnemental)
  - Available PCRs are here: <http://affichage-environnemental.afnor.org/referentiels-sectoriels-pcr/liste-des-referentiels-sectoriels>

## European Commission's Single Market for Green Products

The European Commission's Single Marketplace for Green Products (SMGP) initiative is providing guidelines for and a forum to support industry groups in preparing Product Category Rules (PCRs) to support voluntary disclosure of product footprint information, including not only consumer goods but other goods as well such as intermediary products. The SMGP initiative launched a three-year testing period to develop product- and sector-specific rules through a multi-stakeholder process for product environmental footprint (PEF) and organizational environmental footprint (OEF). There will also be experimentation on PCR tools and software, communication of PCR information through the value chain, and verification of disclosed information. A second phase will build on an in-depth evaluation of the results of the three-year testing. Based on this evaluation, the Commission will decide on further policy applications of the PEF and OEF methods.

- Organizer: European Commission (government)
- Participants: pilot projects are listed here: [http://ec.europa.eu/environment/eussd/smgp/pef\\_pilots.htm](http://ec.europa.eu/environment/eussd/smgp/pef_pilots.htm)
- Location: Europe
- Year: piloting began in 2013 for non-food and 2014 for food, and experimentation is expected to last three years.
- Outcomes: Not yet available.
- More information: [http://ec.europa.eu/environment/eussd/product\\_footprint.htm](http://ec.europa.eu/environment/eussd/product_footprint.htm)

## The Sustainability Consortium Sustainability Measurement and Reporting System

The Sustainability Consortium (TSC) is a global, academically-led, multi-stakeholder organization conducting research and developing data, standards, systems and tools that will improve decision-making and drive sustainability in consumer goods. With offices in the U.S. and Europe and expansion plans in Asia and Latin

America, TSC is actively working in food, beverage and agriculture; home and personal care; consumer electronics; toys, paper and forestry products; and packaging. TSC plans to continue expanding membership and sectors in other areas.

The Sustainability Measurement and Reporting System (SMRS) under development will deliver actionable sustainability information through Category Sustainability Profiles (“Level 1”), and deliver a large-scale system supporting standardization and harmonization of product footprints over time (“Level 2”). The Category Sustainability Profiles are built around key performance indicators (KPIs) for hundreds of consumer products with a goal of helping retailers to evaluate product sustainability. The KPIs are based on literature review, compiled into a “dossier,” which is then used to prepare a profile which identifies the environmental hotspots around which the KPIs are based. A wide range of retailers and suppliers are beginning to put TSC’s work to use, informing how they design products, source materials and buy merchandise.

- Organizer: The Sustainability Consortium (industry consortium)
- Participants: many organizational partners across many sector working groups. A list of members, including industry, consultancies and civil society organizations and government agencies can be found here: <http://www.sustainabilityconsortium.org/members/>
- Location: worldwide
- Year: SMRS development began around 2010
- Outcomes: Key Performance Indicator lists for >100 Product Categories
- More information:
  - <http://www.pef-world-forum.org/initiatives/joint-initiatives/the-sustainability-consortium-smrs/>
  - <http://www.sustainabilityconsortium.org/tag/smrs/>

## Product-Attribute-to-Impact Algorithm (PAIA) initiative

This initiative aims to converge with industry partners to estimate carbon and energy impact using streamlined (simplified) Life Cycle Analysis methods. Simply put, PAIA maps important attributes of a product, such as those with a high environmental impact or those important to stakeholders, to a product’s carbon and energy impact. This initiative aims for harmonization with other key footprinting efforts, including the GHG Protocol, iNEMI, TSC, IECC, and USEPA programs.

- Organizer: Massachusetts Institute of Technology’s Materials Systems Laboratory, in partnership with several Information Technology companies (non-government organization, industry partners)
- Participants: Intel, Hewlett Packard, AMD, AUO, Carbon Trust, iNEMI, Lenovo, Dell, NEMA, USEPA, TSC
- Location: operating in the United States, with supply chain measurement initiatives worldwide.
- Year: methodology development began in 2010.
- Outcomes: the methodology has been successfully pilot tested on several electronic products and components.
- More information: <http://msl.mit.edu/projects/paia/main.html>