World Business Council for Sustainable Development

WORLD RESOURCES INSTITUTE

WRI/WBCSD GHG Protocol
Supply Chain and Life Cycle Survey
Summary of Results
May 2008

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1. Survey Objectives

In November 2007, the WBCSD/WRI GHG Protocol Initiative began to investigate the need to develop guidelines to help companies account for supply chain greenhouse gas emissions (GHG) and/or life cycle GHG emissions, either at the corporate or product levels.

In order to facilitate this research, a survey (see Appendix I) was distributed to over 300 companies, experts and other stakeholders, to gain insight into the need, scope and technical feasibility of developing such a standard or guidance. This document summarizes the survey results, and presents preliminary analysis of the findings.

2. Overview of Survey Findings

The survey responses confirmed a clear and urgent need for the GHG Protocol to develop new guidelines on supply chain and life cycle GHG accounting. While an overwhelming demand was expressed for comprehensive, internationally accepted guidelines, specific suggestions on the scope and objectives of the guidelines were quite varied.

Of the four presented options (product-level life cycle accounting; corporate-level life cycle accounting; product-level supply chain accounting; corporate-level supply chain accounting), two emerged as the most constructive contributions from the GHG Protocol Initiative: a product life cycle standard and additional guidance on accounting for scope 3 and supply chain emissions at the corporate level.

Based on these findings, the WBCSD/WRI GHG Protocol Initiative pursued expert and stakeholder consultations to further define the scope of work moving forward. The WRI/WBCSD business plan (see attached) provides additional information on background and project next steps.

3. Survey Distribution and Response

The survey was distributed through the following organizations and channels:

- WRI U.S. Climate Business Groups
- WRI Green Power Market Development Group
- WBCSD Energy & Climate working group member companies
- WBCSD Sustainable Value Chain Initiative working group member companies
- EPA Climate Leaders Program
- Supply chain and life cycle experts and partners known to the WRI & WBCSD

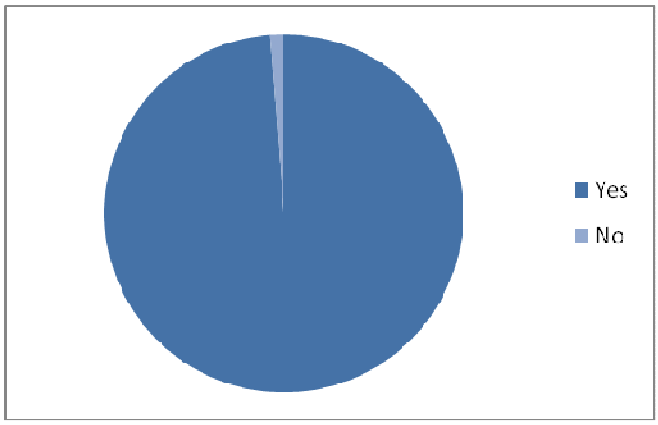
Number of responses: 83

See Appendix II for the list of survey respondents.

For questions of comments: Antonia Gawel, WBCSD (gawel@wbcsd.org) or David Rich, WRI (drich@wri.org)

4. Summary of Survey Results

4.1. The perception of supply chain or life cycle GHG emissions accounting as an important business issue



4.2. Benefits/ objectives/ purpose of life cycle/ supply chain assessment

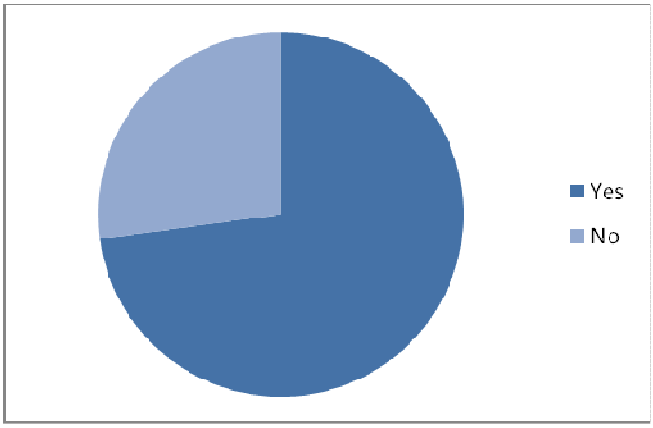
For companies:	For consumers:	For regulators and policy makers:
Internal: • Internal management/ decision-making/ planning • Risk management • Benchmarking • Performance tracking • Product development/ promotion • Engage/ pressure suppliers • Guide procurement decisions • Capture scope 3 emissions ***External:*** • External disclosure/ communication • Achieve carbon neutrality • Product labeling • Marketing	• Develop a greater understanding of GHG implications of purchasing decisions • Differentiate "responsible" companies • Transparency through product labeling	• Assess the proportion of national emissions that are a result of exported manufacturing and supply chain "insourcing" and where responsibility for reducing emissions may lie • May inform policies on embedded emissions in traded products • Reflect global changes in industrial manufacturing

Analysis: The benefits and objectives of undertaking a supply chain or life cycle assessment varied to quite a large extent by industry sector. Broadly, company objectives can be characterized by internal and external motivations: internally, companies seek to improve their processes, or carbon management practices related to the development of

their products or materials, and guide their procurement decisions; externally, consumer-facing industries and their suppliers seek product differentiation through the development and promotion of low GHG-intensive products.

From a regulatory or policy perspective, the concept of developing policies based on the embedded GHG content of traded products is currently undergoing analysis and debate. The GHG Protocol is a policy neutral initiative that supports the use of accurate and consistent information to serve multiple objectives and enable effective decision making.

4.3. Proportion of companies currently assessing their product or supply chain GHG emissions



4.4. Existing resources

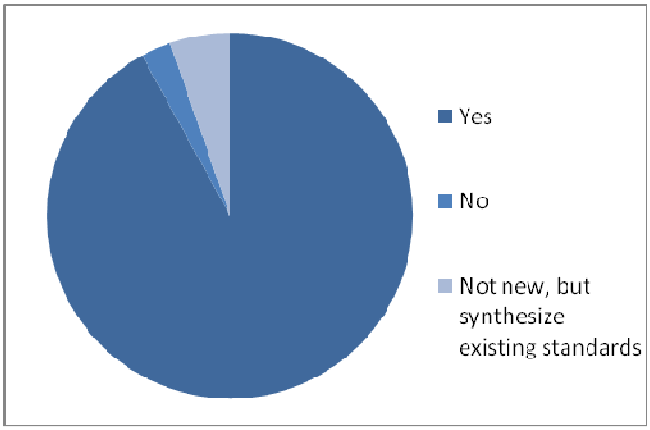
The majority of respondents are currently undertaking some form of supply chain and/or life cycle GHG assessment. Approximately 70 sources of existing information, guidance, initiatives or standards were cited as existing resources available for the analysis of supply chain and life cycle emissions. Here we cite several relevant examples, potentially serving as building blocks in the development of a WRI/WBCSD GHG Protocol guidance or standard:

- ISO 14040 series for Life Cycle Assessment
- ISO 14025 for environmental Labels and Declarations
- BSI/Carbon Trust/Defra PAS (Publicly Available Specification) 2050, Specification for the assessment of the life cycle greenhouse gas emissions of goods and services
- UNEP/SETAC Life Cycle Initiative
- European Commission guidance on Life Cycle Accounting and Carbon Footprinting

4.5. Challenges faced by companies when analyzing supply chain or product life cycle emissions

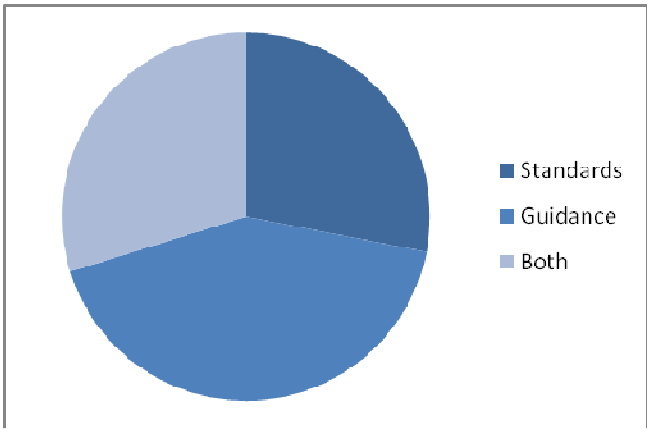
Boundaries/ scope	• Difficulty in setting the upstream and downstream boundaries, such as how many tiers of suppliers to include • Avoiding double counting • Defining boundaries when activities are shared, franchised or sub-contracted • Complex ownership structures • A need to define significance/relevance/ materiality for including activities within the system boundary
Allocation	• Appropriate allocation of emissions for one product that may serve as an input to multiple downstream products or processes (i.e. through economic value, energy, or mass allocation) • Allocation of the proportion of supplier emissions to an individual downstream product or activity • Complexity of certain products where one product may have a large number of components from a vast array of suppliers
Guidance/ methods	• Lack of internationally accepted guidance or standards • Lack of appropriate or sufficiently accurate emission factors • Complexity of analysis • Amount of time and cost required to apply methodologies
Data	• Reliability, accuracy and usefulness of data sources and emission factors • Data confidentiality concerns between suppliers and customers • Large volume of required data for accurate calculations • Obtaining data from outsourced manufacturing • Lack of information regarding impact of use and disposal of products • Accounting for differentiated user behaviors in the use phase
Confidentiality	• Reluctance to provide data due to proprietary business and competitiveness concerns
Communication/ Labeling	*Internal:* • Challenge in communicating results to non-technical internal colleagues to enable correct interpretation and appropriate decision making *External:* • Challenge in communicating complex results to non-technical external stakeholders • Lack of consumer awareness and understanding or results • Communication of findings such that information is correctly interpreted and understood by customers • Limitations of using LCA data or labels to compare products due to methodological assumptions and often high margins of error

4.6. Perception of a long-term need for new guidelines on supply chain or life cycle accounting



Analysis: A large proportion of companies described an increasing demand for information related to the GHG emissions of products and supply chains. It is expected that these demands will increase and become more specific in the near future. The survey responses indicated a clear need for an internationally accepted, standardized, and credible approach to providing this information in a streamlined and efficient manner. In addition, respondents expressed a need for clarity in communicating results to avoid the misinterpretation of public information.

4.7. Perceived need for a standard, guidance, or both standard and guidance

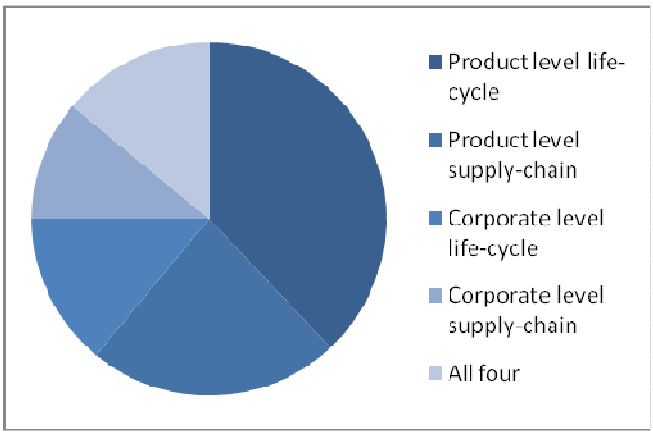


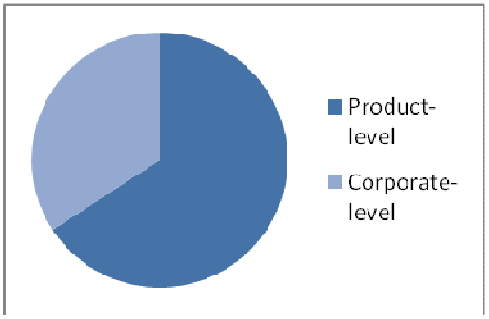
Analysis: The survey respondents suggested that a standard would faciliate the consistent use of methodologies. A guidance document would enable the clarification of issues related to the purpose, goals, boundaries and use of a GHG life cycle and/or supply chain assessment.

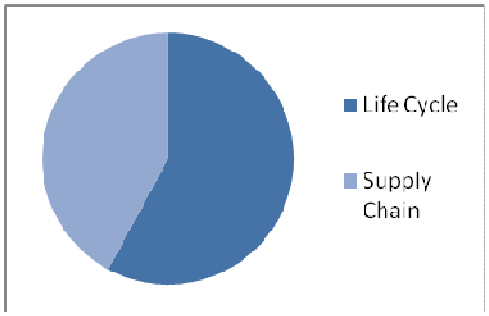
No clear preference between the development of a standard or a guidance emerged, but generally, the demand for more prescriptive and concise information (whether it be in the form of a standard or guidance) was clear. In moving forward, the GHG Protocol intends to carefully analyze in more detail the benefits and need for both standards and guidance,

with an understanding of the limitations and challenges in developing a standard and noting that guidance and standards would meet different objectives.

4.8. Scope of the new standard or guidance







Analysis: The results demonstrate that multiple scopes (e.g. product level and corporate level) are priorities for different companies. Product level standards or guidance emerged, by a slight margin, as requiring the most urgent need for clarity. Following these mixed results, the GHG Protocol team undertook more detailed consultations with technical experts, companies, and other stakeholders (see business plan for list of participants). These discussions led to the conclusion that a product life cycle standard as well as additional guidance on corporate level scope 3 emissions would be the most beneficial contribution of the GHG Protocol.

5. Survey Outcome

Following the analysis of this survey, the WRI/WBCSD GHG Protocol Initiative has decided to move forward in the standard development process. New guidelines will address both product level life cycle accounting and corporate level scope 3 and supply chain accounting. Due to the urgent demand expressed through this survey, the GHG Protocol intends to develop the new standard under an accelerated schedule of 2 years, compared to 4-5 years for previous standards.

As in the case of the GHG Protocol's previous standards, this standard will be developed through a broad, inclusive, multi-stakeholder process. A business plan has been developed by WRI and WBCSD, outlining the objectives, scope, development process and steps, and ways in which companies and organizations can engage in the process. Those interested in participating are encouraged to contact Antonia Gawel, WBCSD (gawel@wbcsd.org) or David Rich, WRI (drich@wri.org).

Appendix I

Questionnaire on Supply Chain and Life Cycle GHG Emissions Accounting

November 2007

Introduction and Purpose

The WRI/WBCSD Greenhouse Gas Protocol Initiative is investigating the need to develop guidance or standards to help companies account for supply chain greenhouse gas emissions and/or life cycle greenhouse gas emissions, either at the corporate level or at the product level.

There is a growing business interest in accounting for the "cradle-to-gate (supply chain)" and/or "cradle-to-grave (life cycle)" emissions of the products companies manufacture or sell as they look to develop or procure more climate friendly products, track progress towards an emissions reduction goal, seek certification and labeling, or compare products, suppliers, or companies. We seek your advice on whether you perceive the accounting of life cycle greenhouse gas emissions and supply chain greenhouse gas emissions to be an important business issue in need of further accounting guidance or standards and if so, what purposes such a standard or guidance should serve.

The science and practice of life cycle assessment is complex and evolving. The process of undertaking a life cycle assessment could range from a qualitative or semi-quantitative assessment focused on selected life cycle stages to a comprehensive quantitative assessment that may involve a number of contentious assumptions and policy decisions open to individual interpretations. As a result, there may be a need for the development of a more streamlined and standardized life cycle accounting approach that is specifically designed to quantify climate change impacts from products.

Whether to develop guidance or to develop a standard depends on whether the majority of accounting issues are technical issues or policy issues. A standard is most appropriate when the accounting issues are of a technical nature and the approach taken to resolving those issues can be decided based primarily on objective criteria, such that various companies will reach similar answers to similar accounting questions. Guidance is most appropriate when accounting issues primarily pose policy questions and the criteria used to resolve those questions are subjective, such that different companies or analysts may reach different answers when confronting similar questions.

If the GHG Protocol Initiative undertakes this work, we will investigate existing best practices on these issues. Benefits of building off existing work include expending fewer resources by not duplicating work and building a consensus standard or guidance supported by multiple organizations. We welcome your suggestions for existing or developing standards or guidance to consider.

Questionnaire on Supply Chain and Life Cycle GHG Emissions Accounting

1. Do you perceive the accounting of supply chain or life cycle greenhouse gas emissions to be an important business issue? Please explain why. What are the main objectives of supply chain or life cycle GHG accounting? What purposes should this data serve?

2. Has your organization attempted to analyze supply chain or product life cycle emissions, and if so, what are the current methods and practices used and what are the challenges or difficulties encountered?

3. Are you aware of existing standards or guidance on these issues? Please describe.

4. Do you think there is a significant and long-term need for new standards/guidance on developing supply chain or life cycle emissions inventories?

5. Do you think standards are necessary to achieve these objectives, or would guidance be sufficient (see introduction above)? Given your experience and understanding, do you think the major questions related to supply chain or life cycle emissions accounting are primarily technical in nature (and should have relatively objective answers), or primarily policy questions (with relatively subjective or arbitrary answers)?

6. If you think further standards/guidance should be developed, which of the following should this standard/guidance center on? (Please mark your answer(s) with an X and explain)
   ____ Product-level life cycle emissions accounting
   ____ Corporate-level life cycle emissions accounting
   ____ Product-level supply chain emissions accounting
   ____ Corporate-level supply chain emissions accounting

7. Do you have other suggestions for what should be included in the objectives and scope of this standard/guidance?

8. If WRI/WBCSD decides to develop a standard or guidance, would your organization like to join the standard development process? If so, who is the most appropriate contact?

Appendix II

Respondents to the GHG Protocol Supply Chain/Life Cycle Survey

1. ACE-INA
2. AgRefresh
3. Alcan
4. Alcoa
5. AMD
6. American Water
7. Anheuser-Busch
8. API Hong Kong
9. Balance Carbon
10. BG
11. BP
12. BWBR Architects
13. Carbon Trust
14. Caterpillar
15. China Association of Small and Medium Sized Enterprises
16. Cisco
17. Citi
18. The Climate Conservancy
19. The Climate Group
20. Climate Mitigation Services
21. CLP
22. Canadian Standards Association
23. Dell
24. Dow
25. DuPont
26. E2MC
27. Ecofys
28. EDF
29. Energetics
30. Environmental Resources Trust
31. EPA SmartWay
32. ERM
33. E-Source
34. Fedex Kinko's
35. FPL
36. Gap
37. General Electric
38. General Motors
39. Georgia Pacific
40. Go Neutral Now Consulting
41. Google
42. Green Logistics Consultants Group
43. Haworth
44. HP
45. IBM
46. IECA
47. Increment
48. Interface
49. Johnson and Johnson
50. Kansai Electric Power Co.
51. Kimberly Clark
52. Kodak
53. Lend Lease Corporation
54. Lenovo
55. Lienne
56. Mohawk Paper
57. NCASI
58. New Zealand LandCare Research
59. Northeast Utilities
60. Novozymes
61. Natural Resources Defense Council
62. Office Depot
63. Owens Corning
64. Petro Canada
65. Quad Graphics
66. Rick Love
67. SEMARNAT (Mexico)
68. Shell
69. Smith Group
70. Spanish Business Council for Sustainable Development
71. Staples
72. Steelcase
73. Suncor
74. SustainAbility
75. Tengelmann
76. Tetra Tech
77. The Bault
78. Trihydro
79. Unilever
80. Victoria Australia EPA
81. Volkswagen
82. Winemakers' Federation of Australia
83. Xerox