



World Business Council for Sustainable Development



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## The Greenhouse Gas Protocol

### Product Life Cycle Accounting and Reporting Standard

#### *Comment Template*

We are providing this template to streamline public comment submissions. To use this template, please follow the instructions below:

- The Product draft is open for stakeholder comment from November 11, 2009 through December 21, 2009.
- To provide written comments, please use the comment template provided, instead of sending comments in a separate file or e-mail, in order to streamline the comment process.
- When using the comment template, please organize comments by chapter/section and reference page numbers and line numbers.
- If you have questions during the public comment process, please email Holly Lahd at [hlahd@wri.org](mailto:hlahd@wri.org).
- Submit comments as an attached MS Word file by email to Holly Lahd at [hlahd@wri.org](mailto:hlahd@wri.org) no later than **Monday, December 21st, 2009**. We appreciate any effort to submit written comments before the deadline.

**Feedback from (name):** \_\_\_ Matthias Finkbeiner on behalf of

**Organization:** \_\_\_\_\_ UNEP/SETAC Life Cycle Initiative \_\_\_\_\_

**General comment:**

The technical chapters go beyond ISO 14040ff, there are detailed descriptions and examples, basic concepts of LCA are described in a simple technical language. Product Categories Rules (PCR) – as used in ISO 14025 - are described and recommended, if available. This seems to be very important, since in any kind of GHG/CF approach Goal & Scope cannot be as freely defined as in a classical comparative product LCA! Complex and complicated products are nicely defined and treated in a separate chapter (8.2.5). Here and throughout the text guidance is given which is often missing in the existing standards. As such, the protocol is useful.

There are a number of technical comments for improvement below. Most relevant topics are:



- Consistency between Critical Review according to ISO 14044 and Assurance.
- Transparency and clarity about the limits of PCF in the sense of not being appropriate for comparative assertions and overall claims of environmental performance.
- Reference to existing standards instead of inventing new terms for established procedures.
- The data quality part and the allocation part can be simplified.
- The consequential approach has no practical relevance yet and the academic discussions on it are partly wrong and not appropriate for a guide to be used outside the academic world.
- The positioning of IO-data above the level of proxy data to fill data gaps is not appropriate and does not reflect state-of-the-art practice.

Chapter/Section	Comments
Summary	<p>PLEASE NOTE THAT THE COMMENTS ON THE SUMMARY ARE NOT COMPREHENSIVE. ANY CHANGES MADE TO THE MAIN DOCUMENT ACCORDING TO THE COMMENTS ON THE LONG VERSION BELOW NEED TO BE TRANSFERRED TO THE SUMMARY AS WELL.</p> <ul style="list-style-type: none"> <li>• 3.4. Allocation The whole section basically follows ISO 14040/44. This is appreciated and it should be clearly referenced, e.g. by putting a sentence in the beginning: Experienced users of ISO 14040/44 do not need to follow this section, because it describes LCA standard practice.</li> <li>• Order. Please move 4<sup>th</sup> bullet point (To avoid ....) to second after (when addressing)</li> <li>• The difference between the direct system expansion and substitution allocation approach is unclear, therefore delete allocation by substitution.</li> <li>• Allocation based on market value Delete the last part of the last sentence. This requirement is not necessary. Economic allocation can be applied if there is an average price available for the reporting period. The price does not need to be stable within the period (because it can be averaged) nor beyond this period (because this is not of interest).</li> <li>• 3.8. /Inventory Date Instead of the date there should be a reference time frame for which data have been investigated. It would be interesting to include a split up of the greenhouse gasses inventoried in this summary report.</li> </ul>
1. Introduction	<ul style="list-style-type: none"> <li>• 1.2 The definitions in the box are mainly taken from ISO</li> </ul>



Chapter/Section	Comments
	<p>14040/44. This should be given as reference.</p> <ul style="list-style-type: none"> <li>• 1.2. p7 line 4-8: The explanation why comparative assertions are not allowed should be expanded: “According to ISO 14040/44 comparative assertions disclosed to the public have to address a comprehensive set of environmental impacts. Using one impact category only (here: GHG) is not sufficient for this purpose. To use CF as a basis for comparative assertions is not acceptable and open to misuse.</li> <li>• page 7, line 5: we read "This flexibility, though, results in a standard that does not directly enable comparative assertions or product labelling". Change “directly”, to “neither directly nor indirectly”</li> <li>• Page 9, lines 33/34: we actually read: “External uses might include an annual corporate sustainability report that is distributed publicly”. It should be stressed that the scope of sustainability (our final goal) is much broader than LCA, GHG accounting is clearly much narrower. ISO 14040ff requires for good reasons a diverse set of impact categories, not a single one. Otherwise, trade-offs are bound to make comparisons impossible. The business opportunities mentioned in section 1.3.1 “Business Goals” may be real, but also the improvement of an existing product system requires a full LCA! Improvement on the basis of a single indicator (here: GWP) may lead to trade-offs with a high degree of probability (increasing the energy efficiency might be an exception).</li> <li>• That this standard builds on ISO 14040/44 and wants to be consistent with it should be added for clarity.</li> </ul>
2. Principles of Product GHG Accounting	<ul style="list-style-type: none"> <li>• L.6: it says that the principles are taken from LCA standards, but one of the main principles of LCA “comprehensiveness” is not addressed by GHG. It should be stated: “Most principles of LCA according to 14040/44 apply to this standard. The principle of comprehensiveness does not apply due to the focus on GHG only.”</li> <li>• The principle “life cycle perspective” from ISO 14040/44 should be added and replace “completeness”. Completeness is misleading, because it could be misunderstood as comprehensiveness.</li> </ul>
3. Performing a Product GHG Inventory	<ul style="list-style-type: none"> <li>• 3.1 p 13 line 13: Quotation of standards relate to the British version. Why? Just quote the correct ISO reference. This applies at several more places in the text. Therefore, search and replace them all.</li> <li>• section 3.1; p. 13; 1.12: Add a sentence to give an explicit reference to ISO 14044. For instance: Product GHG accounting</li> </ul>



Chapter/Section	Comments
	<p>follows the concept of life cycle assessment for which a general framework is presented in ISO 14044.</p> <ul style="list-style-type: none"> <li>• section 3.1; p14, and 15: both figures are far to technical and should go out. They do not bring any added value.</li> <li>• On page 17, 17-23, the use of additional impact categories is addressed “worthwhile... to consider the complete suite of environmental impacts when making decision”. This sentence shows that the authors are aware of the problem, but finally this is only a recommendation. It should be made a requirement, especially for comparisons and comparative assertions.</li> </ul>
4. Establishing the Methodology	<ul style="list-style-type: none"> <li>• 4.1 and 4.2: The description of attributional and consequential is not correct in several places. Consequential modeling is given too much room still. It is up to now an interesting academic concept with no practical relevance.</li> <li>• P 19, l. 11: delete the option to include consequential modeling based on sector specific guidelines. This will lead to arbitrary and inconsistent results. There is also no technical rationale for that.</li> <li>• P19, l.13: The definition of attributional as addressing DIRECT emissions only is wrong according to general understanding of direct and indirect emissions. Direct means typically the product related emissions, e.g. the exhaust of a car, and an attributional approach of course considers indirect emissions, e.g. due to the fuel production for the car. The wording you used is taking from the “consequential community”. You can do that, but then you need to define clearly the new meanings they introduced to terms that have been used in other meaning by a much larger group of users.</li> <li>• 4.2.1 box: The definition of consequential by “which are identified by linking causes with effects” is an unproven claim, scientifically wrong and misleading. The sentence has to be replaced by “which are predicted based on market trends”.</li> <li>• 4.2.1 Figure should be deleted. Makes no sense and not understandable for practitioners.</li> <li>• Section 4.2.1. The distinction between attributional and consequential LCA results in an academic discussion attributional vs. consequential LCA. This is a comprehensive scientific discussion which cannot and should not be summarized in document as the GHG protocol.</li> <li>• It should be added that the consequential approach is unsuitable to address responsibility, because the predicted consequences are arbitrary. E.g. if 9 previous emitters emit an amount below a negative effect level, they will get no consequential burden. If the 10<sup>th</sup> emitter will come and be above an effect threshold, it</li> </ul>



Chapter/Section	Comments
	will get a consequential burden. Is only the 10 <sup>th</sup> emitter responsible for the problem? If so, the consequential approach provides incentives for not responsible free rider behaviour.
5. Defining the Functional Unit	<ul style="list-style-type: none"> <li>• P. 23 Examples: are taken directly from ISO 14048 -&gt; give reference.</li> </ul>
6. Boundary Setting	<ul style="list-style-type: none"> <li>• Here – like in some other places in the document – new terms for well established topics are introduced. Boundary setting is a synonym of “definition of the system boundary” as used in ISO. If you think, a new term is needed, it should be at least clarified that it is a synonym to the ISO term or the difference should be clearly described.</li> <li>• You introduce the term process map – established practice is to call it process tree, product system plan or simply flow chart. Again clarify and reference to existing practice.</li> <li>• Section 6.2: The inclusion of background processes should not be set as a requirement.</li> <li>• The issue of capital goods is rather complicated, because the definition of it is not straightforward. Therefore, we propose the following in descending order of priority: <ul style="list-style-type: none"> <li>○ Avoid the term capital goods at all and just require that all activities that are significant have to be included (independent from the fact whether they are seen as capital goods or other goods)</li> <li>○ If you retain the term capital goods, than e.g. in Section 6.2. p.24, l. 31. change formulation: Capital goods activities should only be included if proven significant. This prove should be based on product groups where there is consensus among experts that capital goods are a significant contributor, e.g. within the LCA community (e.g. renewable energy).</li> </ul> </li> <li>• The same reasoning applies to the inclusion of facility operations and corporate activities.</li> <li>• 6.3.2 the argument of uncertainty of the use phase for excluding carbon storage only would justify the exclusion of any use phase effects. There needs to be better explanation. This is much more user relevant than many other parts in the document that are described at length.</li> <li>• 6.3.5 see comment on terms above.</li> <li>• 6.3.6 p 33 l. 32: “...if deemed significant”. What does significant mean in this context? 1% or 10%? Define it or ask the company to define their level of significance.</li> <li>• Table 6-1: Table caption should clearly include that this is just an example, because e.g. on waste water treatment there are</li> </ul>



Chapter/Section	Comments
	<p>different scholars that come to different results.</p> <ul style="list-style-type: none"> <li>Section 6.3.6 P. 33 l33 ..., best practice is for a company to collect data for these activities and include these within the boundary as this would provide the most complete account of the GHG inventory ....</li> </ul> <p>There are several issues with the above sentences:</p> <ul style="list-style-type: none"> <li>1. The term best practice is not defined in the draft and only used in this section and appendix a. So there is need for clarification and implications for the practitioner.2. Completeness is only one principle (according to p. 12) of Product GHG Accounting, relevance another. Thus a definition of best practice should not address completeness only, but also relevance.</li> </ul>
7. Collecting Data	<ul style="list-style-type: none"> <li>Section 7.1, P. 35 l18 -42 (box 7-1): the basic distinction between primary and secondary data is clear (there is a hierarchy!). However, for the further listed types of data somehow it is not clear whether there is a hierarchy or the mentioned data types are on the same level.</li> <li>Section 7.1, P. 35 L 36. Here the term representativeness is used, which is a quality indicator and further distinguished in table 9-1. This would in turn implicate that all secondary data is fully representative? But then again data quality indicators are not needed. Pls. clarify this.</li> <li>Box 7-1 has a lot of redundancies with section 7.2.1 p.37, l. 6 – p. 38 l 12.</li> <li>7.2.1: The differentiation of data types is very detailed and practically not usable. E.g. if I take IOA-data for the sector plastics as a proxy for a specific plastic like e.g. a carbon reinforced duroplast – how is that different from extrapolated and proxy data?</li> <li>To put IOA under secondary data and not under 8.2.3 addressing data gaps makes no sense. If you allow IOA as secondary data, there will be no data gaps, because with IOA you can address anything. If you put it therefore under secondary sources, you can delete 8.2.3. In practice, IOA is used for addressing data gaps and therefore should be placed under 8.2.3. – In addition, the use of IOA-data is often on the quality level of proxy data only.</li> <li>P.40 line 6: frequently should be deleted, because 5 years is not really frequent. It should be also added that IOA data updates relate to up to 5 year old data anyway.</li> <li>section 7.2.1 p.37, l. 6 – p. 38 l 12: similar content as box 7-1. Somehow more precise and new terms are emphasized.</li> <li>→ Suggestion:</li> </ul>



Chapter/Section	Comments
	<p>reduce box 7-1 to primary and secondary data and describe both types more precisely under 7.2.1 guidance on choosing data.</p> <ul style="list-style-type: none"> <li>• Section 7.2.2, p. 40, l. 13-14 (Box 8-3).The procedure described there is based on monetary relationships, which strongly conflicts with the definition of foreground processes as described in 6.2, p24, l. 26 (... Processes are directly connected over the product’s life cycle by materials or energy flows). Thus, IO data cannot be recommended for PCF calculations of foreground processes.</li> <li>• Section 7.2.2, p. 40, l. 13-14 (Box 8-3).In point 2, the term data gap is used, which clearly indicates, that IO-data is a means to address data gaps as described in section 8.2.3. Also the given example clearly reveals the drawbacks of IO data. Using a category such as “non ferrous metals” will most likely result in misleading outcomes. Further, comprehensive databases on metals are available and hence there is no need for using IO data for metals. This example must go out since it is not reflecting state of the art life cycle assessment knowledge.</li> <li>• → Suggestions:  Either: Give a hierarchy for choosing data as follows: 1. Primary data, 2. Secondary process (LCA data) based on physical relationships, 3. Data may be used for filling data gaps, which could include: proxy data, extrapolations or IO data,  Or: Just have a 2 level hierarchy: 1. Primary data and 2. Secondary data. The selection of secondary data is then merely based on data quality (applicable for process data, IO data, proxy data and extrapolations). However in such a case, process data should be defined as best practice (if this term will be used in the standard)</li> <li>• 8.2.3 (i.e. 7.2.3) Filling data gaps, p 41 l. 37: IOA should be added to this bullet list.</li> <li>• P 41 line 50/51: using apples for pears, which is qualified as proxy data, is above the quality you get in most IOA databases. Therefore again, IOA belongs in this section.</li> <li>• 8.2.4 (i.e. 7.2.4) p 42, l. 48: The first sentence is just speculation and reflects limited practical experience. The variation in the manufacturing and material production is just as big: → delete.</li> </ul>
8. Allocation	<ul style="list-style-type: none"> <li>• The whole section basically follows ISO 14040/44. This is appreciated and it should be clearly referenced, e.g. by putting a sentence in the beginning: Experienced users of ISO 14040/44 do not need to follow this section, because it describes LCA</li> </ul>



Chapter/Section	Comments
	<p>standard practice.</p> <ul style="list-style-type: none"> <li>• 8.1. There is an inconsistency if on the one side you say couple products should have an economic value and on the other side recycling is mentioned as an example. It should be clearly stated that for many recycling processes inputs do not have an economic value (e.g. glass, paper, small scrap of metals) and thus no allocation is necessary.</li> <li>• Tab. 8.1. The description on physical allocation factors in this table and the “allocation based on physical relationship” on P. 52 do not match. I would suggest to distinguish two principles</li> <li>• “Process sub-division by physical relationship” (similar to description in tab 8.1). If there is a clear physical relationship and product volumes can be varied independently, allocation is not necessary and instead sub-division of the process is possible.</li> <li>• “Allocation based on physical relationships”. It is not possible to vary product volumes independently. But, one can apply physical units as e.g. energy content or mass in order to derive allocation factors.</li> <li>• The difference between the direct system expansion and substitution allocation approach is unclear, therefore substitution should be deleted.</li> <li>• Value Choice. Please delete this part because overlaps with above parts. All approaches are somehow a value choice.</li> <li>• Fig. 8-4 Rename “Use physical allocation factors” to “use process sub-division by physical relationship” Delete the box “Are the market values ....”, which is not necessary. In any case one can apply the average values over the reporting period.</li> <li>• P. 55, L. 49ff Substitution Delete paragraph because covered by system expansion.</li> <li>• P. 56 “De facto closed loop recycling” this is new wording for existing ISO content (“inherent material properties are the same...”) – clarify that it is just a new term for an established practice.</li> <li>• P. 53 l.7: “recycling rates”: it needs to be clarified if, legal or real recycling rates are to be used.</li> </ul>
<p>9. Assessing Data Quality &amp; Uncertainty Analysis</p>	<ul style="list-style-type: none"> <li>• The proposed data quality approach is very academic. It requires a lot of effort without real added value.</li> <li>• Box 9-1: the review should not be undertaken by a company but a person as in the Critical Review Scheme of ISO 14040/44.</li> </ul>





Chapter/Section	Comments
	<ul style="list-style-type: none"> <li>• Section 9-2,p.60, table 9-1: The data quality indicators presented are based on the data quality section of the ISO standard for life cycle assessment (ISO 14044:2006) There should be a reference to ISO 14044 here, since this is the framework for all LCA studies and a well known document among LCA practitioners , which are addressed as one main target group of the standard.</li> <li>• Section 9-2,p.60, table 9-2: Four levels are overcomplicating the entire process of data quality identification. Three levels should be sufficient: (Good, fair and poor). The question of aggregation remains. This issue should be further investigated in the road testing.</li> <li>• Section 9-2,p60, table 9-2. There should be a reference to ISO 14044. The distinction between different levels as given in the table is arbitrary and not based on any further studies of different product groups. For instance, even data which is only 3 years old can be outdated, depending on the sector. The correctness of these rules of thumb may be investigated in the road testing.</li> <li>•</li> </ul>
10. Calculating GHG Emissions	<ul style="list-style-type: none"> <li>• 10.2.2 p68, l. 48: 1) should this be rather a requirement or just guidance? 2) is the purchase of renewable energy an purchased offset?</li> </ul>
11. Assurance	<ul style="list-style-type: none"> <li>• In this section, the established practice which is accepted by all stakeholders of the Critical Review according to ISO 14040/44 is not reflected. Key differences are: <ul style="list-style-type: none"> <li>○ It is done by persons, not organizations (more responsibility and credibility)</li> <li>○ It is not accredited or formalized (quality comes with the pressure on the organization to select credible reviewers.)</li> <li>○ It focuses on conclusions, not every number and is therefore more cost-efficient.</li> </ul> </li> <li>• An organization that already did a Critical Review according to ISO 14040 for a full LCA and just wants to report one result, GHG, based on GHG Protocoll, too – does not want to pay for another assurance.</li> <li>• Add: If a CR according to ISO 14040 has been done, it fulfills the requirements of the GHG Standard.</li> <li>• Add 14040 to the list of standards given on p. 70, l. 25.</li> <li>• Section 11.1, p. 70, l.22-27: There should be a link to the critical review part of ISO 14044. From a viewpoint of an LCA practitioner it is not acceptable that in this section no link is</li> </ul>



Chapter/Section	Comments
	<p>given to the most important standard of product LCA assessment. If there is lack of knowledge in the working group we strongly recommend opening the group for new members to incorporate that knowledge within that section.</p> <ul style="list-style-type: none"> <li>• Add “experts” to certification or assurance body making clear that qualified individuals can provide assurance as well.</li> <li>• P. 74, 46: add ISO 14040/44, ISO 14025.</li> <li>• 11.3.5: here again a new term “materiality threshold” is introduced for something that is well known as “cut-off-criteria”. Either change the name or at least explain that it is the same thing.</li> <li>• Chapter 11 (Assurance) is very detailed and seems to be written by lawyers. The term is better than “verification” which is evidently not possible for LCAs and similar methods. But also “assurance” has meanings (according to my dictionaries) that can hardly be applied to even carefully obtained results. The main meanings listed in the Oxford Dictionary are: “A positive declaration that a thing is true”, “A solemn promise or guarantee” and “Certainty”. The authors, again, seem not be completely convinced, as can be seen in formulations as (Page 70/37) “reasonable assurance” or “limited assurance”. This topic and the related one of certification should be discussed in the LCA community in depth. I personally see bureaucratic monsters looming around the corner.</li> </ul>
12. Reporting	<ul style="list-style-type: none"> <li>• 12.1 p. 82, 1.3: the requirement for public disclosure makes no sense for B2B application of the standard.</li> <li>• Add a disclaimer to the summary report: “This information can not be interpreted as an indicator of overall environmental performance.”</li> <li>• P 88 l. 18: again offsets should be clarified to include renewable energy certificates as well.</li> </ul>
Appendix A: Data Management Plan	<ul style="list-style-type: none"> <li>•</li> </ul>
Appendix B: Additional Guidance on Collecting and Calculating Data	<ul style="list-style-type: none"> <li>•</li> </ul>
Appendix E: Glossary	<ul style="list-style-type: none"> <li>• Reference definitions from ISO 14040/44.</li> <li>• Correct wrong definitions, e.g. on consequential approach, as given above.</li> </ul>
Any other general comments or feedback	<ul style="list-style-type: none"> <li>• Throughout the document many issues are based on ISO 14044 which however is not given as a reference in most cases. This should be added.</li> </ul>

