Response from Henk Harmsen

Question 1. Yes, a single global framework is necessary. Note that the choices that can be made within that framework are resulting in incomparable results. For example, otherwise comparable companies may choose different operational and organizational boundaries.

2. I do not see why there should be a primary focus on the shareholder rather than the stakeholder.

3. Both companies and stakeholders will always want to benchmark. This means a more sectoral approach, which in turn requires comparable results. This is currently not possible, see [1] above.

4. I miss the ISO 14064-1 principles of relevance, completeness, consistency, accuracy and transparency. All of them are however covered in some other form in the text. However I think that a climate change specific standard should prevail over an accounting standard in this respect. For example, the concept of accuracy in climate change recognizes the fact that GHG estimates are necessarily uncertain – much more uncertain than accountants recognize [or willing to recognize]. For example, how is an emission inventory of 10% related to a reduction target of 5%? Or a baseline year emission recalculation trigger of 5%? [Note the EU ETS policy on tiers for uncertainty].

5. The sample report is more extensive than many companies would bargain for. Verification of this report looks like an extensive exercise to me. Essentially, the proposal seems to be to have the answers of the CDP questionnaire included in the mainstream report; but what is the incentive for the company? It can merely refer to its answer to the CDP questionnaire and make that available on demand. Getting an ISO 14064-1 report included with some strategic analysis is already quite ambitious.

6. See above. The content is too extensive for many listed companies, and would therefore easily lead to boiler plate text. On the other hand, what is missing is the extent to which companies are involved in emission reduction projects [voluntary, JI,CDM]. The fact that Typico concentrates on eco friendly products and offsetting would suggest that it is either not willing to reduce emissions, or that it has exhausted possibilities to do so.

7. EU ETS has its own reporting template. The EU ETS requires more specific factors, which are missing in the Typico report. That report merely refers to “relevant factors”, which is unacceptable given the plethora of emission factors available [IPCC2006, custom factors, CORINAIR, GHG Protocol, UK Defra etc.. Also, uncertainty is missing.

8. The challenge is that performance indicator and performance measures are hard to compare. A company could set itself an easy target, for example by ignoring scope 3emissions, a low emission reduction in relation to the marginal abatement costs that it faces and a high baseline recalculation trigger. I could not see a meaningful indicator in the sample report. For example, Apple Computer has published its greenhouse gas emissions including product use. Dell and HP did not and report lower numbers. How can investors that are not necessarily knowledgeable about GHG inventories put this into perspective?

9. Collection of info would largely correspond with the effort involved in collecting CDP questionnaire information, however with much more involvement from other departments.

I guess some departments that have not much difficulties with CDP would balk when looking at the sample report of Typico.

10. Practical difficulties: the approach taken is one of accountancy [reference to IAS with ISO 14064 “encouraged”, verification opinion of an accountancy organization etc].

Looking at the Technical Working Group composition and the acknowledgements section I am not surprised about that. I realize that this is an unpopular thing to say, but accountants do not necessarily have the technical expertise to verify this sort of reports. Any look through the monitoring documents [EU ETS, ISO, GHG Protocol etc] will make clear that specialized expertise is required. I am therefore surprised by the absence of any reference to ISO 14065 Greenhouse gases — Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition . Without a serious approach to assurance carbon disclosure will bemarginalized.

11. A comment that I hesitate to make is that the Board, the Advisory Committee, the Technical Working Group and the people in the Acknowledgements are almost all Anglo Saxon. This is a concern if you aim at worldwide coverage. I'd try to involve the C hinese somehow, for example. More specific comment is included below.

About the standard - a well known problem of the GHG Protocol and the ISO 14064-1 that has been derived from it is that it leaves important decisions open to the user. So, although these documents are “standards” similar users can get completely different emission estimates by applying them. For example, similar organizations can choose operational control vs. financial control or to report scope 3 or not [and what it would include in scope 3 or not]. This is a real problem for investors trying to compare reports, and some decision is required. And not even all organizations are using these standards. Most of the organizations use it, but most of the emissions under CDP are using “other approaches” - meaning that the worlds' largest corporations are using a different approach. We do not know to what extent these approaches differ from ISO 14064-1 or the GHG Protocol, as there is nothing about it in the CDP questionnaire. The paragraph “comparability” is thus restrained to year-to-year emissions from the same organization, a missed opportunity. Guiding principles of ISO 14064-1 should apply – relevance, completeness, consistency, accuracy and transparency. Materiality is [ISO definition] “the concept that individual or an aggregate of errors, omissions and misrepresentations could affect the greenhouse gas assertion and could influence the intended users’ decisions”. Therefore materiality is by definition a concept for the verifier, not for the reporting organization. What is introduced as materiality here is a de minimis approach. See text on completeness in the GHG Protocol.

Regarding “Physical Risks from Climate Change”, this can easily digress into text of questionable quality. The sample report refers to floods and heating/cooling in 2009.Whereas the general trend is unquestionable, there is limited probability that you would see this signal through the meteorological noise in individual years. It would be an idea here to refer to the National Communications made by the Parties for the Secretariat of the UNFCCC. Enormous efforts are made to present accessible information on what climate change would mean for where you have your business, but it is hidden away on the UNFCCC website. At least the starting point for analysis would be reliable now. About the sample report A number of items listed under “contextual disclosures on GHG” is missing. The main text requires reporting of MWh [for scope 2], the GWP and their source; emission factors for scope 1; and uncertainty. About uncertainty: this is not trivial. If the uncertainty of the inventory is 10% and the reduction target is 5%, how would you know that the claimed

successful emission reduction was significant or not? Financial control – the approach chosen by Typico plc - means that leased assets under operating lease are not covered under scope 1 or 2. This is not trivial, as there are many organizations that have operating leases [offices, cars]. See IAS 17. Emissions from these assets should be covered under scope 3, but reporting of that category is not mandatory. The emissions can thus leak away. For example, Typico plc seems to have either no operating leases or has chosen not to report the emissions from these assets. [see www.ghgprotocol.org, "Categorizing GHG Emissions Associated with Leased Assets".

All emission factors from IPCC have not more than 3 significant digits. This means that the calculated emissions cannot have more than 3 significant digits either. Reporting 6731 ktCO2eq suggests an accuracy which is not there. Correct number is 6.73 Mt CO2eq.The global warming potentials [GWP] differ per IPCC assessment report, agreement among the Parties is to use the second assessment report figures. This is not specified in the sample report.

Double counting in sample report - The report mixes 2 concepts, those of emissions and emission reductions. First, scopes 1 to 3are added [gross emissions], and emission reductions are then subtracted in order to get net emissions. This leads to double counting. The use of renewable energy leads to lower scope 2 emissions and is therefore already accounted for. Subtracting the reduction leads to a double count; technically, the renewable energy is now treated as a sink, not as carbon neutral power. In other words, Typico plcs uggests that windmills remove CO2 from the atmosphere.[A similar problem occurs when an installation in the EU ETS would participate in JI. It cannot sell the emission reductions if it has already has the allowances – it would then sell the same amount twice, first as EAUs then as ERUs]. The GHG Protocol foresees this problem and requires that emission reductions are reported as "optional information". ISO 14064-1 has also an explicit instruction on this [para 5.2].

It now also becomes uncertain what the reduction in graph 1.5.2 of the sample report means. Is this a reduction vis-a-vis a business as usual scenario? Or are these emission reductions sought elsewhere? As an investor you would evaluate them differently. An emission reduction on site would probably mean both reduced carbon risk and cost savings too. Buying emission reductions elsewhere means that the site may have limited reduction opportunities, a risk factor. The double counting that occurs when adding scope 1, 2 and 3 are obvious. So, the figure "net emissions" in the report can contain multiple layers of double counting. These are emissions already reported by the utilities [scope 2, reported as scope 1 by the utility], those e.g. by the user of the product [scope 3, reported as scope 1 by user] and the carbon neutral power [reported as sink instead of zero].

About the independent assurance report I find it courageous of PwC to give a reasonable level of assurance. Typico must be a complex organization with nearly 9 Mt CO2eq/year emissions; a number of required items are missing from the report and the emissions are stated beyond the possible level of accuracy. Yet PwC confirms the numbers and goes as far as confirming that "All Scope 1 (direct GHG emissions)and Scope 2 (indirect GHG emissions) have been reported for operations within the organizational boundary" - they guarantee that every single GHG source is covered. This must be a costly verification, will organizations indeed cough up these costs? As a start, it would be maybe worthwhile to consider limited level of assurance based on agreed-upon procedures to start this operation.