Open and Free: Bringing Life Cycle Opportunity to All Markets

Gregory A. Norris, Sylvatica

- Presently, LCA data is mostly contained in databases of software which costs money and is only used by experts. There are a few cases where LCA data is published in the web (notably the US LCI database project, www.nrel.gov/lci) but these data are then only made usable by importing them into LCA software.
- Presently, LCA data reflects industry average data rather than brand/product-specific data, so that it is hard to use LCA information in selecting brands/products. An important exception is NIST's "BEES Please" system, in which suppliers can pay and send NIST their gate-level data; NIST in turn hires a consultant to perform and LCA, and the LCA information gets loaded into BEES.
- Presently, large companies (OEMs) have a difficult and costly time getting gate-level data from their suppliers, since such information is competition-sensitive, and since the economic benefits of sending the data to the OEM may not be clear.
- Presently, small companies cannot afford to get involved in doing LCAs – it is too costly in time, expertise, software, or consulting, with limited/unclear economic benefits.

But the present is becoming the future, today. So that:

1. LCA data are now published in the web, marked-up with standardized meta-data (data about data) so that algorithms can search the web, find the most appropriate data, extract it directly from the websites and use it in desktop computations within seconds. (Note: the web, marked-up with standardized and machine-readable meta-data, is referred to as the "semantic web.") This functionality was just developed and demonstrated in July 2006.
2. Companies can download a free tool which is tailored to the product(s) they make, and into which they enter gate-level data of the sort now sent to NIST in the BEES Please program. This tool uses the technology described in paragraph 1 above, in order to generate a LCA of the company's product(s). Companies can then optionally benchmark their products versus the sector average, and at their discretion, click-to-publish their LCA results in the semantic web, so that any other tools (including NIST's BEES tool) and existing Ecolabeling systems and environmental product declaration systems and green purchasing catalogs can now draw upon a wealth of new data. This functionality will become operational during September 2006.
3. OEMs can encourage their suppliers to use the system to publish cradle-to-gate LCA data in a day without divulging any confidential information. An added economic benefit to the suppliers is free advertising in the semantic web. OEMs can then click-to-use data from their suppliers, in calculating their own LCAs, *without* divulging the identities of their suppliers (also sometimes competition-sensitive information).
4. The system is being designed in a multi-lingual and free web-based platform so that *all* companies in the world can use it to access markets – promoting rural economic development, for example – and to report on the environmental – and social – attributes of their products and production processes. So that buyers can, in turn, increasingly drive sustainable development with all the buying that they/we do.

This system is being created for the world to use, for free, at www.earthster.org.

This presentation will describe the meta-data, the international data standards being used, the computational processes embodied in the open source software, the flow of information from desktop-to-web-to-desktop, and the implications of the functioning system for LCA, for green purchasing, and product design. A case study application will demonstrate the application of this technology to the design of green buildings.