Centre for ISA Information Sheet 8
ISO 14044 Environmental management – Life cycle assessment – Requirements and guidelines and ISO 14040 Environmental management – Life cycle assessment – Principles and framework

ISO 14044 addresses the environmental aspects and potential impacts of a product throughout its life cycle. It covers the methodological framework for LCA, reporting of your LCA and critical review of the LCA by experts or interested parties.

> *"LCA methodology is open to the inclusion of new scientific findings and improvements in the state-of-the-art of the technique".* (Item 4.3e of ISO 14040)

ISA's core business is improvements in state-of-the-art techniques for LCA and hence input into the continued development of ISO LCA standards[1]. The ISA methodology that underpins the BL[3] software and the Australian Government's online calculators[2] is therefore entirely compatible with ISO 14044.

Because of ISA's improvements in LCA techniques some of the processes necessary for ISO compliance can now be addressed within the new LCA methodology. This makes redundant some of the time consuming work that was previously necessary for example to determine a boundary for your LCA. The ISA methodology itself takes care of the boundary, fully accounting for all inputs rather than only those that cumulatively contribute more than a defined amount to the total. In ISA's methodology there is no need to agree on a limit and define a system boundary because every item of the economy is tracked along an infinite supply chain. This greatly simplifies the life cycle assessment process for organisations because time and energy do not have to be spent on defining system boundaries and justifying the criteria used to select them (see ISO 14044: 4.2.3.3 System boundary; 4.3.3.4 Refining the system boundary; 4.4.1b; and 4.5.3.4c Consistency check).

Using the ISA methodology it is not necessary to describe each unit process as part of the data collection process. The methodology and BL3 software require two sets of information: your organisation's financial accounts and your direct onsite impacts such as water use, land use, emissions and employment. Each is a discrete and distinct data set and once entered will not be requested (and therefore entered) a second time so is not likely to be counted twice (see ISO 14044 4.3.2.1: To decrease the risk of misunderstandings (e.g. resulting in double counting when validating or reusing the data collected), a description of each unit process shall be recorded).

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1 For example: Suh, S., **Lenzen, M.**, Treloar, G.J., Hondo, H., Horvath, A., Huppes, G., Jolliet, O., Klann, U., Krewitt, W., Moriguchi, Y., Munksgaard, J., and Norris, G., System boundary selection in life-cycle inventories using hybrid approaches, Environmental Science & Technology 38 (3), 657–664 (2004).

2 http://cc-calc.greenhouse.gov.au/Content/Home.aspx

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Throughout ISO 14044 the term *allocation* occurs. In the ISO Standard *allocation* refers to the allocation of processes and resources to the production of the particular product under analysis (i.e. separating it out from other products that may share some production processes etc). It is part of boundary drawing and hence not an issue for the ISA methodology. This is because the user explicitly delineates the object under investigation by entering financial and physical data. The input-output database underlying BL[3] takes care of the allocation of all upstream processes.

The meaning of the word *allocate* in ISO terms is different from ISA's use of the term in such phrases as *allocating impacts along the supply chain* which refers to the apportioning of responsibility for impacts along a whole supply chain. Apportioning emissions, or any other impact, along the supply chain has only recently been consistently and quantitatively conceptualised by ISA researchers[3]. Allocating each impact – for example on a 50%-50% basis between the supplier and the recipient – removes double-counting.

The systematic sharing of responsibility, for say, greenhouse gas emissions or employment, along a supply chain is different from making a decision about exactly what resources or processes should be allocated to the production of a particular product as part of the LCA of that product. The former is about assigning responsibility, and the latter is about setting boundaries.

[3] Gallego, B. and M. Lenzen (2005). "A consistent input-output formulation of shared consumer and producer responsibility." Economic Systems Research 17(4): 365–391.
Lenzen, M., J. Murray, et al. (2007). "Shared producer and consumer responsibility – theory and practice." Ecological Economics **61**(1): 27–42.