

LCA Activities in Italy

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Environmental consciousness is continuously gaining ground in Italy, especially after the promulgation of the ISO 14000 series on the Environmental Management Systems (EMS) and other initiatives like the new national plan on waste management ("D.L. Ronchi") and the environmentally designed requirements for some engineering constructions where LCA is specifically required.

For the medium sized industries, the use of LCA is now generally accepted as a valid tool to perform several tasks. Even if it generally means a considerable cost which does not immediately result in a direct revenue, it is recognised to be important for characterising current operating practices and to address any improved action to reduce energy consumption and pollution to the environment.

At present, only the major industrial companies are officially using LCA Methodology in Italy: among the others, FIAT for car production, ABB in the electromechanical sector, TELECOM and ITALTEL for telecommunications and some other industries or technical trade associations in the packaging, chemical, paper, waste management, construction, electronic and micro-electronic fields.

This, of course, is due to the high investment costs needed to create an internal specific task. All of the above mentioned industries, in fact, generally entrusted the LCA activities to their research centers with the help of LCA consultants.

After the creation of an internal synergetic strategy for LCA application, with the specific objective to study the LCA Methodology in depth, the companies update an internal database to execute first case studies and, more generally, to perform LCAs at the early stages of the design processes. Systematic data collection is now performed for all materials and processes of interest for each industrial sector.

Moreover, companies like ABB which produce systems with an extended life-time (a product life from 20 to 30 years), believe that the LCA approach should be applied methodically in order for a correct EMS to function successfully. Most of the above mentioned companies, in fact, use suppliers to produce semi-worked components and these suppliers are frequently customers of sub-suppliers. An appropriate environmental management of the supply system is therefore pursued in order to check, drive and improve the performance of each stage of the production chains and to make the overall system more efficient. In practice, what happened with the Total Quality Management System is now occurring with the EMS.

Apart from industry, there are many other initiatives which are taking place in Italy in the LCA field. At the Polytechnic University of Turin, the local LCA research group has been involved

in LCA activities since 1993: after the analysis of different aspects of the automotive, mining, waste management and other primary production sectors, an EC project has begun for the application of the methodology to some Chinese industrial processes ("Eco-Compatibility of Industrial Processes for the Production of Primary Goods"). At the Polytechnic University of Milan, an LCA research and service center together with an ANPA (National Agency for Environmental Protection) is presently under construction. The Ambiente Italian Research Organisation has been performing LCA activities in many sectors for a number of years and has been pursuing a EC project to investigate the LCA activities in our country over the last two years. Other Universities, like Pisa, Florence, Bari and Palermo are now looking to the LCA Methodology as an innovative research field and different initiatives provide evidence for the great interest concerned with this subject.

Finally, the fact that some big Consulting Companies like Boustead and Ecobilan have opened up their offices in Italy as well seems to indicate that a development of LCA activities is to be expected here.

In conclusion, even if the volume of activities related to LCA in Italy is not presently as large as in other countries, a kickoff to LCA diffusion seems to have been executed and all the research activities to improve this methodology as an operative tool indicate how this interest is proceeding.

The main limitation to the expansion of LCA activities in the small and medium companies is still due to the important investment needed to start such activity, especially if compared with the actual requests, or technical specifications, of the customers.

A solution that is sometimes proposed to improve the LCA diffusion in Italy is to drive the interest of the companies to direct and indirect cost reduction according to the promotion of their eco-efficiency. A method to do this is through the investigation of the energy factor: Italy is strongly fossil fuel dependent (more than 80% of the total energy need) and energy represents a considerable internal cost factor. A first approach with energy analysis can therefore produce benefits both for the enterprises' economic balance and for the environmental company actions, consequently promoting the environmental consciousness necessary later to establish LCA activities.

A good contribution to this process of LCA culture diffusion in Italy, at least in the electromechanical community, is coming from ENEL, the Italian agency for electricity production and delivery. ENEL stated that they have frequently been performing eco-compatibility analyses on materials and systems and that environmental requirements will continue to be included more and more in their technical specifications in the near future.