GENERAL ACTIVITY OF LIFE CYCLE ASSESSMENT IN MALAYSIA

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INTRODUCTION

Ever since the emergence of the ISO 14040 series on life cycle assessment (LCA), the only prominent activity related to these standards in Malaysia has been their legislative adoption as national standards. Beginning with 1998 and up to 2001, ISO 14040, 14041, 14042 and 14043 were all adopted as Malaysian standards.

The use of these standards that is, the use of LCA as a tool for environmental management is minimal in the present time. LCA case studies are conducted by a number of universities in the country as students’ final year or post graduate projects. LCA, although an internationally accepted tool for product improvement in relation to protecting the environment has never been used by any of the manufacturing, service or agro-industry sectors in the country.

The lack of awareness of LCA is reflected in a questionnaire survey initiated by the Technical Committee of LCA in conjunction also with the doctoral thesis of one of its members who developed the document where practically all of the respondents (~ 40 % of the 150 companies responded) showed nil to minimal knowledge of LCA.

In view of the current limited LCA activities in Malaysia, this paper will critically examine some factors that pertain to the lack of advancement of LCA, and at the same time highlight a number of other environmental advancements achieved by the country.

PERCEPTION OF THE INDUSTRY TOWARDS ENVIRONMENTAL ISSUES

In general the industrial sectors of Malaysia adopt environmental management systems, predominantly pollution control or treatment processes to comply with regulatory requirements prescribed under the Environmental Quality Act 1974. The penalties for contravening the regulations is severe and can include jail sentence aside from the monetary fines that can amount to a maximum of ½ million Malaysian dollars.

Due to stringent enforcement and the bad media publicity for culprit companies, many have installed facilities to ensure their air or water emissions to the environment are in compliance with regulations.
Up to 1995, it can be said that the interest of the companies in respect of environmental issues has been dominated largely by regulatory compulsion. In that year, SIRIM launched the Environmental Management System (EMS) certification scheme in line with ISO 14001 in Malaysia. The possibility of certification to an EMS for the companies marked a turning point in the outlook of environmental issues among the industries. Protecting the environment from negative impact of industrial activities soon became an important aspect of the ‘green image’ that multi-nationals and export oriented companies had to portray to maintain their competitive edge in the international market.

From the launch of the EMS certification system in 1996 to August 2002, SIRIM has certified 231 companies to ISO 14001. Of the certified companies, ~46% comes from the electrical and electronic manufacturing sector, ~14% from the engineering sector, ~32% from the scientific sector and ~7% from the servicing or non-manufacturing sector. Most of the companies that are certified are multi-nationals or export-oriented business where certification to EMS is a mandatory or subtle requirement by their overseas client.

At this juncture, it can be said the industries in Malaysia are better versed with the ISO 14001 standard on environmental management system than all the other ISO 14000 series of environmental management standards because of clientele’s requirement, particularly, the western countries. Since certification to ISO 14001 only requires evidence that the company has an environmental management system, little attention is paid to the environmental impact of the finished product or the raw materials used. This could be one of the main reasons why LCA has not caught up with the industries in this country.

**Potential for Development of LCA**

A general description of the perception of Malaysian industries toward environmental management tools whether pertaining directly to management systems, application tools or technologies is one of use when ‘forced to’ by law or their clients. The fact that LCA has not been used implies that there is yet no pressure on the industries to apply this to maintain their presence in the market.

The scenario may soon change. Of late, some industries in Malaysia, in particular the electrical and electronic sector had been requested by their European clients to provide test reports indicative of the absence of environmental hazardous substances in their products. There is also an increasing trend for some overseas buyers to request for evidence of the ‘environmental friendliness’ of imported products. The request to provide such evidence is new to the Malaysian industries, in particular, the local small and medium sized companies.

With the mounting request for evidence of the ‘environmental friendliness’ of products exported to developed countries, the use of environmental management tools such as LCA is expected to gain prominence and eventually be established in the country.
The absence of LCA activities may also be due to the absence of an ecolabelling system in Malaysia. LCA has always been related to Type III environmental labelling system set out in the draft ISO 14025 standard document. The development of ecolabel systems is therefore a potential driving force to the progress of LCA.

**Malaysia’s Participation in Global Environmental Initiatives**

Although LCA activities are not yet conspicuous, it cannot be said that Malaysia has no environmental conservation and protection programmes. In fact, Malaysia is very active in her participation of many international environmental negotiations. For example the country is committed to fulfill the United Nations Framework Convention on Climate Change (UNFCCC) and the subsequent emergence of the Kyoto Protocol. Other international initiatives that Malaysia is committed to include the Montreal Protocol for Reduction of Ozone Depletion Substances, Rotterdam Convention on Persistent Organic Pollutants, Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal and the Ramsay Convention on Biological Diversity.

Malaysia in fact participates actively in the activities of the ISO TC 207 Task Force on Climate Change and has been the proponent for a new work item on the standardization of Carbon Sequestration Accounting and Verification. At the recent 10th Meeting of ISO/TC 207 Meeting at Johannesburg, the working group WG5 on Climate Change endorsed the scope of the working group as to develop international standard(s) for measuring, reporting and verifying greenhouse emissions (GHE) at entity- and project-levels. The Malaysian representative is the convenor for the working group.

Although climate change is a global environmental concern rather than a local environmental issue, Malaysia’s initiation to propose the new work item is related to the fact that she is endowed with abundance of vegetation that can contribute to carbon sequestration that is widely accepted as a means for reducing greenhouse gas emissions. Standardisation of measurement and reporting of carbon sequestration is vital to the future carbon credits trading for compliance with emission reduction target established under the Kyoto Protocol.

The largest energy supply company in Malaysia, Tenaga Nasional Berhad (TNB) carries out research projects related to carbon sequestration in a effort to offset greenhouse gases produced from fossil fuel-fired power plants. As for the development of a national greenhouse gas inventory, the Malaysia Energy Centre under the Ministry of Energy, Communication and Multimedia adopts the methodology developed under the International Panel on Climate Change (IPCC).

**Conclusion**

The commitment of the government of Malaysia towards sustainable environment and resource management has actually intensified in recent years. Legislative and institutional mechanisms have been strengthened with emphasis on cleaner technologies and pollution.
abatement strategies. The industries on the other hand has been implementing various environmental protection processes to ensure compliance to regulatory requirement, and those who are dependent on the export market have incorporated certified EMS into their business activities. It would seem Malaysia’s current export market has yet to make demands on the local industries to provide data such as life cycle inventory data of their products. Hence the industries have been slow to respond or are even aware of the applications of environmental management tools such as LCA. The development and realisation of other environmental management standards such as environmental labelling systems can propel the expansion of LCA activities in the country.

Reference

1. Private communication with Mrs. Sumiani Yusoff, Civil Engineering Department, University of Malaya.