

CHAPTER 1

INTRODUCTION

1.1 Introduction

Since the 1990s, a new set of technological frontiers has been established, with projected advances in electronics, robotics, biotechnology and superconductors. Populations continue to grow and becoming more urbanised due to economic pressures, growth in communication access, tourism and the general globalisation of economies and societies. However, as significant as these developments may become, few will probably surpass the importance of changes in the world's natural environments. These trends will continue to necessitate changes in human relationships with those ecosystems, especially in businesses' interactions with air, water, land and other living species.

Environmental awareness is ever increasing. Environmental management continues to be a global concern for industry, government, and society as a whole. The consequences of how organisations provide activities, products and services to the world's burgeoning populations are critical. The human population is becoming more aware of its physical environment and how its actions affect the very ecological systems they depend on for their future. Since the Rio Earth Summit in 1992, the concept of sustainable development has been unfolding throughout the world. Businesses have recognized that there should be a common goal, not a conflict, between economic development and environmental protection, both now and for future generations (Camarota, 1999). Organisations of all types have been, however,

struggling to find a set of practical tools to implement strategies supporting this concept. The ISO 14001 standard provides just such a set of tools.

Environmental Management Systems (EMS), such as ISO 14001, provides a framework for organisations that wish to effectively manage their environmental affairs. Implementing an EMS that conforms to the ISO 14001 standard may help businesses integrate environmental values into their operations. ISO 14001 is a voluntary standard that identifies the core elements of an EMS necessary for an organization to achieve its environmental goals and effectively manage its impacts on the environment. The ultimate objective of the standard is to integrate EMS with an organization's overall business processes and systems so that environmental considerations are a routine factor in its business decisions. The ISO 14001 EMS standard has quickly become recognized as the benchmark of "good" industry environmental management practices. Although it requires policy commitments to legal compliance, prevention of pollution and continual system improvement, it is essentially a process standard that provides an organization with a disciplined framework within which to achieve its environmental goals and objectives and continuously improve its environmental performance. EMS are thus a dynamic process, which will lead organisations step by step along the path to sustainable development (Honkasalo, 1999).

As worldwide interest in environmental affairs is increasing, environmentally responsible companies are encouraged to align their EMS, with the requirements of ISO 14001 and to pursue registration under this international standard. As of September 1998, about 188 organizations/sites in the United States have obtained third-party registration. In Malaysia, until today it was reported that more than 250 multinational industries and small and medium industries have been certified with ISO 14001. Globally, 30,303 ISO 14001 registrations have been issued as of June 2001.

Examples of major corporations with registrations include Ford, IBM, 3M, Lucent Technologies, and Sony, to name a few. One of the benefits of ISO 14001 implementation is, assuring access to foreign markets such as Europe and the Pacific Rim, where most major corporations are obtaining either Eco-Management and Auditing Scheme (EMAS) or ISO 14001 registration. EMAS is the European Union's equivalent to ISO 14001 with a number of additional performances related requirements pertaining to such matters as auditing and public reporting (Smith, 2000; Peglau, 2001).

1.2 Research objectives

The ISO 14001 EMS standard requires the organisation to identify the environmental aspects and impacts that arise from its activities, products and services, and determine which aspects could have significant impacts on the environment. Determination of significant impacts is very much dependent on the methodology being developed. Each company uses a method developed for identifying significant environmental impacts that best suits its needs. For most businesses, it is critical to choose a method that is simple and easy to understand. The method to be used must be clearly documented. This documentation is needed for the ISO 14001 audit, as well as for review in setting future objectives. Nevertheless, this has not been an easy task for many organisations that are seeking for ISO 14001 certification. The problems that they encountered with are setting appropriate criteria and prioritising the significant impacts. Consequently, the identified significant impact may not reflect the real urgency of the situation. This will eventually confuse the organisation and weaken the effectiveness of the EMS for continual improvement. Furthermore, there is no standard method to be used in identifying the significant impacts.

In developing a methodology for determination of significant impacts, an organisation must possess its own definition of significance. This requires the organisation to develop a set of criteria that the facility considers significant. These criteria will be dependent on organisational culture, aspirations and activities.

For these reasons, this study aims to assess the methodologies for determination of significant impacts. The specific objectives of this study are as follows:-

- To identify significant impacts in an electrical/electronic company by using three methods which have been developed;
- To compare which method is most suitable for this selected case study;
- To analyse and identify criteria used in setting up a method; and
- To select the best method that can be used as a guide in determining the significant impacts.