# Chapter 1
# Introduction

Industry is a major source of water pollution; therefore, the wastewater treatment plant is the essential part of waste management. The industrial wastewater stream is interested in both environmentally acceptable and cost-effective. Especially manufacturers concerned with high water consumption. The electronic industry, widely regarded as a clean industry, has the most wastewater problems. However, for decades, electronic manufacturing is the leading sector of industrial growth and economic dynamics around the world (Erixon, M., 1999).

As the implementation of environmental management systems (EMS) has increased the number of the industries and manufactories to gain the environmental aspects control in their production. Industrials are becoming interested in environmental consequences of their operations in the cost of disposal, legal, regulatory incentives and public demands (LaGrega, M.D. et al., 1994). So the growing awareness of product-related environmental issue has focused on the requirement of generally accepted methods to study the environmental impacts of products throughout their entire life. According to cradle-to-grave concept of hazardous wastes regulation and associated liabilities, it causes all industries develop means and measures for reducing hazardous waste generation (Sven-Olof, R. 1992).

Life cycle assessment (LCA) is an efficiency environmental management tool, which identifies all resources used and waste generated to all environmental components (air, water and soil) throughout the life cycle of a specific material, product or service (SETAC). The procedure for doing an LCA includes goal and scope definition, inventory analysis, impact assessment and interpretation. It can be used in a variety of ways ranging from a conceptual thought process for supporting decisions to help a company identify product development and improvement opportunities, strategic planning, public policy making and marketing.

The purpose of this LCA represents to be a potentially useful and powerful tool to identify and maximize the environmental benefits of waste minimization of an electronic products wastewater treatment plant. Using LCA methodology in waste management is an obvious choice for industries. Sometimes it can be argued that examination of one phase of the life cycle may lead to wrong conclusions, but waste handling can actually be seen as a production process. However LCA can in this connection be used to prioritize actions and also to choose the best option(s) from an environmental viewpoint (Cascio, J., 1996).

### 1.1 Objectives

To study LCA working process for using evaluation of electronic products wastewater treatment plant and apply waste minimization.

### 1.2 Scope of the Study

The scope of this study was limited to the wastewater treatment plant of electronics product, which factory is located in Northern Region Industrial Estate, Lampoon province, Thailand. The study was conducted by using LCA concept and evaluated life cycle impact was evaluated by Environmental Priority System (EPS). Scope of this study was focused on the operation phase in waste treatment process excluding phase of construction and demolition, which involved calculation of emissions to the environment from the consumption of raw materials, electricity generation, waste treatment processing and waste disposal. The environmental impact potentials from the assessment were improved basically on the framework of waste minimization and rechecked with Environmental Load Unit (ELU) reduction of modified LCA.