

# Chapter 1

## Introduction

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## 1. Introduction

Recent economic growth in Asian region is remarkable as compared to other regions. This economic growth leads to the improvement of the quality of life. One of the key developments is improved transportation such as motor cycle, car and commercial vehicles. However, increased personalized transport leads to rapid and uncontrolled growth of vehicles. This eventually results in adverse impacts on air quality, energy security and traffic accidents. This also contributes to global warming as it has already become an important issue in developing countries. Air quality improvement and energy security are more important priorities than traffic accident and global warming at the first step of the motorization.

Measures to improve the air quality include automobiles with latest and advanced technology, which are relatively much cleaner on the road. However, it is often difficult to introduce them. The reasons are high cost of the latest automobiles, insufficient infrastructure such as car maintenance system, supply of reliable spare parts and optimum fuel quality, which must correspond to the level of emission regulations and vehicle technology. There are many type of vehicles in the market and it needs much time to switch to the latest model. In general, it needs about ten years to exchange to the latest one and therefore this option can not be considered as an immediate solution for "Sustainable Automobile Society".

The "Mobility 2030" published by the World Business Council for Sustainable Development (WBCSD) reported that two-stroke engines, widely used for two- and three-wheelers in developing countries, are likely to disappear over the course of the next decade, to be replaced by more efficient, cleaner four-stroke engines. For example, a moppet equipped with 50 CC two stroke cycle spark ignition engine can emit up to hundred times more HC emissions of latest car with 2000 CC displacement of spark ignition engine. Automobiles and light-duty trucks, catalytic converter-equipped motorized two- and three-wheelers will require unleaded and low sulfur fuel, raising issues of affordability and correct fuel use as well as vehicle maintenance. In the developed world these challenges seem surmountable. The prognosis is much more uncertain in developing countries and therefore an important issue for Asian region.

The member countries of this WG are consisted of developed and developing countries, so that suitable collaboration between working members is possible to discuss the issues for improving air quality in Asian big cities. This is a purpose of this WG, and in the first step of 2009 project, it is decided to assess actual situation on environment and energy issues, in order to achieve this objective. At the same time, optimum fuel quality standard and emission regulations are needed to be integrated in the Asian region. Based on these actual conditions of each area, countermeasure should be introduced in the second step. This research project will contribute to not only economic development, but also fundamental development for regional integration. This is clearly in line with the mandate of ERIA to "support ASEAN's endeavor to build the ASEAN Economic Community and support its role as the driver of the wider economic integration." [The Statement on the Establishment of ERIA, June 3, 2008].