Chapter 1

Introduction

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Chapter 1
Introduction

Along with the rapid economic growth in the East Asia Summit (EAS) countries comes the formation of new industrial and commercial facilities as well as energy supply infrastructure. The demand for energy supply is also expected to rise well into the future. Therefore, concrete plans to control energy consumption is required for the sustainable development of EAS economies.

Experiences of developed countries show that improving the efficiency on the energy consumption side does not come about by promoting the use of highly efficient energy equipment alone. Rather, energy efficiency is also attained when there is an institutional framework for efficient energy use (such as the Energy Conservation Law) at the initial stage of capital accumulation and development of industrial/commercial facilities.

The oil crisis in the 1970s and the increase in climate change issues since the 1990s led developed countries to devise various political and technical approaches for energy management. In particular, the advancement of information and communication technologies since 2000s has greatly helped to develop the energy management system (EMS), which is now widely called xEMS[1] to refer to the various types of EMS technologies available. Furthermore, efforts to relate the load management functions of EMS with the Demand Response[2] concept have been accelerated.

As changes in industrial structure and in energy consumption are expected along economic growth in the EAS countries, it is worthwhile to understand the potential advances in the EMS that meet the specific needs of each country in the region. This study, a project of the Economic Research Institute for ASEAN and East Asia, identifies the common policy challenges to the advancement of EMS in the EAS region and is expected to contribute to the region's sustainable economic growth.

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1 Collective term for HEMS (Home Energy Management System), BEMS (Building Energy Management System), Factory Energy Management System, Community Energy Management System, etc.

2 The mechanism to allow end-use customers to reduce electricity loads at the instruction of electric power utilities during the hours of peak demand and get paid for the reduced loads.

1.1 Objective

This study aims to analyse the potential to deploy EMS technologies in the EAS region and to propose, upon identifying the policy challenges that are common in the region, policy actions that can promote EMS.

1.2 Scope of Works

The study focused on analysing the needs of EMS technologies and understanding the current state of EMS through case studies.

(1) *Analysing the Needs of EMS Technologies in the EAS Region*

Given the global trend in EMS and its technological prospects, this study identified the xEMS technologies applicable in the EAS region and analysed the viability of implementing these technologies in each EAS country.

(2) *Understanding the Current State of EMS through Case Studies*

Case studies on the implementation of EMS for office buildings—particularly called the Building Energy Management System (BEMS)—were conducted to determine the system's viability and challenges.