

# ASEAN

# Energy Demand

## Trends and Structural Change

Ang Beng Wah



**ISEAS**

INSTITUTE OF SOUTHEAST ASIAN STUDIES

# **ASEAN**

# **Energy Demand**

## **Trends and Structural Change**

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# Preface

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Energy demand is one of the most difficult areas to study on energy in developing countries because of the paucity of good data. It is, therefore, not surprising that our current understanding of energy use in developing countries is fairly limited compared to that for the industrialized world. Yet knowledge of the structure and the mechanisms of change in energy use is crucial to energy planning and policy formulation. In particular, it assists planners and policy makers in assessing future energy requirements, fuel substitution, and policies for energy production, use and conservation.

As a contribution to energy demand studies in developing countries, this book deals with how energy has been used in five ASEAN countries, namely, Indonesia, Malaysia, the Philippines, Singapore and Thailand. It concentrates on four major aspects of energy use: trends in commercial energy consumption, energy demand and economic growth, non-commercial energy use, and energy consumption by end-use. The analysis is based on energy data collected from sources which until now are highly scattered and uncoordinated. One main objective is to provide a description of the changes in the structure of energy demand that accompany the growth of these economies and to analyse their interactions. Another objective is to make inter-country comparisons to identify systematic differences in energy use. By accounting energy demand in a harmonized manner, this book is able to provide a consistent picture of the mechanisms of change in energy use in these countries.

The main body of this work was completed in 1984 at the Institute of Southeast Asian Studies (ISEAS) but much of the energy data was collected and analysed between 1977 and 1983 while I was with the Cambridge Energy Research Group (CERG) in the Cavendish Laboratory of Cambridge University. I am indebted to several individuals who have contributed their time or sources of information, without whom this book could not have been completed in its present form. I wish to thank Richard Eden and Richard Bending of CERG, Joe Stanislaw of Cambridge (USA) Energy Research Associates, Sir Austin Robinson of Cambridge University, Gareth Price, Alan Clarke and Hans DuMouline (formerly) of Shell International, John Mitchell of British Petroleum, and William Humphrey and Irfan ul Haque of the World Bank. I am grateful to ISEAS for providing me with financial support and to the Director, Kernial Singh Sandhu, for his kind assistance at all times. My thanks should also go to Agustin

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The study relies heavily on official data, both published and unpublished, and unpublished data kindly provided by several energy industries. I am indebted to Shell International and British Petroleum and their subsidiaries in the ASEAN region, ESCAP of the United Nations, the World Energy Conference, the National Electricity Board of Malaysia, Petronas, the National Energy Administration of Thailand, the Public Utilities Board of Singapore, and the Ministry of Energy of the Philippines.

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Ang Beng Wah