

Reproduced from *China and ASEAN: Energy Security, Cooperation and Competition* (Singapore: ISEAS—Yusof Ishak Institute, 2015). This version was obtained electronically direct from the publisher on condition that copyright is not infringed. No part of this publication may be reproduced without the prior permission of ISEAS—Yusof Ishak Institute. Individual articles are available at <<http://bookshop.iseas.edu.sg>>

CHINA AND ASEAN

ISEAS–Yusof Ishak Institute (formerly the Institute of Southeast Asian Studies) was established as an autonomous organization in 1968. It is a regional centre dedicated to the study of socio-political, security and economic trends and developments in Southeast Asia and its wider geostrategic and economic environment. The Institute’s research programmes are the Regional Economic Studies (RES, including ASEAN and APEC), Regional Strategic and Political Studies (RSPS), and Regional Social and Cultural Studies (RSCS).

ISEAS Publishing, an established academic press, has issued more than 2,000 books and journals. It is the largest scholarly publisher of research about Southeast Asia from within the region. ISEAS Publishing works with many other academic and trade publishers and distributors to disseminate important research and analyses from and about Southeast Asia to the rest of the world.

CHINA AND ASEAN

❖ Energy Security, Cooperation and Competition ❖

ZHAO HONG

ISEAS YUSOF ISHAK
INSTITUTE

First published in Singapore in 2015 by
ISEAS Publishing
30 Heng Mui Keng Terrace
Singapore 119614

E-mail: publish@iseas.edu.sg • *Website:* bookshop.iseas.edu.sg

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the ISEAS–Yusof Ishak Institute.

© 2015 ISEAS–Yusof Ishak Institute, Singapore

The responsibility for facts and opinions in this publication rests exclusively with the author and his interpretation do not necessarily reflect the views or the policy of the publisher or its supporters.

ISEAS Library Cataloguing-in-Publication Data

Zhao, Hong.

China and ASEAN : Energy Security, Cooperation and Competition.

1. Energy policy—China.
 2. Energy policy—Southeast Asia.
 3. Energy consumption—China.
 4. Energy consumption—Southeast Asia.
 5. China—Foreign relations—Southeast Asia.
 6. Southeast Asia—Foreign relations—China.
 7. China—Foreign economic relations—Southeast Asia.
 8. Southeast Asia—Foreign economic relations—China.
 9. South China Sea—International status.
- I. Title.

HD9502 C52Z631 2015

ISBN 978-981-4695-25-1 (soft cover)

ISBN 978-981-4695-26-8 (E-book PDF)

Typeset by International Typesetters Pte Ltd
Printed in Singapore by Markono Print Media Pte Ltd

CONTENTS

<i>List of Tables and Figures</i>	vii
<i>List of Abbreviations</i>	xi
<i>Acknowledgements</i>	xiii
1. Introduction: China, ASEAN, and the New Global Energy Order	1
China's Rise and Southeast Asia	1
ASEAN's Rise in the Global Economy	6
New Global Energy Order	9
Debates on Energy Resource Cooperation and Competition	12
Different Views on China's Energy Quest Strategy	18
2. Economic Growth and Energy Security	24
Economic Growth and Energy Demand	24
Energy Security Concerns of China and ASEAN	29
Climate Security	42
Rethinking of China's and ASEAN Countries' Resource-Intensive Growth Models	49
Responses to Energy Security Challenges	59
3. China's Energy Quest in Southeast Asia	77
China's Energy Diversification Strategy	77
Opportunities for Southeast Asia	89
China's Resource Diplomacy in Southeast Asia	94
China's FDI and Energy Cooperation	98
From Cooperation to Conflicts?	105

4. Case Study (1): Myanmar	112
Global Energy Resource Nationalism	112
China's Energy Development in Myanmar	115
Can Energy Cooperation Strengthen China–Myanmar Relations?	120
Japan and India as Important Players	123
Conclusion	135
5. Case Study (2): Indonesia	142
Overview of Energy Sectors in Indonesia	142
Political and Economic Cooperation	147
Sino–Indonesian Energy Resource Ties	149
Sino–Indonesian Energy Ties Extending to a Broader Bilateral Relationship?	162
Conclusion	164
6. Energy Resource Competition and the South China Sea Disputes	168
Maritime Energy Resources and the “Sovereignty Dilemma”	168
Energy Resource Rivalry in the South China Sea	170
Negative Impacts of the South China Sea Disputes	180
“Joint Development” as a Way for Reducing Tensions and Enhancing Stability?	188
Conclusion	192
7. Conclusion	202
Cooperation or Conflicts?	202
Working Together for a New World Energy Order	206
Working Together for a New Regional Order	209
<i>Index</i>	215
<i>About the Author</i>	229

LIST OF TABLES AND FIGURES

Tables

1.1	Top Five ASEAN Trade Partners (US\$ million; %)	4
2.1	Primary Energy Demand in China and ASEAN (Mtoe)	28
2.2	CO ₂ Emissions from the Consumption of Energy (million metric tons; %)	43
2.3	Carbon Intensity (metric tons of CO ₂ per 1,000 US dollar GDP)	44
2.4	Electricity Production Sources of China and ASEAN Countries, 2009 (%)	46
2.5	CO ₂ Emissions by Sectors (% of total fuel combustion)	48
2.6	GDP per unit of Energy Use (constant 2005 PPP US\$ per kilogramme of oil equivalent)	50
2.7	Exports as a Percentage of GDP (%)	56
3.1	Structure of China's Outward FDI Stock	83
3.2	Proven Reserves of Oil and Gas in Selected ASEAN Countries, at end 2012	91
3.3	Fossil Fuel Net Trade by ASEAN Countries	93

3.4	ASEAN's Crude Oil Export to China (10,000 tons)	95
3.5	Chinese OFDI in ASEAN (US\$ million)	102
5.1	Contribution of Energy Sectors to GDP (Rp\$ billion)	144
5.2	Contribution of Energy and Mineral Resources to the State Revenue (Rp\$ billion)	145
5.3	Growth of Oil, Gas, Coal Production and Consumption in Indonesia (%)	146
5.4	FDI Inflows to Indonesian Mining Sector (US\$ million)	151
5.5	Share of Mineral Fuels, Oils and Products of Their Distillation (HS:27): Export from Indonesia to Major Countries	152
5.6	Exports of Selected Mineral Products (US\$ million)	154
5.7	Contribution of Energy Sector to Export (US\$ million)	157
5.8	China's Trade Volume with ASEAN-5 (US\$100 million)	159
6.1	CNOOC's Oil and Gas Production in Adjacent Waters	173
Figures		
2.1	GDP Per Capita in Selected Countries	26
2.2	Top Ten Net Oil Importers, 2013 (million barrels per day)	31
2.3	Oil Import Dependence, China and ASEAN (% of total oil consumption)	32
2.4	China's Crude Oil Imports by Source	33
2.5	ASEAN's Oil Balance	34

2.6	ASEAN's Crude Oil Imports by Source	35
2.7	China's LNG Import Sources, 2011	37
2.8	ASEAN's Gas Balance	38
2.9	ASEAN Energy Supply by Source (Mtoe)	47
3.1	Shares of China's Overseas Equity Oil Production, 2010	81
3.2	World FDI Inflows to ASEAN and China (US\$ million)	100
3.3	Distribution of China's FDI in Southeast Asia, 2012	101
5.1	Commodity Structures of Indonesia's Exports to China, 2013	160
5.2	Commodity Structures of China's Exports to Indonesia, 2013	161

LIST OF ABBREVIATIONS

ACE	ASEAN Center for Energy
ACIA	ASEAN Comprehensive Investment Agreement
AEMI	ASEAN Energy Market Integration
AIA	ASEAN Investment Area
APAEC	ASEAN Plans of Action for Energy Cooperation
ARF	ASEAN Regional Forum
ASCOPE	ASEAN Council on Petroleum
bcm	cubic metres
BCF	billion cubic feet
b/d	barrel per day
boe	barrels of oil equivalent
CNOOC	China National Offshore Oil Corporation
CNPC	China National Petroleum Corporation
COC	Code of Conduct
DOC	Declaration on the Conduct
EEZ	Exclusive Economic Zone
GW	gigawatt
IEEJ	Institute of Energy Economics
IPCC	Intergovernmental Panel on Climate Change

Ktoe	thousand tons of oil equivalent
Kb/d	thousand barrels per day
LNG	Liquefied Natural Gas
MMBtu	million British thermal units
Mtce	million tons of coal equivalent
Mtoe	million tons of oil equivalent
Mt	million tones
NDRC	National Development and Reform Commission
NOCs	National Oil Companies
ODA	Official Development Aid
OPEC	Organization of the Petroleum Exporting Countries
PLAN	People's Liberation Army Navy
PSC	Production Sharing Contracts
RCEP	Regional Comprehensive Economic Partnership
Sinopec	China National Petrochemical Corporation
TAGP	Trans-ASEAN Gas Pipeline
Tcf	trillion cubic feet
TPP	Trans-Pacific Partnership
Twh	terawatt-hour
UNCLOS	United Nations Convention on the Law of the Sea
ZoPFFC	Zone of Peace, Freedom, Friendship and Cooperation

ACKNOWLEDGEMENTS

In writing this book, I have fortunately had enormous support and assistance from various individuals and institutes. That I could eventually finish this humble book was due to many people who helped and supported me in my academic career over the past years. Foremost, I would like to thank ISEAS–Yusof Ishak Institute Director Ambassador Tan Chin Tiong and Deputy Director Ooi Kee Beng. Without their encouragement and support, it would not have been possible to undertake this research project in China and Southeast Asia. In undertaking my field research, I am specially indebted to the following institutes. In Yunnan, Yunnan Normal University arranged a trip for me to the border areas. For this, I am grateful to Professor Luo Huasong. In Xiamen University, I am indebted to the staff of the Research School of Southeast Asian Studies for their time and interviews. They are Professor Li Jinming, Professor Fan Hongwei, Professor Wang Qin, and Professor Wu Chongbo. In Singapore, EAI (East Asian Institute) gave me a special opportunity to conduct my research at its library. For this I am so grateful to Professor Zheng Yongnian and Dr Lam Peng Er. Heartfelt thanks also go to my colleagues and friends at ISEAS–Yusof Ishak Institute for their encouragement and collegiality: Mr Daljit Singh, Dr Terence Chong, Dr Malcolm Cook, Dr Ian Storey, Dr Francis E. Hutchinson, Dr Maxensius Tri Sambodo, Dr Lee Poh Onn, Dr Cassey Lee, and Dr Tang Siew Mun. Appreciation too goes to the Institute’s editorial team, Mr Ng Kok Kiong and Ms Sheryl Sin Bing Peng for bringing this book into fruition in a timely manner. Many thanks also go to *Trends in Southeast Asia* for its permission to revise and publish the following articles: “The South China Sea and China–ASEAN relations” (parts of Chapter 6); and “China’s quest for energy in Southeast Asia” (parts of Chapter 3). Parts of Chapter 5 (Case Study of Indonesia)

appeared in a draft paper presented at an international workshop organized by ISEAS in May 2015.

Finally, without thanking my wife and daughter, the book cannot be complete. I am deeply indebted to my wife's endless support, encouragement, and understanding. Equally important is my daughter who has been always with me through *WeChat* and e-mail, sharing hardship and happiness. It is to you that I dedicate this book.