

Energy Security in Times of Economic Transition

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Energy Security in Times of Economic Transition: Lessons from China

BY

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Abbreviations

Acceptability by society	AC
Affordability of energy prices	AF
Analytic hierarchical process	AHP
Applicability of technology	AP
Asia Pacific Energy Research Centre	APERC
Availability of resource	AV
Barrels per day	bpd
Belt and Road Initiative	BRI
Billion cubic metres	bcm
British Petroleum	BP
Carbon capture and storage	CCS
Carbon dioxide	CO ₂
China Energy Conservation Investment Corporation	CECIC
China National Offshore Oil Corporation	CNOOC
China National Petroleum Corporation	CNPC
China Petrochemical Corporation	Sinoproc
China Statistical Yearbook	CSY
China's National Development and Reform Commission	NDRC
China-Pakistan Economic Corridor	CPEC
Chinese Academy of Social Sciences	CASS
Chinese Communist Party	CCP
Coal-bed methane	CBM
Coal-mine methane	CMM
Contract Responsibility System	CRS
Department for Business, Enterprise and Regulatory Reform	DBERR
Diversification of primary energy demand	DoPED
Driving force–state–response	DSR
Energy indicators for sustainable development	EISD
Energy Information Administration	EIA
European Union	EU
Five-Year Plan of economic and social development	FYP
Frontier Works Organisation	FWO
Global Terrorism Index	GTI
Greenhouse gas	GHG
Gross domestic product	GDP
Gross national product	GNP

Group company system	GCS
Gulf Cooperation Council	GCC
Household Responsibility system	HRS
Hydro, Eolien, Light, Insulation, Organomasse	HELIO
Independent power producer	IPP
Indicators for sustainable energy development	ISED
Initial public offering	IPO
International Atomic Energy Agency	IAEA
International Energy Agency	IEA
Kilowatt-hour	kWh
Kuomintang	KMT
Large and medium-sized enterprise	LME
Liquefied natural gas	LNG
Lawrence Berkeley National Laboratory	LBNL
Megawatt-hour	MWh
Memorandum of understanding	MOU
Middle East Oil Import Dependency	MEOID
Million tons	Mt
Modern enterprise system	MES
National Bureau of Statistics of China	NBS
National Energy Administration	NEA
National Environmental Protection Agency	NEPA
National Oil Company	NOC
National People's Congress	NPC
National Renewable Energy Laboratory	NREL
Net energy import dependency	NEID
Net oil import dependency	NOID
Non-carbon based fuel portfolio	NCFP
Non-governmental organisation	NGO
Not in my backyard	NIMBY
Oil vulnerability index	OVI
Organisation for Economic Co-operation and Development	OECD
Particulate matter-10	PM₁₀
People's Republic of China	PRC
Renminbi	RMB
Research and Development	R&D
Reserve-to-production	R/P
State Electricity Regulatory Commission	SERC
Small and medium-sized enterprise	SME
State Development and Planning Commission	SDPC
State Economic and Trade Commission	SETC
State Electricity Regulatory Commission	SERC
State Environmental Protection Administration	SEPA
State Petrochemical Industry Bureau	SPIB
State Planning Commission	SPC
State Power Corporation of China	SPCC

State Power Investment Corporation	SPIC
State-owned enterprise	SOE
Sulfur dioxide	SO₂
Sustainable Energy Watch	SEW
Sustainability indicator	SI
Tons of coal equivalent	tce
Total primary energy supply	TPES
Township and village coal mine	TVCM
Township and village enterprise	TVE
United Nations	UN
United Nations Development Programme	UNDP
United States	U.S.
United States Dollar	USD
Work programme on indicators of sustainable development	WPISD
World Energy Council	WEC

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Introduction

Despite unprecedented energy consumption rates and environmental sustainability threats, China has seen fast economic growth and its energy policy and energy security have gone through decades of transformation. As China's economy shifts from a planned to a market mechanism, it is valuable to find the root reason behind the transformation of the energy policy and energy security situation.

International political economy and security studies on China have yet to explore the interaction among three important factors: its energy policy, its energy security, and macroeconomic reform. This book aims to fill this gap in the literature with a new methodological approach to the study of China's energy security. It applies both quantitative and qualitative analyses to the energy security situation in China during the reform period. With this said, two primary objectives are achieved in this book. The first objective is to examine how the energy security situation in China has evolved during the economic reform period. This book establishes a quantitative framework based on a comprehensive concept of energy security which covers availability of resources, applicability of technologies, acceptability by society, and affordability of prices. The framework analysis shows that China's energy security situation has not improved during the reform period.

The second objective of the book is to explore qualitatively why the energy security situation has not improved. To answer the 'why' question, the book opens up a new perspective by analysing the relationship between energy policies and the macroeconomic reform. It is found that China's macroeconomic reform has restricted the formation of China's energy policies and determined its energy security situation. In essence, China's energy policies are only a reaction to the macroeconomic measures. In other words, China's energy policies are not originally intended to improve energy security, but passive reactions to China's macroeconomic reform. This explains why China did not improve its energy security situation despite 40 years of reform.

In addition, with a separate chapter, it also includes an international perspective by studying the impact of China's Belt and Road Initiative on its energy security situation. This book is not only meaningful for the case of China but also useful to explain energy security in other countries, especially those countries in economic transition.

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I would like to thank my parents from the bottom of my heart for their dedication and support. They always stand by me whenever I am in difficulty. They are the nicest people in my world.

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