

IN PURSUIT OF CARBON NEUTRALITY

China's goal of carbon neutrality by 2060 requires a significant transformation of energy systems and the economy, raising critical questions about the domestic energy legal and regulatory systems. This book critically analyses the development and implementation of energy laws and regulations related to crucial strategies and pathways towards carbon neutrality, namely decarbonising power supply, enabling fuel switching, electrifying end-use in transport and industry, and adopting carbon removal mechanisms. It offers rich legal details and insights into regulatory processes and arrangements that underpin energy market reform and liberalisation, while also examining the role of law and regulatory measures in promoting technological advancements and supply chains for decarbonisation, with a focus on renewable energy, energy efficiency and storage, electric vehicles, critical transition minerals, and carbon removal mechanisms.

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In Pursuit of Carbon Neutrality

ENERGY LAW AND REGULATION IN CHINA

HAO ZHANG

The Chinese University of Hong Kong



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Preface

My interest in energy law and energy transition began during my internship in London, where I was exposed to the policy debate on renewable and sustainable energy in the United Kingdom. Intrigued by the development of carbon markets, I pursued my PhD research at Melbourne Law School, examining the regulatory design of emissions trading pilot schemes in China. A fundamental question that puzzled me was how carbon pricing instruments could drive low-carbon investments in China, given the heavy regulation of China's energy markets, despite incremental reform in its power sector.

China is under significant pressure to decarbonise its energy sector to reduce fossil fuel consumption and greenhouse gas emissions. In September 2020, President Xi Jinping announced at the UN General Assembly that China aims to peak emissions by 2030 and achieve carbon neutrality before 2060. Achieving these ambitious goals requires a fundamental shift in China's energy systems and the economy, raising critical questions about domestic energy law and regulation.

This book aims to address this knowledge gap by critically analysing China's energy legal and regulatory framework in the context of carbon neutrality. It examines the development and implementation of national energy laws, regulations, and regulatory measures related to crucial strategies and pathways towards carbon neutrality, namely decarbonising power supply, enabling fuel switching, electrifying end-use in transport and industry, and adopting carbon removal mechanisms.

Chapter 5 builds on a previous publication in the *Journal of World Energy Law & Business*, featuring the transformation of China's gas sector, regulatory reform of the tariff regime, and the fair opening of the pipeline network. While some arguments have been tested through prior publications, this book takes a more comprehensive

approach by considering the latest developments when evaluating China's energy legal and regulatory systems pertaining to carbon neutrality. However, due to the research scope and word limit, this book does not cover some important topics, such as the development of the national emissions trading scheme and its interaction with the energy law framework. These topics require further research in the future. Any errors that remain are my sole responsibility.

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Abbreviations

CCS	carbon capture and storage
CCUS	carbon capture, utilisation, and storage
CDM	clean development mechanism
CHP	combined heat and power
CPC	Communist Party of China
EIA	environmental impact assessment
EOR	enhanced oil recovery
ESG	environmental, social, and corporate governance
EV	electric vehicle
FiTs	feed-in tariffs
FYP	Five-Year Plan
GHG	greenhouse gas
IEA	International Energy Agency
kWh	kilowatt hour
LNG	liquefied natural gas
LULUCF	land use, land-use change, and forestry
MEE	Ministry of Ecology and Environment
MEP	Ministry of Environmental Protection
MIIT	Ministry of Industry and Information Technology
MNR	Ministry of Natural Resources
MOF	Ministry of Finance
MOST	Ministry of Science and Technology
MRV	monitoring, reporting, and verification
NDRC	National Development and Reform Commission
NEA	National Energy Administration
NEV	new energy vehicle
NOCs	national oil companies
SAMR	State Administration for Market Regulation

SASAC	State-Owned Assets Supervision and Administration Commission
SERC	State Electricity Regulatory Commission
SOEs	state-owned enterprises
T&D	transmission and distribution
TPA	third party access