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*Introduction to the Volume*

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# Geopolitical Economy of Energy and Environment: China and the European Union—Introduction to the Volume

*Mehdi P. Amineh and Yang Guang*

This book volume, to which thirteen researchers have contributed, is the result of the second phase of the joint research program between the Institute of West Asia & African Studies of the Chinese Academy of Social Sciences and the Energy Program Asia of the International Institute for Asian Studies. As directors of this program and editors of and contributors to the volume presented here, we are grateful to the Royal Netherlands Academy of Arts and Sciences (KNAW), Amsterdam, as well as Chinese Academy of Social Sciences (CASS), Beijing, for providing us with the opportunity to publish the second part of the results of our joint research program.

China's transition to an urban-industrial society relies, first of all, on its abundant domestic coal supplies, and secondly, on an increase in oil—and gas imports. For this reason, China's strategic investments in the oil and gas industries of resource-rich, energy-exporting countries have vastly increased. Because of high levels of import-dependency, the domestic power-wealth structures of both China (and the EU) rely on interrupted supplies from beyond state borders. To ensure supply security, import-dependent major actors have two options. One is to reduce dependency by, for instance, increasing energy efficiency. Another option is to increase the security of energy imports. This requires improving supply security from resource-rich oil—and gas-exporting countries—and regions.

This part of the research provides an analysis of the strategies and practices of China's three oil majors—the China National Petroleum Corporation (CNPC), China Petroleum and Chemical Corporation (Sinopec), and the China National Offshore Oil Corporation (CNOOC). Their complex relations with host-governments and with local communities and other stakeholders lie at the center of the research program. The resource-rich countries under study are Ghana, Nigeria, Kenya, Venezuela, Ecuador, Brazil, Saudi-Arabia, Iraq, Iran, Kazakhstan, Turkmenistan, and, Russia. After analyzing the involvement of Chinese National Oil Companies (NOCs) in these countries, we found that package deals dominate China's access strategy. As part of this strategy, the oil trade and investments in both the upstream and downstream parts of the industry are combined with political and financial support for wider strategic

economic cooperation. We consider the growing international and transnational activities of China's State-Owned Enterprises (SOE) to be part and parcel of economic globalization processes (Marcel 2006; Xu, 2007; Harris 2009; Jiang, J. & Sinton 2011).

In establishing energy-supply security, state-led economic activities have the potential advantage of including long-term policy objectives, such as energy security, in the energy supply process. However, given man's limited ability to control the future, the question remains of to what extent China (and the EU) will be able to create trade-offs between these contradictory objectives and the demands of domestic and international actors.

Fossil fuel imports also supply the largest share of the European Union's energy demand. Developing clean sources of energy and securing energy supplies are therefore important long-term development goals of the EU.

Currently, member-states are still in control of the external policy of energy security, and decide on their domestic energy-mix themselves. However, the EU-regulations on domestic energy policies do constrain the external energy security policies viable in member states. Furthermore, energy-security policies touch upon a wider set of objectives, such as climate change, energy efficiency, and the development of renewable energy. As far as the EU and China are concerned, their growing share in renewable energy has not been accompanied by a reduction in the fossil fuels imported. On the contrary, import-reliance has increased throughout the last two decades. This has partly been induced by the relatively low prices of some imported fuels, in particular coal and oil. Import levels are expected to increase even higher in the upcoming decades. According to expert opinion, the development of shale gas and tight oil will not substantially reduce the EU's import dependency. This research explores the challenges to the Union's energy security in general, and to fossil-fuel supplies in particular. The focus in this part is on non-Russian suppliers, namely the Middle East, North Africa, and the Caspian Region.

In three parts, the volume describes and analyzes the following, interconnected themes:

- (a) China's energy policies, with a focus on the cross-border activities of China's NOCs in selected resource-rich countries, namely: Kazakhstan, Turkmenistan, Russia, Iran, Iraq, Saudi Arabia, Brazil, Uruguay, Venezuela, and Ghana.
- (b) China's dilemma in expanding fossil fuel production and consumption (mainly coal and oil) to meet the energy needs of its massive urbanizing, developing society, and at the same time reducing the level of pollution

in major cities and reaching agreement with its partners on international efforts to limit climate change accompanied by possibilities for the development and implementation of alternative and renewable energy resources.

- (c) The energy security challenges of the European Union, and its energy-security policies in countries and regions of supply, in particular the Middle East, North Africa, and the Caspian Region. The member states of the European Union (EU) simultaneously face the need to fuel their high-income economies—each with a high level of per capita energy consumption—and to secure energy supply security and sustainability. As this volume will clarify, both China and EU, the world's largest energy importers, are cooperating to escape the fossil fuel trap by developing clean sources of energy.

## 1 Organization of the Work

This book volume consists of three parts and 11 chapters. In Chapter 1 Amineh and Yang will outline the approach and the conceptual foundations that underlie this volume. The chapter discusses, such topics as the domestic and global geopolitical economic logics behind China's rise and external relations in general and the transnationalization of Chinese NOCs in particular.

Part 1, consisting of Chapters 2 to 8, will provide descriptions and analyses of the activities of China's NOCs in selected resource-rich countries in Asia, Africa, and Latin America. In Chapter 2 Nana de Graaff analyzes the development and nature of the transnationalization of Chinese NOCs. Employing the Social Network Analysis (SNA) method, including the social networks of the directors of Chinese NOCs, this study will provide a first step toward longitudinal mapping by focusing on the transnational corporate networks that have been established by the China National Petroleum Corporation (CNPC) and PetroChina since the mid-90s. This approach visualizes the transnational patterns that have emerged over time and it gives an insight into the configuration and nature of these transnational patterns. The CNPC and PetroChina, the two major NOCs investigated, are increasingly collaborating with other key players in the global energy market; not only with other state-owned oil companies, but also with (western) privately owned oil companies.

In Chapter 3 Liu Dong investigates the activities of the three main Chinese NOCs—namely the CNPC, Sinopec, and the China National Offshore Oil Corporation (CNOOC)—in Iran and Iraq from 2000 to the present. Although

the names used to describe these contracts differ, all contracts signed with Iran and Iraq are risk service contracts. This means that the oil and natural gas found and produced by Chinese NOCs in Iran and Iraq cannot be added to the companies' resource reserves. On the basis of these findings, Liu hypothesizes that Chinese NOCs are incapable of improving Chinese energy security by their involvement in these countries, and that they will therefore receive limited support from the Chinese government. Without the backing of the Chinese government, Chinese NOCs are primarily driven by commercial considerations, and have to find ways to reduce their investment risks in these two highly unstable countries, as their western counterparts do.

In Chapter 4, Sarah Hardus studies China's involvement in Ghana's oil industry to provide insight into the policies and strategies used by and the interactions between Chinese state-led actors in their quest for African natural resources. She finds that China acts as a regulatory state that sets the overall policy framework and provides the diplomatic and financial support for the overseas investments of its financial institutions and NOCs. At the same time, these state-led actors are operating in increasingly autonomous ways and are prioritizing individual commercial considerations over the strategic interests of the national government. Hardus also assesses the way in which the transnationalization of China's oil industry is influenced by and concomitantly influences African political settlements. African ruling political elites do create opportunities for China's transnational investments but overreliance on ruling elite brokerage seems a risky strategy. For their African counterparts, Chinese investments can contribute to broad-based development. However, in countries characterized by competitive clientelism there is a risk that they will serve short-term elite interests instead.

In Chapter 5, Chen Mo provides an empirical analysis of the performance of Chinese NOCs in Sudan and Saudi-Arabia to underline the reasons Chinese oil companies are engaged in transnationalization, their level of transnationalization, the challenges facing transnationalization, and further prospects for the transnationalization of Chinese oil companies. The transnationalization of Chinese NOCs is mentioned as the inevitable result of a combination of a number of factors and will continue to develop. However, the level of transnationalization of Chinese NOCs should not be exaggerated. The successful cases of transnationalization are partly in the outcome of comparative advantages, but have also burgeoned from win-win solutions, the creation of mutual benefits. Several challenges face Chinese oil companies in the Middle East. These include, the instability and uncertainty in the resource-rich countries of the Middle East, geopolitical barriers to foreign investments, and competition with western and local enterprises. By addressing these and other challenges—for

instance, those arising from and created by the need to adapt to international business norms—Chinese NOCs are exploring new ways to transnationalize.

In Chapter 6, Barbara Hogenboom describes and analyzes the ways in which China-Latin-America oil relations have emerged and expanded, running parallel to overall shifting oil politics in the region. She then explores how these two trends have affected the governance of oil in the cases of Venezuela, Brazil, and Ecuador. Governance is about the complex interaction of the multiple actors, interests, values, and processes that shape the organization of society, including its economic and political structures and the ways in which natural resources are used. Hogenboom shows that, alongside some regional trends there are also important national differences, and that domestic resources and institutions considerably affect oil relations with China. Three tendencies stand out: firstly, the type of arrangements and coordinated activities that Chinese NOCs, banks, and government agencies deploy differ substantially from those of other large oil-seeking nations; secondly, even though the arrival of Chinese capital is sometimes criticized in the media and by non-governmental organizations (NGOs), the response of Latin American governments is positive and depicted as non-imperialist South-South relations; thirdly, Chinese oil investments interact with profound shifts in national governance caused by new political regimes and oil policies.

In Chapter 7, Sun Hongbo analyzes China's relations with Venezuela, with a focus on energy-sector cooperation. He deals with the question of the composition of actors in bilateral relations, what interests they pursue, and how they influence bilateral relations between China and Venezuela. The Sino-Venezuelan 'Cooperation Model' is posited as a plural collaboration pattern in which energy is the cooperation axis. From the perspective of political actors, with its diplomacy, buttressed by its commerce and energy departments, the Chinese central government is aiming to maximize energy security by optimizing China's oil import sources from Venezuela and other Latin American countries. Chinese NOCs employ different methods of energy cooperation, including crude oil trade, investments, loans in exchange for oil, the purchase of technical equipment, mergers, and acquisitions. Thereafter cooperation is extended to infrastructure, high-tech, agriculture and other fields under the umbrella of an intergovernmental institutionalized cooperative framework. This is financed by Chinese banks or oil companies in the form of credit or investments. Chinese companies participating in this model are repaid in Venezuelan crude oil. From a commercial actors' perspective, the goal of Chinese national oil companies and financial institutions is to maximize their profits through increased performance in commercial activities. From the actors' interaction perspective, the actors in the Sino-Venezuelan Model,

including the governments, oil companies, and financial institutions, are situated in a complex interrelationship because they adopt a behavioral approach targeted at self-benefit.

In Chapter 8, Robert Cutler analyzes Chinese energy relations with Kazakhstan and Russia, surveying the foreign direct investment (FDI) behavior of Chinese national oil companies (NOCs) in Kazakhstan and Russia. The first section sets out the systematic framework of the analysis, founded on the theory of complex systems ('complexity science'). The second section provides a schematic overview of the general development of Chinese FDI strategy and behavior from the disintegration of the Soviet Union up to the present day. The third section looks more closely at the FDI strategy and behavior of the Chinese NOCs specifically regarding Kazakhstan and Russia, and periodizes this according to the first two of the three chronological phases distinguished in the first section. The fourth section of the article evaluates the conduct of Chinese NOCs toward Kazakhstan and Russia from the standpoint of motives of corporate behavior and comparative incentive structures. The fifth section of the article concludes with a few remarks on the chronological periodization employed, followed by a summary of China-Kazakhstan-Russia triangle as the foundation of the East Central Eurasian hydrocarbon energy complex, the implications for patterns of energy development in Central Asia and East Central Eurasia, and a glance at the imminent Chinese-Indian competition in South and Southwest Asia.

Part 2 is concerned with environment and climate change and the possibilities for the development and implementation of alternative energy resources. In Chapter 9, Gupta and Chu et al. discuss the geo-ecological risks of investments in the oil and gas sector of developing countries, taking China, Nigeria, and Kenya as case studies. They combine an understanding of climate change and its implications for the phasing out of fossil fuels, the debate about the right to development and its implications for who should phase out fossil fuels first, and the issue of stranded assets—or the long-term costs of phasing out fossil fuels. They conclude that, with the ratification of the Paris Agreement and the adoption of the Sustainable Development Goals, the geo-ecological risks associated with energy sector investments might outweigh their actual gains. Although each case study exposes different dimensions of geo-ecological risks, all point to a need for a global approach to monitoring transnational transfers of wealth and technology between countries that are permitted to extract fossil fuels, countries that are stranding resources and foregoing revenue, and countries that continue to require fossil fuel imports to support development. Therefore, the operational challenge is to design a global climate governance

arrangement that compensates losers, is perceived as equitable by all parties, and can impose strict limits on the use of fossil fuels in the long term.

In Chapter 10 Li, Xiaohua presents a comparative research to solar energy policies proposed by the EU and China. He illustrates the developmental history and status of the PV market and the differences between the PV industries in the EU and China. Thereafter he describes a conflict that took place between the EU and China in the PV field. There have been different policies implemented to support PV in the EU and China before and after the International Financial Crisis. Li discusses their influences and the reasons for policy changes. He sets out the different visions of the trade war in the PV field between EU and China, and the importance of support for the development of PV solar energy. He then analyzes the different strengths of the EU and China in terms of production, and the source of Chinese PV companies' competitiveness. He suggests specific fields in which China and the EU should strengthen their cooperation, and what kinds of adjustments should be made to the industrial policies in China and the EU in order to avoid or alleviate conflicts.

In the final part of the volume, Part 3, Mehdi Amineh and Wina Graus explore the challenges facing the European Union's energy security in general, fossil energy supply security in particular, with a focus on non-Russian suppliers in the Middle East, North Africa, and the Caspian Region. Fossil fuels have the greatest share in supplying the European Union's demand and securing the wealth-power structures of the Union and its member states. Security of energy supply and developing clean sources at home are, therefore, an important part of the long-term development goals of the EU. Currently, the member states are still in control of the external policy of energy security and decide on the domestic energy mix themselves. However, EU regulations on domestic energy policy constrain the external energy security policy of EU-member states. Although policies at the EU and member state-level have booked some successes in the field of energy security, the fossil fuel import dependence in the EU has substantially increased in recent years. The energy supply security of the European Union, mainly from the Middle East, faces a number of domestic and geopolitical challenges. These include the persistence of Arab patrimonial rentier-states and societies that rely on personalist rule, patron-client relations, and personal (traditional) authority. Furthermore, the Middle East, and to some extent Central Eurasia, has to pay attention to the existence of politicized religion and their corresponding social forces and organizations, geopolitical crises, and external interventions by major powers. Lastly, the emerging newly industrializing Asian economies, especially China, are impacting the post-Cold War geopolitical shift underway in the Middle East and



Central Eurasia. The increasing diplomatic, economic, and even security relations between Middle Eastern, Central Eurasian resource-rich countries, and the upcoming contender states of China, Russia (and to some extent India) will inevitably influence EU energy supply security. Amineh and Graus argue that the energy challenges facing Europe require a coherent external policy to enable Europe to play a more effective international role in tackling common problems with energy partners worldwide. This step would allow the EU to speak with one voice in its external [energy] relations.