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CHINA AND GLOBAL ENERGY GOVERNANCE UNDER THE G20 FRAMEWORK

ALEX HE



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Alex He



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67 Erb Street West
Waterloo, Ontario N2L 6C2
Canada
tel +1 519 885 2444 fax +1 519 885 5450
www.cigionline.org

TABLE OF CONTENTS

iv	About the Global Economy Program
iv	About the Author
1	Acronyms
1	Executive Summary
2	Introduction
3	The Current Global Energy Governance System
5	Seeking Limited Goals for Global Energy Governance
6	Achieving Limited Goals of Global Energy Governance through the G20
8	China's New View on Energy Security: Embracing Global Governance
10	China's Participation in Global Energy Governance
13	Conclusion and Recommendations
15	Works Cited
20	About CIGI
20	CIGI Masthead

ABOUT THE GLOBAL ECONOMY PROGRAM

Addressing limitations in the ways nations tackle shared economic challenges, the Global Economy Program at CIGI strives to inform and guide policy debates through world-leading research and sustained stakeholder engagement.

With experts from academia, national agencies, international institutions and the private sector, the Global Economy Program supports research in the following areas: management of severe sovereign debt crises; central banking and international financial regulation; China's role in the global economy; governance and policies of the Bretton Woods institutions; the Group of Twenty; global, plurilateral and regional trade agreements; and financing sustainable development. Each year, the Global Economy Program hosts, co-hosts and participates in many events worldwide, working with trusted international partners, which allows the program to disseminate policy recommendations to an international audience of policy makers.

Through its research, collaboration and publications, the Global Economy Program informs decision makers, fosters dialogue and debate on policy-relevant ideas and strengthens multilateral responses to the most pressing international governance issues.

ABOUT THE AUTHOR



Xingqiang ("Alex") He is a CIGI research fellow. Prior to joining CIGI, Alex was a research fellow and associate professor at the Institute of American Studies at the Chinese Academy of Social Sciences (CASS). At CIGI, he is focusing on China and the Group of Twenty, China and global economic governance, and domestic politics in China and their impact on China's foreign economic policy making.

In 2009-2010, funded by the Ford Foundation, Alex was a visiting scholar at the Paul H. Nitze School of Advanced International Studies, Johns Hopkins University in Washington, DC. In 2008-2009, he was a guest research fellow at the Research Center for Development Strategies of Macau. In 2008, he participated in a short-term study program at the Institute on Global Conflict and Cooperation at the University of California at San Diego, which was sponsored by the US Department of State. In 2004, he was a visiting Ph.D. student at the Centre of American Studies at the University of Hong Kong.

Alex has co-authored the book *A History of China-U.S. Relations* and published dozens of academic papers and book chapters both in Chinese and English. He also periodically writes reviews and commentaries for some of China's mainstream magazines and newspapers on international affairs.

Alex has a Ph.D. in international politics from the Graduate School of CASS. Before beginning his Ph.D., he taught international relations at Yuxi Normal University in Yunnan Province, China.

ACRONYMS

AIB	Asian Infrastructure Investment Bank
APEC	Asia-Pacific Economic Cooperation
CCP	Chinese Communist Party
CEM	Clean Energy Ministerial
ECT	Energy Charter Treaty
G7	Group of Seven
G8	Group of Eight
G20	Group of Twenty
GSEP	Global Superior Energy Performance Partnership
IEA	International Energy Agency
IEF	International Energy Forum
IGOs	international governmental organizations
IMF	International Monetary Fund
IPEEC	International Partnership for Energy Efficiency Cooperation
IRENA	International Renewable Energy Agency
JODI	Joint Organisations Data Initiative
NDRC	National Development and Reform Commission
NOCs	national oil companies
OPEC	Organization of the Petroleum Exporting Countries
PTAs	preferential trade areas
SCO	Shanghai Cooperation Organisation
SDDS	Special Data Dissemination Standards
UNFCCC	United Nations Framework Convention on Climate Change
WTO	World Trade Organization

EXECUTIVE SUMMARY

Fragmentation of the global energy governance system, aggravated by securitization and politicization, paints a bleak picture for the prospect of global energy governance. However, the basis provided by market forces and rules, reinforced by nation-states' need for an effective global governance mechanism, is encouraging players, including nation-states and international energy organizations, to pursue effective global energy governance, specifically limited goals in global transparency and data-sharing mechanisms, and to coordinate efforts for clean energy and climate change governance in the near future.

The Group of Twenty (G20) provides significant institutional arrangements to coordinate big powers to govern the international energy markets and address climate change. It could be the appropriate platform to negotiate and achieve these limited goals. The G20's established cooperation with major international energy organizations such as the International Energy Agency (IEA), International Energy Forum (IEF) and the Organization of the Petroleum Exporting Countries (OPEC) would also help it to deliver these goals.

China participates in the majority of global energy governance institutions but is still a non-member outsider of major institutions such as the IEA and the Energy Charter Treaty (ECT). Its energy security strategy still mainly focuses on geopolitical means to guarantee its energy supply security and it does not have much trust in the international energy market. China is suspicious of the prospect that international energy governance institutions can play a major role in coordinating stable energy production, supply and consumption, and deliver energy security for members in the global energy governance system. China therefore also doubts the benefits it could receive from participation in global energy governance.

The significant role China has played in the G20 since the 2008 global financial crisis increased China's confidence in global economic governance. It gradually realized the virtues of global governance, and Chinese leaders began to talk of and even offer proposals on global energy governance under the G20 framework, as well as to pay more attention to climate change and renewable and clean energy development. Chinese academic circles paid even more attention to China's substantial participation in global energy governance and suggested that China should join major global energy governing institutions as a member country and fully engage with these institutions and promote cooperation with them via the G20 platform.

INTRODUCTION

Since the 1990s, China has increasingly relied on imported oil and gas. China's policy makers gradually reached consensus on active participation in international energy cooperation to secure the country's national energy security. By interpreting "international cooperation" as "bilateral cooperation," China chose to ensure its overseas energy supply through bilateral energy cooperation, reinforcing its "going out" strategy,¹ and building overseas oil and gas import routes. This going out strategy was implemented substantially in Africa, the Middle East and Latin America, as well as elsewhere. Three strategic land-based oil and gas pipelines² have been built and are transporting oil and gas back to China. More pipelines are being planned and built, as the main complement to importing oil via sea routes. The new Silk Road Economic Belt and the 21st-century Maritime Silk Road — in short, the One Belt, One Road initiative — were finalized in 2014 and are being carried out as a national grand strategy. Energy resources constitute a significant component of the strategy given the fact that the One Belt, One Road routes overlap China's major oil and gas import routes, and that the Silk Road Economic Belt connects Russia and some of the major oil and gas producers in the Middle East and Central Asia. A key part of the One Belt, One Road strategy appears to be a strengthened version of bilateral cooperation for energy security and, at present, it is being pushed ahead strenuously.

As far as global energy governance is concerned, China began to engage and cooperate with some international energy organizations in the late 1990s and early 2000s. To date, China has joined several global and regional energy governing regimes, such as the IEF, the Clean Energy Ministerial (CEM) and the International Renewable Energy Agency (IRENA), but remains an outsider of several major global energy governing regimes, including the IEA, OPEC and the ECT, although China has established cooperative relations with them all to various extents. Some scholars (Guan and He 2007; Xu 2013; Yu Hongyuan 2013) have advocated for China to participate more actively in global energy governance, which, in their view, could facilitate international energy cooperation and contribute to stabilizing international energy prices, eventually enhancing China's supply security. It could also help China to acquire a voice in rule making in international energy organizations.

This paper explores China's perspectives and practices in its quest for overseas energy supply security and its participation in international energy cooperation since becoming a net oil import country in 1993. It compares the traditional approach, in which China mainly focuses on bilateral means to pursue its overseas energy supply security, and the new concept of energy security, in which greater involvement in global energy governance, in particular in the G20, is highlighted to promote China's energy security. The paper argues that China still retains a bilateral and regional cooperation approach, while making progress in developing closer cooperation with existing major global energy governing institutions. The One Belt, One Road strategy proposed in 2013 is regarded as a strengthened version of the bilateral and regional cooperation approach. One argument for why China is embracing global energy governance institutions is that doing so conforms to China's domestic endeavours to mitigate its domestic air pollution, which is in line with China's goals of clean energy development and climate change mitigation of the global energy governance system. Chinese academic circles constitute the main forces advocating China's more positive participation in global energy governance. The G20 provides significant institutional arrangements to coordinate big powers to govern the international energy markets and to address climate change. This paper suggests that, given China's growing prominence at the G20, it could be the proper platform for the country to play a more active role in global energy governance.

This paper is organized as follows. It first gives a literature review of studies on the current global energy governance system, with an analysis of its main problems and major supportive forces. The second part suggests that to effectively govern a global energy market in the near future, China should pursue a set of limited goals, including global transparency and a data-sharing mechanism on oil and gas, coordinating efforts for clean energy and climate change governance, instead of comprehensive, cohesive global energy governance institutions. The third part argues that the G20 is the proper institution in which to pursue these goals. The fourth part provides observations on China's new concept on energy security, which is illustrated in the evolution of China's policy to embrace global energy governance and its increasingly positive policies and practices on climate change, and compares it with China's traditional geopolitical approach to energy security. The fifth part examines China's participation in international energy organizations, highlighting the advantages of China participating in global energy governance under the G20 framework. The final section provides policy recommendations on how China could improve its participation in global energy governance at the G20.

1 China's going out strategy initially referred to Chinese state-owned oil companies' pursuit of overseas oil in the 1990s, which focused on the purchase of foreign oil assets and equity. Aiming to encourage China's state-owned enterprises to invest abroad, the going out strategy was consolidated and formalized as a national grand strategy in the 10th Five-Year Plan (2001–2005) in October 2000.

2 These are the northeast (China-Russia) pipeline, northwest (Central Asia) pipeline and southwest (China-Burma) pipeline.

THE CURRENT GLOBAL ENERGY GOVERNANCE SYSTEM

A Fragmented System

The current global energy governance system is still characterized by fragmentation, and lacks a widely recognized international regime to effectively address the need to coordinate energy policy in the global energy market and to provide collective energy security to all nations (Lesage 2011; Florini 2011; Leal-Arcas and Filis 2013; Baccini, Lenzi and Thurner 2013). So-called “global energy governance” does not exist on the international stage in practice; it is merely a theoretical concept (Leal-Arcas and Filis 2013) and remains a big challenge.

Instead, there are a wide range of international institutions that deal with the global energy economy and energy security issues in a manner that lacks cohesion. The best performance these international regimes could achieve, or have been able to achieve, is to set up forums and to share data through arrangements such as the IEF and Joint Organisations Data Initiative (JODI) (ibid.). According to a recent study, there are 34 energy international governmental organizations (IGOs) in operation, and almost every country is currently a member of at least one IGO (Baccini, Lenzi and Thurner 2013). The major energy governing bodies in the international community, such as the IEA, OPEC, the ECT and the IEF, all have their own limitations and problems when it comes to whether they could function as global governing regimes on energy production, security, access and trade. The IEA, OPEC and the ECT suffer from narrow membership that greatly restricts their capacity to be real global energy governance organizations. The IEF reflects other issues facing global energy governance: non-treaty-based regimes that lack coercive powers over their members can only contribute to dialogue and information sharing at the best of times.

There are many other international or regional regimes active in various aspects of energy governance, including energy trade, security, transit, investment and climate change. The World Trade Organization (WTO) plays an important role in terms of energy trade. At least 18 percent of total intra-WTO trade involves energy goods, and energy-related commodities trade falls within WTO remit (Leal-Arcas and Filis 2013). Various regional trade agreements, such as the European Economic Area, the North American Free Trade Agreement and the Association of Southeast Asian Nations Free Trade Area, can, to some extent, govern the energy-related trade within preferential trade areas (PTAs). The United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol act as the major body to govern energy-related environmental protection. The WTO and other PTAs can contribute to both environmental protection and energy transit, given their provisions with

implications for environmental protection, climate change and energy transit issues. The Group of Seven (G7) and the G20, the two major ad hoc forums, have already drawn some attention to the issue of global energy governance by including it on their agendas.

Nation-states Play a Vital Role in Shaping Current Global Energy Governance

The geopolitical dimension of energy security has a deep impact on policy makers concerned with energy security issues, and a zero-sum logic underlines interstate energy relations.³ National oil companies control the vast majority (over 80 percent) of proven oil and natural gas resources and will overwhelmingly dominate world oil production and pricing in the coming decades (Goldthau and Witte 2010). Navroz K. Dubash and Ann Florini (2011) emphasize that national energy policy makers seldom refer to international standards, concluding that structures of energy governance are shaped globally but mediated nationally by specific factors. Sovereign states tend to fiercely defend their respective national interests, which partly explains the fragmentation of the global energy governance system. Rafael Leal-Arcas and Andrew Filis (2013) argue that most interstate cooperation related to energy security concerns the needs of the states involved and that states appear to be confined to engaging in bilateral arrangements, establishing regional arrangements or setting up other types of multilateral sector-specific arrangements.

Securitization and Politicization of Energy Issues

Many countries, in particular import-dependent consumers (such as China, the European Union, Japan and the United States), consider the energy industry a securitized domain⁴ of economic policy, and energy security constitutes an important component of their economic security. Their economies would be very adversely affected by either a rapid price increase or a suspension of supply. Energy may also be included in broader concerns for national security and geopolitical strategy and, in some countries, regime security. The “extraordinary measures” that have resulted from securitization are usually economic nationalist energy policies. These policies are embodied in the form of

3 Realism in international politics suggests that nation-states should establish a sphere of influence for energy and resources through oil diplomacy and alliance building, or other political arrangements, to monopolize resources and use it as a weapon to achieve political goals (Morgenthau and Thompson 1993; Gilpin 1981).

4 A securitized domain or securitization refers to an issue area in which economic logic is subsumed to security concerns, and it allows for the policy measures in the field to go beyond standard practices considered normal for that issue area (Higgott 2004; Emmers 2003; Wilson 2015).

“resource nationalism” in governments (in particular, in the governments of the world’s major energy producers) that intervene through trade and investment controls to ensure state control over energy sectors (Mares 2010). State ownership of energy sectors is the preferred method to ensure energy sectors contribute to national development goals. Many energy producers, including the Gulf States, Russia and Brazil (oil), Indonesia (gas), India (coal) and China (oil and coal), followed the path of establishing state control in the energy industry (Wilson 2015).

Another form of economic nationalism is evident when many energy-consuming countries, such as China, Japan, South Korea and India, deploy mercantilist strategies to safeguard their energy security. The most commonly used strategy is having national firms own energy projects at production sites abroad, and using diplomatic and investment efforts to “lock up” energy supply from key producers in a preferential way to eschew the use of international markets (McCarthy 2013; Wilson 2015). As a consequence, securitization of energy issues and economic nationalism greatly limit the dynamics of further multilateral energy cooperation and prevent the emergence of effective global energy governance. Economic nationalism prohibits any form of cooperation based on trade and investment liberalization (Wilson 2015).

Existing Fatal Flaws within Multilateral Organizations Impacting Global Energy Governance

Dubash and Florini (2011) argue that the existing global energy governing institutions consist of a relatively small handful of organizations, which are limited in scope and capacity. These organizations are currently far from fully developed and fail to adequately address any of the market and governance failures. The many endeavours, including: the creation of the IEF and its efforts to bridge producer and consumer nations; the establishment of UN-Energy; the creation of IRENA; greater engagement of the World Bank and the WTO; and the early steps taken by the G7 and the G20 to address the energy issue, cannot cover up the fact that none of the existing organizations can play a central coordinating role in global energy governance — there are no effective developed institutional processes in place to coordinate action among them all. In addition, they almost never formalize rules for national policies and, in some cases, have not even managed to broker agreements on principles for cooperation (ibid. 2011; Wilson 2015).

Jeffrey D. Wilson (2015) further points out that the existing global energy governing bodies are inclined to emphasize informal processes and voluntary adherence to vaguely defined principles and have an aversion to negotiating formalized or specific commitments. These characteristics are labelled as a “soft law” approach to institution building.

Other scholars have expressed similar perspectives on the poor quality of the existing global energy governing institutions, using terms such as “vacuum” and “landscape of wreckage” to describe global energy governance (Harks 2010; Victor and Yueh 2010).

Market Forces and Rules Provide the Basis for Global Energy Governance

Although a variety of constraint factors and characteristics of the existing global energy governance have been examined and verified, there are other factors and inherent features that contribute to the emergence of, and promote the expansion of, current global energy governing regimes.

Market forces matter and they cannot be ignored. Narrowly focusing on the geopolitics of energy will divert attention from a key fact for global energy governance: a competitive global oil market — the foundation for global energy governance — does exist. The global oil market has proven that the global price for oil is, first and foremost, a function of market forces and cannot be artificially lowered or increased by policy design in the long term (Goldthau and Witte 2010). In other words, geopolitical and mercantile frameworks alone cannot explain the fluctuation of global oil markets. The global oil market presents itself as the subject of global energy governance and, to a certain extent, this governance is both possible and needed to correct market failures, to lower transaction costs by sharing and disseminating information, and to set rules and standards for market exchange. Leal-Arcas and Filis (2013) explain that the global energy economy possesses a certain degree of global governance — sufficient agreements on energy trade have been reached in this respect. Other aspects of energy, including the exploration, extraction, production and allocation of energy resources, have no footing for global governance.

Nation-states Have a Need for Effective Global Energy Governance

The information IGOs provide tends to be uncommon and highly valuable in the energy market (Harks 2010), which is the main reason why nation-states typically join energy IGOs to gain access to this information. With this information, states can lower transaction costs by implementing common standards, improving the quality of the available data and increasing the transparency in energy policies implemented domestically (Baccini, Lenzi and Thurner 2013). A majority of countries need to join abundant and continuous networks of supply (Nicolas 2009) to guarantee their energy security and to cut the cost of acquiring it. Both producers and consumers need to reduce the impact of external shocks by joining energy IGOs. Nation-states tend to use energy IGOs to improve or consolidate their market position while reducing the risk of suffering competitive disadvantage on the world market,

and the argument is coherent with the theory on collective action (Baccini, Lenzi and Thurner 2013). Interdependence between countries is another factor that pushes states to join energy IGOs, and can help the diffusion of these IGOs.

SEEKING LIMITED GOALS FOR GLOBAL ENERGY GOVERNANCE

The four restrictive factors discussed above demonstrate the numerous difficulties facing the global energy governance system, while there are also two elements driving the inherent foundation and potential of the system. Taking into account both the difficulties and potential, it is reasonable to seek limited goals for coordinating regimes instead of coercive institutions.

First, a consensus has been reached that creating a big institution such as a world energy organization to govern the global energy market is not a realistic solution. The existing energy issues require flexible and specialized institutional responses, rather than one new, big bureaucracy (Lesage 2011). What is needed is a mechanism for coordinating initiatives focused on delivering energy security and environmental protection (Victor and Yueh 2010), which should be developed from the existing regimes.

Second, the ultimate goal of global energy governance should not be a coercive, universally accepted international institution to provide collective energy security to all nations in the world, but rather an international regime to coordinate global energy trade and investment, energy security and access, and efforts to address climate change.

Third, the limited goals of global energy governance should be designed to be attainable. The “big picture” is to effectively coordinate policy among governments, guarantee a stable energy supply, provide access to energy — in particular, oil and natural gas supply — and ensure environmental sustainability. Specifically, the key question is how to coordinate energy policies made by independent national governments, that is, the interaction between global and national energy governance, and how to coordinate among the major institutions in global energy governance, for example the IEA, the IEF, OPEC, the G7 and the G20. Generally speaking, coordination should include the basic elements of energy governance: measures to correct market failures; lower transaction costs through greater transparency and information sharing; strategies to deal with external shocks; rules and standards for market exchange; and promotion of new multinational infrastructure investments to foster interconnection and security.

In reality, effective coordination still remains a difficult mission in most cases. While effective coordination among different dimensions and institutions should be the final goal, the basic and achievable goals in the near future

should be the promotion of a transparent international market, and data-sharing mechanisms between governments and energy IGOs and between producers and consumers. The purpose of the coordination mechanism is to reduce uncertainty and lower transaction costs in the international energy market. In terms of an enforcement mechanism, global energy governance should be built on soft-law rules, including political consensus among leaders of nation-states, voluntary commitments, peer pressure and incentive-based implementation.

Fourth, there should be an emphasis on climate change and clean energy governance. The demand for good governance on climate change, environmental protection and renewable energy will provide persistent momentum for global energy governance, but they will also bring about more complexities. Climate change concerns both producers and consumers, and has already developed into a fundamental issue in global energy governance. Less securitization and relatively weaker economic nationalism in the field of climate change and environmental protection mitigates the negative influences brought about by the re-emergence of nation-state players in global climate change governance. A treaty-based global energy governance mechanism regarding climate change and environmental protection, the UNFCCC, is already in place, and more cohesive agreements could be expected as attainable goals. An increasing percentage of renewable energy and clean energy in global energy consumption will greatly promote the realization of climate change mitigation and environmental protection goals.

Unlike the fragmented global governance of oil and gas markets, there is a treaty-based, universal governance regime in place for climate change. The UNFCCC, with its 196 parties, has near universal membership and its Kyoto Protocol has been ratified by 192 parties.⁵ The UNFCCC promotes global climate change governance through negotiations, and progress has been made since the Kyoto Protocol. The key question that remains is what kinds of international institutions in global governance are needed to effectively implement the goals and frameworks agreed in the UNFCCC. In other words, ways to promote the implementation of the low-carbon policies and technologies need to be found. Although there have been some failures, including Russia, Japan, Canada and New Zealand’s refusal to commit to the second phase of the Kyoto Protocol at the Doha Climate Change Conference in November 2012, the UNFCCC remains the treaty through which climate change negotiations take place. In addition, the US-China Joint Announcement on Climate Change in

⁵ See <http://newsroom.unfccc.int/about/>.

November 2014 offered an incentive for further promotion of the implementation of carbon emission reduction goals.⁶

Renewable energy and clean energy could contribute greatly to the mitigation of climate change, and could even be a last-resort solution in the future, given that humans cannot survive without a sustainable energy supply. Renewable energy and clean energy stand a chance of providing the necessary energy with reduced or no greenhouse gas emissions. The reduction of fossil fuel usage will help mitigate climate change, but persistent use of fossil fuels in the future will produce CO₂ and other greenhouse gases and the issue of climate change will continue. Renewable energy and clean energy are also a promising industry, which could be a driving force for the revival and development of an economy. As far as global renewable energy governance is concerned, the main focus should be on a mechanism to promote the development, sharing and transfer of clean, renewable and new energy technologies, based on intellectual property protection. Some existing arrangements can be used in this regard: the WTO Environmental Goods Agreement negotiation, launched in July 2014, which could be expanded to include the transfer of clean and renewable energy technologies. In that case, the new energy technologies could be used to promote both energy security and mitigation of climate change.

ACHIEVING LIMITED GOALS OF GLOBAL ENERGY GOVERNANCE THROUGH THE G20

Among all the organizations in global energy governance, the IEA is regarded as having the greatest potential to be “the one” in the future. Ann Florini (2011) believes that despite its constrained membership, the IEA is at the centre of many key developments in global energy governance. The current global energy governance system plays a limited role in coordinating the global energy market and guaranteeing the collective security of energy supply on a global scale. The crucial question is how the existing institutional constraints can be altered. An obvious starting point is to focus on ways to leverage more effectively the existing formal intergovernmental actors. As a global high-level forum and a bridge between big powers, the G20 is

often considered an appropriate platform for coordinating action among leading states (Dubash and Florini 2011).

The rise of the G20 in global economic governance since the 2008 global financial crisis provides the global energy governance system with another option. The G20 is currently the most plausible forum where broad directions for global energy governance could be decided, making it an important arena to watch (*ibid.*). There are three reasons why the G20 is well positioned to play an increasingly significant role in global energy governance.

First, the G20 provides key political consensus and encourages willingness to take action by issuing public declarations. Its members include the most significant developed and developing economies, accounting for 85 percent of global GDP.

Second, flexible institutional arrangements in the G20 could be another advantage of establishing effective global energy governance under the framework of the G20. Flexible institutional arrangements among the International Monetary Fund (IMF), the World Bank and the G20 proved to be an effective model to handle the global financial crisis, which provides a possible road map for future institutional cooperation in global energy governance. Institutional cooperation, or association, among the existing main global energy governance organizations, such as the IEA, the IEF and the G20, could provide a possible shortcut for a future global energy governance model. Following the existing successful cooperation model between the IEA and the G7, together with the fact that the G20 has taken over the leading role in global economic governance from the G7, it appears that the IEA may continue to play the rather unusual direct role of responding to “assigned tasks” by the G20 (Florini 2011).

Third, members of the G20 involve the most important players in the international energy market: China, India and the United States (the biggest energy-consuming powers) and Saudi Arabia and Russia (the leading energy producers), as well as other G7 members, most of which are the big consumer powers.

The rise of the G20 as the primary forum for global governance laid a solid foundation for the G20 to play a more significant role in global energy governance. Cooperation between the G20 and major global energy governing bodies has developed since then. The IEA has played a supporting role since the Pittsburgh G20 Summit in 2009. Since 2011, cooperation to tackle price volatility in international oil, natural gas and coal markets has been the priority in this regard. Together with the IEF and OPEC, the IEA submitted to the G20 the report of improving the quality, timeliness and reliability of the JODI database in April 2011, and the report calling for extending the G20 work on volatility in oil markets to gas and coal in October 2011. In June 2012, the three agencies again submitted

⁶ The historic US-China Joint Announcement on Climate Change emphasizes the two countries’ commitment to a successful climate agreement in Paris. Both President Barack Obama and President Xi Jinping affirmed that they share the conviction that climate change is one of the greatest threats facing humanity and that their two countries have a critical role to play in addressing it. The strengthened bilateral coordination and cooperation on their climate policies, such as promoting sustainable development and the transition to green, low-carbon and climate-resilient economies between the two countries, are believed to have been key to the final achievement of a legally binding and universal agreement on climate, with the aim of keeping global warming below 2°C, at the 2015 Paris Climate Change Conference.

to the G20 finance ministers the report for increasing transparency in international gas and coal markets.⁷ In July 2014, the JODI-Gas was officially launched.⁸

The G20 has the potential to provide leadership at the highest level on energy policy as on other matters (Hirst 2012). Dries Lesage (2011) believes the G20 can take the lead in developing a modern and coherent strategy for a sustainable energy future that benefits everyone, expressing optimism on the role that can be played by the G20 in global energy governance. There are two noteworthy performances by the G20 in global energy governance. First, it has undertaken efforts to curb excessive volatility in oil prices and enhance transparency in oil and gas markets. A key element in this exercise is the improvement of JODI. Another important project is the phasing out of fossil fuel subsidies, which contribute significantly to global warming and cost the governments of developing countries billions of dollars per year (*ibid.*).

However, there has not been much progress made since 2011. At present, the transparent oil and natural gas market information system, represented by JODI, is being supported by relevant nations via the G20 platform. Clearly, the political support from the members of the G20 is vital to enhancing the reliability and relevance of JODI data and further successes of JODI. In addition, financial support for holding JODI seminars from the members of the G20 is important for further development of JODI. This constitutes an important part of JODI's capacity building. In short, a comprehensive (including oil, gas and coal) and authoritative JODI data-sharing mechanism is essential for effective global energy governance. Achieving it should be one of the real and attainable goals of global energy governance in the near future.

The goal of phasing out inefficient fossil fuel subsidies was agreed to at the 2009 Pittsburgh G20 Summit. The progress since then, however, has been slow. There was not a strict timeline and road map for the goal, although almost every summit called for the elimination of inefficient fossil fuel subsidies. The slow progress was even used as an example of the G20's failure, in order to oppose the involvement of the G20 in global energy governance. At the 2012 Los Cabos summit, finance ministers were tasked with establishing a voluntary peer review process for G20 members. This is mostly undertaken through a process of mutual review

between countries, but because of the non-coercive feature of the process, it often takes time. The United States and China — the two biggest powers with large numbers of fossil fuel subsidies — agreed to do a joint peer review of inefficient fossil fuel subsidies in the US-China Joint Announcement on Climate Change in November 2014, which would encourage other members of the G20 to do the mutual review and accelerate the slow process.

As of the beginning of May 2015, the members of the two review teams (the Chinese team and the US team) had been selected. At the seventh US-China Strategic and Economic Dialogue on June 23-24, 2015, in Washington, DC, China and the United States reaffirmed their commitment to complete the peer reviews by the end of 2015 and to publish the results and brief interested parties. Both sides committed to encouraging other countries to undergo fossil fuel subsidy peer reviews (US Department of the Treasury 2015). By October 2015, the self-reviews by the United States and China were being finalized. Once the self-reviews are shared with the peer review teams, the review teams will evaluate the information on each country over the course of several months. Germany and Mexico have announced they will undergo the second round of peer reviews, with Germany serving on both the Chinese and American peer review teams and Mexico serving on the American peer review team (IEA and OECD 2015).

The CEM, a multilateral US initiative that resulted from the Copenhagen UNFCCC climate conference in 2009, is another achievement within the G20 on global energy governance. The CEM began to report to the Cannes G20 Summit. The G20 Leaders' Declaration at St. Petersburg in 2013 echoed the call by the International Atomic Energy Agency Action Plan on Nuclear Safety for multilateral cooperation toward achieving a global nuclear liability regime, one year after the Fukushima nuclear disaster following the earthquake and tsunami in Japan in 2011.

The ongoing energy initiatives and close engagement of the G20 regimes are of great significance in addressing real weaknesses and gaps in global energy governance, although the progress, including the creation of a JODI data mechanism and the phasing out of fossil fuel subsidies, is slow. The very nature of the G20, which does not act as a genuine political steering committee in the fragmented field of global energy governance, is one of the main reasons for the slow progress. As stated earlier, energy is an issue heavily burdened with strategic repercussions. Governments are reluctant to engage closely with an official multilateral institution equipped with cohesive mechanisms for more coordination and an informal country grouping, and therefore a voluntary process might be easily accepted. In addition, energy issues are still not listed as one of the top priorities on the agenda at the G20, thus there is a lack of political willingness that can be recruited to push through the goals of energy governance.

7 The three reports mentioned here are available at the IEA website: www.iea.org/aboutus/globalengagement/g20/ieacontributions/totheg202009-2015/.

8 The JODI-Gas involves the monthly coordination of hundreds of stakeholders along the global energy data supply chain. Following the success of JODI-Oil, JODI-Gas represents another concrete outcome of the producer-consumer dialogue and will further enhance the energy data transparency and, furthermore, promote energy security for producers and consumers. Refer to the JODI website for more information: www.jodidata.org/news/official-launch-of-the-jodi-gas-world-database.

Lesage (2011) suggests establishing a G20 energy task force to do the overall strategic thinking on global energy governance. Such a task force could contribute to policy coherence and provide political stimuli on behalf of countries that bear a great responsibility for the world's energy problems. Other scholars propose a standing, but flexible, network of officials from the G20 and multilateral institutions, comparable to the Financial Stability Board (Victor and Yueh 2010; Lesage 2011). However, constraints on the G20 regarding global energy governance prevent these proposals from being considered seriously. New momentum on global energy governance is needed; perhaps China's more active engagement can deliver the necessary impetus.

CHINA'S NEW VIEW ON ENERGY SECURITY: EMBRACING GLOBAL GOVERNANCE

In general, China's stance on energy security is endowed with excessive geopolitical or geostrategic considerations. Its policy orients more toward national security rather than the international energy market. This entails China enhancing its self-sufficiency as much as possible in the supply of energy, establishing more land routes for transporting overseas oil and natural gas into China, and trying to avoid chokepoints such as the Strait of Malacca. The going out strategy was created and executed for China to acquire more overseas energy resources. It reflects a belief that oil produced by Chinese companies abroad is a more secure source than that purchased on international markets and provides the only way for China to realize energy supply security.

However, in practice, market rules matter, and Chinese national oil companies (NOCs) have followed the market rules to participate in international energy markets and did not "isolate" the equity oil⁹ they produced. On the contrary, the NOCs sold their equity oil in the international markets to make a profit in consideration of the cost of transportation or price differentials between global and domestic Chinese markets. For the first time, the Chinese National Energy Administration announced in 2012 that more than 90 percent of China's overseas equity production was sold locally, contributing to the stability of the global oil market (Wang 2012). China's energy security actually relies heavily on the international oil markets, not the going out strategy and the so-called strategic oil pipelines and land-based transportation routes. Currently, China still maintains its geopolitical strategy. With signed bilateral cooperation agreements, China is building pipelines, roads, railways and ports for acquiring access to oil and gas in energy-rich countries. The One Belt, One Road initiative, from the perspective of energy

supply security, contributes to a 2.0 version of the current geopolitical strategy to secure China's energy supply.

Against the background of prevailing traditional geopolitical energy views, a new vision of China's energy security has been growing gradually since 2006. In general, it proposes embracing global energy governance.

Chinese President Hu Jintao proposed a new energy security concept at the G8 [Group of Eight] Outreach Session held in July 2006 at Constantine Palace, St. Petersburg (Xinhua News 2006). Hu called for greater international cooperation to increase oil and gas supplies, stressing the need for cooperation and dialogue between the main energy-exporting and -consuming countries. Interestingly, Hu emphasized that efforts should be made collectively to maintain stability in oil-producing regions and to ensure security in international energy routes, appealing for less politicization of energy security. He also called for research and development in energy technology.

It is fair to say that Hu's new energy security concept was a counter to his remark on the Malacca dilemma three years prior¹⁰ and it was the first time a Chinese leader emphasized international cooperation to solve energy problems. However, it does not mean an immediate policy change, and China still would prefer not to rely so heavily on other countries to secure the sea routes for importing energy. Hu's proposal for a new energy security concept sounded more like self-serving propaganda and it lacked specific measures for implementation. Nevertheless, it symbolized the beginning of a new energy security concept emerging in China.

In July 2011, former Vice Premier Zeng Peiyan, the chairman of the China Center for International Economic Exchanges, proposed constructing a global stabilizing mechanism on energy resource markets under the G20 framework at the Energy, Resources and Sustainable Development Conference, which was held in Perth, Australia, as part of the Boao Forum for Asia.

In line with the principle of mutual benefit, agreed at the fifth World Future Energy Summit in Abu Dhabi in April 2012, Chinese Premier Wen Jiabao advocated establishing a global energy market governance mechanism comprised of the largest G20 energy producers and consumers. Under such a framework, China hopes that fair, reasonable and binding international rules could be developed and early warning mechanisms, price coordination, financial supervision and emergency mechanisms could be built through consultation and dialogue.

9 Equity oil is the proportion of production that a concession owner has the legal and contractual right to retain.

10 At a central economic work conference in late 2003, President Hu reportedly expressed concern about the security of China's oil imports. Known as the Malacca dilemma (Shi 2004), it refers to claims that China's oil imports face great risks of being cut off at the chokepoint of the Strait of Malacca, reflecting the traditional conception of China's energy security challenge.

This is the first specific proposal from top Chinese leaders on global energy governance and it took a clear stand to build a mechanism for global energy market governance under the framework of the G20. This proposal reflected China's willingness to participate in global economic governance, which was mentioned at the Fifth Plenum of the 17th Chinese Communist Party's (CCP's) Congress.

Since 2007, an increasing number of academic voices have questioned the traditional energy security concept. Zhao Hongtu (2007) and Zhang Zhongxiang (2012) argued that the real risks of the Strait of Malacca and other energy transportation routes mainly come from pirates, terrorist activities and maritime accidents during peace time, not an American-led oil blockade, which is highly improbable, both politically and technologically. In 2013, Zha Daojiong, an energy expert from Beijing University, and He Fan, from the Institute of World Economics and Politics at the Chinese Academy of Social Sciences, once again questioned the legitimacy of the Malacca dilemma (Lian 2013).

At the same time, scholars of China's traditional energy security also began to suggest that China should participate positively in global energy security cooperation and diversify its energy supply sources (Yang 2009). In 2013, another scholar, Wu Lei, called on policy makers to end the debate on whether China should participate in the IEA and global energy security governance, and instead "pursue such policies" (Wu 2013).

After Premier Wen's speech in 2012, scholars from the State Council and the National Development and Reform Commission (NDRC) published research proposals on how China should participate in the global energy governance mechanism, in particular under the framework of the G20. A research team from the Department of Research at the State Council of China published a report on "Building Global Governance Institutions on Bulk Commodity of Energy Resources" under the G20 (Fan et al. 2012). It argued that the G20's power structure and its status as the premier institutional anchor in global governance creates cost advantages, making it feasible for the G20 to build global energy resources market governance.

In February 2014, the Energy Research Institute at the NDRC and the Grantham Institute for Climate Change at Imperial College London released a joint draft research report, *Global Energy Governance Reform and China's Participation*. It suggests a greater role for the G20 in providing leadership on energy governance reform, possibly through a new working group, and strengthening the G20's role as an important and representative discussion platform for G20 leaders on energy issues. The report makes a number of recommendations on how China can build capacity for participation in global energy governance and how it can pursue more internationally minded energy policies. It makes an effort to explain Chinese energy policies to the international community so they can be fully understood

(Energy Research Institute, NDRC; Grantham Institute for Climate Change 2014). The NDRC's research team consists of retired former high-level officials and scholars inside the government. The report further demonstrates positive movement toward global energy governance in China's policy.

The transition of China's energy security concept is significant for China's participation in global energy governance. The two key changes in this transition, including President Hu's new energy security concept in 2006 and Premier Wen's proposal for building a global energy market governance mechanism under the framework of the G20, both involve China's participation in the G7 and G20. This is no coincidence. China's closer engagement with these fora shows its increasingly positive attitude toward participation in global governance. By participating in the G20 summits, China entered onto the centre stage of global economic governance, and received recognition and approval as a major economic power in the G20. China has recently demonstrated an understanding of the significance of the G20, in particular as a platform for promoting effective governance on the global energy market, and officials would likely seek to improve on Wen's initial proposal.

China's increasingly positive efforts on clean energy and climate change signaled the emergence and development of the new energy concept in China. They both constitute parts of China's gradual economic transition, which began in the early 2000s. Continuous high-speed economic growth, accompanied by large volumes of inefficient fossil fuels and, in particular, its high reliance on coal, put China under increasing pressure to address environmental protection and climate change, both domestically and internationally. Becoming the world's biggest greenhouse gas emitter in 2006 brought about even greater pressure. All of this pushed China to pursue more flexible and pragmatic endeavours to deal with the issue of climate change. China showed a more positive attitude in some key areas. China changed its previously suspicious attitude toward the Clean Development Mechanism defined in the Kyoto Protocol and supported it with great enthusiasm. China also changed the tone of its consistent claim that developed countries should provide technical and capital assistance to developing countries. It turned to emphasizing the cooperative approaches the two groups of nations could take to acquire the necessary technologies and financing for dealing with climate change (Zhang Haibin 2007). It also had more enthusiasm for clean and renewable energy development, which was regarded by China as one of the most important and promising fields to forge the prospect of China's sustainable economic development in the twenty-first century.

China defined climate change as a development issue in its first national climate change plan in 2007 (NDRC 2007). Its efforts to mitigate climate change are driven

by a desire to maintain sustainable growth and solve the increasingly severe problem of environmental pollution through measures and policies to reduce carbon emissions and through encouraging the development of clean and renewable energy. As a result, China is emerging as a clean energy superpower and has made progress on hydro power, wind power and solar power.

The US-China Joint Announcement on Climate Change declared at the Asia-Pacific Economic Cooperation (APEC) meeting in November 2014 indicated a positive step forward by China on climate change issues. The joint announcement will no doubt encourage the rest of the world to take more active measures to address climate change. After two weeks of intense, tough negotiations, a landmark global-warming agreement was reached at the twenty-first session of the UNFCCC Conference of the Parties in Paris on December 12, 2015. China's current adjustment in the energy industry, with an emphasis on supporting the development of renewable energy, could guarantee the realization of the target goal declared in the joint announcement. Adoption of the so-called "new normal" concept — a model of growth that emphasizes economic upgrading and innovation — illustrates that Chinese leaders are gradually accepting relatively slow economic growth. Environmental protection and the growth of renewable energy are regarded as important components of China's economic transition and development. This explains why China's emphasis is shifting to a low-carbon economy. In doing so, it has the chance to maintain sustainable economic development and the legitimacy of the party-state. The level of air pollution, characterized by persistent smog in most parts of China and the increasingly louder voices of pervasive complaints, pushed the Chinese leaders to gradually elevate the priority of environmental goals in recent years. Xi's public response to the so-called "APEC blue"¹¹ at the APEC meeting in Beijing in November 2014, demonstrated that China's top leader endorses the efforts and measures for environmental protection.

CHINA'S PARTICIPATION IN GLOBAL ENERGY GOVERNANCE

Driven by the sense of insecurity in energy supply, policies of controlling energy production and transportation routes are still the preferred choices for most Chinese elites and leaders, judging from the new One Belt, One Road strategy released in 2013 and China's consistent efforts to sign more bilateral energy supply agreements and build

more land-based routes for energy transportation in the past decade. The Energy Development Strategy Action Plan (2014–2020), released in November 2014, provides a footnote to the perspective (NDRC 2014). As far as international cooperation is concerned, the action plan focuses on the mid-term overseas energy goal, which prioritizes investment and trade, as well as building and maintaining sea routes and land-based routes to transport energy back to China. It also underlines the need to expand energy import paths, in particular the One Belt, One Road, the Bangladesh-China-India-Burma economic corridor and the China-Pakistan economic corridor. It continues to encourage enterprises to implement the going out strategy and promotes the formation of regional energy markets. With regard to global energy governance, it simply mentions that China should actively participate in and "foster a free, open, competitive global energy market with order and effective supervision" (*ibid.*). No specific and meaningful proposals are raised in this respect.

Under the strategy, it appears that China's rise as an energy-consuming and -importing power poses challenges to the existing global energy governance system in many respects. China's tendency to secure its energy needs by signing energy production and supply deals in bilateral diplomatic ways presumably undermines the principles of free trade and expels generally accepted rules of investment (Goldthau and Witte 2010). Characterized by bid prices higher than market prices and accompanying large amounts of collateral social and economic investment promises, Chinese NOCs' unique investment activities to acquire resources draw suspicion and even distrust. Their decisions are regarded as closely involved with the CCP and their investments serve China's strategic policy more than its resource policy. China's energy security strategy is seen as nothing but an indispensable component of a broader grand geopolitical strategy.

Furthermore, the geopolitical energy strategy implies huge economic and political risks. It is always a reasonable and wise decision to diversify overseas energy supply. It should not, however, slide into the other extreme. That is, China should not attempt to overcome the illusion of the Malacca dilemma by building other difficult transport routes for overseas oil and gas importing on a whatever-it-takes basis, totally ignoring the economic cost. The political strategy-oriented model of investment, plus a poor investment environment in countries along the route, suggest that the One Belt, One Road strategy could have huge economic risks and cause China to suffer great economic loss. Accordingly, investment on energy infrastructure under the strategy will probably not help improve China's energy supply security.

A reasonable solution to these challenges is to encourage China to join the existing energy governing bodies. China has already shown its desire and willingness to join. At present, China is advancing cooperation with almost

11 Blue skies are ephemeral in China, especially in Beijing, because of frequent intense smog. Before the APEC summit held in Beijing in November 2014, the Chinese government implemented extremely strict pollution-control measures to make sure a blue sky emerged in Beijing and impressed visiting foreign dignitaries. This led to the use of the sarcastic phrase "APEC blue" to describe something beautiful but short-lived.

Table 1: China's Participation in Global Energy Institutions

Institution	Description	China's Involvement	Introduction of China's Participation
IEA	Treaty-based organization	General cooperation as a non-member partner country	Cooperates with the IEA in many aspects. China's Ministry of Science and Technology and the IEA have established good communication channels for policy research. China has a cooperation agreement with the IEA's network of 40 international technology cooperation agreements. China belongs (as of 2013) to 19 of the IEA's Implementing Agreements for technology collaboration and has regularly participated in the IEA's senior technology committee, the Committee on Energy and Research Technology.
OPEC	Treaty-based organization	General cooperation based on bilateral dialogue	The China-OPEC Energy Dialogue mechanism was established in 2005. The first and second China-OPEC energy round tables were held in 2006 and 2007, respectively.
IEF	A forum for dialogue	General cooperation as a member of the forum and of its executive board	China is generally well represented at a very senior level at ministerial meetings of the IEF. China participated in the IEF special ministerial meeting and signed the IEF Charter in 2011. The administrator of China's National Energy Administration led a high-level delegation to hold a China Energy Day at the IEF on December 1, 2013.
ECT	Treaty-based organization	General cooperation as an observer status country	China became an observer country of the ECT in 2011. The ECT has a special interest for China and is expecting China to become a charter member country. Cooperation between China and the ECT is making progress. China participated in the ECT's task force on Central Asia energy cooperation.
G20	Consensus-based institution	Substantial participation as a member country	Former Premier Wen Jiabao proposed multilateral coordination on the global energy market under the framework of the G20 in 2012. China agreed to publish data on stockpiles of oil at the 2014 Brisbane G20 Summit and reached an agreement with the United States on a joint peer review of inefficient fossil fuel subsidies under the G20.
JODI	A mechanism for oil and gas data transparency.	General cooperation as member of the ECT and G20	China participated in the work of JODI and hosted the eighth International JODI Oil Conference in Beijing in 2011.
G8	Institution for big power coordination	General cooperation as a non-member dialogue country	China participated for the first time at the G8/Developing Countries Dialogue in 2003. Former Chinese President Hu Jintao proposed China's new energy security concept — which called for greater international cooperation to ensure energy supply security — for the first time at the dialogue held in 2006.
CEM	A high-level global forum	Substantial participation as a member country	As of January 2015, China had participated in four of the 13 CEM initiatives, including co-leading the electric vehicle initiatives with the United States. The other three initiatives are Carbon Capture, Use and Storage; Smart Grid; and Sustainable Cities. A minister or vice minister of China's Science and Technology Ministry has attended all five of the CEM meetings held so far.
IRENA	An intergovernmental organization	General cooperation as member country	China hosted an IRENA-sponsored seminar and an event in 2014. IRENA launched <i>Renewable Energy Prospects: China</i> , the first country-specific analysis in the REmap 2030 series, in Beijing in 2014.
UNFCCC	Treaty-based intergovernmental organization	Substantial participation as member country	As a key party, China has participated actively in the climate change negotiations under the UNFCCC since it entered into force in 1994. China is a member of the Technology Executive Committee of the UNFCCC, which aims to help developing countries implement their low-carbon energy growth strategies.
APEC	A high-level global forum	Substantial participation as member country	China has limited participation in the APEC Energy Working Group and provides annual data. The Energy Ministerial Meeting is the main energy regime in APEC and China hosted the APEC meeting and the 11th APEC Energy Ministerial Meeting in 2014, announcing the Beijing Declaration — <i>Joining Hands Toward Sustainable Energy Development in the Asia-Pacific Region</i> .
Shanghai Cooperation Organisation (SCO)	A permanent intergovernmental international organization	Substantial participation as a founding member and leading country	An SCO energy club was first proposed in 2005. Chinese President Xi Jinping and Russian Prime Minister Dmitry Medvedev called for the establishment of an SCO energy club in 2013.

Source: Author. Some of the data is cited from the consultation draft report *Global Energy Governance Reform and China's Participation* (Energy Research Institute, NDR; Grantham Institute for Climate Change 2014).

all of the major global and regional energy governing institutions, but it does not have effective and substantial cooperation with global institutions, only with some regional institutions (see Table 1). The constraints on China's participation in global energy governance include the following:

- China's focus is still on seeking energy supply security through geopolitical strategy and it does not pay equal attention to participation in global energy governance.
- There are some fatal flaws within the current global energy governance system, such as fragmentation and lack of implementation capacity, as well as some restrictive factors, such as the securitization and politicization of nation-states' energy policies, which make global energy governance bodies less authoritative and credible. China is still suspicious of the benefits it would receive from global energy governance.
- Domestic oil and gas interest groups would restrict China's further participation in global energy governance.

More active participation in global governance under the G20 could bring China huge advantages, with low economic and political costs. Most importantly, it provides an alternative to guarantee China's energy security. The rise of the G20 and global governance achievements in economics, finance, development and energy demonstrate that the new concept of collective security to guarantee energy security offers China an alternative for securing its energy supply. Compared to the geopolitical strategy, it has almost no economic risk and zero political risk. All that is needed from China is a change in the policy view of its elites and top policy makers, and more involvement of qualified officials and consultants from its bureaucratic agencies. The potential gains of adopting the concept of collective security could be greater than that of a geopolitical approach.

Second, participation in global energy governance under the G20 is a good way to dispel doubt from Western countries concerning China's motivation for acquiring global energy and to enhance China's image on the international stage, thereby improving relations with Western countries in the international energy market. With its huge volume of imported oil and gas in the international market and its outsider status to major international energy organizations, China constitutes the weakest link in existing global energy market governance and also the most challenging factor in current global energy governance. China's closer engagement and initiatives in energy governance under the G20 framework will be a convincing sign to other major players that China could be a constructive force in global energy governance.

Third, substantial participation in global energy governance can help China acquire the capability for engaging in price setting in international oil and gas markets. Several means are available to improve China's performance: coordinate the strategic oil reserves; join the major energy governance mechanisms such as the IEA and the ECT; and reform the Shanghai International Energy Trade Center and make it a crude oil futures trading centre to participate in the international oil trade. Some progress has been made in this regard. The China Securities Regulatory Commission approved the crude oil futures trade at the Shanghai Futures Exchange in December 2014. All of these goals can be facilitated if China pursues them under a G20 framework. At the 2014 G20 summit in Brisbane, China agreed to publish data on its stockpiles of oil, and China has already reached an agreement with the United States on a joint peer review of inefficient fossil fuel subsidies under the G20. These are important steps for China's participation in energy governance at the G20. China's future involvement in a comprehensive JODI oil information mechanism at the G20 will be helpful for a Shanghai crude oil futures trading centre built on transparency and effective supervision.

Fourth, innovation in energy technology, in particular clean energy, is significant for countries such as China and the United States in achieving their goals in clean energy and climate change. Cooperation and transfer in energy technology, in particular clean energy, is highly important for the promotion of common goals in climate change mitigation. The G20 is the perfect platform to promote cooperation in energy technology. The CEM, IRENA and the International Partnership for Energy Efficiency Cooperation (IPEEC) are the institutions focusing on the development of clean, renewable energy and energy efficiency, and they are building, or already have built, close working relations with the G20 under the G20 Energy Efficiency Action Plan.¹²

The G20 summitry is widely perceived in China's policy communities as the ideal platform for participation in global governance. To create and strengthen a political framework for international energy cooperation, China needs to play a leading role in the G20. The fact that energy governance is not the top priority on the G20 agenda and that China is not a member of major international energy organizations restrains China's active engagement on energy governance at the G20. However, with the United

¹² In 2015, the IPEEC will report to the G20 through the Energy Sustainability Working Group. The Global Superior Energy Performance Partnership (GSEP) is one of the CEM's 13 initiatives. The GSEP Power Working Group reported to the G20 in 2015 through the G20 Energy Sustainability Working Group on sharing knowledge of high-efficiency, low-emissions electricity-generation technologies. As a member of both IRENA and the G20, Turkey — the 2015 G20 summit host country — had stated at the 2015 IRENA assembly that it would leverage synergies between the G20 and IRENA, with a focus on promoting energy access in Sub-Saharan Africa and assessing the influence of falling oil prices on renewable energy investments (IRENA 2015).

States unwilling and incapable of action due to domestic deadlock, and with China hosting the summit in 2016, China is expected to lead the G20 with its agenda-setting responsibilities, and its energy goals could be pushed forward as a result.

CONCLUSION AND RECOMMENDATIONS

Currently, China prioritizes the traditional geopolitics-based approach over participation in global energy governance organizations to secure its energy supply. The newly proposed One Belt, One Road grand strategy, although still mainly focusing on regional and bilateral ways to promote China's energy security, contains elements that could lead to more active participation for China, including contributing to global governance. The key question is: can China's more active participation in global governance coordinate with the geopolitical approach? The litmus test will be how China promotes the Asian Infrastructure Investment Bank (AIIB) and what kind of rules and governing mechanisms for the bank are finally made. How will the AIIB address its role in advancing infrastructure investment and construction in Asia, including energy infrastructure, to accommodate China's interest in connecting the neighbouring countries and energy-rich Central Asian and Middle Eastern countries? What can China do with respect to global energy governance when it hosts the G20 summit in 2016?

The biggest advantage of the G20 platform is that it coordinates the strength and resources of existing international regimes to push its own agenda. China should push the G20 Energy Sustainability Working Group to establish a closer connection with the IEA and OPEC (similar to relations among the G20, the IMF and the World Bank), to begin the discussion on how to set up the framework of global energy market governance. Chinese leaders understand that the G20 is one of the few international institutions in which China can be an equal participant, and even a leading country. The energy governance issues handled at the G20 through its energy arrangements could maximize China's interest in substantially participating in global energy governance, given that China is currently not a member of the IEA, OPEC, the ECT and other important global energy governing organizations.

The G20 summit in China in 2016 will be a golden opportunity for China to play a positive — and even leading — role in global energy governance. China, the world's greatest energy consumer and leading producer of renewable energy, should put the issue of global energy governance on its priority list for the agenda. Considering China's lesser engagement with existing major global energy governing organizations and marginalized status in the global energy governance system, having some new channels would be China's best choice. China should make clean energy and climate change the most important issues

in its participation in global energy governance at the G20. Meanwhile, as the largest oil-importing country, China cannot afford to be excluded from fossil fuel-related energy cooperation. A specific and substantial, but not extremely complicated, issue can be an appropriate starting point for China to get involved in this regard. Information sharing under the JODI operated by the IEF-IEA-OPEC mechanism on the G20 platform is perhaps one option.

Based on the considerations above, there are five aspects of global energy governance where China could participate and play a leading role.

First, the CEM should be upgraded under the G20 as the leading institution for global clean energy governance at the 2016 G20 summit in China. As a parallel measure, IRENA should be invited to participate. This proposal is based on the United States and China's cooperation in clean energy and their leading roles at the G20. Specifically, China and the United States have already cooperated at the CEM, which was established by Steven Chu, the former US energy secretary, in December 2009. The United States holds a dominant position in the organization and leads eight of its 13 initiatives, while China has participated in four of them, including co-sponsoring one of the electric vehicle cooperation initiatives with the United States.¹³ What is more, China and the United States have a good record of cooperation in clean energy. The two countries created the US-China Clean Energy Research Center, and established the US-China Climate Change Working Group, two initiatives that include cooperation on carbon capture storage technologies, energy efficiency, smart grids and other key clean energy technologies. The recent US-China Joint Announcement on Climate Change further strengthens this cooperation. The two countries also agreed on a joint peer review of inefficient fossil fuel subsidies under the G20. It is reasonable that the United States and China would play a leading role in a strengthened mechanism to govern clean energy cooperation under the G20, if China proposed it at the 2016 G20 summit.

Second, China should propose to upgrade JODI as a comprehensive information-sharing mechanism on the G20 platform. China already agreed to meet the IMF's Special Data Dissemination Standards (SDDS) and to publish data on its stockpiles of oil. Chinese President Xi Jinping announced at the Brisbane G20 Summit that China has decided to switch to the SDDS of the IMF from the General Data Dissemination System. The step is important, and both China and the world will benefit from it, as it will make currency and commodity markets operate more efficiently. Considering China's strategy to try to use natural gas to replace heavily consumed coal and reduce carbon emissions, China should try to encourage the cooperation between the main producers of natural gas,

¹³ See Table 1.

including Russia, Qatar and the United States, and other natural gas-consuming countries, such as Japan and China itself, under the JODI gas mechanism.

Third, China should take the opportunity when hosting the G20 summit in 2016 to put energy governance on the list of top priorities and to negotiate a proper way to join the IEA. In light of the interest the IEA expressed in having China join the organization,¹⁴ if China is determined to join, the requirement of being a member of the Organisation for Economic Co-operation and Development should not be a major stumbling block. From the point of view of China, joining the IEA represents a significant shift in its energy security strategy and implies it embraces the Western way of seeking its energy supply security. It requires great determination for China to make this change and move forward, as it indicates a significant policy switch in China's energy security strategy. For instance, it could mean stopping or scaling back some major planned or ongoing projects, such as costly ports or land-based pipelines, and paying more attention to fully engaging in global governance mechanisms, such as the IEA and JODI. Changes to the established strategy need support from bureaucracy and must overcome the obstruction from vested interests centred on these projects. Most importantly, there needs to be a transition in the policy views of top leaders that the Western way of seeking China's energy supply security is not necessarily more untrustworthy than the traditional geopolitical way. These changes require China to cooperate and share energy security with its imaginary enemies, the US-led Western countries in the global energy governance system. In terms of policy implementation, China will need to pay at least equal attention to both means of guaranteeing energy supply security.

Fourth, China should promote ending inefficient fossil fuel subsidies, an action to be explored at the G20. Since the Pittsburgh summit in 2009, the G20 has repeatedly committed to phasing out inefficient fossil fuel subsidies (Carin 2015), but delay and procrastination since then have harmed the credibility of the G20. Promoting a practical proposal to end inefficient fossil fuel subsidies will redeem the G20's reputation on this issue, and also bring great pressure to undertake structural reform of the energy sector, which has been called for in China for years. Other measures to reduce emissions and promote energy efficiency that would have an impact on China, both domestically and internationally, include the introduction of a carbon tax and an initiative for a nationwide carbon-trading scheme. The former has been brewing for years (Yuan 2013; Lin 2013; Yu Haishan 2013) and it was announced that the latter would be ready by the end of

2016 or early 2017 (Chen and Stanway 2015). The two parallel measures to fight carbon emissions and improve energy efficiency domestically are also expected to help China reduce the impact caused by border tax adjustments in the future, and even to immunize China from border tax adjustments (Shi 2009; Yu Haishan 2013). Meanwhile, China should also participate in writing the rules for border tax adjustments, to avoid them being unilaterally imposed by other countries in the future.

Finally, a China-led AIIB would be a key institution in which China could play a critical role in global energy governance. The AIIB is supposed to play a major role in infrastructure construction, including energy infrastructure in Asia. The G20 could be the proper platform to discuss and promote the new ideas of financial and energy governance in the AIIB. This should be introduced by China on the G20 agenda for the 2016 G20 summit. With the G20 agenda, China could hope to contribute to the development of global financial and energy governance innovation and make peace with existing global governance systems — that is, the US-led World Bank, the IMF and the Asian Development Bank system — in terms of promoting global energy infrastructure.

Participation in global energy governance is mainly understood and implemented as a complement to the dominant geopolitical means of seeking energy supply security in China's energy security strategy. China's performance in global economic governance at the G20, in particular macroeconomic policy coordination, demonstrates that China is appreciating the essence of global governance, which is to create stabilized global economic policy coordination frameworks and mechanisms, and to provide public goods to all members in the system. Advocacy and suggestions from Chinese academic circles on China's full participation in global energy governance, including the recommendations in this paper, represent efforts to push China forward to contribute to the global energy governance system and will benefit members in the system, including China itself.

14 Nobuo Tanaka, former chairman of the IEA, once said that if China demonstrated a strong desire to join, the IEA could modify the membership state rule that obstructs China from entering the organization (Wang and Wei 2013).

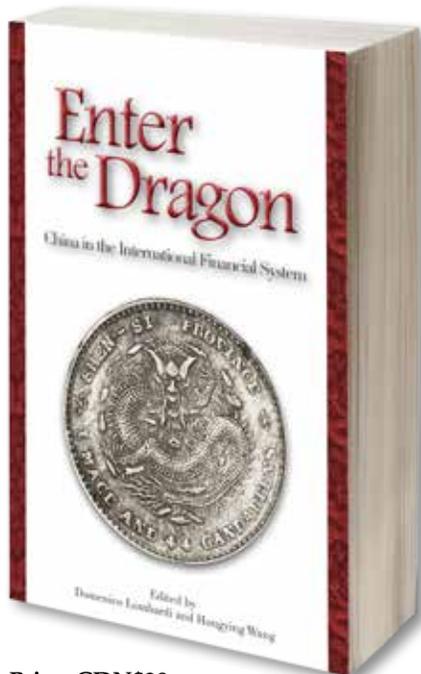
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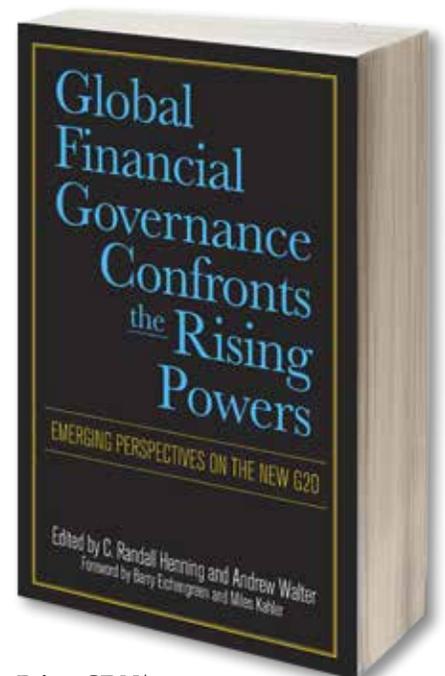
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Assessing the Governance Practices of Sustainability Reporting

Policy Brief No. 71
Jason Thistlethwaite and Melissa Menzies

The Financial Stability Board recently proposed the creation of a Climate Disclosure Task Force, coordinated through the G20, to develop standards for companies to disclose their exposure to climate change risks. This brief identifies the key categories of governance practices that must be addressed, how these divergent practices challenge end-users, and how the establishment of criteria that define effective and efficient reporting is a critical first step for the Climate Disclosure Task Force.



Growth, Innovation and COP21: The Case for New Investment in Innovative Infrastructure

CIGI Policy Brief No. 73
Céline Bak

Forged by private and public sector cooperation, Mission Innovation was announced at the twenty-first Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change as a commitment to doubling, by 2020, the investment in energy innovation by participating countries. Mission Innovation heralds a new period of active private-public sector engagement on energy, climate and innovation policy.



The Case for Intellectual Property Rights: Should Patents Be Strengthened, Weakened or Abolished Altogether?

CIGI Policy Brief No. 70
Joël Blit

This policy brief recommends that to diminish the potential for holdup, uncertainty around patent rights should be reduced. Patents should be easily searchable, more easily understood by non-legal experts, narrower and more clearly demarcated. To the extent that patents' welfare costs seem to outweigh their benefits, requirements for obtaining a patent should be tightened. Further, patents should be less broad and their duration reduced, concomitant with shortened product life cycles.

ABOUT CIGI

The Centre for International Governance Innovation is an independent, non-partisan think tank on international governance. Led by experienced practitioners and distinguished academics, CIGI supports research, forms networks, advances policy debate and generates ideas for multilateral governance improvements. Conducting an active agenda of research, events and publications, CIGI's interdisciplinary work includes collaboration with policy, business and academic communities around the world.

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Le CIGI a été fondé en 2001 par Jim Balsillie, qui était alors co-chef de la direction de Research In Motion (BlackBerry). Il collabore avec de nombreux partenaires stratégiques et exprime sa reconnaissance du soutien reçu de ceux-ci, notamment de l'appui reçu du gouvernement du Canada et de celui du gouvernement de l'Ontario.

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