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The Evolution of China's Energy Institutions : Centralization versus Decentralization

Yu Bao & Gordon Houlden

China Institute
University of Alberta
Edmonton, Alberta, Canada

EXECUTIVE SUMMARY

The energy sector has played a vital role in the economy of the People's Republic of China since 1949, and has drawn sustained close attention from the leadership of the Chinese state and business sector, particularly as China has gradually become more dependent on imported petroleum. The institutional settings of China's energy sector have undergone a number of reforms and adjustments, which have generally followed the pattern of China's broad administration reform movements.

The role of government in the energy sector has been transformed from a focus on highly centralized controls to a more market-oriented management approach, and then, more recently, back to a more centralized coordination of energy management. As China's economic growth reshapes the global energy market, the institutional reforms in China's energy sector will continue to receive attention from China's international energy partners.

This paper offers a historical overview of China's energy institutions (1949-2013) with a special focus on the oil and gas industry. In so doing, it divides the evolution of China's energy institutions into four phases: 1) a highly centralized phase, 2) the transition from centralized planning to a market system, 3) a market-oriented management phase and 4) the phase of centralized coordination and supervision, all against a backdrop of China's evolving energy security needs and China's medium and long-term economic goals.

The chart in the appendix of this paper will help clarify the evolution of China's energy state-owned enterprises(SOEs).

China's SOEs are taking a proactive role in positioning China abroad in quest of enhanced energy security by securing existing footholds in some locations and positioning in others for future considerations, which is evidenced by the China National Offshore Oil Corporation's (CNOOC) $15.1 billion acquisition of Canada-based NEXEN Inc. in 2012. This study may also help contribute to a better understanding of the current broad debate over Chinese SOEs. While this paper does not tackle the issues regarding the independence of Chinese SOEs from the Chinese government, a better understanding of the institutional evolution of Chinese energy SOEs, as well as their growing influence in Chinese energy policy, can perhaps be a building block in a much more ambitious discussion.

INTRODUCTION

As the world's fastest-growing large economy, China overtook the United States to become the world's largest energy consumer in 2010.[1] China's energy demand has risen at a quick pace due to its rapid economic expansion. This growth has in turn materially influenced the global energy market. According to the recently released BP Energy Outlook, China will become the world's largest economy and energy consumer by 2030, and, combined with India, will account for 94% of the world's net oil demand growth.[2] As China is becoming increasingly influential in the global energy market, the evolution of China's energy institutions since the founding of the People's Republic of China in 1949 deserves closer scrutiny. This information may help us to better understand not only China's domestic energy policy, but also China's international behavior in the global energy arena. This paper will map a brief history of the institutional evolution of China's energy sector. (An appendix serves to summarize the various changes of state energy management since 1949.)

This study is also relevant to increasing understanding of the current debate over Chinese SOEs. While this paper does not tackle the issues regarding the independence of Chinese SOEs from the Chinese government, a better understanding of the institutional evolution of Chinese energy SOEs, as well as their growing influence in Chinese energy policy, can perhaps make some contribution to that debate.

The institutional settings of China's energy sector have undergone a number of reforms and adjustments, which are generally consistent with China's broader administration reforms. The role of government in the energy sector has been transformed from a focus on highly centralized controls to more market-oriented management, and then, more recently, back to a more centralized coordination and supervision. The latter move, however, focuses more on "improving the effectiveness of regulatory oversight" than on the "operational aspects of energy production".[3] This paper offers a historical overview of China's energy institutions with a special focus on the oil and gas industry. In so doing, it divides the evolution of China's energy institutions into four phases: 1)the highly centralized phase, 2)the transition from centralized planning to a market system, 3)the market-oriented management phase and 4)the phase of centralized coordination and supervision, all against a backdrop of China's evolving energy security needs and, indeed, its medium and long-term economic objectives.

The paper will conclude with an assessment of the implications of these institutional developments for China's international energy partnerships and the strategies needed to maximize mutual commercial and industrial benefit.

1 BP Statistical Review of World Energy, London 2011
2 BP Energy Outlook 2030, London 2012, pp. 45

3 Zhao, Jimin, "Reform of China's Energy Institutions and Policies: Historical Evolution and Current Challenges", BCSIA Discussion Paper 2001-20, Energy Technology Innovation Project, Kennedy School of Government, Harvard University, 2001, pp. V

THE EVOLUTION OF CHINA'S ENERGY INSTITUTIONS

Phase i: Highly Centralized Control (1949-1977)

With the establishment of the People's Republic of China in 1949, the Chinese government generally adopted the Soviet Union's administrative structure and centralized planning economic system, and began to play a dominant role in controlling and managing the energy sector. Chinese leaders gave top priority to the development of heavy industry, particularly the national defense-related military industry, following the outbreak of the Korean War in 1950.[4] This highly centralized planning system allowed the Chinese government to fully control and allocate its limited natural resources and energy, meeting the immediate demands of heavy industry. During this period of time, the energy sector in China placed primary emphasis on short-term production plans, giving little or no attention to a long-term energy strategy.[5]

The institutional structure in the energy sector was characterized by a back-and-forth shifting of oversight powers between the central and local governments, as well as the repeated merging and separation of energy related ministries.

Major Events/Milestones:

- The Ministry of Fuel Industry, established in October 1949, was the sole ministry responsible for all energy production, including oil, gas, coal and electric power, over the course of the next five years, between 1949 and 1954.

- The State Planning Commission, the predecessor of the current National Development and Reform Commission (NDRC), established in 1952, was responsible for the management of the centralized planning economic system, as well as the supervision and monitoring of the national economic development plans, including those relating to the production and distribution of energy.

- After the Korean War, the Ministry of Fuel Industry was judged to be no longer capable of meeting the growing demand in China for diversified energy products and services, and was thus replaced in 1955 by the State Council with four new energy related ministries: the Ministry of Petroleum Industry,[6] the Ministry of Coal Industry, the Ministry of Chemical Industry and the Ministry of Electric Power Industry.

- The establishment of these four new ministries and the corresponding reform in the energy sector no doubt contributed to the economic development in China at that time through an ostensibly logical separation of roles. Nonetheless, the Cultural Revolution, which took place between 1966 and 1976, disrupted, particularly in the first two years, all economic agencies of government, inter alia, calling for simplification and, in effect, the consolidation of institutions in China. Therefore, in 1970, the State Council merged the Ministry of Petroleum Industry, Ministry of Coal Industry, and Ministry of Chemical Industry into one 'super-ministry', the Ministry of Fuel and Chemical Industry.

- Somewhat paradoxically, the Cultural Revolution also led to the decentralization of administrative power, which resulted in the shifting of the oversight of local

4 Peng, Wuyuan. The Evolution of China's Coal Institutions, Program on Energy and Sustainable Development, Freeman Spogli Institute for International Studies, 2009, pp.7
5 Zhao 2001

6 CNPC. China National Petroleum Corporation (CNPC) Offical Website. 2012. http://www.cnpc.com.cn/en/aboutcnpc/companyprofile/history/ (accessed 8 3, 2012).

operation of ministries from the central government to local governments.[7]

- In light of the foregoing, the Ministry of Fuel and Chemical Industry had no meaningful power over the energy sector due to the decentralized institutional structure as well as the ongoing economic dislocation caused by the Cultural Revolution. The Ministry was then re-divided into the Ministry of Coal Industry and the Ministry of Petroleum and Chemical Industry in 1975, the latter of which was further sub-divided into the Ministry of Petroleum Industry and the Ministry of Chemical Industry in 1978.

Phase ii. Transition from Centralized Planning to a Market System (1978-1997)

After the end of the Cultural Revolution, in 1978, China entered into a new era through the adoption of a policy centered on an ambitious program of reform and "opening-up" of the economy to the outside world. Chinese leaders shifted their focus from political struggles to economic development. Similar to other sectors, the energy sector in China experienced a transition from an emphasis on centralized planning towards a more market-based system during the period of 1978 to 1997. With the introduction of a market system, state-owned oil enterprises were established and began to play an increasingly significant role in the energy sector. During this phase of institutional evolution, China's energy institutional structure again underwent multiple processes of decentralization and recentralization, albeit within a broader process of moving towards market-oriented management.[8]

Major Events/Milestones:

- In order to restore the energy sector after the havoc wrought by the decade long Cultural Revolution, China's central government took back from the local governments their power over the state-owned energy-related enterprises and institutions, and formed the National Energy Commission in 1980, which was responsible for the coordination of overall energy development in China, as well as the supervision of energy-related ministries. However, this National Energy Commission existed for only two years and was dissolved in 1982.

- In the face of an oil supply shortage, the Ministry of Petroleum Industry became one of the economic market reform pilots, and received approval by the State Council in 1981 to carry out the "100 million tons of crude oil production lump sum policy."[9] According to this policy, the Ministry of Petroleum Industry was instructed to reach the target of producing 100 million tons of crude oil per year, and was authorized to export the excess oil production to earn much-needed foreign currency. This market-oriented initiative although set by the central government, in conjunction with the identification and early development in China of major offshore reserves in this period, on balance enhanced the production capacity of China's oil and gas industry.

- One essential strategy of China's industrial reform was to promote the development of energy-related industries. China's three largest national oil companies, being China National Petroleum Corporation (CNPC),

7 Zhao 2001, pp. 11
8 Cunningham, Edward. "China's Energy Governance: Perception and Reality." MIT Center for International Studies Audit of the Conventional Wisdom, 2007, pp. 3

9 Chen, Geng. "Review of 30 Years Reform and Opening Up in China's Oil Industry." 11 12, 2008. http://ccnews.people.com.cn/GB/87320/8328880.html (accessed 8 16, 2012). Chen hase served as the President of CNPC 2002-2006.

China Petrochemical Corporation (predecessor of Sinopec), and China National Offshore Oil Corporation (CNOOC) were established during this phase of energy institutional reform.

- The first field to undergo the process of 'opening-up' was China's offshore industry, through the establishment of CNOOC in 1982. CNOOC, still affiliated with the Ministry of Petroleum Industry, was granted, under legislation, the right to engage in offshore oil exploration and sales in cooperation with overseas partners.[10] This development was also driven by the acute Chinese need for foreign maritime drilling expertise and capital.

- In order to solve the issues related to fragmentation and inefficiency in the petrochemical industry,[11] the State Council established the China Petrochemical Corporation in 1983, by merging the country's 39 major petrochemical and refining enterprises, which previously belonged to the Ministry of Petroleum Industry, the Ministry of Chemical Industry and the Ministry of Textile Industry. As the predecessor of Sinopec, China Petrochemical Corporation reported directly to the State Council.

- In 1988, the State Council dissolved the Ministry of Petroleum Industry and reconstructed it as the China National Petroleum Corporation (CNPC),[12] which became responsible for the management and operation of China's onshore oil and gas exploration, development and production, reporting directly to the State Council. With the dissolution of the Ministry of Petroleum Industry, CNOOC also became an SOE, reporting directly to the State Council, in that same year.

- Along with the dissolution and reconstruction of the Ministry of Petroleum Industry, certain other energy related ministries, including the Ministry of Coal Industry, the Ministry of Water Resources and Electric Power, and the Ministry of Nuclear Industry, were dissolved and replaced with SOEs such as the National Coal Corporation and the National Nuclear Corporation. Nonetheless, and counter to the overall trend, the Ministry of Coal Industry was reestablished in 1993 by the State Council.

- The establishment of the Ministry of Energy in 1988 was yet another experiment with recentralization. Based on the merging of certain functional departments of the dissolved energy-related ministries, China's first Ministry of Energy was established in 1988. It was formed as a "coordinating body" of all newly established national energy corporations[13] and was nominally in charge of the entire energy sector. Despite high expectations, the Ministry of Energy was viewed by the leadership as having failed to fulfill its mandate and was dissolved in 1993 by the State Council for the following reasons:[14]

    1. The Ministry of Energy came into being with very limited functions, such as the development of an energy strategy, and the supervising of major energy projects.[15]

    2. The Ministry of Energy had "overlapping author-

10 CNOOC. History of CNOOC, CNOOC Official Website. 2012. http://en.cnooc.com.cn/data/html/english/channel_114.html (accessed 8 16, 2012).
11 Chen 2008
12 CNPC 2012, http://www.cnpc.com.cn/eng/company/presentation/history/?COLLCC=2030741158&

13 Zhao 2001, pp. 14
14 Garrison, JA. China and the energy equation in Asia : the determinants of policy choice. Boulder, Colorado.: First Forum Press, 2009, pp. 26
15 Zhao 2001, pp. 14

ity" in the energy sector with the State Planning Commission,[16] the predecessor of the current NDRC. Those overlapping functions became difficult to reconcile.

3. The newly established SOEs took over the "management and production functions" of the former energy-related ministries and as "energy shareholders" they appear to have become too strong for the new Ministry of Energy to manage in a time of institutional opposition.[17] Indeed, the previous Ministry of Petroleum Industry and Ministry of Coal Industry had publicly opposed the establishment of the Ministry of Energy[18].

During this phase of institutional evolution in China's energy sector, the establishment of the three largest national oil corporations not only symbolized one of the major successes of the reform and opening-up of China's industrial management system, but has also made great contributions to optimizing the comprehensive utilization of energy resources, strengthening the state oil corporations' responsibilities for production and operation, as well as promoting the overall development of China's oil industry. Although the three new national oil companies increasingly performed or partially performed most of the national energy over-sight functions, these SOEs also reflected, and in some respects spearheaded the national energy policy objectives, as the oil and gas industry as a whole began to move towards market-oriented management in its operations.

16 Tsang, Stephen , and Ans Kolk. "The evolution of Chinese policies and governance structures on environment, energy and climate." 2010. http://dare.uva.nl/document/177598 (accessed 8 7, 2012), pp. 11
17 Tsang and Kolk 2010, pp. 11
18 Wang, Qiang. "Ideas on Reconstruction of Ministry of Energy." SINA Finance. 5 8, 2005. http://finance.sina.com.cn/g/20050508/16151569266.shtml (accessed 8 17, 2012), pp. 5

Phase iii. Market-oriented Management (1998-2007)

The State Council underwent significant and strategic institutional reform in 1998 to accommodate the rapid development of a market economy in China. The excessive interventions of the government in the business sector, and the overlapping of functions among different ministries had led to administrative inefficiency, hindering the process of economic development. The 1998 administrative reform was therefore aimed at separating government functions from enterprises' management.[19] It called for the streamlining of ministries and the reconstruction of SOEs.[20] The reorganization of governmental agencies and the reduction in the number of government officials also applied to the energy sector, with the dissolution of nearly all energy-related ministries.[21]

Major Events/Milestones:

- In 1998, the State Council dissolved fifteen ministries, along with those related to energy, including the Ministry of Coal Industry, the Ministry of Electric Power Industry, the Ministry of Metallurgical Industry and the Ministry of Chemical Industry, etc.

- The State Planning Commission was renamed the State Development Planning Commission (SDPC). The National Bureau of Petroleum and Chemical Industry was established in 1998 as the department-level coordinating body of the oil and chemical industry,

19 Xinhuanet. 1998 Institutional Reform . 3 6, 2003. http://news.xinhuanet.com/zhengfu/2003-03/06/content_761488.htm (accessed 8 18, 2012).
20 Zhao 2001, pp. 17
21 Weng, Shiyou, and Xiaohong Ouyang. State Council Reform: Break Down, Rebuild, Rinse, and Repeat, The Economic Observer Online. 3 6, 2008. http://www.eeo.com.cn/ens/Politics/2008/03/06/93441.html (accessed 7 16, 2012).

by merging the government functions of the previous Ministry of Chemical Industry, CNPC and China Petrochemical Corporation. This new bureau was dissolved three years later in 2001.

- In 1998, China's central government decided to carry out strategic reform in the oil and gas industry. The previous CNPC and China Petrochemical Corporation entities were reorganized into large oil group companies through a "central administrative assets allocation."[22] This reorganization was aimed at realizing the integration of upstream and downstream production, supply and sales, as well as domestic and foreign trade in the oil and gas industry. Its development was aimed at optimizing the industrial structure of the oil industry, but it also laid a foundation for these two national oil corporations to become listed companies.

- In 1999, in accordance with the current policy principles of "separating primary industries from secondary industries, separating superior assets from non-performing assets, and separating corporate functions from social functions,"[23] CNPC and China Petrochemical Corporation carried out an internal reorganization process, and formed their own joint stock companies, respectively.

- Subsequently, CNPC (PetroChina), Sinopec and CNOOC were successfully listed in overseas stock markets in 2000-2001,[24] symbolizing a historical breakthrough in the institutional evolution of China's energy sector. With this development, these three national oil companies entered into the international energy arena.

- Nevertheless, the upshot of this evolution is that, since the dissolution of the Ministry of Energy in 1993, no unified energy management department at the national level existed in China for over ten years. Energy-related functions were distributed among different ministries. The policy, planning and coordination roles of energy institutions were weakened in the move towards market-oriented management and while there remained basic regulation and supervision, there was no longer state oversight of the operating aspects of energy production.

- In 2005, the State Council announced the establishment of the "National Energy Leading Group" headed by Premier Wen Jiabao, with the aim to coordinate the long term energy strategy and major energy projects at the national level. The Office of the National Energy Leading Group was also established as a department under the National Development and Reform Commission. This new institutional setting in the energy sector laid the foundation for the establishment of the National Energy Administration (NEA).

Phase iv. Centralized Coordination and Supervision (2008 to present)

As the energy industry plays an increasingly important role in China's economic development, and as energy inputs grow, Chinese leaders have begun to attach greater importance to a national energy strategy, so as to secure energy supplies for sustained long-term economic growth. The growing gap between energy production and consumption has evoked a strong call for the reestablishment of a Ministry of Energy to coordinate the energy strategy at the national level. However, the State Council has proven to be very cautious about this proposal, possibly

22 Chen 2008
23 Chen 2008
24 CNPC 2012, Sinopec 2012, CNOOC 2012

due to the failure of the previous experience with a Ministry of Energy in the early 1990s. In 2008, a moderately-sized National Energy Administration, rather than the Ministry of Energy, was established as a Vice-Ministerial level department under the NDRC.

Major Events/Milestones:

- The establishment of the NEA was, at least on paper, a highly significant initiative, although it can perhaps be more accurately described as an incremental step forward in China's institutional energy reform. Based on the previous Office of the National Energy Leading Group (purely a highly policy-coordination unit) and the State Energy Bureau of the NDRC, the NEA is responsible for formulating and implementing energy development plans and industrial policies at the national level. According to the mandate indicated on the NEA website, the NEA is "administering energy sectors including coal, oil, natural gas, power (including nuclear power), new and renewable energy etc."[25]

- The NEA's other functions include
  1. the "coordination on major issues in energy development and reform;"[26]
  2. the "monitoring of the supply and demand of domestic and international oil markets;"[27]
  3. taking the lead in international energy cooperation, negotiation and signing of MOUs with "foreign energy authorities and [the] International Energy Agency;"[28]

- The Chief of the NEA also serves as one of the Deputy Chairmen of the NDRC. The NDRC, formerly named the State Development Planning Commission and also described as the "mini-State Council", is responsible for formulating and implementing "strategies of national economic and social development, annual plans, [and] medium and long-term development plans."[29]

- The role of the NEA in China's energy sector is largely focused on coordination and regulation, having no direct control over the operational aspects of production, or the pricing of energy.[30] The increasingly well-established and well-resourced state-owned energy enterprises play a rather independent role in energy production while the Pricing Department of the NDRC is in charge of the pricing of all strategic commodities, including oil and gas.
  1. Another important symbol of China's recentralization of energy institutions was the establishment of the National Energy Commission (NEC) in 2010. The NEC is responsible for the overall coordination of China's energy policies on energy security, climate change, carbon reduction and energy efficiency. It aims at improving regulatory efficiency, rather than directly controlling energy production.
  2. The current Premier Wen Jiabao serves as the Chairman of the NEC.
  3. The current Deputy Premier Li Keqiang acts as the NEC's Vice Chairman.
  4. The NEC includes 21 Commission members: Ministers of 21 Ministries or ministerial level agencies under the State Council.
  5. It is anticipated that following the National Peo-

25 NEA. China's National Energy Administration Official Website. 2012. http://www.nea.gov.cn/ (accessed 7 19, 2012).
26 NEA 2012
27 NEA 2012
28 NEA 2012

29 NDRC. Main Functions of the NDRC, National Development Reform Commission Official Website. 2012. http://en.ndrc.gov.cn/mfndrc/default.htm (accessed 5 19, 2012).
30 NEA has only around 100 staff in total, while CNPC has over 1million employees.

ple's Congress in March, 2013, Li Keqiang[31] will replace Wen Jiabao as NEC Chairman. Possibly, Wang Yang, a Politburo member of the Chinese Communist Party, will become Deputy Premier with responsibility for energy.

6. The NDRC and the NEA serve as the secretariat of the NEC, with the NDRC's Chairman serving as the Director and the NEA's Chief as the Deputy Director.

- State-owned oil enterprises, such as CNPC, Sinopec, CNOOC and SinoChem do not report to the NEA, but are directly under the supervision and management of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), which is a member of the NEC. SASAC supervises and manages state-owned assets and "appoints and removes the top executives of the supervised enterprises."[32] Furthermore, even though CNPC is a Vice-Ministerial level SOE, Chairman Jiang is a Ministerial level official, and therefore is of a higher rank than the Chief of the NEA. It can be agreed that ranking has largely weakened the "steering power" of the NEA.

- Other NEC members include the Ministry of Commerce (MOFCOM) and the Ministry of Lands and Resources (MLR).
  1. MOFCOM is responsible for regulating the import and export market of oil and gas as well as issuing crude oil import certificates and quotas.[33]
  2. The MLR is responsible for "licensing the rights to explore and to mine the mineral resources" and the transferring of the "rights to examine and approve blocks open to foreign investment."[34]

- While the overall role of private competition is growing in China, energy SOEs are still growing in size and are playing an increasingly significant role in overseas energy trade and investments. CNPC, Sinopec, CNOOC and SinoChem import the bulk of crude oil. They are of great influence in the national energy policy-making process and have considerable autonomy over investment decisions.
  1. CNPC is China's largest national petroleum company and China's largest oil and gas producer and supplier. It owns the major oilfields, such as Daqing, Liaohe, and Dagang, among fourteen others, and is rich in oil and gas reserves. Its annual oil and gas production constitutes 70 to 80 percent of the total production of the three companies.
  2. SINOPEC is China's second largest national petroleum company and China's largest producer and supplier of refined oil products and major petrochemical products.
  3. CNOOC is China's third largest national petroleum company and China's largest offshore oil and gas producer.
  4. SINOCHEM is the fourth largest oil company as well as the leading chemical service provider. As one of the first multinational corporations established in China, SINOCHEM has played a key role in petroleum product imports.

31 Li Keqiang is expected to be elected as China's new Premier in March 2013.
32 SASAC. Main Functions and Responsibilities of SASAC, State-owned Assets Supervision and Administration Commission of the State Council (SASAC) Official Website. 2012. http://www.sasac.gov.cn/n2963340/n2963393/2965120.html (accessed 8 3, 2012).
33 MOFCOM. Ministry of Commerce Official Website. 2012. http://english.mofcom.gov.cn/ (accessed 8 1, 2012).
34 MLR. Responsibilities of the Ministry of Land and Resources, Ministry of Land and Resources Official Website. 2012. http://www.mlr.gov.cn/mlrenglish/about/mission/200710/t20071015_656461.htm (accessed 8 1, 2012).

CONCLUSION

The energy sector has always played a vital role in China's economic growth and has drawn growing attention from leaders of Chinese government, business and enterprises, particularly as China has become more dependent upon imported petroleum. There are predictions that China will possess the world's largest economy in the course of the next decade, but in any event China will certainly continue to play a growing role in the global energy market, sponsored by its expansion and global hunt for energy resources. The institutional arrangements in the energy sector not only determine China's domestic energy policy, but also affect China's international behavior in the global energy arena.

Given China's high-profile role in the international energy market, this paper has sought to trace the evolution of China's energy institutions through four different phases: the highly centralized phase, the transition from centralized planning to a market system, the market-oriented management phase and the phase of centralized coordination and supervision.

China's energy strategy, particularly the 12th Five-Year Plan, emphasizes the development and utilization of clean and renewable energy however the economic reality remains that China is heavily dependent on fossil fuels.

In all plausible scenarios, China will remain highly dependent on energy imports, particularly oil and gas but also in uranium as well as on a wide range of new and renewable energy technologies and services. This need is based on rapid economic growth and the growing gap between energy production and consumption.

An effective institutional system of energy management is viewed by the Chinese state as being of great importance to the healthy development of China's overall energy sector. As discussed in this paper, China's energy institutional reform has undergone several processes of decentralization and recentralization. Nonetheless, it continues to lack effective coherence and consolidation between the policy/administration sector and the operational entireties (SOEs). Given the critical role of energy security for China and its international dimension, the new Chinese leadership is expected to expend further efforts to reform the energy institutions, so as to achieve the coordination and strategic approaches necessary in a globally framed and technologically dynamic setting.

As China's economic growth re-shapes the global energy market, the institutional reforms in China's energy sector will continue to receive close attention from China's international energy partners, including Canada. It remains uncertain whether and to what extent further reforms will be undertaken by the current Chinese leadership transition. For instance, it is unclear whether a Ministry of Energy will be re-established or who the major personnel will be, notably on international files. Regardless of the outcomes, these issues warrant close attention by China's international partners in order to better comprehend China's energy policy planning, which in turn now affects global energy markets.

BIBLIOGRAPHY

Austin, Angie. Energy and Power in China: Domestic Regulation and Foreign Policy. London: The Foreign Policy Centre, 2005.

BP. "BP Energy Outlook 2030." London, 2012.

BP. "BP Statistical Review of World Energy 2011." 2011.

Chen, Geng. "Review of 30 Years Reform and Opening Up in China's Oil Industry." 11 12, 2008. http://ccnews.people.com.cn/GB/87320/8328880.html (accessed 8 16, 2012).

CNOOC. History of CNOOC, CNOOC Official Website. 2012. http://en.cnooc.com.cn/data/html/english/channel_114.html (accessed 8 16, 2012).

CNPC. China National Petroleum Corporation (CNPC) Offical Website. 2012. http://www.cnpc.com.cn/en/aboutcnpc/companyprofile/history/ (accessed 8 3, 2012).

Cunningham, Edward. China's Energy Governance: Perception and Reality. MIT Center for International Studies Audit of the Conventional Wisdom, 2007.

Garrison, JA. In China and the energy equation in Asia : the determinants of policy choice. Boulder, Colorado.: First Forum Press, 2009.

Higashi, Nobuyuki. Natural Gas in China: Market evolution and Strategy. Working Paper Series, International Energy Agency, 2009.

MLR. Responsibilities of the Ministry of Land and Resources, Ministry of Land and Resources Official Website. 2012. http://www.mlr.gov.cn/mlrenglish/about/mission/200710/t20071015_656461.htm (accessed 8 1, 2012).

MOFCOM. Ministry of Commerce Official Website. 2012. http://english.mofcom.gov.cn/ (accessed 8 1, 2012).

NDRC. Main Functions of the NDRC, National Development Reform Commission Official Website. 2012. http://en.ndrc.gov.cn/mfndrc/default.htm (accessed 5 19, 2012).

NEA. China's National Energy Administration Official Website. 2012. http://www.nea.gov.cn/ (accessed 7 19, 2012).

Peng, Wuyuan. The Evolution of China's Coal Institutions. Program on Energy and Sustainable Development, Freeman Spogli Institute for International Studies, 2009.

SASAC. Main Functions and Responsibilities of SASAC, State-owned Assets Supervision and Administration Commission of the State Council (SASAC) Official Website. 2012. http://www.sasac.gov.cn/n2963340/n2963393/2965120.html (accessed 8 3, 2012).

Schneider, Karen. China's Energy Policy: Recent Developments and Outlook. Canberra: Australian Bureau of Agricultural and Resource Economics, 2004.

Sinopec. Company overview, Sinopec Official Website. 2012. http://english.sinopec.com/about_sinopec/our_com-

pany/20100328/8532.shtml (accessed 8 9, 2012).
Tsang, Stephen , and Ans Kolk. "The evolution of Chinese policies and governance structures on environment, energy and climate." 2010. http://dare.uva.nl/document/177598 (accessed 8 7, 2012).

Wang, Qiang. "Ideas on Reconstruction of Ministry of Energy." SINA Finance. 5 8, 2005. http://finance.sina.com.cn/g/20050508/16151569266.shtml (accessed 8 17, 2012).

Weng, Shiyou, and Xiaohong Ouyang. State Council Reform: Break Down, Rebuild, Rinse, and Repeat, The Economic Observer Online. 3 6, 2008. http://www.eeo.com.cn/ens/Politics/2008/03/06/93441.html (accessed 7 16, 2012).

Xinhuanet. 1998 Institutional Reform. 3 6, 2003. http://news.xinhuanet.com/zhengfu/2003-03/06/content_761488.htm (accessed 8 18, 2012).

Zhao, Jimin. Reform of China's Energy Institutions and Policies: Historical Evolution and Current Challenges. BCSIA Discussion Paper 2001-20, Energy Technology Innovation Project, Kennedy School of Government, Harvard, 2001.

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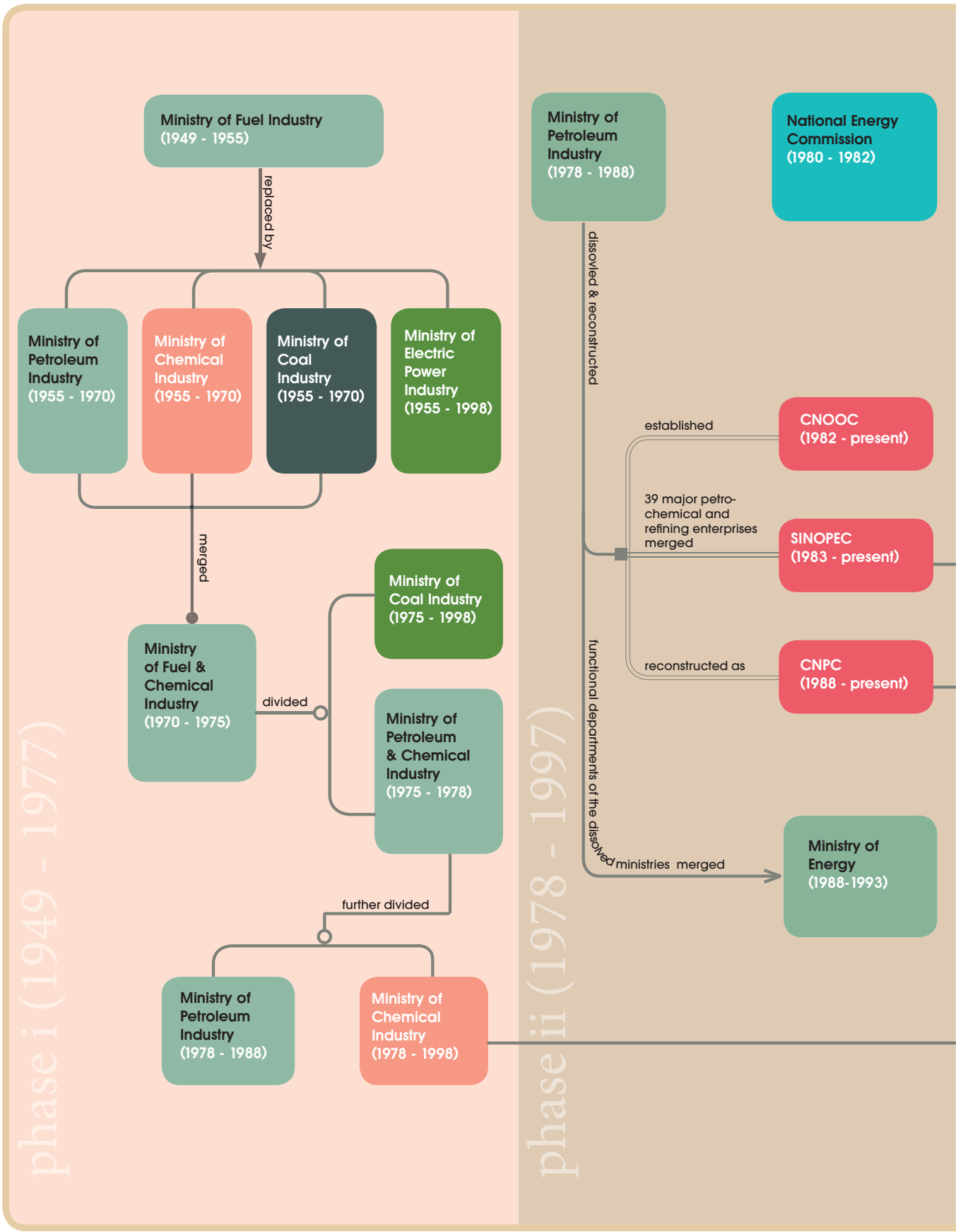
Any errors or omissions are solely the responsibility of the authors.

APPENDIX Chronology of China's Energy Institutional Reform

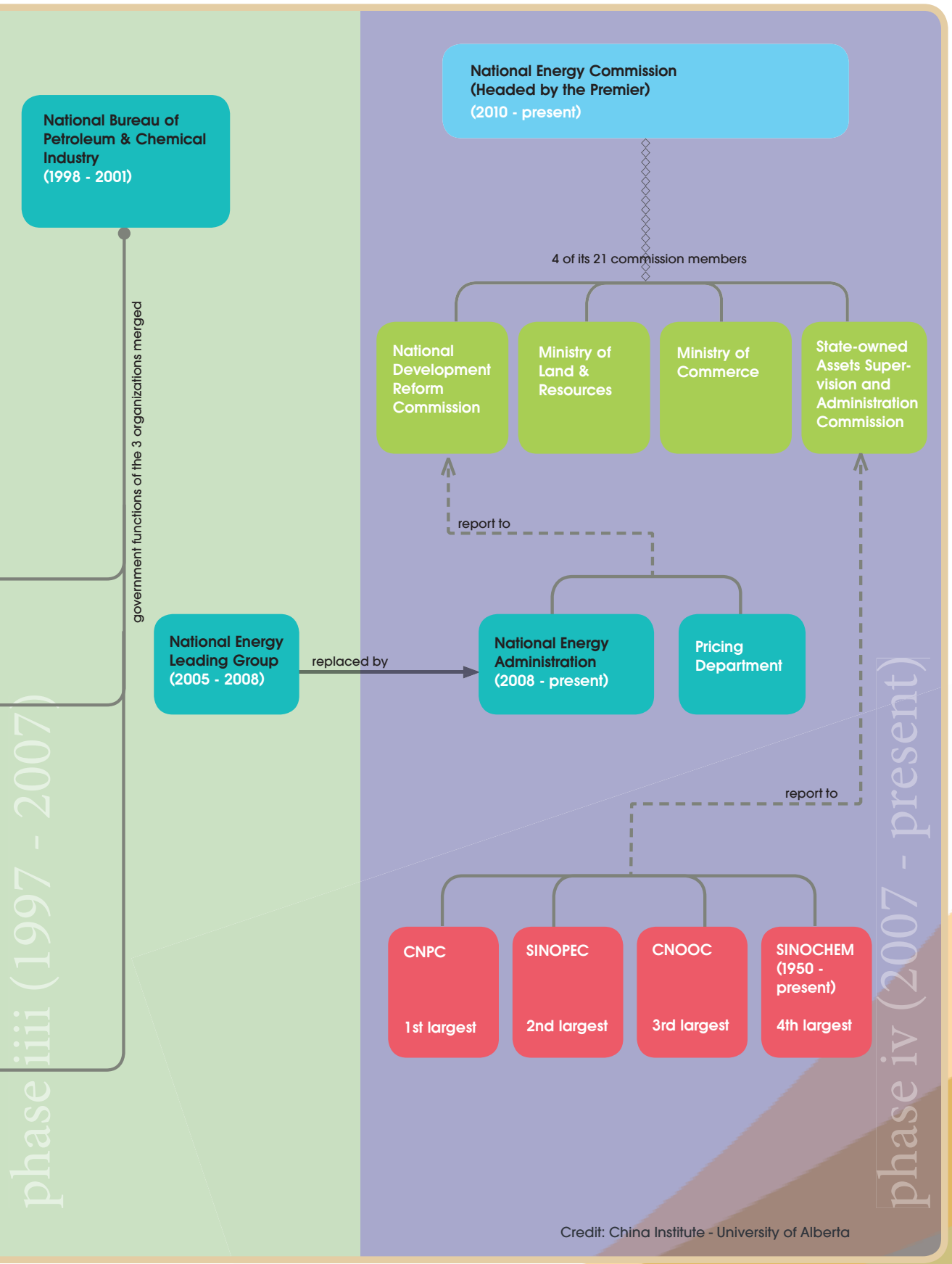
October 1949	Ministry of Fuel Industry established
1955	Ministry of Fuel Industry replaced by Ministry of Petroleum Industry, Ministry of Coal Industry, the Ministry of Chemical Industry and Ministry of Electric Power Industry
1970	Ministry of Petroleum Industry, Ministry of Coal Industry, and Ministry of Chemical Industry merged into one ministry -- Ministry of Fuel and Chemical Industry
1975	Ministry of Fuel and Chemical Industry divided into Ministry of Coal Industry and Ministry of Petroleum and Chemical Industry
1978	Ministry of Petroleum and Chemical Industry divided into Ministry of Petroleum Industry and Ministry of Chemical Industry
1980	National Energy Commission founded
1982	National Energy Commission dissolved CNOOC established under Ministry of Petroleum Industry
1983	China Petrochemical Corporation (predecessor of Sinopec) established
1988	Ministry of Petroleum Industry dissolved and reconstructed as China National Petroleum Corporation (CNPC) Ministry of Energy established
1993	Ministry of Energy dissolved
1998	National Bureau of Petroleum and Chemical Industry established
2001	National Bureau of Petroleum and Chemical Industry dissolved
2005	National Energy Leading Group established
2008	National Energy Administration established
2010	National Energy Commission established

APPENDIX Abbreviations and Acronyms

SEO	State-owned Enterprises
CNOOC	China National Offshore Oil Corporation
NDRC	National Development and Reform Commission
CNPC	China National Petroleum Corporation
SINOPEC	China Petrochemical Corporation
SDPC	State Development Planning Commission
NEA	National Energy Administration
MOU	Memorandum of Understanding
NEC	National Energy Commission
SASAC	State-owned Assets Supervision and Administration Commission
MOFCOM	Ministry of Commerce
MLR	Ministry of Land and Resources


Ministry of Fuel Industry (1949 - 1955)
replaced by
Ministry of Petroleum Industry (1955 - 1970)
Ministry of Chemical Industry (1955 - 1970)
Ministry of Coal Industry (1955 - 1970)
Ministry of Electric Power Industry (1955 - 1998)
merged
Ministry of Fuel & Chemical Industry (1970 - 1975)
divided
Ministry of Coal Industry (1975 - 1998)
Ministry of Petroleum & Chemical Industry (1975 - 1978)
further divided
Ministry of Petroleum Industry (1978 - 1988)
Ministry of Chemical Industry (1978 - 1998)
phase i (1949 - 1977)
Ministry of Petroleum Industry (1978 - 1988)
National Energy Commission (1980 - 1982)
dissovled & reconstructed
established
CNOOC (1982 - present)
39 major petro-chemical and refining enterprises merged
SINOPEC (1983 - present)
reconstructed as
CNPC (1988 - present)
functional departments of the dissolved ministries merged
Ministry of Energy (1988-1993)
phase ii (1978 - 1997)

ONS IN FOUR PHASES



China Institute
203 Telus Centre
University of Alberta
87 Ave & 111 St
Edmonton AB Canada

Tel: 780.492.1263
Fax: 780.492.8200
Email: china@ualberta.ca
Web: www.china.ualberta.ca