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The Reform Paradox and Regulatory Dilemma in China's Electricity Industry

ABSTRACT

The Chinese government has implemented electricity reform during the reform era, but the process has been accompanied by widespread power shortages and political struggles among state agencies. This paper addresses this contradiction by explaining two interrelated outcomes: the transformation of the state regulatory structure and the development of corporatized state-owned enterprises.

KEYWORDS: China, electricity reform, state-owned power companies, state regulation, State Electricity Regulatory Commission

INTRODUCTION

The past two decades have witnessed profound changes in the electricity industry globally as technology has developed and the monopoly status is no longer unbreakable. While trends of privatization and liberalization of the power industry swept the world,¹ some countries have instituted successful reform projects. But most have continued to struggle with the process of establishing an effective free market. China is now among the latter. What is distinctive about the Chinese case is that during the initial stage, the central government adopted a reform strategy of corporatizing the state-owned

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1. Many countries underwent electricity reform in the 1990s, including both industrialized and developing countries such as the United Kingdom, the United States, Mexico, India, Argentina, etc. See John Surrey, ed., *The British Electricity Experiment* (London: Earthscan, 1996); Adrian Van Den Hoven and Karl Froschauer, "Limiting Regional Electricity Sector Integration and Market Reform: The Cases of France in the EU and Canada in the NAFTA Region," *Comparative Political Studies* 37:9 (November 2004), pp. 1079–1103; John K. Turkson, ed., *Power Sector Reform in SubSaharan Africa* (New York: St. Martin's Press, 2000); and Yi-chong Xu, *Electricity Reform in China, India, and Russia* (Northampton, Mass.: Edward Elgar, 2004).

Asian Survey, Vol. 51, Number 3, pp. 520–539. ISSN 0004-4687, electronic ISSN 1533-838X. © 2011 by the Regents of the University of California. All rights reserved. Please direct all requests for permission to photocopy or reproduce article content through the University of California Press's Rights and Permissions website, <http://www.ucpressjournals.com/reprintInfo.asp>. DOI: AS.2011.51.3.520.

power companies and liberalizing the barriers to market entry, rather than privatizing the industry and developing a market mechanism. While both developed and developing countries have privatized their power industry in order to achieve greater efficiency and better social equity, China has maintained public ownership of the power companies to promote similar goals. The progress that China achieved in the late 1990s proves that a policy of privatization is a sufficient but not a necessary condition for reforming the electricity industry.

Nonetheless, the later accompanying power shortages and disorder in the electricity generation sector have exposed serious problems that China shares with other countries that instituted reforms.² The power shortage and market disruption have posed a puzzle here: why has a worse outcome been introduced in terms of output as the reform project has gradually been implemented? I argue that without being bolstered by a functional regulatory structure, the reform project that was meant to restructure the industry, break monopolies, and foster competition has, ironically, resulted in the formation of an oligopoly.³ Although China has transformed its economic system, a not-yet-developed market mechanism and immature market culture have stymied the reform process in certain industries.⁴ Hence, because of inadequate institutional support for market development, the focus of the Chinese state in its electricity reform has been how to regulate the industry.

This article conceptualizes two interrelated projects, the transition of the state regulatory structure and the development of corporatized central state-owned enterprises (SOEs), in order to address the gap between the advancement touted by the Chinese government and the predicaments still encountered by the power reform. Regarding the transition of the state regulatory structure, I look at how the central state has managed and supervised the power sector during the reform era and explore why and how the sector's regulatory agency fails to work. With respect to the development of corporatized

2. Since 2004, many cities have suffered electricity shortages and in some cases have had to resort to rationing.

3. The latest trend in power generation is toward a duopoly where two colossal power groups, Datang and Huaneng, have overtaken others to occupy a dominant position; nonetheless, they have adopted different strategies to expand their business. See *21 Shiji Jingji Baodao* [The 21st Century Herald Business], September 15, 2006, <<http://www.nanfangdaily.com.cn/jj>>, accessed October 1, 2006.

4. For a discussion on market culture in China, see Lowell Dittmer and Lance Gore, "China Builds a Market Culture," *East Asia: An International Quarterly* 19:3 (September 2001), pp. 9–50.

central SOEs, I analyze how the central SOEs take advantage of their superior status to “capture” the regulatory agency. Given the trend of separating enterprises from the government, a serious problem occurs: the central SOEs form a partnership to resist the regulatory authority, complicating regulation with the issues of central-local government relations and the state-business nexus.

This article begins with brief discussions of two contrasting views of the power shortage and the traditional approaches to SOE reform in China, and introduces a new view. The following section describes the dynamics of China’s electricity reform and details the development of a regulatory system as a critical institutional factor. I examine the political logic of electricity reform and how it shapes the power industry and in turn leads to paradoxical market conditions. The article concludes with a discussion of the broader implications for China’s central-local relationship, industrial policy, and emerging regulatory system. By examining the dynamics of China’s electricity reform, this article enriches our understanding of the changing roles of the state—both central and local—and the central SOEs, and the relationship between them. The paper demonstrates that an urgent demand for a functional regulatory system is not a response to reform implementation but a part/prerequisite of it.

BUSINESS CYCLE? UNDERDEVELOPMENT OF INFRASTRUCTURE

A comprehensive reform project in the power industry has not been a pressing issue until recently. In the 1990s, state power companies, in an industry with monopoly status and abundant resources, were not main actors pushing for reform, because of their vested interests. It has never been easy to explicate the timing of launching reforms in China, as the policy-making process remains a “black box” to this day. But by examining the historical context and transformation of institutions, at least one point becomes clear: China’s electricity reform is not a short-term project, newly designed in response to the power crisis, but rather a long-term project that dates back to the 1980s. Whereas the Chinese government has claimed that improvement accrued from the early stages of electricity reform and continued at a steady pace, the reality is that reform has also brought in increasing shortages and disorderly competition.

So, has reform been successful? Two perspectives are reflected in the author’s interviews. These interviews were conducted from March 2006 to July

2007 with scholars, government officials at both the central and local levels, and industry representatives from both public and private power companies in various provinces, including Heilongjiang, Henan, Shandong, Shanxi, and Zhejiang. Some argued that electricity reform has been quite successful because substantial reform steps such as restructuring the industry and introducing private investment have been implemented, even though some problems have emerged. Others consider the reform project to have failed and conditions now to be even worse than before the reform.⁵

Among the latter, two explanations are presented: the business cycle and underdevelopment of the infrastructure. According to a business cycle argument, the development of electricity capacity has lagged behind sharply raised power consumption stemming from rapid economic development. The investment in the generation sector in the past few years was unable to catch up with the abruptly increased demand from the economic revival in 2002. The colossal investments and long construction times for power plants prevent timely adjustments to the unbalanced supply-demand relationship. Once lump-sum electricity capacity has developed, the situation in turn faces the problem of power surplus.

Others contend that the supply-demand relationship is balanced in general, but underdeveloped infrastructure is the Achilles' heel that results in the power shortage. By extensively developing the network system and increasing operating hours, the power shortage could be alleviated. This has raised the debate on the necessity of establishing an ultra-high voltage (UHV) transmission system, which is, however, regarded as a step backward toward re-monopolization.

I contend that neither argument is sufficient to explain the inadequacies of reform. On the one hand, the business cycle thesis misses the fact that the installed electricity capacity has grown rapidly and most power plants have not yet reached maximum operating levels. Moreover, from the past five-year macroeconomic plans announced by the Chinese government, it is clear that the center remains powerful in managing economic performance. Therefore, the lag between prediction and reality of the supply-demand relationship in the power industry is, in fact, moderate. On the other hand, underdevelopment

5. Interestingly, most people supporting the former argument are either officials or scholars. The latter statement is drawn from extensive interviews with managers of power industries (both in power plants and grid companies); however, among the managers, the problems caused by the reform project depend on what sector they are from.

of the infrastructure underscores the problem that despite the state's investment of a large amount of money to improve and renew the grid systems nationwide in the past few years, the power shortage continues. The unbalanced market condition, in fact, has its root in the reform project and implementation. Various regional reactions, such as local protectionism or idiosyncratic reform efforts on a provincial basis, have emerged as well.

Reform advocates are right in acclaiming their achievement: the whole industry has undergone a full structural reform and introduced private investment into the generation sector. At the same time, they are wrong as well, since China has suffered from increasing power shortages. The Chinese state did make progress in the early stages of the reform, but it did not realize that establishing a functional regulatory mechanism during, if not before the reform, is necessary. Macroeconomic factors matter, but the regulatory dilemma is causing the current situation to deteriorate. Now, China's electricity reform stagnates. How can we correctly diagnose the problems during the reform? I now turn to examine state capacity and regulatory development.

STATE CAPACITY AND REGULATORY DEVELOPMENT

Scholars recognize that natural monopolies such as network utilities and infrastructure are not monolithic entities, and that the introduction of market competition is possible as the relevant technology advances.⁶ Hence, the Chinese state designed a comprehensive, phased project to restructure the industry, transform its own role from owner to regulator, introduce private investment, and construct a market mechanism.⁷ China's electricity reform raises the critical issue of whether the Chinese state is capable of managing the restructured industry while it is trying to improve industrial performance and efficiency. That is, whether state capacity is declining or increasing during the reform era and to what extent the central government can regulate enterprises in the shifting state-industry relationship.

At one extreme, some scholars argue that the central state remains all-powerful, with a wide range of institutional redesigns and inclusionary tactics.⁸

6. Ioannis Kessides, *Reforming Infrastructure: Privatization, Regulation, and Competition* (Oxford: Oxford University Press, 2004).

7. Shaofeng Xu and Wenyong Chen, "The Reform of the Electricity Power Sector in the PR of China," *Energy Policy* 34:16 (November 2006), pp. 2455–65.

8. See Dali Yang, *Remaking Chinese Leviathan* (Stanford, Calif.: Stanford University Press, 2004); and idem, "State Capacity on the Rebound," *Journal of Democracy* 14:1 (January 2003), pp. 43–50.

Moreover, China has been redesigning the regulatory mechanisms in different industries through extensive administrative restructurings. On the other end are other scholars who demonstrate the weakness of the central state by presenting evidence of the unsustainability of reform strategies and also pervasive lobbying.⁹ In-between, some hold a relatively conservative view of the state's regulatory capacity and examine the role of the central state within a broader framework.¹⁰ In China, most scholars adopt economic perspectives to examine the industrial reform and regulatory development, but their discussion falls into normative debate and is not empirically viable.¹¹

I contend that a closer look at the interaction between the state and enterprises with a focus on the role of the SOEs helps to clarify the debate over state capacity. After being separated from the government, the SOEs are responsible for their own profits and losses. In contrast to the popular view of SOEs' poor performance, some central SOEs have done very well and made it to the ranks of leading companies in their industries, not only in China but around the world.¹² Any windfall profits the SOEs made from state assets were retained in the companies and shared by both top managers and employees. This has inspired the phenomenon of "*neibu fuli fubai*" (internal

9. Minxin Pei, *China's Trapped Transition: The Limits of Development Autocracy* (Cambridge, Mass.: Harvard University Press, 2006); and Scott Kennedy, *The Business of Lobbying in China* (Cambridge, Mass.: Harvard University Press, 2005).

10. Andrews-Speed contends that the regulatory structure is merely "nominally" independent and does not really command substantial authority in the energy sector. Lin shows the interaction between preexisting social relations and reform implementation as the central state transforms the SOEs and reinvents its regulatory capacities. Moreover, Mertha presents the eclectic standpoint that the central government is now experiencing "soft centralization" and combating local protectionism in policy implementation. See Philip Andrews-Speed, "Regulation and Deregulation of Energy in the Asian Market: The Case of China," in *Asian Energy Markets: Dynamics and Trends*, ed. the Emirates Center for Strategic Studies and Research (Abu Dhabi, United Arab Emirates: Emirates Center for Strategic Studies and Research, 2004), pp. 143–80; Kun-chin Lin, "Disembedding Socialist Firms as a Statist Project: Restructuring the Chinese Oil Industry, 1997–2002," *Enterprise & Society: The International Journal of Business History* 7:1 (March 2006), pp. 59–97; and Andrew Mertha, "China's 'Soft' Centralization: Shifting Tiao/Kuai Authority Relations," *China Quarterly* 184 (December 2005), pp. 791–810.

11. See Junhao Wang et al., *Zhongguo Longduanxing Chanye Jijiegou Chongzu Fenlei Guanzhi yu Xietiao Zhengce* [Restructuring differentiated regulatory and coordinating policies in China's monopoly industries] (Beijing: Shangwu Chubanshe, 2005); and Shijin Liu and Fei Feng, *Longduan Hangye Gaige Gongjian* [The reform in the monopoly industries] (Beijing: Zhongguo Shuili Shuidian Chubanshe, 2006).

12. According to *Fortune* magazine, there are 30 Chinese central SOEs listed in the world's 500 largest corporations. *Fortune*, July 8, 2010, <<http://money.cnn.com/magazines/fortune/global500/2010/countries/Australia.html>>, accessed October 2, 2010.

welfare corruption) and widespread social discontent.¹³ In 2007, the Chinese government established a capital management budget system to collect dividends from the SOEs, but its effect has been limited.¹⁴

Because of the changing nature of the state sector, the traditional property rights approach and soft budget constraints approach are insufficient for clarifying current state-industry relations. While the related concepts of the market system and private capital have been gradually rooted in the Chinese transition economy, I propose that a regulatory state model is an appropriate analytical approach to diagnose economic problems from empirical and theoretical perspectives. The Chinese government has implemented a series of administrative reforms and two major guidelines: *zhengqi fenkai* (separate government and business) and *zhengjian fenli* (split politics and regulation).¹⁵ The former distinguishes the roles of the state and SOEs, and helps the SOEs adopt a modern enterprise system. The latter clarifies the functions of the government agencies as policy-making or regulatory. The central state aims to expand regulatory capacity by either strengthening the existing regulatory entities or establishing new, independent regulatory agencies.¹⁶ Although the current regulatory frameworks have not functioned well, the central state undoubtedly is moving toward a regulatory state, especially in those “commanding heights” industries such as electricity, telecommunications, and civil aviation.¹⁷

13. For example, the low-level employees in a provincial power company earn at least 8,000 yuan (US\$1,000) per month and enjoy housing subsidies ranging from tens of thousands to hundreds of thousands of yuan. Author’s interview with a journalist reporting on electricity affairs in Beijing, December 19, 2006.

14. Barry Naughton, “SASAC and Rising Corporate Power in China,” *China Leadership Monitor* 24 (Spring 2008).

15. The idea of separating governments and enterprises first appeared in the late 1980s. In 1987, then-Premier Li Peng mentioned this as one of the five principles in the power reform. In 1988, then-State Councilor Song Ping pointed out that the lack of separation of government and enterprises was one of the hurdles to reforming the economy comprehensively. “Guanyu Guowuyuan Jigougaige Fang’an de Shuoming” [Statement concerning the plan for restructuring the State Council], <<http://www.law-lib.com/fzdt/newshtml/20/20050721212027.htm>>, accessed September 13, 2010.

16. The first independent regulatory agency, the China Securities Regulatory Commission, was established in 1992. To date, the Chinese government has four independent regulatory commissions. The others are the State Banking Regulatory Commission, State Insurance Regulatory Commission, and State Electricity Regulatory Commission.

17. Margaret Pearson, “The Business of Governing Business in China: Institutions and Norms of the Emerging Regulatory State,” *World Politics* 57 (January 2005), pp. 296–322; and idem, “Regulation and Regulatory Politics in China’s Tiered Economy,” paper presented for a conference on “Capitalism with Chinese Characteristics,” Indiana University, May 19, 2006, <<http://www.polsci.indiana.edu/china/papers.html>>, accessed August 20, 2007.

The regulatory state refers to a state that takes on the responsibilities of governing economic activities, promoting market competition, and managing the social damage caused by externalities.¹⁸ The idea of the regulatory state had its origin in American political development dating back to the Progressive Movement and the New Deal; the notion spread to the other side of the Atlantic in the 1970s, especially the United Kingdom.¹⁹ The regulatory state model is characterized by privatization and delegation of authority to autonomous regulatory agencies.²⁰

Two caveats accompany this term. First, with limited space, the use of the term “regulatory state” mainly focuses on the state’s efforts to establish a new regulatory mechanism and the interaction between this new government agency, local states, and industries.²¹ Second, the idea of regulation as presented in this paper indicates an active role played by the central state, not a passive one, as in the constraints-based approach. The regulatory development experiences of the industrialized countries demonstrate that a working regulatory structure should be established in advance of or at least concurrently with putting reform projects into practice. While transitioning from a planned economy to a market system, China has not undergone a regulation cycle from deregulation to re-regulation, as in Western countries. China has, in fact, been in a process of “regulation in transition” and has been searching for an innovative mechanism to manage industries under a different economic system. If the “preemptive” regulatory settings are not already in place in the reform projects, the colossal central SOEs would be able to find a way to exploit and resist the reform process.

By examining the dynamics of power reform, I found that the central state no longer has a monopoly over reform initiatives with the power companies, i.e., the state has been *captured* by the industry it regulates. Moreover, local governments collude with industry for their own interests and contribute to regulatory failure. The central SOEs, the major actors in the power sector,

18. Tony Prosser, *Law and Regulators* (Oxford: Clarendon Press, 1997).

19. Giandomenico Majone, ed., *Regulating Europe* (London: Routledge, 1996).

20. Giandomenico Majone, “From the Positive State to Regulatory State: Causes and Consequences of Changes in the Mode of Governance,” *Journal of Public Policy* 17:2 (May 1997), pp. 143–44; and David Levi-Faur and Sharon Gilad, “The Rise of the British Regulatory State: Transcending the Privatization Debate,” *Comparative Politics* 37:1 (October 2004), pp. 105–24.

21. Some dynamics are critical in identifying whether the Chinese state is regarded as a regulatory state, such as local state corporatism and state-society relations, but they are either slightly discussed or not covered here in order not to complicate the following discussion.

exploit their superior status to lobby high-level officials, similar to interest groups in the West, even as the central SOEs have been corporatized.²² These SOEs are now separated from the bureaucratic umbrella/constraints of the central state and run their businesses independently.

Thus, while the reform project is designed to decouple the state from SOEs and to restructure the industry, the changing relationship between the state and SOEs determines how these power groups respond to reform efforts. For the local governments, it is very clear that a stable, if not abundant, power supply will spur robust industrial development and help the local economy prosper, which means more investments, higher revenue, and greater economic achievement. Therefore, the local governments are willing to join a win-win game and collude with power companies to establish power plants, even though the local officials may run the risk of violating the central policies. The heterogeneity of local governments has further resulted in variations across the electricity industry.

STUMBLING ON THE WAY TO MARKET

During the reform era, China's electricity sector has experienced three stages of restructuring. Each stage has its own reform agenda, and each left an institutional legacy that impacts on the later reform's implementation.

Liberalizing the Industry: Breaking up the State Monopoly and Opening Up Power Generation, 1979–1997

During the early reform era, the Chinese government (re-)established the Ministry of Electric Power (MEP) in 1979, and several policy goals were announced. The overall goal in the early stage of electricity reform was to terminate the state monopoly in the power generation sector and prepare for the separation of government and enterprises. National and provincial power companies were established, and the provinces were regarded as appropriate functional units to implement reform. This idea of making provinces into operating entities, however, was not compatible with two other policy goals—integrating the fragmented grid system and distributing electricity collectively—that aim to further develop the regional power markets. Meanwhile, the central government adjusted industrial policies to lower

22. However, they work in ways different from their Western counterparts.

the market entry barriers to the generation sector and induce more capital investment.²³

The generating capacity has expanded rapidly because of diverse investment sources from the local governments, private entrepreneurs, and even foreign investors. State monopoly in the power generation sector has been broken. Nonetheless, without restructuring the industry and creating a new regulatory scheme, two problems have emerged. First, because state power companies enjoyed the privilege of possessing both the power plants and the grids, the newly built independent power plants (IPPs) were competing on an unequal basis with them. Another problem was that local governments exerted local protectionism to safeguard their investments in the power plants, which created high barriers for inter-provincial electricity trade.

In 1988, the Chinese government underwent an administrative reform and established the Ministry of Energy (MOE), integrating the coal, petroleum, and electricity industries. The electricity industry has in fact been unique in the sector because China was generally self-sufficient in electric capacity, and raw materials for generating electricity, such as coal mines and water resources, were abundant. The power sector was characterized by two major features: uneven distribution (rather than deficiency) and a lack of an international trade dependency. Moreover, because of its public-service character and technological constraints, the power industry can only be partly liberalized, placing it somewhere on the scale between the coal industry (fully privatized) and the oil sector (wholly state-owned). In 1993, with another round of government restructuring, the MOE was dissolved and the MEP was formed again. This was the third occasion since 1949 that China had instituted the MEP, but in this round it would only exist for five years.

The policy of liberalization encouraged the construction of various types of power plants²⁴ and tremendous growth in power-generating capacity, which to a great extent relieved the power shortage and bolstered rapid economic development. Ironically, in response to surplus generating capacity, in 1999 the State Economic and Trade Commission (SETC) promulgated a

23. The State Council, *Guanyu Guli Jizi Bandian he Shixing Duozhong Dianjia de Zhanxing Guiding* [Provisional regulations on fund-raising for investment in the power industry and implementing different power prices] (State Council [1985], no. 72).

24. Distinguished by different types of ownership, they are public-owned; private-owned; joint ventures; build-own-transfer (BOT); initial public offering (IPO); and transfer, operate, transfer (TOT). See Michel Bellier and Yue Maggie Zhou, *Private Participation in Infrastructure in China* (Washington, D.C.: World Bank, 2003), pp. 69–76.

regulation and suspended most of the thermal power plant projects for three years.²⁵ Implementing liberalization, however, later introduced both structural and regulatory problems.

Corporatizing State Assets: Separating Government and Enterprises, 1997–2002

As promulgated on December 28, 1995, the Electricity Law envisioned that China's electricity reform would soon advance into a new stage where the government planned to separate the generation and transmission sectors and further liberalize and marketize the former.²⁶ Before that, a necessary step is to separate the responsibilities of government and enterprises, proposed in the mid-1980s but not fully implemented until the late 1990s.

In 1997, the Chinese government transferred the state-owned power assets in their entirety to the newly established State Power Corporation (SPC) and subsequently dismantled the MEP in 1998. There was no line ministry in charge of electricity affairs; regulatory and policy functions were then delegated to the SETC and the State Development and Planning Commission (SDPC) (see Figure 1). Although the problem of unifying government and business had been solved, inherent problems continued to exist in the industry. As a central SOE, the SPC had monopoly status through the vertical integration of generation and transmission, and enjoyed stifled competition in the absence of a specific regulatory authority. In fact, the SPC is not merely a monopoly company but also a corporatized ministry, because most former MEP officials had transferred to the SPC after 1998. Moreover, the first general manager of SPC, Shi Dazhen, was the last minister of Electric Power. The IPPs had suffered from a distorted industrial structure in which they were unable to compete with the SPC, and were regarded as retail sellers to it.

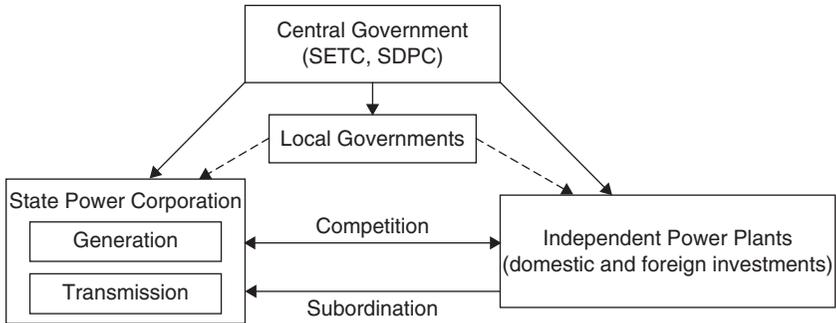
Domestic investors realized that the profits were not what they expected, so they quit. Even though foreign investors enjoyed preferential treatment, they left China because of the higher risk and volatile policies.²⁷ In addition,

25. See SETC, *Guojiajiwei Guanyu 'Jiuwu' Houqi Tiaozheng Dianli Jiegou Youguan Wenti de Tongzhi* [Circular of the SETC concerning the relevant questions on the adjustment of structure of power construction in the second half of the ninth five-year plan] (Beijing: SETC [1999], no. 182).

26. Philip Andrews-Speed, Stephen Dow, and Zhiguo Gao, "The Ongoing Reforms to China's Government and State Sector: The Case of the Energy Industry," *Journal of Contemporary China* 9:23 (2000), pp. 5–20.

27. The preferential policies for foreign investment in the generation sector, known as the "three guarantees," guaranteed generation, prices, and returns, were adopted in the late 1980s and formally

FIGURE 1. Regulatory Structure in the Power Industry before 2002



SOURCE: By author.

NOTE: *solid lines* = strong supervisory relationship; *broken lines* = weak supervisory relationship.

local protectionism had not been mitigated as the reform was implemented, and generating capacity expanded. The provinces rich in power supplies preferred retaining the electricity for their own development to selling the power to the provinces facing a serious shortage. Inter-provincial barriers have a tremendous impact on power allocation, which further impedes national economic growth.

New Reform Initiatives, 2002—

In 2002, the State Council promulgated the “Circular of the State Council concerning the Reform of the Power Structure” (State Council [2002], no. 5), which is regarded as a landmark reform initiative to separate the generation and transmission sectors and adopt a new regulatory system. Regarding the industrial restructuring, the SPC was spun off into two grid companies and five power groups under the newly created State-owned Assets Supervision and Administration Commission (SASAC).²⁸ This indicated that the monopoly had been broken up, and marks a critical step toward establishing the power markets and promoting competition. Nonetheless, the separation process did not go well because the grid companies still owned the power

abrogated in 2002. For more detailed information on foreign investment in China’s power industry, see Changyu Ouyang and Mingzhou Yang, *Dianli Qiye Liyong Waizi* [The power enterprises utilize foreign investment] (Beijing: China Electric Power Press, 2000).

28. The two grid companies are the State Grid Corporation and China Southern Power Grid. The five giant power groups are China Huaneng Group, China Guodian Corporation, China Huadian Corporation, China Datang Corporation, and China Power Investment Corporation.

plants. According to the regulations, the grid companies were allowed to keep a portion of the generation assets as a financial source to pay for the necessary costs of further reform.²⁹ The companies, however, were reluctant to give away generation assets, which were a major source of revenue, and violated government policies to repurchase or invest in the power plants.³⁰

Moreover, although private investment in the transmission sector (a sector that remains in natural monopoly) is prohibited by law, the sector has actually undergone a certain degree of privatization at the county level; some governments sold the power grids to private enterprises because of heavy financial burdens.³¹ These incidents reflect larger political and economic problems in the electricity reform. According to China's Electricity Law, only one power supply enterprise shall be established in each electricity service area.³² With this limitation, power plants can only cooperate with a single grid company, either the State Grid Company (SGC) or China Southern Power Grid (CSPG), depending on the location, to deliver products in a given area. As the power grids continue to hold the generation assets, the threat of remonopolization overshadows market development. At this point, the reform has gone into reverse.

With technological advancement, the idea of reforming the power sector prevailed globally in the 1990s. The reform strategies were aimed at meeting these goals: privatize state-owned power companies, transform the industrial structure from vertical to horizontal integration, introduce private investments, and construct a functional regulatory agency. If the state failed to achieve these requirements, a natural monopoly would be either left intact or replaced by an oligopoly, preventing the development of the market mechanism and competition. China incorporated some of the strategies into

29. These generation assets, the so-called "Item 920" and "Item 647," were left to the State Grid Corporation in 2002. Their liquidation was eventually completed in the late 2000s.

30. The Shandong Luneng Group is a good case to illuminate the power companies' misbehavior. For more detailed information, see "Shui de Luneng?" [Whose Luneng?], in *Caijing* [Finance] 176 (January 6, 2007).

31. The transmission sector has, in fact, experienced a transition of property rights at the county and township levels. Some county grid companies are now owned by either private enterprises or employees as shareholders. Author's interview with the chief of the city power company in Jinan, October 15, 2006. For example, a county government in Sichuan Province sold its network system to the New Hope Group, a private enterprise among the top 500 Chinese enterprises, in 2002. See *21 Shiji Jingji Baodao*, December 29, 2004, <<http://www.nanfangdaily.com.cn/jj>>, accessed October 1, 2006. Similar situations have been found in Henan and Guizhou Provinces.

32. Article 25 of the Electricity Law of the People's Republic of China. See Xinhua Net, <http://news.xinhuanet.com/legal/2003-01/22/content_701842.htm>.

a unique reform scheme with the intent of corporatizing the colossal state electricity enterprises to maintain the state's dominance in the sector. Nonetheless, the compromised design of the regulatory framework, which reflects the departmentalism among government entities and is plagued by a strong state sector, fails to work. Without creating a functioning regulator, the reform is destined to stagnate.

The Independent Regulatory Agency and Its Dilemma

After implementing two major industrial restructurings and partial liberalization, China's power sector was no longer tightly controlled by the central government. The existing regulatory system was not able to meet the requirements for further development and became an obstacle, because it was incompatible with the market-oriented reform directions and diversified operating entities. Demand for a new type of regulation has become a pressing issue. However, the combination of lack of a distinct regulatory body and dispersion of regulatory discretion in the previous reform stage has imposed structural constraints on the subsequent establishment of a modern regulatory system.³³

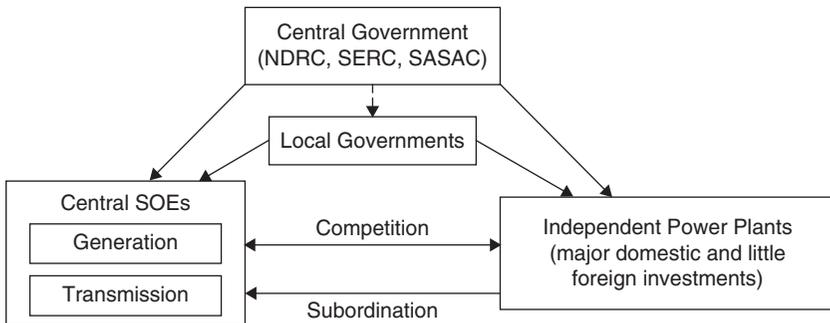
The State Council prioritized the plan to create a regulatory authority in the power sector and included it as a part of the 2003 governmental reorganization. Meanwhile, international institutions such as the World Bank and Asian Development Bank also helped the Chinese government design a new regulatory agency based on the reform experiences of other countries.³⁴ With assistance from international organizations, the State Electricity Regulatory Commission (SERC) was eventually established in April 2003; it is responsible for monitoring the whole industry, developing the market mechanism, and promoting competition (see Figure 2).³⁵ It is a big stride in China's

33. During 1998 and 2003, in addition to the SETC and SDPC, other ministries had more or less authority over the electricity industry, including the Environmental Protection Bureau, Ministry of Land Resources, Ministry of Water Resources, and Ministry of Finance.

34. See the Asian Development Bank and State Council Office for Restructuring the Economic System, *Report on Establishing the State Electricity Regulatory Body of China* (Beijing: China Financial and Economic Publishing House, 2004); and Nouredine Berrah and Joseph Wright, *Establishment of a State Electricity Regulatory Commission in China—A Suggested "Roadmap"* (Washington, D.C.: World Bank Working Paper, 2002), <<http://www.worldbank.org.cn/English/content/roadmap.pdf>>, accessed June 30, 2007.

35. In addition, the coherent but indirect efforts that have been undertaken by the central state to deepen power reform and better manage the industry are the establishment of two leading groups as high-level coordinating institutions: the Reform in Electricity, Telecommunications, and Civil

FIGURE 2. Regulatory Structure in the Power Industry after 2003



SOURCE: By author.

NOTE: *solid lines* = strong supervisory relationship; *broken lines* = weak supervisory relationship. NDRC = National Development and Reform Commission.

regulatory reform as the first independent regulatory body in the industrial sector.³⁶ Under this new regulatory system, the state implemented an experiment for regional power markets in six provinces and expected local protectionism to be reduced.³⁷

Nonetheless, two institutional restrictions prevent the SERC from functioning well. First, as a newly established government institution, the SERC has not been given full discretion or sufficient resources. Some government entities share monitoring authority. For instance, the NDRC holds the exclusive authority of *shenpi* (reviewing and approving) construction projects and setting prices, while the SERC performs partial administrative and regulatory duties. Because of its limited capacity and the asymmetric distribution of information, the NDRC has been unable to carefully review and investigate all the projects and electricity prices submitted by its subordinates. This allows local governments and state power companies to manipulate the information in their submissions. Moreover, the provincial governments, the Ministry of Environmental Protection, the Ministry of Land Resources, and the Ministry of Water Resources are involved in the regulatory process because of their responsibilities. As the owner of the giant state-owned

Aviation Leading Group in 2003 and the National Energy Leading Group in 2005. The former was led by the late Vice Premier Huang Ju, and the latter is headed by Premier Wen Jiabao.

36. As of today, there are only four independent regulatory agencies in China and the other three are all in the financial sector: the China Securities Regulatory Commission (1992), the China Insurance Regulatory Commission (1998), and the China Banking Regulatory Commission (2003).

37. These are Heilongjiang, Jilin, Liaoning, Shanghai, Shandong, and Zhejiang.

electricity enterprises, the SASAC's goal to maintain the dominance of SOEs is in conflict with the SERC's policy to promote competition. These constraints significantly weaken the SERC's regulatory capacity.

Meanwhile, the SERC suffers from certain endogenous flaws. First, understaffing and insufficient financial resources have afflicted it since its inception. According to its organizational structure, the SERC commits only 98 staff members to perform its tasks.³⁸ In comparison, the SGC, the largest enterprise in China's power sector, has more than 1.5 million employees. Second, the SERC is not fully supported by an adequate legal framework. The Electricity Law was promulgated in 1995 but has not been amended afterward; it is not applicable to the current situation. With outdated stipulations, the SERC can only wield its authority according to the Dianli Jianguan Tiaoli (Regulations on Electricity Supervision) issued by the State Council in 2005.³⁹ Third, with the expectation that the state will establish an energy super-ministry, the general assumption is that the SERC will be dismantled or subsumed.⁴⁰ Thus, any improvement in its current operating parameters may vanish later. The appointment of the incumbent chairman, Wang Xudong, was considered to be confirmation of the SERC's transitional nature because he was already 62 years old when appointed and would reach retirement age in three years.⁴¹

There also exists a unique phenomenon in China's state sector that prevents the SERC from functioning. The SOEs' high-level managers are bestowed *xingzheng jibie* (administrative ranks) parallel to those of government officials. In the power sector, the general manager of SGC enjoys *zhengbu ji* (minister-level rank) as the chairman of the SERC; likewise the managers of

38. See General Office of the State Council, *Guojia Dianlijianguan Weiyuanhui Zhineng Peizhi Neishe Jigou he Renyuan Bianzhi Guiding de Tongzhi* [Circular of the General Office of the State Council concerning the organizational structure of State Electricity Regulatory Commission] (Beijing: General Office of the State Council [2003], no. 7). As of now, the SERC has expanded to six regional bureaus and 12 provincial offices, but the understaffing problem remains. For example, in the Northeast Bureau there are only 40 staff members, responsible for electricity affairs in northeastern China.

39. The Decree of the State Council [2005], no. 432.

40. "Gaige Jiang Cong Zhongyang Zhubu Tuizhi Difang" [Reform will be gradually moving from the central government to the local states], *Guangzhou Ribao* [Guangzhou Daily], March 12, 2008, <http://gzdaily.dayoo.com/html/2008-03/12/content_135528.htm>, accessed June 22, 2009.

41. "Wang Xudong Churen Dianjianhui Zhuxi, Wei Chengli Nengyuanbu Pulu" (Wang Xudong was appointed the chairman of the SERC, paving the way for the creation of the Ministry of Energy), *Xinxi Shibao* [Information Times] (Beijing), May 2, 2008, <http://informationtimes.dayoo.com/html/2008-05/02/content_182769.htm>, accessed June 22, 2009.

the five power groups have *fubu ji* (vice minister-level rank). This is a problem inherited from the process of corporatization from the former ministries to central SOEs, in which former ministers assumed the office of first general managers and kept their ranks and perquisites. The SERC suffers from this system because these power SOEs are not subordinates or regulatees but parallel institutions in terms of administrative rank. Furthermore, state power groups exploit their special status and close connections in order to lobby government officials for their own interests, behaving as interest groups in the Western sense. Hence, the separation of government and enterprises will never succeed as long as the enterprises remain state-owned.⁴²

A nationwide power shortage occurred in China in 2003 and worsened in 2004.⁴³ A faulty policy promulgated by then-Premier Zhu Rongji in 1999 contributed to the situation, in which expanding power capacity failed to meet surging power demand.⁴⁴ Moreover, the power structure further exacerbated supply-demand conditions. The power plants that could raise the power supply by increasing their operating hours were constrained by limited transmission capacity because of the underdeveloped power grids. The power shortage prompted the local governments to cooperate with the state power groups to secure a stable power supply, which is the basis of economic growth and local revenue generation.

An accompanying phenomenon was rampant rent-seeking at the local level. Some power plants were under construction even though the projects were still being reviewed by the NDRC and had not yet received permission to proceed.⁴⁵ For instance, the fatal accident that took place at the Xinfeng power plant in Ulanqab, Inner Mongolia, in 2004 proved collusion between the local government and power companies. The local government let construction begin without an approval, and ignored central directives regarding

42. Xueqing Wang et al., *Guanzhi Longduan: Longduanxinhangye de Zhengfu Guanzhi* [Regulating the monopolies: State regulation in the monopoly industries] (Beijing: Zhongguo Shuili Shuidian Chubanshe, 2004), pp. 52–53.

43. Twenty-one out of 30 provinces, municipalities, and autonomous regions suffered restrictions or blackouts in 2003. The number went up to 24 in 2004.

44. The policy is also known as Sannian Bushang Huodian [Suspension of Thermal Power Plant Projects for Three Years]. See fn. 26.

45. Tun-jen Cheng and Chung-min Tsai, “Powering Rent Seeking in the Electricity Industry,” in *Rent Seeking in China*, eds. Tak-wing Ngo and Yongping Wu (London: Routledge Press, 2009), pp. 117–44.

suspension of the project.⁴⁶ The Yemazhai and Fa'er power plants in Liupanshui City, Guizhou Province, are two other representative cases showing how local government shelters illegal power generators.⁴⁷ The reality shows that the SERC lacks both the capacity and discretion to monitor the industry.

Another issue further reflects the regulatory dilemma in China's power sector. To improve efficiency in the transmission sector, the potential establishment of a UHV grid is gaining traction. The idea is to build power plants close to coal mines and water resources in the western part of China and transmit power to east China through the grid. Proponents contend that it lowers transportation costs and is better for the environment. Nonetheless, the SERC officials believe that this project will result in a squandering of resources and the re-monopolization of the power industry because the UHV system will fortify the grid companies' domination of the power plants.⁴⁸ Unfortunately, their efforts were in vain, as the SGC convinced the NDRC and earned approval to establish the UHV system.

The Chinese government is continuing to push the reform forward and aiming at separating the transmission and distribution sectors as scheduled. Nonetheless, what we have witnessed is a beleaguered state regulator, power struggles among different agencies, and an unclear future for reform.

CONCLUSION

By examining the dynamics of China's electricity reform during the reform era, I explore the development of a regulatory system and the political struggles within the central government and among the central state, local states, and state power companies. The roles of the central state, local state, and central SOEs are all changing as the power reform advances. These colossal central SOEs, the policy products of Zhuada Fangxiao (Grasp the Big Corporations, Get Rid of the Small Ones),⁴⁹ have already become the most powerful

46. "Zhuicha Neimenggu Weigui Dianchang" [Investigating illegal power plants in Inner Mongolia], *Caijing* 138 (July 25, 2005).

47. "Jinyuan Diguó' Diaocha" [Investigating the Jinyuan empire], *ibid.*, 115 (September 5, 2004); and "Guizhou Baiyiyuan Weigui Dianchang Kangfa Guowuyuan Sibawei" [10 billion yuan illegal power plants in Guizhou against four ministries], *Tengxun Xinwen* [Tengxun News], December 23, 2006, <<http://news.qq.com/a/20061223/000971.htm>>, accessed November 5, 2007.

48. SERC, *The Annual Report on Electricity Regulation (2006)* (Beijing: SERC, 2007).

49. This is a major economic strategy of the SOE reform that was set in the 15th Party Congress of the Chinese Communist Party in 1997.

actors and occupy the dominant position in their own industries.⁵⁰ When competition was introduced by the state to break up a monopoly, an unexpected oligopoly by the central SOEs emerged. The policy goal of introducing private investment to promote development of the market has proved a failure: the generation and transmission sectors remain largely in the hands of the central SOEs. Reform strategies are intended to liberalize the generation sector, keep a public monopoly in the transmission sector, protect end-users, and prevent rent-seekers. However, in some provinces, reforms have not advanced, but rather, regressed.⁵¹ China's unique reform policy of corporatizing state assets without privatization has proved unsuccessful and, in fact, problematic.

China's power reform has led to a paradoxical situation in which reform has succeeded while regulation has failed.⁵² That is to say, the Chinese state has achieved the goal of restructuring and liberalizing the industry, but failed to establish a functioning regulatory system. The system exhibits a profound defect: state regulation, a critical element in the economic transition process, has been missing from the reform design from the very beginning. Because the Chinese state treated institutional restructuring and state regulation as two separate issues and weighted the former over the latter, it inevitably encountered the dilemma of monitoring a liberally reformed sector with a functionally weak state agency. The newly created independent regulatory agency has not been able to function and has been captured by the colossal state power groups. In their own interests, the local governments have worked closely with state power companies to ensure their power supply, with the aim of attracting more investment and bringing in higher local revenue. And the central SOEs have exploited their "quasi-governmental" status to enjoy a dominant position in the industry. To a broad extent, the reform policies the Chinese government adopts for its monopoly industries

50. For example, China National Petroleum Corporation and China Petroleum and Chemical Corporation in the oil industry. See Chih-shian Liou, "Bureaucratic Politics and Overseas Investment by Chinese State-Owned Oil Companies: Illusory Champions," *Asian Survey* 49:4 (July/August 2009), pp. 670–90.

51. According to a list announced jointly by the NDRC, State Environmental Protection Administration, Ministry of Land Resources, and Ministry of Water Resources in July 2005 (NDRC [2005], no. 38), 32 projects in the power industry violated one or more of the laws and regulations on environmental protection, land use, water use, and soil and water conservation, or were not included in the macroeconomic plans. Among them, 11 cases were found in Henan Province and 10 in Inner Mongolia.

52. The author would like to thank the reviewer for raising this point.

are quite similar. It is a unidirectional reform strategy, from separating the government and enterprises to restructuring the industry, and finally to instituting the market and promoting competition. However, a critical element, setting up a well-designed regulatory system, has consistently been neglected.⁵³

53. This logic could well be applied to reforms in China ranging from the early telecommunications industry to the current postal service industry.