

**Changes in China's Electricity
Industry Governance:
Implications for Energy Cooperation
in Northeast Asia**

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One of the key points in the discussion about the China dimension in Northeast Asian energy cooperation is the environmental contribution that comes along with the importation of energy. In particular, China imports natural gas from Russia which exports the same to South Korea and Japan. An increase of gas in China's energy consumption can help reduce China's dependence on coal, the primary source of China's energy and the primary cause of atmospheric pollution as well. On the other hand, if gas and other clean sources of energy gained a larger share of China's energy consumption market the result would be a conflict of interest with the power supply systems already in place. This makes it meaningful to examine China's governance of its electric power industry, since coal is currently used to generate electric power and replacing coal with gas for household use is certainly desirable. How the electric power industry is managed in China has a great impact on the future prospects of bringing in additional non-traditional energy sources for consumption through international cooperation.

The purpose of this paper is two-fold. First, it provides an update on recent policy reforms by the Chinese government concerning the governance structures for the country's electricity industry.¹ As is true in most other countries, the development of the electricity sector of the energy industry does not always follow the logic of science. This is particularly true when 'sustainable development' is an implicit or explicit criterion for research. Instead, development – from national planning to project approval – is heavily influenced by the industry's governance structures and practices. In a sense, understanding how China governs its energy industry is as important as understanding the supply and demand of the Chinese energy market. Second, drawing on insights derived from the first part, this paper examines the implications of China's changing electricity governance for bringing visions of energy cooperation in Northeast Asia into reality. Among other things,

proposals for cross-national energy development cooperation in Northeast Asia can benefit from cooperation between the local bodies of China's electricity governance apparatus in the northeastern provinces. They could be assisted by the formation of a web of stakeholders in cooperative project designs.

Governance Structure of China's Electricity Industry

From 1949 till the mid-1980s, the electricity industry in China was one of the least reformed sectors of the Chinese economy. The state was the sole owner and operator of power generation and distribution facilities. A state monopoly also means that there was little foreign participation in the electric power industry. For the Chinese government, following the principles of self-reliance, the state provision of electricity for both commercial and civilian consumption was a matter of national security, and in some ways a means of ensuring central government's effective political control of the provinces.² Reforms to the industry began in 1985, when the State Council allowed entities other than the national government to raise funds for power plant construction. Such entities included local governments, state-owned enterprises, and partnership enterprises of various forms of ownership.

These reforms diversified the sources of investment in the electricity industry. At the same time, they led to complexities in governing the industry as well. This is because the Chinese bureaucracies at various levels have difficulties in coordinating their activities along industry lines. In addition, the majority of China's power plants operated autonomously. It was not until the early 1990s that the construction of power distribution networks began.³ We should bear in mind that although the sources of electricity investment increased, the level of state monopoly of the industry remained unchanged. Also in 1985, the State Council allowed the diversification and setting of electricity prices as to recover investments in power generation. This reform

measure, however, do not mean that electricity pricing was allowed to fluctuate according to market conditions as in the case of a market economy. "Diversification" simply meant that different end users had to pay different prices set by the government. The government at various levels determined the price of electricity and this continues today.⁴

The second phase of reform in the electricity industry began in the early 1990s. These reforms attempted to push the industry into market competition through a restructuring of state-owned power enterprises into stock corporations and the creation of "enterprise groups." The goal of such restructuring was to relieve the enterprises of their governing responsibilities and to take advantage of economies of scale.⁵ A key step in this direction was the promulgation of the Electricity Law of China in 1995. The third phase of reform in the electricity industry began in 1998, marked by the dissolution of the Ministry of Electric Power. The following section offers a glimpse of China's governance structure for the electricity industry today.

National Level Governance

At the national level, under the State Council, the State Development and Planning Commission and the State Economic and Trade Commission (SETC) map out national development strategies, regulations, and policy directives. SETC assumed the functions of China's energy ministries before the comprehensive revamping of ministries under the State Council was implemented in 1998. For the electricity sector, the Department of Electric Power under SETC now assumes the authority of the former Ministry of Electric Power, which itself went through seven rounds of merger with and/or separation from other energy ministries, after the creation of the Ministry of Fuel Power in 1949 (see Appendix A). The history of this bureaucratic restructuring is a long one.⁶ Suffice it here to say each restructuring had to do

with the Chinese central government's desire to better coordinate the utilization of energy resources available and accessible to China. The 1998 dissolution of the Ministry of Electric Power, for example, did not mean that the State Power Corporation of China (SP) had the sole authority to decide on power plant construction. The Ministry of Water Resources retained its power to decide on hydro-power projects and the supply of electricity for agricultural use.

The dissolution of the Ministry of Electric Power was preceded by the creation of the State Power Corporation of China in 1997.⁷ The SP was designated to be an enterprise in itself. When the State Council launched the SP, it appointed the minister and vice ministers of the Ministry of Electric Power to serve as its chief executive officers.⁸ The SP thus became a super-corporation governing seven regional power corporation groups and six independent electricity networks at the provincial level that had been under the direct control of the Ministry.⁹ In addition, the SP shares responsibility together with the Ministry of Public Security in managing Anneng Corporation, the hydro-power division of the People's Armed Police Forces.

There is yet another national agency that is part of China's governance mechanism in relation to its power industry — the China Electricity Council (CEC). Created in 1988, the CEC was an association of enterprises in China's power industry but worked under the direct supervision of the Ministry of Energy and its successor the Ministry of Electric Power. The CEC's main functions were to provide various forms of service assistance to power enterprises and the now-dissolved "power industry management."¹⁰ Behind such a vague statement of purpose was the reality that along with the reforms that began in the mid-1980s, bureaucratic control of the country's electricity industry became so complex that it was beyond a single ministry's reach to regulate all of the actors in the electric power industry. Investors in the

electricity industry other than the Ministry of Electric Power assumed individual and often autonomous control of the power plants and distribution systems. The result was conflicts of interest and inefficient use of resources. The CEC, then, coordinates the various investors/managers of the industry to help the central government govern the electricity industry according to national rules and standards. Along with the dissolution of the Ministry of Electric Power, the CEC in 1998 became a corporation registered under the Ministry of Civil Affairs. In theory this switch of ministerial affiliation changed the CEC into a wholly independent entity. However, the fact is that the SP's CEO concurrently serves as CEC's chairman and the honorary chairman of the CEC (Gao Yan) was the last Minister of the Ministry of Electric Power. This suggests that the CEC has yet to function as a truly independent body. This independence may seem to be a product of the separation of the governance function from the business functions of the electricity industry but the reality is different.

In short, the central government has taken steps to push the electric power industry into the market, much like what it has done with manufacturing and light industries. The SP and its affiliates and associated power corporations have indeed started to function as market rather than bureaucratic operators, both domestically and in overseas fund-raising. Nonetheless, as is true of the transformation process of all sectors of the Chinese economy, bureaucratic and legal hurdles remain. The following section looks at China's governance of the electric power industry at the level of the province.

Provincial Level Governance

The same 1996 directive of the State Council that led to the creation of the SP instructed the governments of the provinces and below to abolish their

administrative departments that had been managing electric power industries, in ways similar to the Ministry of Electric Power at the national level. Provincial electric power bureaus were told to hand over their administrative functions to the respective provincial economic and trade commissions. The same process has applied to those governments below the provincial level. Reform below the national level was envisioned to be part of a three-stage strategy as follows:

- 1) the separation of government administrative functions from the management of power plants,
- 2) the separation of power plants from power grid runners,
- 3) the introduction of a competitive pricing system.

However, the first stage of these reforms at the provincial level did not materialize until September 2000, when Jiangsu Province abolished its power bureau and turned over its administrative functions to the provincial economic and trade commission. In contrast, by the same time twenty six provincial economic and trade commissions had emulated the State Trade and Economic commission to create a bureau of electric power, expecting to take over the policymaking functions of the departments of electric power of their respective provinces.¹¹ Such developments indicate that the reform process ran into many obstacles before the industry could function as a unit.¹²

The purpose here is not to track the progress of these administrative reforms in China's provinces. Instead, the slow pace of provincial governments heeding directives from the central government and the unevenness of China's provinces in carrying out national reform pointed to the complexities of the task. As is the case in reforming other state-owned industries, the efforts to transform electricity generation and distribution into an efficient system based on market principles is hampered by various factors. They include the complexities in power plant ownership, the dynamics of a province's overall

economic policymaking and intra-provincial differences, among others. In this regard, it remains to be seen if the national government's vision of establishing a national unified national power grid network by the year 2020 will be implemented.¹³

The Legal Dimension

If the administrative governance structures of China's electric power industry suffer from the lack of a national standards and practices, does the Electricity Law of China (hereafter the Law), the first of its kind in contemporary China's history, offer a clearer road map? The Law has 75 articles in ten chapters. It contains regulations on power development, network management, supply and price, as well as rural power production and consumption, and protection of power facilities. The wide scope of the law is indicative of the numerous challenges facing the industry. How the Law may function in the national government's overall strategies for overhauling the electricity industry has been analyzed elsewhere.¹⁴ It deserves our attention that by August 2000, the Law was already deemed to be insufficient for the changed market realities, prompting SETC to announce preparations for revising the Law and to invite local input in the process.¹⁵ Key issues the revision was supposed to address included: transparency in decision making for electricity transmission through the power grid networks in place, the setting of electricity prices and fees, as well as legal responsibilities for entities that are found to have caused problems to power supply, and making the Law compatible with the World Trade Organization's (WTO) rules.¹⁶

Since the Law is in the process of revision, it is impossible to know what the new legal provisions will be. For the purpose of getting an idea about implications for foreign investment of China's attempt at governing the

electricity industry, we should pay attention to one of the key articles in the existing law. Article Three of the existing Law stipulates that:

The electric power industry shall fit the needs of national economy and social development and will develop appropriately. The State encourages and guides legal investment in the development of power sources and the establishment of power production enterprises by domestic and overseas economic organizations or individuals.

Investment in the power industry shall implement the principle of "whoever invests, benefits."

A potentially useful guide for predicting likely reforms to the Law is the March 2001 revision to the Sino-Foreign Equity Joint Venture Law. The first sentence is likely to be revised to reflect the stronger role of the market over economic planning. Now that the Ministry of Electric Power is no longer in existence, it remains to be seen how the revision of the Law would reflect the national government's goal of encouraging national competition and retaining some element of governmental guidance at the same time. After all, electricity supply and the energy industry in general involves issues related to national security and the ideology of energy self-sufficiency.¹⁷ Indeed, foreign access to China's energy market in general and electricity market in particular is different in nature from access to the manufacturing industries. For the manufacturing industries the Chinese government at various levels has relentlessly campaigned to attract more foreign funding.

Probably the most contentious issue is the current interpretation of "the principle of 'whoever invests, benefits'." This principle can serve as a stimulus for investment. At the same time, it can stifle market competition, as the electricity sector remains a state monopoly. The problem is a complex one, involving China's struggle to sort out the ownership issue in its economic operators. For foreign investors in the Chinese electric power sector, a

regulatory framework took shape in late 1996.¹⁸ But since then the national government has done away with policy pronouncements that guaranteed profits for foreign investors in electricity projects. It also changed other aspects of China's regulatory regime for foreign direct investment (FDI) in energy development. For example, the BOT (build-operate-transfer) scheme (first applied in the Laibin B project in Guanxi in 1996) is no longer in line with central government policy preferences.¹⁹ As is true with Chinese policies for so many other sectors/projects involving FDI, changes are simply a way of life. Furthermore, better efficiency in the electricity sector in China does not necessarily mean higher profits for foreign investors in China's energy sector.²⁰

China's pending WTO membership will be of assistance to reduce the legal irregularities in China's domestic laws. The process will take time and may not be that smooth. Even with the WTO principle of national treatment dutifully implemented, foreign investors in China's electric power industry will still need to compete with domestic Chinese operators in the same imperfect market. As over twenty years of foreign investment in China show, market irregularities stems from, among other things, bureaucratic influence getting in the way of the enforcement of economic laws, and WTO rules do not disallow a member government's right to national economic planning.

In short, in spite of the seemingly drastic reform measures, monopoly and strong bureaucratic influence remains the key features of China's governance of the electricity industry. A case in point is China's Premier Zhu Rongji's reported criticism that the central government's decentralization design of "making the province the [economic and legal] entity" of electric power generation resulted in the provinces erecting protective barriers, making it impossible for efficient utilization of China's power industry. In response, Zhu instructed the SETC and other central government agencies to re-take the initiative in mapping out strategies for reforming the electricity industry.²¹

On the other hand the Chinese economy would not have developed since the 1980s without decentralization of economic decision making from the central government bureaucracies to the provinces. Fiscal reforms in the mid-1990s that allowed the separation of national from provincial revenue collections meant that provinces have a vested interest in retaining and expanding their power in setting their own economic policies. Such policies may not always conform to central government directives or preferences. Central-local government relations in contemporary China's history were never harmonious, resulting in cycles of centralization-decentralization-recentralization. The result is uneven development in regions across China, in spite of the impressive statistics of nation-wide growth for the past two decades.²²

Implications for Energy Cooperation in Northeast Asia

There are many ways to consider the Chinese dimension when examining the issue of energy cooperation in Northeast Asia. Geoeconomic/strategic factors certainly play a role.²³ Projections about China's overall energy demands in the future and its choice of energy development priorities and projects²⁴ also contribute to our understanding of China's approaches to its own energy security and the Northeast Asian region. If we look at the national picture alone, then it is meaningful to ask such questions as "who will fuel China"²⁵ and consider what opportunities the energy industry in China offers foreign investors.²⁶

My previous review of changes in the governance structure of China's electricity industry was meant to bring in an additional dimension for consideration. My intended message was straightforward; the dynamics in China's domestic political economy can affect the prospect of energy cooperation in Northeast Asia as much as the larger issues of international

politics and economics. For its 10th Five-Year Plan period (2001-2005), China's national priority in energy development is focused on the Western region and the role its vast energy reserves can play in the economic development of the Eastern and Southern regions. It is reported that 37.4 % of the country's new power projects will be launched in 12 Western provinces alone. These projects are in turn linked by a massive group of transmission networks connecting power generators in the West to the end users in the South (Guangdong) and the East (Shanghai and Jiangsu).²⁷ A second large-scale project to note is the gas pipeline linking Xinjiang and other provinces in the West with end-users in provinces in central China and along the coast (Shanghai), and from Inner Mongolia to Beijing.²⁸

China's Northeastern provinces, in contrast, are not enjoying the same kind of injection of energy investment by the central government as are the Western provinces. In addition, the Northeastern provinces have in recent years lagged far behind the coastal provinces in developing their own industrial base. This in turn limits their capacity to raise funds to either develop the energy resources in areas under their administrative jurisdiction for commercial purposes or to meet their own consumption needs, or both. For the Northeastern provinces, though, the future is not totally bleak. Once a national electric power grid network is in place, the province's power suppliers have an opportunity to benefit as well (by selling their electricity to the national network).

What implications do the findings summarized in the previous sections of this paper have for energy cooperation in Northeast Asia? The following part of the paper addresses the question by breaking the general question down to a number of related questions and proposes strategies for integrating China more fully into regional cooperation schemes.

If the national government of China has located its energy development priorities in the Western and coastal parts of the country, is it too early for efforts to launch regional energy cooperation projects in Northeast Asia that involve China? It is true that China's Northeastern provinces (Heilongjiang, Jilin, Liaoning, and Eastern parts of Inner Mongolia) are not priority areas in the Chinese national government's 10th Five-year Plan (2001-2005). It is also true that these provinces have a much weaker economic base in comparison with the coastal provinces. Precisely because these provinces suffer from a lack of national funding, international cooperative projects have a larger role to play. Of critical importance is the realization that research as well as cross-national energy project designs must come to grips with the political-economic reality in China. That reality is that the China dimension in Northeast Asian energy cooperation in many ways means dealing with the Northeastern provinces, rather than the national government in Beijing. This point is particularly relevant given the fact that the central government has decentralized the responsibilities for electricity and other forms of energy development to the provinces. In terms of timing, the present political-economic relations between Russia, China, and Japan are by most measures more conducive to launching regional cooperative projects than before. Thus, launching regional energy cooperation projects in the near future can contribute to strengthening positive developments in Northeast Asia.

How would the decentralized governance structure of China's electricity industry affect the outcome of international cooperative efforts? Ongoing changes in China's governance mechanisms for the electricity industry means more power to the provinces. Increased provincial autonomy in terms of economic decision-making is a historical trend for China. Short of a major disruption to China's governance system (for example a civil war or a cross-border military conflict), that trend is unlikely to be reversed. This implies

that conceptualization of regional cooperative energy projects should begin with bringing provincial economic (in particular energy) planners on board. Doing so can only be conducive to the success of such projects, especially when the international commitment (financial as well as diplomatic) can not be very large due to the commercial risks associated with the launching of such projects. Meanwhile, my point about putting the provinces in Northeastern China in the center of international research and project design efforts is not meant to imply ignoring the central government, however. Support from China's national government is important as well. Indeed, the central government does matter, both as a possible source of finance and for providing policy assurance when it comes to launching international projects.

If the Northeastern Chinese provinces currently suffer from a general decay of their industrial base their own energy demand may not increase very much in the short term. What is the incentive for the provincial electricity and other energy operators to participate in international cooperative energy projects? As so many studies have repeatedly indicated, the energy industry itself can be turned into a growth industry. For the provinces, the immediate benefit of joining multi-lateral energy development projects is the capital that foreign investment projects bring in. In addition, an increase in energy supply can lead to a reduction of electricity and other forms of energy costs for industrial, agricultural, commercial, and household use. Such developments in the local energy sector can in turn contribute to overall local economic growth. Local government monopoly of the power industry can be an obstacle, however. Another obstacle to overcome is the tendency of provincial economic planning agencies to rely on traditional suppliers of energy fuels. This means that to make regional cooperative energy projects possible, the training of local (provincial level and below) bureaucrats in the economic, environmental, and social benefits of regional energy cooperation projects is essential. Such

training should include not only the basics of development economics but should include also the process of enlisting international assistance in local provincial energy development projects.

Conclusion: considerations of strategies

Several proposals may be considered before launching regional energy cooperative projects in Northeast Asia:

- Begin by working with Chinese electricity and other energy operators as well as economic planners in China's Northeastern provinces
- After securing policy commitments from provincial authorities and power operators, assist the provinces to gain central governmental approval and assistance from Beijing. Given the Chinese practice of planning economic development projects in five-year cycles and allowing room for annual adjustment, regional energy cooperation project planning has to involve following up with the Chinese economic planning agencies at both the local and national levels.
- Include as many multilateral institutional shareholders in regional energy cooperation projects as possible. China has twenty years of working with such international multilateral economic institutions and has established a system of making Chinese economic agencies work with the international institutions.²⁹ The bureaucratic channels for the central Chinese government's approval of regional energy cooperative projects are readily available. Such multilateral institutional shareholders include the following:

The UN Development Program (UNDP) is significant in that it has a healthy track record of conducting pre-investment surveys, the findings of which assist international aid and investment agencies to decide their loan packages.³⁰ It also specializes in technical assistance. Perhaps the most significant role of the UNDP is that it can help bring Russian (to be specific,

provincial authorities and operators in the Far East), North Korean and perhaps Mongolian share/stake-holders together so that they are engaged in regional energy cooperation from the beginning.

The ADB and the World Bank: UNDP assessments (usually limited in funding) lead to a greater ability to obtain project commitments from such international development agencies as the Asian Development Bank (ADB) and the World Bank. The World Bank, in particular, should be encouraged to play a role in assisting the launching of energy cooperative programs in one of the world's most strategically important regions. World Bank involvement is important to help secure project funding for Russia-related projects. Now that North Korea is applying for ADB membership, the ADB should be able to disburse project funds that include North Korea as a stake/shareholder.

JBIC (Japan Bank of International Cooperation) and other channels of bilateral aid (including South Korean aid agencies) should also be tapped. JBIC should be encouraged to make loans to such projects by including them in tied loan packages to China. It goes without saying that such ties benefit Japanese energy equipment producers and possibly consumers as well. Now that Japan is changing its method of granting official development assistance (ODA) to China from a multi-year to a single-year cycle, the close involvement of JBIC in Northeast Asian energy development projects can assist Japan to scrutinize its ODA to China as well.

Local governments in China's Northeastern provinces should also be involved in the financing. This connection is critical for the success of such projects. Without making the local government a shareholder of such projects, local government agencies will have less incentive to fully commit themselves to the success of cross-border cooperative energy projects. In a similar vein, local governments in the Russian Far East, the North Korean and Mongolian

governments, should also be encouraged to contribute, no matter how symbolic their financial commitments to a project may turn out to be.

The Development Bank of China and international private banks should be approached as partners in co-financing schemes for regional energy cooperation development projects. They could assist regional energy cooperation in a way that would be closer to the realities of the market and it would also be conducive to ensuring the market efficiency of such projects.

To summarize, this paper contributes to the discussion about energy cooperation in Northeast Asia by identifying the need to begin with local share/stakeholders' interests and commitments, given the changing realities of China's electricity governance structures. The process would then proceed to winning approval of the central government. To ensure the launching and successful operation of a regional energy cooperation project, which is multilateral by nature, it is important to involve as many international institutional share/stakeholders as possible. Finally, by making the mechanisms of launching a regional energy cooperation project a key theme for consideration, it is hoped that the vision of transforming Northeast Asia into a region of prosperity will materialize earlier.

Endnote

- ¹ An excellent account outlining changes in China's power management from 1979 to 1995 is Yang, Ming and Xin Yu, "China's Power Management," *Energy Policy*, 24:5, 1996, pp.735-757.
- ² Lieberthal, Kenneth, *Governing China: from revolution through reform*, W.W. Norton, New York, 1995.
- ³ The China National Electric Power Network Construction Corporation (Ltd) was created in 1993, the decision to start construction of the Three Gorges Dam project was made in the same year.
- ⁴ For electric price setting see the China Energy Information Net page: <http://www.energy-china.com/Zhenfu/talk_dl/151.htm>.
- ⁵ Chou, Daniel C. K. "An Analysis of the Political Economy of China's Enterprise Conglomerates: a study of the reform of the electric power industry in China," *Law and Policy in International Business*, 28:2, Winter 1997, pp. 383-433.
- ⁶ Dangdai Zhongguo de Dianli Gongye, *The Electric Power Industry of Contemporary China*, Dangdai Zhongguo Chubanshe, Beijing, 1994.
- ⁷ State Council, "State Council Directive on the Formation of State Power Corporation"; "Organizational Charter of State Power Corporation", 7 December 1996. Both on-line in People's Daily database <<http://www.peopledaily.com.cn>>.
- ⁸ Ibid.
- ⁹ The seven group power corporations are: Dongbei (Northeast), Huabei (Northern), Huazhong (Central), Huadong (East), Xibei (Northwest), Hua Neng (in Shandong Province) and Gezhouba (in Hubei Province). The six provincial networks are: Shandong, Sichuan, Fujian, Yunnan, Guangxi, and Guizhou. Source: *People's Daily*, 29 April 2001, on-line <<http://www.peopledaily.com.cn>>.
- ¹⁰ The China Electricity Council <<http://www.ccc.org.cn/>>.
- ¹¹ "China to Speed up Structural Reform of its Electric Power Sector", *People's Daily*, 14 September 2000. In Chinese, on-line <<http://www.peopledaily.com.cn>>.
- ¹² One of the most recent attempts by the central government of China to foster a unitary market was an April 21, 2001 circular issued by the State Council prohibiting protectionism by localities in any form.
- ¹³ "China to Create Nationwide Power Grid Network by 2020", *Xinhua Newswire* (English), 23 November 2000. Online <<http://www.xinhuanet.com/english/>>.
- ¹⁴ Andrews-Speed, Philip and Stephen Dow, "Reform of China's Electric Power Industry: challenges facing the government", *Energy Policy*, 28:5, May 2000, pp. 335-347.
- ¹⁵ The fact that the SETC takes the lead in proposing revisions to the Law is a good sign. The SETC as a regulatory rather than a managerial agency is in a better position to propose measures to guide the development of the industry in a rational direction, as opposed to the inclination to protect vested interests, which was the case with the first drafting of the law by the Ministry of Electric Power in 1995.
- ¹⁶ "The Electricity Law of China to be Revised", *People's Daily*, 16 August 2000. In Chinese, on-line <<http://www.peoplesdaily.com>>.
- ¹⁷ A good indication of the persistence of 'self-reliance' in energy development is the policy of 'substituting oil with coal' (*yi mei dai you*), as coal is in abundant supply within Chinese territory, while China has become a net importer of oil since 1993.
- ¹⁸ Lange, John E. and Nicholas C. Howson, "Generating a Regulatory Framework," *The China Business Review*, September-October 1996, pp. 22-28.
- ¹⁹ Heywood, Neil, "Highly Political Energy", *Petroleum Economist*, 67:12, December 2000, pp. 5-7.

- 20 Leggett, Karby, "Foreign Power Companies Fear Chinese Reforms Designed to Slice Consumer Electricity Prices", *The Wall Street Journal*, 28 January 2000, p. A14.
- 21 "Reform of the Electricity Industries Has Reached the Crossroads", People's Daily, 11 December 2000. In Chinese, on-line < <http://www.peoplesdaily.com> >.
- 22 Wang, Shaoguang and Hu Angang, *The Political Economy of Uneven Development: the case of China*, M.E. Sharpe, New York, 1999.
- 23 Asakura, Kengo, "Tans-Korean Gas Pipeline Could Help Asia Energy Security, Environmental Problems," *Oil & Gas Journal*, 98:20, 15 May 2000, pp. 74-77.
- 24 Lawrence, Susan V., "A Blustering Giant Turns Oddly Coy," *Far Eastern Economic Review*, 164:8, 1 March 2001, pp. 46-50.
- 25 Drennen, Thomas E. and Jon D. Erickson, "Who will fuel China?" *Science*, 279:5356, 6 March 1998, p. 1438.
- 26 Blackman, Allen and Xun Wu, "Foreign Direct Investments In China's Power Sector: Trends, Benefits, and Barriers," *Energy Policy*, 27:12, November 1999, pp. 695-711.
- 27 "China to Rev Up Construction of Power Transmission Project", *Xinhua* (English), 27 November 2000. On-line < <http://www.peoplesdaily.com> >.
- 28 "China Launches Massive Gas Pipeline Campaign," *Oil & Gas Journal*, 98:23, 5 June 2000, pp. 63-66.
- 29 Asian Development Bank, Country Assistance Program 2000-2002: the People's Republic of China, 2000, pp.25-27 Available on line < <http://www.adb>>.
- 30 The UNDP already has three regional projects for Northeast Asia: The Tumen River Area Development Program; Northeast Asian Agricultural Cooperation and Support; and Energy, Coal Combustion and Atmospheric Pollution in Northeast Asia. For descriptions of these programs. See <<http://www.unchina.org/undp/regional/index.html>>.

Appendix A

Chronology of China's Electricity Administration Agencies at the National Level

<u>Year</u>	<u>Ministry in Charge</u>	<u>Areas of Management</u>
January 1949	Ministry of Fuel Power	Coal, Electricity, and Oil
July 1955	Ministry of Electricity Power	Fire-based and hydro-power
February 1958	Ministry of Electric Power and Water Resources	
February 1979	Ministry of Electric Power	
March 1982	Ministry of Electric Power and Water Resources	
April 1988	Ministry of Energy	(separate Ministry of Water Resources)
March 1993	Ministry of Electric Power	(Ministry of Energy dissolved)
January 1997	State Power Company created	Management of power production and Distribution; independent legal entity; Operation in line with policy directives by Ministry of Electric Power.
March 1998	Ministry of Electric Power dissolved	Policymaking authorities transferred to Department of Electric Power under State Economic and Trade Commission
March 1998	Ministry of Water Resources	Retains authority to develop small hydropower projects; responsible for supplying power for agricultural use; works in conjunction with State Power Company

Sources of information: *Dandai Zhongguo de Dianli Gongye* (The Electricity Industry of Contemporary China) (Beijing: Dandai Zhongguo Chubanshe, 1994). *Renmin Ribao* (People's Daily), various issues. Compiled by Daojiong Zha

Appendix C

Year 2001 Amendments to Sino-Foreign Equity Joint-Venture Law

Amendments to the Sino-Foreign Equity Joint Venture Law were adopted by the Presidium of the Fourth Session of the Ninth NPC at its third meeting on 14 March 2001. This revision is the second of its kind to the same law, first drafted in 1979, a later revision was published in 1990.

1. Paragraph Two of Article Two of the existing Law "all the activities of a joint venture shall comply with the provisions of the laws, decrees and pertinent regulations of the PRC."

... (amended version) "All the activities of a joint venture shall comply with the provisions of the laws and regulations of the PRC."

2. Paragraph Four of Article Six of the existing law: "The employment and discharge of the workers and staff members of an equity joint venture shall be stipulated in accordance with the law in the agreement and contract concluded by the parties to the venture."

...: "Matters concerning the staff and workers of a joint venture, such as appointment, dismissal, remuneration, fringe benefits, labor protection and labor insurance, should be laid down in contracts concluded in accordance with law."

3. The following provision was added: "The staff and workers of a joint venture may establish trade unions, unfold trade union activities and protect the legitimate rights and interests of staff and workers." "A joint venture shall provide the necessary conditions for the activities of its own trade unions."

4. In Paragraph Four of Article Eight of the existing Law: "the various kinds of insurance coverage of a joint venture shall be furnished by Chinese insurers."

... "Chinese insurers" changed into "insurers in China."

5. Paragraph One of Article Nine of the existing Law: "The production and business operating plans of an equity joint venture shall be submitted to the competent authorities for record and shall be implemented through economic contracts."

... DELETION...

6. Paragraph Two of Article Nine of the existing law: "In its purchase of required raw and semi-processed materials, fuels, auxiliary equipment, etc., a equity joint venture should give first priority to purchases in China. It may also make such purchases directly on the world market with foreign exchange raised by itself."

.... "In its purchase of required raw and semi-processed materials, fuels, auxiliary equipment, etc., a equity joint venture can make such purchases in China or on the world market, following the principle of equity and reason."

7. Article Fourteen of the existing law

... ADDITION: "The parties to a joint venture may bring their case before the People's Court if they fail to include arbitration clauses in their contracts or if they fail to reach a written arbitration agreement."

8. Article Fourteen of the existing law: "This Law shall enter into force as of the date of promulgation. The power to amend this Law is vested in the National People's Congress."

... DELETION...

NOTE: Based on 1) *Xinhua News Report* carried by 15 March 2001 2, listing of amendments *People's Daily* 3 March 2001. Compiled by Daojiong Zha .