

[共同研究：体制移行と経済開発に関する総合的研究]

Inside Japan's Energy Development Politics: What Outsiders Do Not Know

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I. Introduction: Central Asia and Siberia Refocused

In the consequence of the post Cold War global order metamorphosis, the impediments to large-scale projects for regional energy development have rapidly weakened, thereby opening the window of opportunity for international policy coordination and cooperation involving the public and private sectors of different nations. In particular, the proposed "Energy Silk Road" and "Yakutsk gas" projects present strong prospects for bridging growing energy demand/supply gaps in the Asia-Pacific region where, if ever achieved, robust economic growth is anticipated to take place over the long run. Policy discussion has naturally centered on how to manage various geo-strategic, political and commercial risks.¹⁾

Under-informed analysts tend to sell a simplified and optimistic picture for multilateral cooperation: "Russian Asia and China, with huge oil and gas reserves, need capital, technology and equipment for exploration and development"; "while Japan, Taiwan and South Korea, with capital, technology and equipment, need to diversify their energy supplies."²⁾ These analysts have proposed the establishment of a Northeast Asian Energy Regime which would "[accelerate] realization of multilateral energy cooperation" and "[satisfy] the need for a new Northeast Asian policy framework arising from the extensive interdependence of political and strategic as well as economic aims."³⁾

Essential though coordination and cooperation may be, the policy proposals are based in part on a series of serious misunderstandings of Japanese as well as Asian financial and technological capabilities; for example, all the Japanese capabilities combined, both public and private, are less than those capabilities of one Major.⁴⁾ This means that the Japanese capabilities for exploration and development remain very

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1) A ranking official from the Asian Development Bank (ADB) enumerates eight conditions for the realization of an Asian Energy Community: (1) sufficient reserves and markets, (2) international/regional political stability, (3) inter-governmental credit guarantees, (4) adequate technologies, (5) sustained oil prices in favor of natural gas consumption, (6) inexpensive transportation costs for gas, (7) management skills to administer huge construction funds, and (8) "proper" gas prices. See, Aja Enerugii Kyoodotai Tokubetsu Shuzaihan, *Kaikyoo No Seiki Ga Owaru Hi* (When the Century of the Strait Is Over), Tokyo; Koodansha, 1998, p. 200. Furthermore, Koji Watanabe, former Japanese Ambassador to Russia, specifies the five geo-strategic conditions imperative for an Asian Energy Charter: (1) stable Russo-Chinese relations, (2) inclusion of North Korea, (3) multilateral economic cooperation, (4) confidence building measures, and (5) a good investment environment including transportation in the third country. See, *Ibid.*, p. 201.

2) Keun-Wook Paik, *Gas and Oil in Northeast Asia: Politics, Projects and Prospects*, London; Royal Institute of International Affairs, 1995, p. xvii.

3) *Ibid.*, p. 67.

4) *Kaikyoo No Seki Ga Owaru Hi, op.cit.*, pp. 126-127. The super-Majors include Exxon-Mobile, Royal Dutch-Shell,

limited, though the nation itself is the largest creditor country with a number of highly developed technology sectors. In the absence of institutional mechanisms and financial instruments which the Majors have developed for risk management over the last one hundred and fifty years, the Japanese will not easily become economic risk-takers. Instead, the central importance of Japanese involvement lies in its bargaining power as the major natural gas consumer country⁵⁾ and in its potential leadership over the building and management of a Japanese-centered multilateral regional gas regime, while, without such a bargaining power, Japanese influence will remain limited in oil & gas exploration and development. The Majors will continue to have the capacity and willingness to finance projects as long as adequate reserves and viable markets exist.

The current work will offer a cautious, if not pessimistic, look at the segmented structural nature of Japanese domestic energy markets, with focus on the two-way flows of power and policy inherent in the state-business relations within the Japanese political economy.⁶⁾ Market structure is determined by the centralization of resources and the concentration of interests, as operationalized by the number of firms in a given sector and the nature of organization.⁷⁾ An in-depth examination into the structure of these energy markets will serve to differentiate state jurisdiction from state control. The markets structure shapes the incentive and disincentive functions of the Japanese actors, in both the public and private sectors, and thereby the patterns of their external behavior in energy development.⁸⁾ Then the Japanese approach will be comprehended as externalization of such an inside dynamics.

The relationship of the public and private sectors is a focal point. It is first necessary to understand how national security and commercial considerations interplay in Japan's energy policy-making.

II. National Security and Profit-making

Since the 1973-74 oil crisis, the Japanese government has focused on managing the dependence and vulnerability aspects of energy security. Ronald Morse summarizes the following basic elements of Japanese energy policy:

- (1) The promotion of overseas oil development and better use of potential domestic energy sources;
- (2) The development of short-run non-oil energy alternatives: coal, nuclear power, and liquefied natural gas (LNG);
- (3) The diversification of oil supply sources and the encouragement of direct and government-to-government oil deals with the producing nations;
- (4) The encouragement of conservation and the commercialization of new energy technologies; and
- (5) The preparation of energy emergency-management procedures and the buildup of petroleum

British Petroleum-Amoco, ChevronTexaco, and Total Fina Elf.

5) Japan consumes and will consume 70-80% of the total world liquefied natural gas (LNG). See, Table 3.6: LNG demand, 1993, with projections to 2010, in Fereidun Fresharaki, Allen L. Clark, and Duangjal Intarapavich, *Pacific Energy Outlook: Strategies and Policy Imperatives to 2010*, East-West Center, Occasional Papers (Energy and Minerals Series) No.1, March 1995.

6) Richard J. Samuels, *The Business of the Japanese State: Energy Markets In Comparative And Historical Perspective*, Cornell University Press, 1987. Samuels's idea of "reciprocal consent" contrasts with a harmonious, consensual, monolithic image of "Japan, Inc." as a "developmental state". For the latter concept, see: Charlmers Johnson, *MITI And The Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, Stanford University Press, 1982.

7) Samuels, *op.cit.*, p. 14.

8) Generally, market structure, centralization, developmental timing and finance, openness, ruling coalition, administrative tradition are the six factors that determine state-business relations. See, Samuels, *Ibid.*

stockpiles to insulate Japan in the event of major oil disruption.⁹⁾

The Japanese government will most likely experience some major setbacks due to the erosion of accomplishments in the above five elements. Certainly, Tokyo has made substantial progress in energy conservation and stockpiles, while the reliance on oil was reduced from 77.4% in 1973 to 55.8% in 1995 in total energy consumption.¹⁰⁾ Yet, the national effort for energy exploration and development has only secured less than 15% of the total imported oil.¹¹⁾ In addition, with energy gap widening among industrializing countries in Asia, Japan will soon not be able to import oil and other fossil fuels from other Asian countries, which will significantly lower the current level of diversification of energy supplies and deepen Japan's reliance on Middle Eastern oil and gas. (China has already become a net oil importer, while Indonesia will be one shortly. Similarly, Malaysia will be a net importer in gas production.) Japan will not be able to enhance its nuclear role in its energy mix due to a recent series of technical/safety problems and growing public distrust against fast breeder reactor projects.

The Agency of Natural Resources and Energy (ANRE) under the Ministry of International Trade and Industry (MITI) has lately emphasized the effects of internationalization and globalization, involving specifically those structural changes in international energy markets more toward intensified competition, upon energy security policy-making.¹²⁾ A high ranking ANRE official considers it essential to make a long-term plan, both nationally and internationally; planning needs an increasingly longer lead-time because oil and gas development projects become larger and larger, and because nuclear power development projects face growing public opposition and stagnation.¹³⁾ Thus long term planning confronts a series of difficulties such as a serious demand/supply gap and environmental constraints while, given the current oil glut, an optimistic view prevails for the short/medium term.¹⁴⁾ In this context, Tokyo sees that the deepening internationalization and globalization of energy markets favor market control methods as an emergency countermeasure for the short/medium term, rather than an interventionist approach by the International Energy Agency (IAE) under the Organization for Economic Cooperation and Development (OECD) which, using their production and stockpiles, bases its approach on mutual accommodation among member states.¹⁵⁾

The Japanese state, therefore, has to exercise leadership over the private sector, which is driven by price signals involving an inherently static nature, toward the fulfillment of long-term energy security requirements. The different actors of the Japanese private sector would respond to state leadership and

9) Ronald A. Morse, "Japan's Energy Policies and Options" in *The Politics of Japan's Energy Strategy: Resources-Diplomacy-Security*, edited by Ronald A. Morse, University of California at Berkeley Institute of East Asian Studies, 1981, p. 1. These fundamental features of Japan's energy policy remain very similar at the end of the century. See, Kazuya Fujime, "Japan's Energy Policy: Current Status and Issues," *Japan Review of International Affairs*, Fall 1997, p. 174.

10) Table 3: Japan's Primary Energy Supply, Fiscal 1960-1995 (%), in Kazuya Fujime, *Ibid.*, p. 179.

11) Graph 4: Jishu-Kaihatsu-Genyu-Yunyuu-Ryoo No Suii (Statistics on Japan's oil import, nationally developed oil vs. total import), *Wagakuni No Sekiyu-Kaihatsu No Genjyoo To Kadai* (Japan's Oil Development: Realities and Agenda), Sekiyu-Kogyoo-Renmei (Japan Petroleum Development Association), 1997, p. 22.

12) Tomihiro Taniguchi, Councilor, Office of Director General, Agency of Natural Resources and Energy, "Enerugii Sekuritii (Energy Security)," *Kokusai Shigen* (International Resources), January, 1997, p. 43.

13) *Ibid.*

14) *Ibid.*, p. 44.

15) *Ibid.*, p. 45.

initiatives according to a variety of price signals unique to the specific energy market they face, which shapes their cooperative, fence-sitting, or oppositional stance *vis-à-vis* the state. In this sense, the analytical focus needs to be placed on the specific features of the segmentation of energy markets, and how the state and the business share market control.

In November 1997, the Parliamentary League for the Promotion of the Asian Energy Community was formed, with Taro Nakayama (a leading ruling Liberal Democratic Party [LDP] member and former Foreign Minister) as its chair. Ranking Diet members, such as Seiroku Kajiyama (former Chief Cabinet Secretary), Shinji Sato (former Minister of International Trade and Industry), and Yukihiko Ikeda (former Foreign Minister) supported the League, which was indicative of the enthusiasm within the inner circle of the LDP.¹⁶⁾ Nakayama said that the overriding goal was:

to construct a framework for guaranteeing energy and economic security throughout the Asian region, including Russia, and to bring about peace and stability for every country in the region through such measures as the conclusion of a Russo-Japanese peace treaty. One of the specific strategies for that is the concept of an “Asian energy community,” and it consists of several countries cooperating to construct a wide-ranging international gas pipeline encompassing eastern Siberia and Sakhalin as well as the Eurasian continent and Asia, establishing a system of “regional interdependence.”¹⁷⁾

Behind this idea lies mixed geopolitical and economic motives: to establish the base of regional security in terms of mutual cooperation and watch among the Asia-Pacific nations; to generate effective demand in engineering services and equipment for the Japanese private sector currently suffering from a serious protracted recession; and to enhance Japanese international competitiveness already burdened by high energy costs.¹⁸⁾ Those segments of the private sector which would benefit from the pipeline projects need to rely on the state, not on market mechanisms, for the management of geopolitical risks in cross-national pipeline operations, for instance, in terms of the successful conclusion of an Asian Energy Charter. To the extent that such a policy initiative by the politicians ignores the commercial viability aspect of these projects, some segments of the private sector, particularly those which are likely to be exposed to high costs and risks, would adopt a vehement oppositional stance.

In order to comprehend how these segments would behave under conditions of bifurcated interests, it is essential to identify active promoters and their behavioral patterns, which enables one to contrast them with their opposition.

III. The Actors (till the late 1997)

1) The Public Sector

(1) Exploration: Japan National Oil Corporation (JNOC)

Japanese oil exploration capability has been extremely limited because the historical evolution of this sector remains characterized by its small size, excessive competition, and truncated structure between the upstream (explorers and producers) and downstream (refiners, wholesalers, and retailers) seg-

16) “Japan: Dispute Over Sakhalin Gas Pipeline”, *Tokyo Enerugi Foramu*, June 29, 1998, FBIS-EAS-98-180.

17) *Ibid.*

18) For these motives, see the statement of Nakayama in *Kaikyoo No Seiki Ga Owaru Hi*, *op.cit.*, p. 67, p. 70, p. 98, Electricity prices are 50% to 80% higher than those in the United States. See, *Ibid.*, p. 92.

ments. Besides, foreign capital has significantly penetrated into the downstream segment, with 30-40% of market share controlled by the Majors.¹⁹⁾

The Japanese energy sector currently confronts an increasingly serious disadvantage under the ongoing internationalization and deregulation of energy markets in which downstream segments in major national markets suffer from a large decline of profit in the intensified competition that ensues with new entrants. After extensive restructuring and competitiveness enhancement, the Majors have become very aggressive in pursuit of new reserves and concessions, with focus on upstream segments. In 1996, for instance, the Majors obtained their profits primarily from their upstream operations.²⁰⁾

Historically, MITI has aimed at lessening the presence of foreign capital and enhancing Japanese bargaining power in the international oil markets. For this purpose, the Ministry has attempted, in vain, to vertically integrate this fragmented sector toward the creation of a state-owned Japanese Major, but its efforts have only resulted in two incomplete "Japanese minors," the JNOC (upstream) and the Kyodo Oil (downstream).²¹⁾ In brief, the state has not been able to exercise effective control over this sector.

Such a state-business relation, however, has not prevented the state from playing a leadership role in exploration. Contrarily, the private sector has relied on the state as the provider of venture capital and the guarantor of private investment. The state has financed 46% of all Japanese-owned overseas exploration in the cumulative term, both equity and loans, since the creation of the JNOC.²²⁾ Private investors have benefited from state loans through the JNOC but avoided JNOC equity as a constraint. In other words, they accept the state's money but not its control.²³⁾

JNOC would only be able to demonstrate its *raison d'être* by its active initiatives in the pipeline projects when JNOC suffered from its huge amount of non-performing loans.²⁴⁾

(2) Development: The Export-Import Bank of Japan (JEXIM)²⁵⁾

Japanese capability in energy development has also been very limited in comparison with that of the Majors. Certainly, the JEXIM is the largest bilateral credit lender that administers the world's largest budget of bilateral official financial flows, other than those of official development assistance (ODA), to the developing world.²⁶⁾ With this policy instrument, the JEXIM plays a pivotal role of the implementa-

19) The Agency of Natural Resources of Energy, Figure 2: Wagakuni Shuyoo Sekiyu-Seisei-Hanbai-Gyo Shihon-Teikei Kankei-Zu (The Capital Relationships Among the major Japanese Oil Refiners And Retailers), Table 3: Wagakuni Sekiyu-Motouri-Kigyoo No Hanbai-Koosei (The Percentile Distribution of Share Among the Japanese Oil Distributors), *Sekiyu Shiryou* (The Information on Petroleum), 1996, pp. 3-4.

20) *Wagakuni Sekiyu-Kaihatsu No Genjyoo To Kadai*, *op.cit.*, pp. 5-7.

21) Samuels, *op.cit.*, p. 216.

22) Sekiyu Kogyoo Renmei, Figure 7: Wagakuni Sekiyu-Kaihatsu-Kigyoo Heno Gyoshu-Betsu Shutsushi Ichiran (Japan's Exploration Funds by Sector), *op.cit.*, p. 27.

23) Samuels, *op.cit.*, pp. 214-215.

24) The cumulative amount of investment from JNOC's funding at the end of fiscal year 1996 was 1,7262 trillion yen distributed among 266 development project companies. Of these, 44 were either producing oil or preparing to do so, 68 were currently prospecting, 10 were preparing to dissolve, and the remaining 144 had either failed in their prospecting efforts or had succeeded and were dissolving after paying back their investors. See, "Japan: Dispute Over Sakhalin Gas Pipeline," *op.cit.*

25) The Development Bank of Japan finances development projects in and around Japan. The amount of investment by the Bank has reached only 3.6% of the total government investment in the cumulative term. See, Figure 7: Kaihatsu-Shikin No Chootatsu Jyookyoo (the percentile distribution of development finance), *Wagakuni Sekiyu-Kaihatsu No Genjyoo To Kadai*, *op.cit.*, p. 31.

26) Masahiro Matsumura, Table 1-1: Total Bilateral Official Development Assistance (ODA) and Other Official

tion in Japanese national security, foreign economic and commerce-promotion policies. However, energy security is only one of the major policy objectives that the JEXIM pursues.

The JEXIM assumes different rationales from project to project whether to finance specific projects targeting facilities and other commercial infrastructure for energy production, processing, and transportation, although its overall characterization remains a complex empirical question for analysis.²⁷⁾ Officially, the JEXIM has justified its recent loans to Azerbaijan, Russia, Trukmenistan, and Uzbekistan for one or all of the following reasons: “(1) diversification of the economic structure [by] bolstering the oil industry, (2) alleviation of air pollution [through] the use of unleaded gasoline, and (3) [improving] foreign currency earning power through exports of unleaded gasoline.”²⁸⁾ At the same time, however, the JEXIM has an explicit geo-strategic agenda to encourage and promote the economic independence of these former Soviet republics *vis-a-vis* Russia.²⁹⁾

The state-business relations as observed in exploration, where private investors take advantage of state loans for risk reduction, also apply to development. The JEXIM has provided 41.4% of development investment in the cumulative term, while its loans can finance up to 80% of investment in an individual project.³⁰⁾ The recent loans to Russia and Central Asian countries, with or without co-financers, cover 60% of the individual projects.³¹⁾

The state through the JEXIM and the Japan Development Bank, which has its primary jurisdiction in domestic public investment and financing, also has vigorously supported LNG production and transportation involving substantial investment in infrastructure including a liquefaction facility, an LNG tanker, and a regasification plant.³²⁾ State involvement was indispensable for successful LNG projects in Australia, Brunei, Indonesia, Malaysia, Qatar, and the United Arab Emirate. (Indonesia is by far the largest LNG supplier for Japan.)

JEXIM's approach to Central Asia and Siberia has been reinforced by the seminar, held in December 1996, which the JEXIM organized and sponsored under its research arm, the Japan Institute for Overseas Investment. Entitled “Investment Promotion in the Republic of Uzbekistan”, the seminar focused on this country which has become the top recipient of Japanese official loans among the former Soviet republics.³³⁾ In addition, the JEXIM has co-sponsored the November 1997 symposium organized by the Committee for the Promotion of the Asia Energy Community under the chairmanship of Taro Nakayama,³⁴⁾

Flows (OOF) From OECD DAC Countries To Developing Countries (1970–1989), *Japan and the U.S. in International Development, 1970–1989*, Osaka; St. Andrew's University, Monograph Series 7, p. 1.

27) Matsumura, *Ibid.*, pp. 53–92.

28) <http://www.japanexim.go.jp/PressRelease/1996-E/NR96-27.html>, July 13, 1998. Similar information on these countries is available in the JEXIM web site.

29) *Ibid.*

30) Figure 7: Kaihatsu Shikin No Chootatsu Jyookyoo, Figure 8: Kaigai Purojekuto No Gensoku-Rei (The Principles of Lending to Overseas Projects), *Wagakuni Sekiyu-Kaihatsu No Genjyoo To Kadai, op.cit.*, pp. 31–32.

31) <http://www.japanexim.go.jp/PressRelease>, various press releases.

32) As for requirements for these infrastructure, see, “Statement of Jay Hakes, Administrator, Energy Information Administration, Department of Energy, Before The Committee On Energy and Natural Resources, U.S. Senate,” July 23, 1997, <http://www.doe.gov/cgi-bin/qadbgate?headline>, July 20, 1998, p. 6.

33) “Investment Promotion in Uzbekistan,” <http://www.japanexim.go.jp/Bulletin/Mar97/uzbekistan.html>, July 13, 1998.

34) Other organizers include two of MITI's research arms (the Institute for Developing Economies, and the Institute of Energy Economics), Committee of Energy Policy Promotion, the Japan Institute for International Affairs under the Ministry of Foreign Affairs (MFA), while MITI, MFA, JNOC and JEXIM were co-sponsors.

while expressing official support for the Community: "natural gas can contribute not only to Asia's economic growth but also the global environment and energy security."³⁵⁾

(3) Public Infrastructure: Overseas Economic Cooperation Fund (OECF)

Japan, the largest foreign aid donor with emphasis on infrastructure building, will be most competitive when socio-economic infrastructure building is integrated with facilities construction and commercial infrastructure building related to energy production, processing, and transportation. The Majors neither enjoy similar size nor quality of public support by their home governments. The OECF administers a major portion of the world's largest ODA budget in the form of concessional loans with interest rates significantly lower than those offered by open markets, with focus on socio-economic infrastructure building.³⁶⁾ The OECF spent more than 55% of its total disbursement for electric power and gas, transportation, and telecommunications in 1996, while the cumulative figure from 1960 to 1996 reached more than 50%.³⁷⁾

The OECF has targeted projects related to a recipient country's energy sector or an infrastructure essential for the sector. (According to the Japanese definition of a developing nation in terms of GNP *per capita*, Russia is not entitled to receive Japanese ODA, which makes it impossible for the OECF to extend its loans to this country.) Such a pattern is indicative of a high level of policy coordination and/or cooperation in both the planning and implementation stages between the OECF and other aid agencies in the fields of aid and energy, such as the JNOC and the JEXIM, while such an inter-agency relationship is usually characterized as fragmented. Recent loans by the OECF have financed projects such as modernization of hydropower plants in Georgia, construction of gas combined cycle power plants in Azerbaijan, modernization of a railway transportation system in Turkmenistan, construction of a long bridge along the trunk road in Kazakhstan, rehabilitation of the trunk road between major cities in Kyrgyzstan, with repayment periods ranging from 30 to 40 years and interest rates between 0.75% to 2.3% for the procurement of necessary goods, material services, civil workers, and other services for those projects.³⁸⁾ The OECF has co-financed the projects with international organizations, such as the World Bank and the Asian Development Bank.

With these loans, the OECF can open Japanese economic and commercial relations with those countries with which the Japanese public and private sectors possess little historical tie and experience, or even strengthen the emerging relations in energy exploration and development in competition with the Majors and other Western states. Implementing the projects financed by these loans will demonstrate the quality of Japanese goods and equipment, technology, and consulting and other related services as a package for a recipient country's overall development. Such an approach might appeal to these Central Asian countries since the Majors usually concentrate on energy sectors and lack overall development considerations without the support of their home countries in the form of economic assistance.

The extent of government-wide support is obvious. See, *Kaikyoo No Seiki Ga Owaru Hi, op.cit.*, p. 198.

35) "Symposium Held On Natural Gas Network," <http://www.japanexim.go.jp/mar98/network.html>, July 17, 1998.

36) <http://www.oecf.go.jp/data/1996/3-2dt.htm>, July 14, 1998. In 2001, Japan was replaced by the U.S. as the top ODA donor due to a reduction of the ODA budget and Yen depreciation *vis-à-vis* the U.S. dollar. Japan kept the top donor position for the eleven consecutive years since 1991.

37) *Ibid.*

38) <http://www.oecf.go.jp/press/1998/0119-e.htm>, July 13, 1998, various press releases.

2) The Private Sector

(1) The Consortia of Banks

Major Japanese commercial banks have formed a series of consortia so as to cofinance energy development projects, thereby sharing and reducing risks. These banks also have extended loans to individual energy developers on the basis of their corporate performance and creditworthiness. By 1996, in cumulative terms, the banks provided 23.9% of total development finance, while the state through the JNOC contributed 45% and other private sectors 31.1%.³⁹⁾ On the other hand, the banks have not financed exploration projects involving high risks, while the energy sector itself has covered 37.5% of total finance expenditures, 21.5% by the upstreams and 16% by the downstreams.⁴⁰⁾

However, these statistics may lead one to underestimate the pivotal role of major commercial banks in financing exploration projects. Rather, these banks are major stockholders of oil companies that, in fact, maintain effective ownership control and active participation in corporate governance; the banks are obliged to supply some level of financial liquidity to oil companies according to their general business performance and an individual project's prospect. The Sumitomo Trust, Toyo Trust, Yasuda Trust, Chuo Trust, Mitsubishi Trust, Mitsui Trust, Long-Term Credit Bank, and Sakura Bank, among others, are major stockholders of Teikoku Oil, the second largest oil and natural gas producer in Japan. Major downstream companies in refinery and distribution, which also participate in financing exploration projects, evidence a similar pattern of key stockholders consisting of major banks. (The largest producer is Arabian Oil in which the electric power industry has a very large equity participation. This reflects serious segmentation of Japan's energy markets).⁴¹⁾

The consortia of major Japanese banks were very active in financing the recent development projects in the former Soviet republics, quite often taking 40% share of the loans, while cofinancing with JEXIM. These banks included the Industrial Bank of Japan, Sanwa Bank, Sumitomo Bank, Mitsubishi Trust & Banking Corp., and Tokyo-Mitsubishi Bank. The Industrial Bank was the lead bank in the 1998 loan to Uzbekistan, the Tokyo-Mitsubishi Bank in the 1996 loan to Trukmenistan, and the Sanwa Bank in the 1998 loan to Azerbaijan.⁴²⁾

The above pattern of consortia formation is indicative of inter-“Keiretsu” risk-sharing. The following explains the dynamics of these consortia in light of “Keiretsu.”

(2) “Keiretsu”: Banks, Trading Houses, Engineering Firms, and Oil Companies

The Japanese private sector not only employs inter-“Keiretsu” risk-sharing but also a form of intra-“Keiretsu” risk-sharing. “Keiretsu” is a corporate group bound by mutual stockholders and thereby effective ownership control. Peter Drucker succinctly characterizes “Keiretsu” as “the cluster of businesses around a major bank” which “act[s] as the real board of directors for the member companies, since the official board of each individual company is just an internal management committee.”⁴³⁾ In this structure, the main bank of each “Keiretsu” plays the central role of group manager, particularly with regard to expediting exchanges of information and strategies for group-wide and large-scale invest-

39) *Wagakuni Sekiyu-Kaihatsu No Genjyoo To Kadai, op.cit.*, p. 31.

40) *Ibid.*, p. 27.

41) Toyo Keizai Inc., *Japan Company Handbook*, summer 1998.

42) various projects, <http://www.japanexim.go.jp/PressRelease>, July 13, 1998.

43) Peter Drucker, “In Defense of Japanese Bureaucracy,” *Foreign Affairs*, September/October 1998, p. 78.

ments; such a bank greatly influences energy development projects, however, while having been increasingly dormant due to snowballing loans resulting from the mismanagement of burst of the “bubble economy” and deepening depression.

In development projects, engineering firms play a pivotal role in plant construction and operation. The business operations of the Chiyoda Kakou Corp. and the Toyo Engineering Co., two major engineering firms specializing in oil refining and petrochemical plants, can only be understood in the “Keiretsu” context. The loans cofinanced by the Japanese public and private sectors to the former Soviet republics have been used to purchase necessary equipment and services in a large part by the two firms. As in 1997, the Mitsubishi group is the major stockholder of Chiyoda, possessing more than 16.5% of its total equity, where as the Mitsubishi Corp. has 6.2%, the Mitsubishi Trust 5.6%, and the Tokyo-Mitsubishi Bank 4.7%.⁴⁴⁾ The Mitsui group is the major stockholder of Toyo, possessing more than 38.2% of its total equity, where as Mitsui Toatsu Chemicals has 23.1% and the Mitsui & Co. 15.1%.⁴⁵⁾ It is apparent that the financing pattern is informally but substantially tied to “Keiretsu.” Toward the end of the century, however, the two engineering firms faced severe international competition, rapidly worsening their balance sheets, while unable to obtain financial support from their own main banks which struggled from huge non-performing loans.

Some trading houses, such as the C. Itoh Corp., Marubeni Corporation, Nichimen Corp., Nissho Iwai Corp., and Sumitomo Corporation have demonstrated patterns of business operation more or less independent of the above “Keiretsu” dynamics. These firms, however, have attempted to challenge the established predominance of the Mitsubishi and Mitsui groups in energy exploration and development, and the strong state financial support they have enjoyed over the years. In particular, these two groups have successfully excluded other groups from the highly profitable LNG-related business with Southeast Asia countries, while having controlled business as ranging from exploration to development to exploitation.⁴⁶⁾ This exclusionist practice of the two groups is also true of the Sakhalin II project.⁴⁷⁾ The seemingly deviant behaviors of some trading houses indeed reflect the “Keiretsu” dynamics.

IV. The Market Structure and the State-Business Relations

1) The Supply Side: The Collaboration for Risk Management

In energy exploration and development, Japanese state-business relations may be characterized as “collaborative,” and a situation in which the business significantly benefits from state aid to offset risk reduction, and in which the state in search of energy security only offers strong financial incentives to the energy business. Without public ownership, the state has no direct control over exploration and development activities and, as a result, does not pose itself as a rival against the private sector. The state acting through JNOC and JEXIM plays “partner,” “creditor,” and “guarantor” roles. In addition to various preferential fiscal and tax programs by the state, Japanese private investors take advantage of state aid so as to socialize risks and transfer costs inherent in exploration and development. The state needs to accommodate such private interests, at least in part, because it relies on the private sector in fulfilling the energy security requirements of the nation. The market intervention by the Japanese state is thus

44) Toyo Keizai Inc., *op.cit.*, p. 672.

45) *Ibid.*, p. 658.

46) *Kaikyoo No Seki Ga Owaru Hi*, *op.cit.*, p. 77.

47) *Ibid.*

limited in nature and extent. (Of course, a crucial question to be raised is why the state has not established a public corporation in exploration and development and intervened directly in the energy sector).

The specific terms of the state-business “collaboration,” however, are neither uniform nor static. Financing terms and conditions differ from project to project, with regard to size, relative share of the public and private sectors, lead banks, distribution of financial burdens among banks — all of which are subjected to recurring negotiation between the state and the business. Thus state intervention in exploration and development appears “market-conforming,” but is more accurately characterized by compromise with and accommodation to private interests, rather than, providing leadership, guidance, or supervision.

2) The Demand Side: Business Resists State Intervention

The Japanese state does not have effective financial policy instruments on the demand side of domestic energy markets, while exercising license granting power and administrative guidance to penalize or harass opposition and resistance of the energy business. The state tries to regulate and control this sector, rather than induce it with aid. Yet, how successful state regulation and control is depends on the structure of markets which the state and business compete for and compromise over, especially with regard to sharing control. State control becomes strong and extensive when a market is fragmented, but weak and limited when the market is dominated by a monopoly. This means that the state may possess jurisdiction over a specific market without being able to exercise effective control when a monopolistic or oligopolistic market exists. The analytical focus on market structure is justified because the energy sector quite often has a very limited number of market players, due to large capital investment requirements in facility and infrastructure; the utility sector, particularly electricity and gas, tends to have a natural monopoly.

The Japanese oil industry has long resisted the state’s attempt to consolidate it. The industry has been horizontally fragmented and vertically truncated between many upstreams in exploration and production on one hand and downstreams in refinery, wholesale and retail on the other hand. For instance, the fact that the top five firms had only 44.5% market share in refining and 59.6% in product sales over the 1980–1983 period shows a very high level of fragmentation, when compared with the comparable figures of major European countries such as France, Germany, and the United Kingdom.⁴⁸⁾ In 1997, there existed 26 refiners and 12 wholesalers in Japan.⁴⁹⁾ In addition, foreign capital has significantly penetrated the oil industry. For instance, Shell, Mobile, Esso and others controlled some 35% of gasoline distribution and wholesale in 1996.⁵⁰⁾

Facing the excessive capacity⁵¹⁾ and competition in downstreams, the Japanese state has tried in vain to consolidate the industry so as to create a more unified voice *vis-à-vis* the Majors and oil producing countries and thereby enhance Japan’s bargaining power in the international oil markets. Strengthening bargaining power is essential to achieve low energy costs and increase Japan’s international competitiveness, particularly that of heavy industry. MITI has attempted in vain to create an integrated, centralized national oil industry by establishing a state-owned Japanese major. The industry also has succeeded in

48) Samuels, Table 5.6: Market share of the top five firms in selected nations, 1980–83, *op.cit.*, p. 218.

49) *Sekiyu Shiryoo, op.cit.*, p. 2.

50) *Ibid.*, p. 4.

51) The rate of operation in 1996 is, for example, 79.1%. See, *Ibid.*

preventing the state from intervening in exploration; the JNOC establishment law prohibits the organization from undertaking its own exploration projects and instead only authorizes it to finance projects through loans, equity, or debt guarantee. Behind the successful resistance of downstreams against the state lie their main banks blocking their consolidation. The banks have had strong particularistic interests in enhancing their oil-related profit-making through not only foreign exchange transactions and short-term loans but also long-term loans to invest in facilities required by the newly tightened environmental regulations.⁵²⁾ In the post Second Oil Crisis regulatory structure in which weaker oil firms were protected, strong firms benefited further from such a structure and did not have any incentive to support consolidation.⁵³⁾

The Japanese electric power industry also has persistently blocked state intervention, while taking advantage of a market structure free of fragmentation. Nine electricity companies enjoy regional monopoly⁵⁴⁾ and, as a result, a very high level of centralization of resources and concentration of interests; the Tokyo Electric Power Company (TEPCO) supplies more than 30% of the total electric power generation in Japan and the Kansai Electronic Power Company 25%.⁵⁵⁾ All of these companies have stable major stockholders, including insurance companies, banks, institutional investors and local municipalities, in which no particular “Keiretsu” has effective ownership control.⁵⁶⁾

The state has created the Electric Power Development Corporation (EPDC) with its majority holdings, thereby attempting to intervene directly in this sector as a rival. EPDC projects initially involved only hydropower plants, but MITI tried in vain to assign additional commercial responsibilities to the EPDC, particularly a central role coordinating regional electric rate disparities. The private sector challenged this state intervention by proposing the elimination of the EPDC through the first postwar administrative reform commission. The electric power industry even halted all overt political donations to the ruling Liberal Democratic Party in response to match recurring state intervention.⁵⁷⁾

On the other hand, the Japanese gas industry possesses far less bargaining power *vis-a-vis* the state than the electricity industry because the former, with 244 gas companies, both large and small, is extremely fragmented.⁵⁸⁾ Certainly, the industry which is protected under the existing regulatory structure, though significantly smaller, enjoys regional monopoly. But the size of this industry is considerably smaller than the electricity industry where three-quarters of the total Japanese LNG consumption is used by the electricity industry and only the remaining quarter by the gas industry.⁵⁹⁾ This industry is thus far more subject to state control and, therefore, has a far weaker pricing power than the electricity industry.

52) Samuels, *op.cit.*, p. 222.

53) *Ibid.*, pp. 222-223.

54) There is one publicly-owned corporation in electricity in Okinawa due to its unique history of U.S. occupation and its subsequent reversion to Japan.

55) http://www.epdc.co.jp/oline/data_03_03_01.htm, July 20, 1998; Roger W. Gale, Table 1: Electric Power Company Statistics (As of March 1980), “Tokyo Electric Power Company Its Role in Shaping Japan’s Coal and LNG Policy” in *The Politics of Japan’s Energy Strategy*, *op.cit.*, p. 91.

56) Toyo Keizai Co., *op.cit.*, pp. 1396-1404.

57) Samuels, *op.cit.*, pp. 162-163.

58) *Kaikyoo No Seiki Ga Owaru Hi*, *op.cit.*, p. 88-89.

59) Takao Arai, *LNG Trade: A Japanese Perspective*, Australian National University Australia-Japan Research Centre, Research paper No.110, April 1984, p. 10. This cites outdated statistical data but the fundamental pattern of Japan’s LNG consumption remains very similar today.

In sum, the different structures of electricity and gas markets and industries involve their differing behavior patterns in relation to state control. Their policy stances to the Northeast Asian natural gas pipeline projects fully reflect their dissimilarities.

V. The Electric Power Industry As The Key Opposition

The Japanese utility industry, both electricity and gas, has maintained a neutral policy position on overseas oil exploration and development projects. These projects, unlike natural gas projects, do not need a huge initial investment in large-scale pipeline construction, nor require the industry's burden-sharing for investment, nor involve the uncertainties inherent in multilateral management of pipelines, nor influence their business operations. The Japanese public and private sectors have followed a bilateral approach in oil exploration and development with a targeted country, and the utility companies can always purchase oil on the well-established international markets at a competitive price.

The Japanese electricity industry, however, has had an unflinching opposition to the region-wide gas pipeline projects in Northeast Asia that the state and some segments of the private sector such as banks, trading firms, and engineering firms, have strongly supported them. The industry is least susceptible to state control and other political pressures because of the market structure it faces. This policy position provides a sharp contrast with the "relatively positive" one of the highly fragmented gas industry which is more subject to state control.⁶⁰⁾ Contrarily, the state needs to accommodate the electricity industry because it accounts for fully 10% of total investment in Japanese industry,⁶¹⁾ which influences the national macroeconomic performance. Furthermore, given the large size of its political donation to the ruling Liberal Democratic Party, the industry also exercises strong political clout to the state.⁶²⁾

The electricity industry has blocked pipeline projects by rejecting its commitment to stable, large-scale consumption of natural gas, which only the industry can ensure. A large-scale pipeline system will not be economically viable without a major gas market, or the basis on which to determine pipeline routes and calculate profits. Kunio Anzai, President of the Tokyo Gas Company and Chairman of Keidanren's Japan-Russia Economic Committee, says that "electricity companies put a priority on nuclear power generation, while supplementing additional generation with thermal methods."⁶³⁾ The industry fears that "its investment burden will be overwhelmingly larger than that of the gas industry in proportion to its gas consumption."⁶⁴⁾

1) Economic Viability

The pipeline projects would cost 300 to 400 billion yen. There will be some cost benefit over LNG as long as the transport distances are 2000 kilometers or less.⁶⁵⁾ However, there exists a strong sense of caution because the costs for developing the oil wells and the technological basis for commercialization are unclear, which makes it impossible to determine accurately whether the total pipeline gas costs will be cheaper than those of LNG.

60) "Japan: Dispute Over Sakhalin Gas Pipeline," *op.cit.*, p. 3.

61) Samuels, *op.cit.*, p. 135.

62) *Ibid.*, pp. 162-163.

63) "Ugoki-Dasu Nichi-Ro-Keizai-Kankei (Russo-Japanese Economic Relations Is Improving)," *Getsukan Keidanren*, April 1998, p. 17.

64) *Ibid.*

65) "Japan: Dispute Over Sakhalin Gas Pipeline," *op.cit.*, p. 2.

Such caution is seriously compounded by the fact that LNG supply is currently based on long-term contracts, ranging from 20 to 25 years, between gas exporters and utility companies in which pricing lacks elasticity. The length of these contracts suggests stability because of their inference that stability means security. Such a contract is preferred because initial investment in pipeline construction is extremely high and the long-term recovery of investment through stable supply sales is essential.⁶⁶⁾ Technically, such a rigid contract is characterized by:

“take or pay”, “demurrage” (which [spells] out the responsibilities for compensation when some delay [occurs] in the shipping schedule at a loading or unloading port) and the sellers’ responsibilities to supply alternative fuels (in the case of suspension of LNG supply for any reason) [are] the conditions set in the contract to guarantee constant and steady delivery. “Take or pay”, which [is] very common in LNG trade, [means] that even when buyers [fail] to receive some of the contract quantity for any reason, they [have] to pay for the full amount. This type of condition [can] be seen in other trades but [is] particularly important in LNG trade, where the buyers’ tolerance of volume in contract quantity [is] very small and delivery is usually at a regular flat rate every year or even every month throughout the span of the contract.⁶⁷⁾

Even short-term instability, therefore, could be disastrous for both buyers and sellers.

Japanese LNG importers have succeeded in maintaining supply and price stability in rapidly changing, insecure, and unstable oil markets. However, as the world has moved from “energy crisis” to “energy glut,” the advantage of stability has become the disadvantage of immobility and inflexibility.⁶⁸⁾

Japanese electricity companies have already secured their LNG supply until the year 2010, while gas producing countries will be able to supply three times as much gas in 1995 as all the Asian consuming countries need.⁶⁹⁾ Only making new arrangements for spot transactions either at the maturity of the existing contracts with well owners or at the full recovery of initial investment could free the industry from being entrapped into their existing contractual relationships. There is the possibility that the Japanese companies will be major pipeline gas consumers only after 2010.

Taking an oppositional stance to the electricity industry, the ANRE has demonstrated its policy preference in “competitiveness” to “stability” by denying “take-or-pay”:

A side effect of the pipeline that is raising expectations is bargaining power for the price of LNG. This presupposes price competitiveness on the part of pipeline natural gas, but it may serve as an opening in the current fixed-price system of long-term contracts for natural gas, promote price competition in the lower as well as the upper echelons, or, in other words, serve as a triggering device for the emergence of a natural gas market.⁷⁰⁾

66) Arai, *op.cit.*, pp. 24-25.

67) *Ibid.*, pp. 30-31.

68) Jonathan P. Stern, “International Gas Trade: Three Major Markets” in *The World Gas Trade: A Resource for the Future*, edited by Melvin A. Conant, Westview Press, 1986, p. 30.

69) *Kaikyoo No Seiki Ga Owaru Hi*, *op.cit.*, p. 79.

70) “Japan: Dispute over Sakhalin Gas Pipeline,” *op.cit.*, p. 3.

2) Investment Burden

Behind the short-term calculation of economic viability lies regional monopoly as a structural problem: the Japanese utility industry did not build a domestic gas pipeline network that would have destroyed the monopoly involving particularistic commercial interests. Local electricity and gas companies rely on LNG for liquefaction facilities, tankers, regasification facilities, and tank trucks for distribution. The present LNG system has a structure requiring no domestic pipeline networks, which in part reflects the perennial public protest against pipelines. The Japanese electricity and gas industries currently suffer from excessive investment in LNG storage tanks.⁷¹⁾

The lack of domestic pipeline networks will force the industry to depend on LNG involving either liquefaction on the Chinese coast and regasification in Japan or pipeline transport to Japanese ports and liquefaction there for further domestic transport, by either Majors or Japanese energy companies in cooperation with the trading houses. This mode of operation would perpetuate the existing LNG system.

Due to large investment requirements for pipeline construction, neither the electricity nor gas industries will be able to avoid a heavy burden. An official of a power company has rejected the pipelines because he believes they are not economically viable:

There is nothing inevitable about going with a pipeline. Conversion from coal-firing will involve a huge cost. The regions that have the demand are fixed, actually, and LNG should offer a greater degree of freedom. The problem is that the matter is moving along on the basis of politics rather than economics.⁷²⁾

MITI has long pressed the electricity industry to convert power plants from oil firing to coal firing for energy security purposes, while forcing the industry to make a huge amount of investment for conversion. Coal is abundant, and its supply is stable and easy to be diversified. However, MITI-ANRE has only now begun to talk of a policy of converting power plants from coal firing to natural gas firing and steadily liberalizing the retailing of electric power as a means of alleviating the burden of conversion. The electric companies use hydro, thermal (coal-firing, oil-firing, and LNG-firing) and nuclear power generation methods, while thermal methods accounts for 45% of its energy sourcing. These companies have responded well to a series of MITI administrative guidance measures requiring these firms to reduce their share of oil in energy-sourcing mixes; however, with a major portion of the reduction being substituted more by coal than by LNG; coal plays the central role of substitution.⁷³⁾ Electricity companies have built many coal-firing power plants in the Japanese coastal areas. The frequent, inconsistent changes in MITI's approach have further soured their state-industry relationship that has historically been full of tension and confrontation.

3) The Strategic Role of TEPCO

The Tokyo Electric Power Company (TEPCO) is the world's largest privately-owned utility and, as a result, far more influential than any of the other utilities in the formulation of Japan's energy policy.

71) Arai, Figure 1: LNG Receiving Terminals in Japan, *op.cit.*, p. 37.

72) "Japan: Dispute Over Sakhalin Gas Pipeline," *op.cit.*, p. 3.

73) Table 3-2: Kayoku-Hatsuden No Nenryoo-Shohi No Suii (Change in Energy Mix for Thermal Power Generation), *Kaikyoo No Seki Ga Owaru Hi*, *op.cit.*, pp. 79-80.

TEPCO is the leading member of the Federation of Electric Power Companies (Denki Gigyō Rengōkai), while the power of electric companies has grown *vis-à-vis* the state.

[TEPCO] relies on the trading companies to manage its foreign business affairs, ▪ [and] is in the market for such large amounts of uranium, ... LNG, coal, and oil — all of which are politically contentious commodities — that the trading companies' overseas offices tend to spend a disproportionate amount of time attending to the utilities affairs.⁷⁴⁾

Within TEPCO's territory live 31 percent of the country's population and 35 percent of its industry, a far higher concentration than is the case of any utility in the more dispersedly populated United States. Along with the extraordinary centralization of political and economic power in Tokyo, this concentration accounts for TEPCO's political influence.⁷⁵⁾

The electric power industry invests 10% of the total investment in the Japanese economy, and TEPCO as a very large investor has been supportive of a series of ambitious advanced nuclear programs. It has followed an IEA regulation regarding energy sourcing for power generation, and relied on coal-firing and nuclear fission as the base-load-bearing (BLB) fuels while using LNG as the middle-peak fuel and oil and hydro-power as the peak fuels. In other words, oil is not a BLB fuel.⁷⁶⁾

TEPCO has placed a priority on nuclear power generation. Since the adoption of the Long-term Program for Research, Development, and Utilization of Nuclear Energy in 1956, the Japanese state has promoted nuclear programs, where the state-run Power Reactor and Nuclear Fuel Development Corporation (PNC) has played a central role in the fast breeder reactor projects. Despite the current setbacks of the projects due to a series of recent accidents involving nuclear reactors and the resulting public distrust, MITI in tandem with TEPCO and other electricity companies, acting through *Shingikai*s (government councils) and various communication channels for policy formulation, have reaffirmed the existing nuclear fuel recycling programs, particularly the so-called plutonium programs, as the cornerstone of energy security policy.⁷⁷⁾

There will be no significant change in the long-term strategic goal of the existing nuclear programs. The supporting arguments are:

Although oil and uranium prices are stable at the moment, long-term forecasts indicate that both resources will be nearing depletion by the middle of the twenty-first century. It will have taken only a few centuries for human beings to use up the convenient fossil fuels that the earth built up over hundreds of millions of years. Japan, which is especially poor in such energy resources, has no choice but to rely on nuclear power sustained by fuel-recycling programs;

The use of nuclear power is an effective means of curtailing emissions of carbon dioxide to prevent global warming;

74) Gale, *op.cit.*, p. 86.

75) Arai, *op.cit.*, p. 91.

76) *Kaikyō No Seiki Ga Owaru Hi*, *op.cit.*, pp. 80–81.

77) Mitsu Kono, "The Future of Nuclear Power", *Japan Review of International Affairs*, Fall 1997 pp. 197–200.

While energy conservation and alternative energy sources are proposed as alternatives to nuclear power, these options are clearly limited in potential and do not warrant high expectations. By placing our faith in pipe dreams, we risk economic destruction; and

Continuing economic development in China and other East Asian nations will inevitably boost demand for oil, while the source of supply is increasingly concentrated in the oil-producing countries of the Middle East. Aware that oil prices must rise in the not-so-distant future, China, Indonesia, Thailand, and Vietnam are all aiming to increase their dependence on nuclear power. Japan should cooperate with those efforts.⁷⁸⁾

The current setbacks will simply prolong the second stage of Japan's three-stage nuclear plan.

In the first period, where Japan has been for the past 30 years, uranium is the major source of nuclear power. In the second phase, which Japan is entering, the key processes of nuclear fuel recycling — enrichment and reprocessing — are carried out domestically on a commercial basis, and the recovered plutonium is used as the main component in MOX fuel for light water reactors. With significant investment having been made in nuclear projects, TEPCO will not change the current mix of energy sourcing but, rather give LNG a higher priority for power generation. In the third and final phase, fast breeder reactors allow for a still more efficient use of uranium resources and eventually account for most electric power generation.⁷⁹⁾

Thus, electric utilities, particularly TEPCO, have taken less interest in LNG.

VI. Implications to Building An International Private Sector Regime in Gas Pipeline Management

Over the long run, the Japanese utility industry has to diversify its energy sourcing. Otherwise, the industry would lose its bargaining power in the international oil and gas markets because it will rely more and more on a small number of producers in the Middle East. Given the existing contracts, if Indonesian LNG is depleted, the supply will shift to Qatar; if Malaysian LNG is depleted, the supply will shift to Abu Dhabi and Oman. (The supply of LPG already depends on one country, Saudi Arabia.)⁸⁰⁾

The Japanese electric power industry is concerned about the possibility that it will have to take the most expensive gas at the end of a regional pipeline network. In order to avoid such a possibility, the industry would need to take advantage of its being the major gas consumer and negotiate for competitive gas prices. The industry would also be advised to strengthen its bargaining position by comparing the prices of LNG from Southeast Asian countries with those accessed by pipelines. In other words, the industry needs to weaken the assertive position of LNG exporters.

However, the existing arrangements of a long-term contractual relationship in the natural gas business, or “take or pay”, constitute a serious impediment to such bargaining and competitive pricing. Removing such an impediment, however, involves the liberalization of the industry, the collapse of its

78) *Ibid.*, pp. 193-194.

79) *Ibid.*, pp. 199-200.

80) Stern, *op.cit.*, p. 29.

monopoly, and the loss of vested interests, which gives the industry a strong disincentive to promote the pipeline projects. In addition, the industry would prefer LNG to pipelines due to its far higher level of flexibility in relation to end users.

In order to build a Northeast Asian gas pipeline system for the promotion of natural gas consumption, there basically exist three strategies that the Japanese actors should follow in the following ranking order of policy preference:

- (1) [To abandon] reliance upon long-term mechanisms and explicitly provide for reopening of negotiations of price/quantity and other commercial terms during the twenty-year contract period at frequent intervals, perhaps three to five years;
- (2) [To provide a] so-called “hardship clause” which permits either party to reopen the economic terms if the operation of the contract’s long-term provisions cause a substantial adverse economic effect upon one of the parties; and
- (3) [To achieve] greater flexibility in natural gas terms through tinkering with terms for price, quantity and take-or-pay in order to provide a degree of contractual resiliency which can react to changing market conditions in the purchaser’s resale market.⁸¹⁾

As for the existing LNG contracts, the Japanese government should encourage the LNG importers to amend the terms and conditions, as shown by the precedent negotiated between Canadian exporters and U.S. importers: (1) “take-or-pay percentage of annual contract quantity [shall be] reduced”; (2) “price for natural gas which is paid for but not taken [shall be] reduced”; and (3) “base time period for calculation [shall be] increased, e.g., from quarterly or monthly calculation to annual take-or-pay calculation, and take-or-pay obligations based on different time periods [shall be] scaled down, e.g., a lower take-or-pay percentage *per* quarter than per annum.⁸²⁾

In order to generate an impetus toward the Northeast Asian pipeline projects, therefore, the Japanese government should consider the following specific measures and thereby transform the incentive and disincentive functions of the electricity industry, particularly that of TEPCO:

1. The government should encourage Japanese gas importers to terminate the existing long-term, exclusive contracts of natural gas in order to enable a competitive use of pipelines by a variety of market participants.
2. The government should pay a penalty to overseas gas exporters so as to terminate existing contracts of gas supply.
3. The government should encourage and assist Japanese companies to avoid product-share agreements (PSA) and instead employ multilateral methods for risk reduction in energy exploration and development.

81) *Ibid.*, pp. 69–71.

82) *Ibid.*, p. 75.

VII Assessing the Most Recent Transformation of the Japanese Energy Politics: the late 1997 to the present

In tandem with a drastic sectoral transformation since the late 1997, a series of important steps have been taken towards pipeline building. However, the essential features of the Japanese energy development politics endure, and unflinching opposition of the electric power industry to pipeline building dies hard. Certainly, sectoral actors have experienced extensive restructuring at the micro-level and, as a result, face significant structural alterations of the energy markets. But the established state-business relationship retains its complex and complicated mix of cooperation and rivalry. It is crucial to comprehend altering behavioral patterns of sectoral actors facing an emerging incentive function, with regards to natural gas development and pipeline building.

1. The State and the Public Sector

Japanese political leaders, particularly major ranking members of the ruling LDP, have deepened their commitment to pipeline building; their consensus is emerging. Taro Nakayama, Chairman of the LDP Policy Research Commission on Foreign Affairs and former Foreign Minister, has served as Chairman of the Parliamentary League for the Promotion of the Asian Energy Community since its inception, and delivered a speech urging pipeline building at the Asian Energy Security Seminar on March 3, 2002 held in Tokyo.⁸³⁾ In the Seminar, Foreign Minister Yoriko Kawaguchi also made a statement in favor of pipeline building.⁸⁴⁾

Behind their support exist a series of policy initiatives by bureaucrats in charge of energy security, primarily those in the Ministry of Foreign Affairs and the Ministry of Economic, Trade, and Industry (METI; formerly know as the MITI). The bureaucrats have played the central role for planning, implementing and coordinating the 2002 Seminar as well as the 2001 International Energy Forum held in Osaka, a ministerial-level conference for major producing and consuming countries.⁸⁵⁾ Prior to these international gatherings, the MITI/METI conducted a sequence of in-depth policy analyses and planning under the aegis of the two administrative deliberation councils, one in charge of oil & gas and the other in charge of comprehensive natural resources and energy planning.⁸⁶⁾

The council members have been chosen from the diverse public and private sectors in energy business and pipeline building, and, therefore, the sequence of deliberation sessions itself has constituted a process of articulating a variety of stakes and interests of the sectoral actors.⁸⁷⁾ Based on the councils' deliberations, the METI has taken policy measures necessary for promoting use of LNG and regulating use of coals for power generation through subsidies, policy financing and tax exemption or reduction measures. In response to METI initiatives, the ruling LDP will take legislative action to amend the existing Gas Enterprise Law in a manner to secure the third party access to the existing domestic pipelines which individual electric power and gas companies possess.⁸⁸⁾ In 2002, the METI also has announced the simi-

83) *Kokusai Shigen* (International Resources), March 2002, pp. 9-10.

84) *Ibid.*, pp. 5-8.

85) Hidenobu Sobashima, "Aija-Enerugii Anzen Hoshoo Seminaa Wo Furikaetsute (Reviewing the Asia Eenergy Seminar)", *Ibid.*, pp. 11-17.

86) *The Nihon Keizai Shimbun*, May 9, 2001. For the details of deliberation records, see: <http://www.meti.co.jp/kohosys/committee>.

87) *Ibid.*

lar measures for access to the existing LNG storage facilities located in Japan.⁸⁹⁾ In the same year, the METI has proposed to establish a corporation independent of electricity companies, which possesses and controls all the existing electricity transmission facilities, so as to accelerate sectoral liberalization; power transmission is separated from power generation.⁹⁰⁾

The Ministry of Treasury (formerly known as the Ministry of Finance) has extended, through the International Development Bank (IDB), a number of ODA projects to Central Asian countries with focus on infrastructure building, such as power plant, communication facilities, railways, airport, bridge, *etc.*, so as to promote regional energy development and thereby enhance Japanese influence in the recipient countries.⁹¹⁾ The merger of the Export-Import Bank and the OECF created the IDB in October 1999. The merger was intended to be a symbolic part of the administrative reform aimed at achieving a smaller government. Yet, the IDB has obtained a centralized control of ODA and other public financing: inter-agency coordination is replaced by intra-agency planning. ODA continues to be an effective Japanese policy instrument for energy security, though the size of ODA disbursement is expected to decline somewhat due partly to growing budgetary deficits and depreciation of ODA budgets in the U.S. dollar term.

The Japanese government has weakened its policy instruments for energy exploration, even though it has taken some major steps towards energy development and pipeline building. The government has departed from its traditional policy that has pursued to enable Japanese national capital to directly control at least 30% of oil production of the total Japanese oil imports, and instead now explores to diversify the import sources through the international market mechanism. This decision negates the JNOC *raison d'être*. The government thus has planned to abolish the JNOC by the fiscal year of 2005 because the organization has been dominated by corrupted ex-MITI bureaucrats at its top leadership, unable to manage risks inherent in exploration projects, and suffered from huge accumulated non-performing loans.⁹²⁾ The JNOC has strongly resisted against reform efforts and attempted in vain to secure its *raison d'être* by promoting a number of overseas gas exploration projects. The final step to abolishment has not been implemented as yet.⁹³⁾

In sum, the Japanese state has increasingly supported pipeline building. Yet, the state is only taking necessary policy measures for shaping incentives and disincentives, including tax and regulatory measures, without extending any subsidization nor direct financing. The state, already suffering from an enormous size of budgetary deficits and accumulated public debts, leaves the private sector to finance pipeline projects. On the other hand, the state has sustained its dogged commitment in the existing nuclear power generation policy embedded deeply in the *status quo* of the current energy mix. A major shift to LNG will be incremental over a decade or two, only as a result of market-driven adjustments by the private sector, especially major consumer industries such as electric power and gas companies.

88) *The Nihon Keizai Shimbun*, October 25, 2001.

89) *The Nihon Keizai Shimbun*, April 21, 2002.

90) *The Nihon Keizai Shimbun*, March 8, 2002.

91) For details, see the homepage of the IDB.

92) *The Asahi Shimbun*, October 30, 2001. *Nihon Keizai Shimbun*, October 31, 2001.

93) *The Mainichi Shimbun*, May 2, 2002.

2. The Private Sector

The Japanese private sector has been bifurcated into the growing pro-pipeline alliance of various industries seeing great business chance in pipeline building, and the opposition primarily by the electric power industry which has become increasingly besieged. 44 companies consisting of major trading houses, engineering firms, seamless-pipe producers, utility companies (both electric power and gas), oil companies and others, have formed the National Pipeline Research Society of Japan (NPRSJ) for the last ten years or so and, as its spin-off organization, the Asia Pipeline Research Society of Japan (APRSJ); the Mitsubishi Research Institute, Co. (MRI) serves as secretariat for both organizations, while the largest Tokyo Electric Company and the second largest Kansai Electric Company have participated in the pro-pipeline alliances so as to secure their voice and present their reservations as well as to obtain policy-relevant information. The NPRSJ has conducted a series of policy studies on domestic trunk pipelines in Japan and their essential grids in conjunction with a Northeast Asian pipeline network building, while the APRSJ has focused its policy analysis on international aspects of the regional pipelines outside Japan.

The MRI has analyzed the prospect for future energy demand and mix, various aspects of cost performance in comparative terms, such as in transportation, pipeline routes and priority, macro-economic impact and profitability, enterpriser, and safety, and disseminated a series of pro-pipeline policy recommendations.⁹⁴⁾ Notably, the NPRSJ stresses the public nature of domestic trunk pipelines and their essential grids, and demands the state to finance at least such a portion of pipeline network building as a national project.⁹⁵⁾ It is evident that financing and risk management occupy a central importance, particularly when the state has considerably weakened its ability and interest in policy finance in the midst of the current depression and protracted fiscal crisis.

The major commercial banks remain very reluctant to finance pipeline building because they have become more risk-averse due to snowballing non-performing loans. These banks have been entrapped by the bi-directional causation of depression and non-performing loans. In effort to reduce overbanking and regain international competitiveness, the six major commercial banks — Mitsubishi, Mitsui, Sumitomo, Fuji, Daiichi Kangyou, and Sanwa — have regrouped themselves into four mega-banks: they are Mitsubishi-Tokyo, Mizuho (the merger of Daiichi Kangyou, Fuji and Nihon Kougyou), UFJ (the merger of Sanwa, Tokai, Touyo Shintaku), and Mitsui-Sumitomo. This regrouping within the banking sector has subsequently reorganized the Japanese political economy as a whole into a new structure under the four *Keiretsus*.

The above tectonic shift has reinforced the *Keiretsu* dynamics where mutual stockholding is consolidated within the core of *Keiretsu* governance while somewhat weakened in the periphery of *Keiretsu* grouping. A portion of mutually-held stocks has been sold off on the stock market. This restructuring toward concentration has reactivated dormant capital and streamlined some major overproductive capacities through either bankruptcy or merger & acquisition by national and/or foreign capital. It is apparent that the *Keiretsus* have included the energy-related sectors as an essential part of their core and prevented them from bankruptcy or being further penetrated by foreign capital. However, intra-*Keiretsu* re-

94) For details, see: <http://xing.mri.co.jp/research/research/pipeline>.

95) See the homepage of the National Pipeline Research Society of Japan, Inc.: <http://xing.mri.co.jp/research/pipeline>.

structuring in the energy sector has been intensified.

The overly fragmented downstream of the Japanese oil industry faced growing international competition. The Seven Sisters have been reorganized into five super-Majors: Royal Dutch-Shell, Exxon-Mobile, British Petroleum-Amoco, ChevronTexaco and Total Fina Elf. The super-Majors have earned large profit through upstream operations and made large risk-taking investments. The super-Majors have challenged Japanese national capital by wholesaling through their subsidiaries in Japan; they possess highly profitable upstream and are capable of taking off Japanese profit-margin.

The Japanese oil industry has finally accepted a major restructuring in which a dozen of refiners and wholesalers have merged into four companies: Nitsuseki-Mitsubishi (which controls Cosumo and Koua), Exxon-Mobile (which controls Tounen General), Japan Energy-Showa Shell, and Idemitsu. Nitsuseki-Mitsubishi is now the largest of four. It now occupies 36% of the Japanese gasoline wholesale market and ranks as the sixth biggest wholesaler in the world: it is a Japanese Major with both upstream and downstream capabilities. Before the restructuring, Idemitsu as the top wholesaler provided only 16% of the gasoline wholesale.⁹⁶⁾ In fact, the Japanese refiners suffered from excessive capacities and, as a result, were forced to operate at the very high cost. Under the emerging market structure, the Japanese oil sector has become significantly streamlined and commercially viable.

The super-Majors have sharply reduced their investment in energy plant building, and plant builders have inescapably been pressed to restructure high-cost operations assuming a large size of investment. Plant builders, particularly the major Japanese engineering firms, have faced urgent need to improve their profit-making capability.

The case of Chiyoda Kakou Corp., which belongs to the Mitsubishi group, is typical of the restructuring pattern as operating in the *Keiretsu* dynamics. Chiyoda has enjoyed very stable stockholders based on *Keiretsu* governance⁹⁷⁾; the Mitsubishi group has rejected state intervention and instead strengthened its collective mutual stockholding of Chiyoda; the Mitsubishi Corporation, or the major trading house of the group, has increased its share of the stockholding from 6.3% to 8.8% and enhanced its lead company status in Chiyoda corporate governance.⁹⁸⁾ The Mitsubishi Corporation has deepened its collaborative relationship through corporate alliance with an American engineering firm, Kellogg, Brown & Root (KBR), while the American firm has decreased its share of the stockholding from 12.9% to 8.6%. The Mitsubishi Corporation has exercised its leadership and control in shaping energy businesses within the Mitsubishi group from oil & gas exploration and development to petrochemical production. The KBR-Mitsubishi joint capital relationship is terminating the traditional division of labor between a trading house and an engineering firm within a *Keiretsu*, where the former contracts new projects and the latter builds energy plants. As in spring 2002, the three major Japanese engineering firms — Nitsuki, Toyo, and Chiyoda — all have begun to thrive due to new LNG plant projects.⁹⁹⁾

The alliance consisting of the Mitsubishi Corporation, KBR, and Chiyoda poses a serious challenge to

96) *The Nihon Keizai Shimbun*, November 1, 1998. *The Nihon Keizai Shimbun*, December 21, 1999. *The Nihon Keizai Shimbun*, September 28, 2000. *The Nihon Keizai Shimbun*, October 9, 1999. *The Nihon Keizai Shimbun*, May 11, 2002.

97) Nitsuki is one of three major plant builders in Japan, and is independent of the *Keiretsus*.

98) *Kaisha Jyohou* Spring 2002, Toyo Keizai.

99) *The Nihon Keizai Shimbun*, May 25, 2002.

other trading houses and engineering firms which have long selected project-specific partners and enjoyed changing contractual relations. The U.S.-Japan corporate alliance is significant because it may establish a predominant role in the rapidly growing LNG plant building market which has long been dominated by four companies — two American (KBR and Bechtel) and two Japanese (Chiyoda and Nitsuki). In the emerging dynamics where trading houses and engineering firms will lose their freedom of selecting project-specific partners, an ascendant trading house, rather than a major commercial bank struggling for managing non-performing loans, plays a central role in energy business.¹⁰⁰⁾

Apparently, the traditional sense of hostility embedded in the state-business relationship has driven Japanese private corporations to collaborate at the individual project level, form corporate alliance, and merge with a partner in line with Japanese national capital. The oil and the plant building sectors demonstrate that private initiatives have successfully excluded state intervention while having prevented these sectors from further penetration by foreign capital into the energy-related sectors.

The electricity industry has continued to express its unflinching skepticism regarding the commercial viability of pipeline building. The industry has been increasingly besieged in the energy development politics involving various public and private actors in differing sectors. Yet, the industry has succeeded in significantly enhancing competitiveness after streamlining plant operations and accelerating repayment of loans with high interest rates. As a result, the electric power companies have considerably improved their balance sheets and been prepared for sectoral liberalization. Certainly, the electricity industry has made a large cut in capital investment. But its share in the total national capital investment in 2001 records more than 20%, since other industries in the current depression have experienced serious contraction of investment.¹⁰¹⁾ With its enhanced power and influence, the electricity industry is able to sustain its “glorious isolation” in energy politics.

The electricity industry has successfully rolled back against the repeated offensives by the gas industry, when the two industries compete head to head under the ongoing deregulation; electric power companies plan to provide LNG to industrial consumers and new entrants in the energy sectors, while gas companies schedule to build their own electric power plants firing LNG.¹⁰²⁾ In the overly fragmented gas market, the two largest gas companies have become winners while the other small distributors have fallen behind.¹⁰³⁾ Preparing for trunk pipeline building in the great Tokyo area, the largest Tokyo Gas Company has announced to merge or acquire a number of small gas distributors in the area,¹⁰⁴⁾ while having procured two LNG transport vessels of its own.¹⁰⁵⁾ The Tokyo Gas Company, the Osaka Gas Company, the Tohou Gas Company — three biggest distributors have not been able to make a major shift in gas sourcing to LNG, because it has long-term contractual relationships with LNG exporters on the basis of “take-or-pay”. However, to promote gas the pipeline projects related to the Sakhalin I project scheduled to be completed in 2008, these companies have announced to procure 40 % of the total LNG import in accordance with a new format of contract with the maturity of one year, while relying

100) *The Nihon Keizai Shimbun*, March 5, 1999.

101) *The Nihon Keizai Shimbun*, May 21, 2002. *The Nihon Keizai Shimbun*, May 23, 2002.

102) *The Sankei Shimbun*, May 21, 2002. *The Nihon Keizai Shimbun*, May 26, 2002.

103) *The Nihon Keizai Shimbun*, May 23, 2002.

104) *The Nihon Keizai Shimbun*, December 15, 2001.

105) *The Nihon Keizai Shimbun*, September 4, 2000.

upon the traditional contract with the maturity of 20 years for the rest of the import; annual reviewing of contract gives flexibility to changing market conditions, and serves to reduce gas price.¹⁰⁶⁾

The electricity industry remains to prefer LNG to gas by pipeline. The industry will continue to use nuclear fission materials as the BLB fuels, and coal and gas as the peak fuels. The industry also has built new power plants firing cheaper coals and possesses adequate LNG regasification facilities and supply networks in Japan. Thus, there will not be a sharp gas demand increase, and LNG in particular.¹⁰⁷⁾ Forced to choose between competing energy sources, for example, the second largest Kansai Electric Power Company in 2001 relied on its nuclear power stations to generate 59% of electricity, while reducing the proportion of coal-firing plants.¹⁰⁸⁾ In order to lower operational costs, the electricity industry will follow suit of the gas industry which has altered the maturity terms in LNG trade contracts. The Tokyo Electric Power Company, together with the TGS, plans to renew contacts with a Malaysian LNG exporter in a manner to enable a quadrennial review of terms.¹⁰⁹⁾

Major electric power companies have launched a counter-offensive *vis-à-vis* gas companies with surplus derived from gas wholesaling to industrial consumers. The electricity industry imports some 70% of the total Japanese LNG import, but has not recently made full use of the import because of the lowering level of power plant operation due to stagnant electricity demand and increased competition driven by new entrants. Electric power companies plan to supply gas several percent cheaper than gas companies, and will most likely overwhelm them in competition because electric power companies have far larger capital, revenue, and profit.¹¹⁰⁾

3. The Future Prospect

The proposed pipeline building requires not only a huge investment but also sharing costs and risks among the investors. Pipeline planners have so far failed to present the scheduled level of gas price due to the uncertainties and risks inherent in the pipeline projects. Yet, gas pricing has to reflect these factors. Electric power companies, and, to a lesser extent, gas distributors are highly skeptical of the commercial viability of pipeline building because they may need to charge a high price to consumers; gas by pipeline may be more expensive than LNG, and may not be competitive. As in the late 2001, a TEPCO official said that the company could not decide to invest in the pipeline projects without knowing the scheduled level of gas price, nor make a commitment to procure gas through the pipelines.¹¹¹⁾

The Japanese electricity industry has a veto to the proposed pipeline projects, while their power and influence have been reinforced under the existing political and economic conditions as analyzed in this study. The industry is watching the two gas development projects in the offshore Sakhalin. The Sakhalin One project has been planned to distribute gas to Japanese consumers through pipelines in 2008. The Exxon/Mobile – C.Itoh alliance leads this project, while the METI through the JNOC support and cofinance it. The Japanese state has solid involvement in this project. However, the project has already lost some 700 million U.S. dollars. On the other hand, the Sakhalin Two project has been scheduled to

106) *The Nihon Keizai Shimbun*, February 19, 2002.

107) *The Sankei Shimbun*, June 15, 2001.

108) *The Asahi Shimbun*, May 15, 2002.

109) *The Nihon Keizai Shimbun*, March 9, 2002.

110) *The Nihon Keizai Shimbun*, May 26, 2002.

111) *The Asahi Shimbun*, October 24, 2001.

deliver gas by LNG transport vessels. The alliance of the Royal Dutch Shell, the Mitsui Corporation, and the Mitsubishi Corporation develops this project, without any Japanese state involvement. Based on pure private initiatives, this project has so far run any significant loss but finalized the total plan to invest ten billion U.S. dollars so as to initiate gas production in 2006.¹¹²⁾ In the foreseeable future, the Japanese electricity industry will most likely exercise its veto to the pipeline projects, despite the growing appetite of various Japanese industries for a temporary but large effective demand anticipated to generate by pipeline building *per se*.

The Northeast Asian gas pipeline projects indeed have a number of merits. Yet, a major shift from LNG to gas pipeline will take a decade or two until the commercial viability question is settled. A hasty approach to pipeline building will only provoke the Japanese electric power industry to exercise its veto at least, and wreck the important projects at worst. The pipeline promoters, therefore, are strongly advised to fully engage the Japanese electric power industry, particularly the largest Tokyo Electric Power Company and the second largest Kansai Electric Power Company, in the policy planning process, and respect their concerns and stakes, while taking confidence-building measures and other diplomatic initiatives to articulate geo-strategic interests among Northeast Asian countries.

112) *The Nihon Keizai Shimbun*, October 31, 2001.

Inside Japan's Energy Development Politics: What Outsiders Do Not Know

Masahiro MATSUMURA

This study discusses the inside dynamics of Japan's energy development politics in the context of the ongoing Northeast Asian gas pipeline projects. The analysis presumes that the central importance of Japanese involvement lies in its bargaining power as the major natural gas consumer country and in its potential leadership over the building and management of a Japanese-centered multilateral regional gas regime. This work thus presupposes that the Japanese approach in energy development can be comprehended as externalization of the inside dynamics. This study offers an in-depth look at the segmented nature of Japanese domestic energy markets, with focus on the two-way flows of power and policy inherent in the state-business relations within the Japanese political economy. This research thus puts a major analytical focus on the relationship of the public and private sectors.

This study first examines how national security and commercial considerations interplay in Japan's energy policy-making. Then the analysis identifies active promoters of the pipeline projects and their behavioral patterns, and contrast them with their opposition. The focal point of investigation is placed on how these segments of different public and private sectors behave under conditions of bifurcated interests. The research produces some policy recommendations for building an international private sector regime in gas pipeline management, followed by an assessment of the most recent transformation of the Japanese energy politics after the late 1997 and its implications to these policy recommendations.