

## **New Gas Market Design in Japan - Lessons from reforms of gas retail sector in the United States -**

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### **< Research Objective >**

The Urban Heat Energy Subcommittee held meetings between September 2002 and February 2003 and three principles, “Fostering efficient infrastructures for gas supply and effective usage of such infrastructure”, “Expanding and protection of gas users’ benefits”, and “Preparation of conditions for a fair market competition” have been proposed as basis of gas market reform.

In the course of this subcommittee discussion, the basic policy components for the gas reform legislation were determined, including: the redefinition of “pipeline operators” other than general gas utilities; applying third party access obligation (including filing and disclosing tariffs) to all parties other than four major gas utilities that own or operate pipelines for gas supply; the utilization of LNG receiving terminals by third parties; expanding the scope of retail liberalization step by step and abolition of permission system in the large-scale gas supply to liberalized gas customers; the utilization of natural gas by community gas suppliers currently using LPG; and securing fair competition in the reciprocal market entry by enterprises of different energy sector.

Based on the discussions in the subcommittee, the amended Gas Utility Industry Law, which aims to further deregulate and develop gas trading, was adopted by the Diet in June 2003, and the following new study phase has begun in July in order to discuss how to design a detailed system that covers the various policy components, including third party access and fair competition and trade.

This report summarizes recent changes surrounding gas business entities that have emerged in the course of discussions on gas market reform, and also focuses future subjects on Japanese gas retail sector while referring to case studies abroad, particularly in the United States.

### **< Major Conclusions >**

1. In the meetings held by the Urban Heat Energy Subcommittee between September 2002 and February 2003, a wide variety of basic policy components for the gas market reform were determined.

From the viewpoint of the gas retail sector, more details of some policy components need to be discussed in the future concerning securing transparency and neutrality of third party access, coping with diversified needs from third parties planning market entry through delivery services, providing last resort, and securing fair competition in the course of the reciprocal market entry by enterprises of different energy sector through, for example, the preparation of guidelines for fair competition between electric utilities and general gas utilities.

2. When gas retail cases abroad, particularly those of local distribution companies (LDCs) in the United States are considered as references of such policy components left to be discussed more in detail, some differences are observed in comparison to Japan. For example, the degree of flexibility and liquidity with respect to gas procurement in U.S. is higher than that in Japan since interstate pipelines and gas storage systems are prepared nationwide; and energy-related holding companies have some LDCs as subsidiaries as well as electricity and interstate pipeline businesses.

On the other hand, many LDCs in U.S. provide gas delivery/distribution services for marketers while holding sales functions. This is similar to the Japanese situation. With respect to the liberalization of the residential gas retail business, which is a subject of future study in Japan, the implementation level is different on a state-by-state basis in the United States and, therefore, a continued-factor analysis is indispensable.

3. Although respective states employ different approach on gas retail deregulation policies in the United States, several items can also be used as references in the future discussion of Japanese gas market reform; for

example, aggregation service, the selective delivery services of LDCs, requirements of marketers to utilize delivery services (e.g. requirements on gas supply capability, estimation of gas demand of customers supplied by marketers, balancing requirements, financial guarantee, and the like), and policies for providing last resort (e.g. customer type and additional charge of such service).

4. When an LDC is to execute its obligations, such as stable gas supply and “last resort” gas supply services, in the competitive U.S. market, relating risks are shared between the LDC and the marketers; for example, the marketers are required to certify that they have a gas supply capability and financial guarantees. Namely, gas marketers do not necessarily enjoy easing regulations and we should take note of this point.

**Note:**

- In summarizing the conclusions discussed in the meetings held by the the Urban Heat Energy Subcommittee, the policy components that relate to the gas business (e.g. market entry, pricing) were focused on and the regulations on safety were omitted from this report. Naturally, the subject was also discussed how regulations on safety should be modified according to gas market reform.

- This report partially quotes descriptions from the “Detailed Investigation on U.S. Natural Gas Deregulatory Reforms brought by Gas Retail Unbundling concerning LDCs” (executed in fiscal year 2002), which was entrusted from the Gas Market Division, Electricity and Gas industry Department,. Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry, after the permission of quoting by the division.

**Pipeline operator:** In this context, we refer to a business operator other than general gas utilities who owns or operates pipelines for gas supply. For example, domestic natural gas developers (mining companies) or electric utilities fall under this category.

**LDC:** An abbreviation of local distribution company. In the United States, the gas retail business has been unbundled since around the middle of the 1980’s according to a step-by-step basis and LDCs provide delivery/distribution services. It is reported that about 1,300 LDCs are participating in the gas retail business.

**Marketer:** A business operator who mediates in the gas buying and resaling business. The marketer participates in the gas retail market by utilizing LDCs’ delivery/distribution services, and there are various types of marketers, including affiliates of the oil majors or European energy business enterprises (for example Centrica in the United Kingdom), affiliates of LDCs, and non-affiliated enterprises. At least 260 operators are participating as marketers.

**Different gas retail deregulation policies among states:** For example, Oklahoma and Texas are typical gas producing states and the gas price of residential customers is relatively cheap. In these states, the ratio of natural gas consumed in households to the total consumption is low, and the State Public Utility Commissions in such states recognizes that the retail deregulation in residential sector would bring little benefit. Colorado is also a gas producing state and the Gas Unbundling Legislation was established in 1999, but the effect of deregulation has not penetrated to the household level to a major degree due to low natural gas prices.

**Aggregation:** An operation wherein a marketer/supplier provides energy services such as electric power or gas to aggregated multiple users.

**Last resort gas supply:** A gas service to ensure the supply of gas to users when gas users fail to conclude supply agreements with new gas suppliers other than existing LDCs in the liberalized market or the new gas suppliers cannot provide services due to some reason. Usually, LDCs provides this service.

<Explanation>

**1. Discussions in the Urban Heat Energy Subcommittee and topics concerning the gas retail business for future study**

The Study Forum on Gas Regulatory Reform (a private study group assembled by the divisional heads of Resources and Fuel Division and Power and Gas Division, Ministry of Economy, Trade and Industry) discussed and determined medium- and long-term strategies for each function of domestic gas chain<sup>1</sup>, e.g. storage/delivery of LNG (LNG receiving terminal), transportation through pipeline, and retail, between January 2001 and April 2002, based on the two fundamental principles of “expanding gas users’ benefits” and the “sound growth of the gas industry”.

After the comprehensive study of this group was completed, further discussions were made to consider gas market regulatory reforms by the governmental council called “Urban Heat Energy Subcommittee” of Advisory Committee for Natural Resources and Energy, between September 2002 and February 2003. In the course of the subcommittee, the above fundamental principles were maintained, but the “sound growth of the gas industry” was reclassified as “Fostering efficient infrastructures for gas supply and effective usage of such infrastructure” and “Preparation of conditions for a fair market competition” to re-coordinate the basic directions of the gas market design.

Through discussions about “Fostering efficient infrastructures for gas supply and effective usage of such infrastructure”, some conclusions were made: (1) to redefine pipeline operators; (2) to introduce a proper incentive, including assigning privileges which are permitted only to public utilities, in order to develop new pipeline investment; (3) to expand the scope of the business entities who provide transportation/delivery services; (4) to develop interconnection and resulting reciprocal use of pipelines; and (5) to allow third party access to LNG receiving terminals.

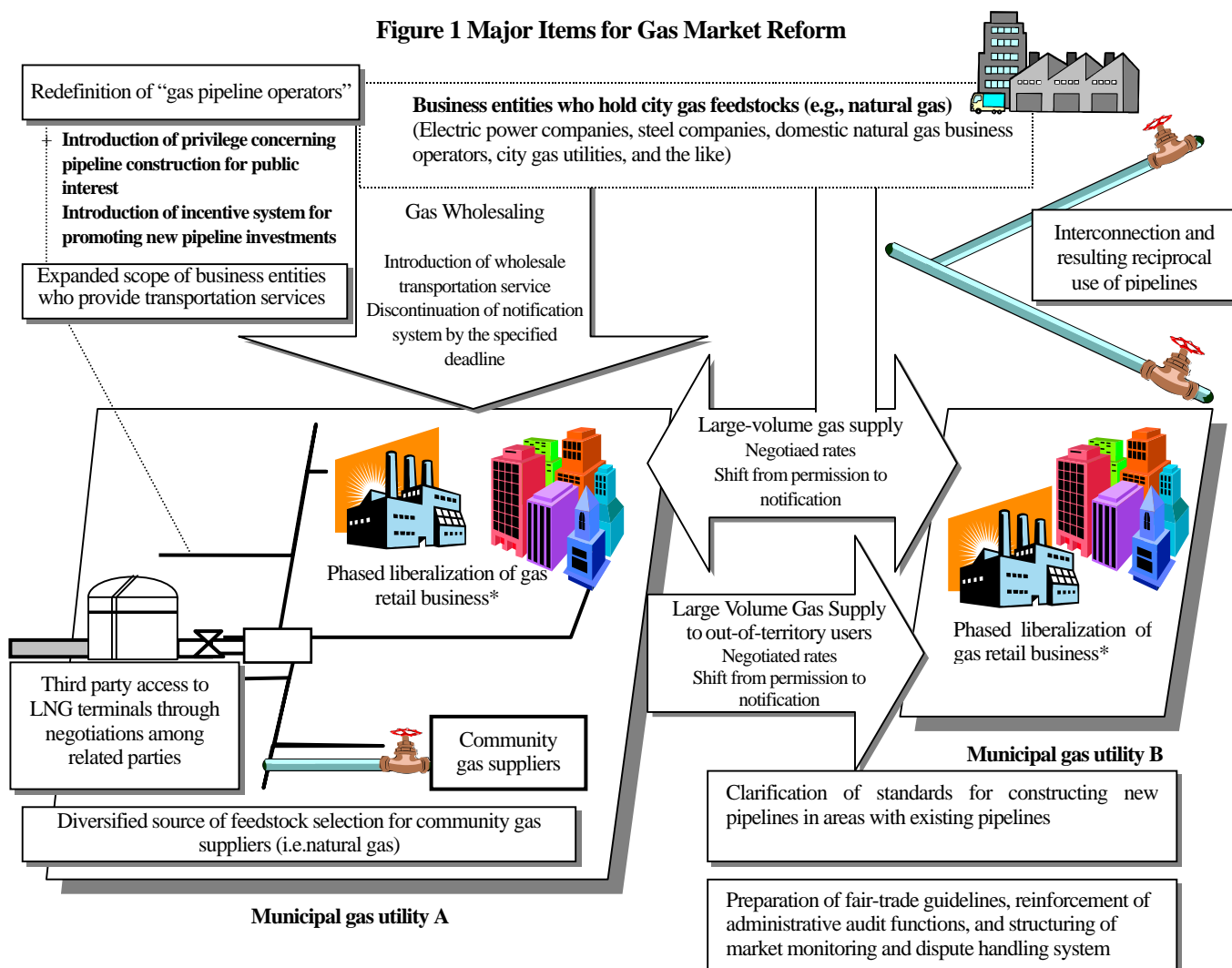
With respect to the point “Expanding and protection of gas users’ benefits”, from the viewpoints of increased foreseeable regulations and minimized preconditions for market entry, some conclusions were made: (1) to expand the scope of retail liberalization step by step and make its schedule clear; (2) to shift permission system in the large-scale gas supply to notification; (3) to introduce a wholesale transportation service; (4) to discontinue the notification system in the case of wholesaling by the specified deadline; and (5) to diversify the source of feedstock (including natural gas) to be selected by community gas suppliers. (See Figure 1.)

With respect to “Preparation of conditions for a fair market competition”, since both regulated and deregulated sectors co-exist in the gas utility during the transition period, it was concluded that: (1) the regulatory bodies should be responsible for clarifying fair expense allocation standards between regulated, deregulated, and other business operations, and auditing the results of the allocation; and (2) the guidelines for fair trade should be drafted by assuming the reciprocal market entry by enterprises of different energy sector. In addition, certain necessities were pointed out: (1) the administrative audit system, such as in rate case procedures, must be implemented more strictly; and (2) the market monitoring and dispute handling system must be structured for the coming competitive market.

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<sup>1</sup> A process that contains consecutive events from the production of natural gas, liquefaction, transportation by tankers, storage, regasification, and transportation/distribution through pipelines to sales (wholesale and retail).

Figure 1 Major Items for Gas Market Reform



\* Phased deregulation of gas retail business

Current situation: Gas is retailed to users whose contracted annual consumption is at least 1,000,000 m<sup>3</sup>.  
(Market opening<sup>2</sup>: approx. 40 %)

Target for 2004: Gas will be retailed to users whose contracted annual consumption is at least 500,000 m<sup>3</sup>.  
(Market opening: approx. 44 %)

Target for 2007: Gas will be retailed to users whose contracted annual consumption is at least 100,000 m<sup>3</sup>.  
(Market opening: approx. 50 %)

Source: “Desirable Future Regulatory Framework for the Gas Industry”, Urban Heat Energy Subcommittee, Advisory Committee for Natural Resources and Energy, 4th meeting, 20 February 2003.

When emphasis is placed on the regulatory reform of gas retail sector, it will be necessary in the future to design a more detailed system that can clarify the delivery/transportation service, cope with diversified needs on such service, provide last resort gas supply, and define proper rules for the reciprocal market entry by enterprises of different energy sector, for example, the preparation of guidelines for fair competition between electric and general gas utilities. (See Table 1.)

<sup>2</sup> The degree of deregulation above is calculated from the data of the top ten gas suppliers in FY 2000.

**Table 1 Subjects for Future Detailed Study concerning Gas Regulatory Reforms (Retail Sector)**

Item	Description
<b>Clarity of gas delivery /transportation system</b>	It is necessary to ascertain measures that ensure fair competition between the general gas utilities that operate gas supply networks and other gas business entities who utilize those networks. (Actions to be taken include: introduction of a separate income and expenditure accounting system on delivery/transportation service; prohibit network operators from using business information obtained from providing gas delivery/transportation service for other purposes (firewalls on information); and to prohibit discriminatory treatments.)
<b>Diversified needs on gas delivery /transportation service</b>	In principle, the charges for gas delivery/transportation service should be calculated cost of service basis. Also, it is desirable to hold flexibility of pricing by taking into consideration the utilization efficiency of the pipelines (for example, load factor and congestion of pipelines) and supply needs of customers.
<b>Liberalization for small-volume customers</b>	For household and small commercial customers in which the contracted annual consumption volume is less than 100,000 m <sup>3</sup> , viability of liberalization should be studied by evaluating phased deregulation, change of gas procurement, foreign case studies, and the progress of deregulation in other energy sectors.
<b>Last resort gas supply to liberalized gas customers</b>	If a liberalized customer in the service area has not concluded a contract with gas supplier other than general gas utilities and that the customer wishes to return to the existing gas utility's gas service under its tariff, the gas utility has an obligation to serve to the customer (Article 16 of the Gas Utility Act). With further deregulation in the future, it is assumed that it would be more burdensome for general gas utilities to maintain reserved supply capacity and, therefore, it is necessary to structure a framework so that last resort gas supply can be ensured.
<b>Fair competition</b>	<b><u>Example: Establishing fair competition due to reciprocal market entry by electric utilities and gas utilities</u></b> It is necessary to prepare guidelines and other rules in cooperation with the METI and the Fair Trade Commission so that a business entity can introduce separated accounting and firewall systems (e.g. on information) between its main business operation (sales of electricity or gas) and other business. What type of activity will result in a violation of the Antitrust Law must also be identified in view of fair trade requirements.

**Sources:**

- (1) "Desired Future Regulatory Framework for the Gas Industry", Urban Heat Energy Subcommittee, 4th meeting, 20 February 2003;
- (2) 4th meeting of Gas Policy Working Group, 13 December 2002.

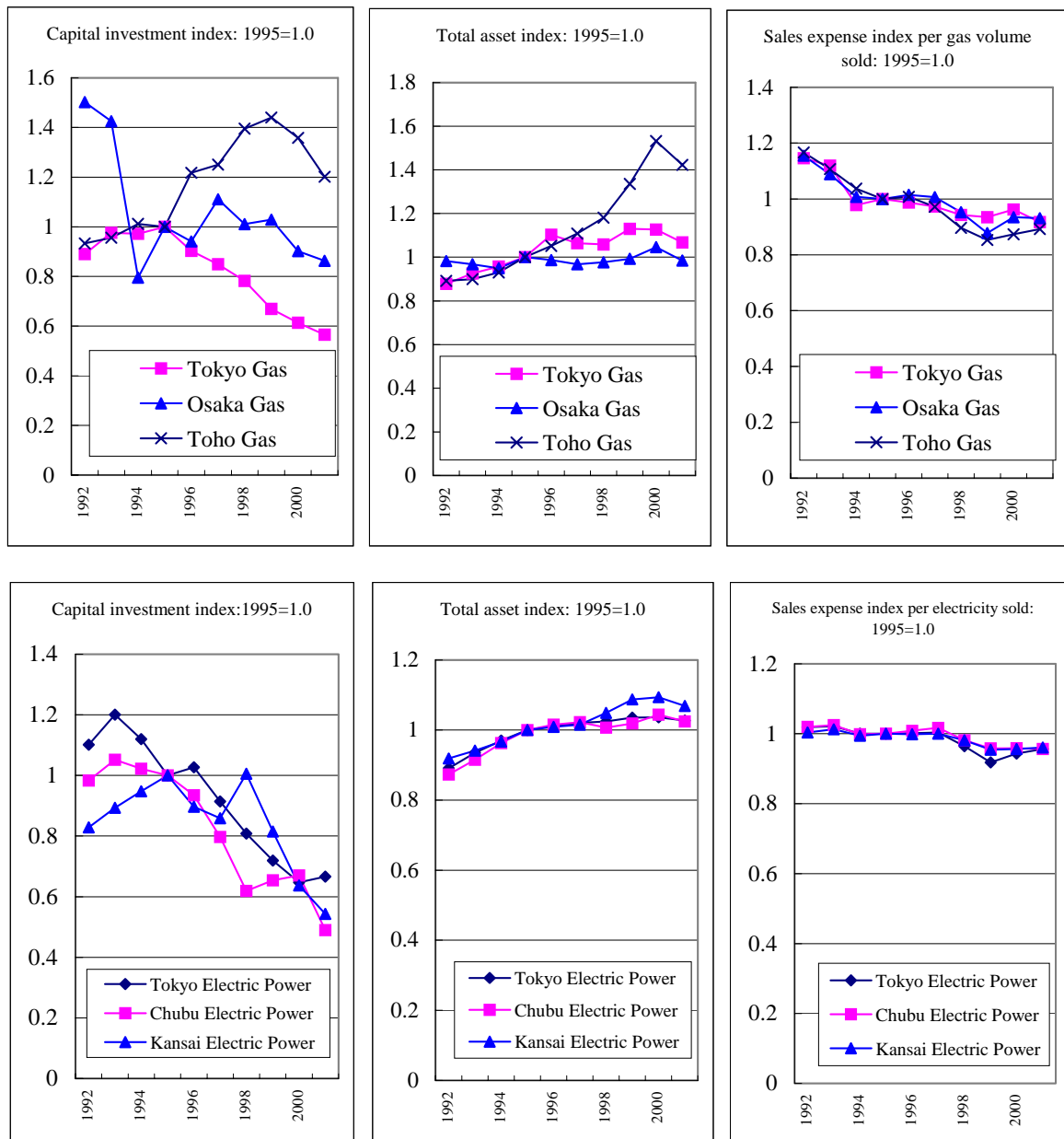
**2. Recent Changes Surrounding Gas Utilities**

In parallel with the progress of discussions on gas regulatory framework, there have also been changes surrounding the gas utilities: the number of new gas suppliers providing large volume gas supply has increased. As of the end of FY 2002, thirty-eight large-volume gas supply plans by other than general gas utilities received permission, or made notification, to enter the gas supply business. Thirty-three of these new plans are supplying energy within the service areas of general gas utilities, and sixteen of these thirty-three supply plans are utilizing the pipelines of the existing general gas utilities.

The supply volume of these new entrants accounted for some 2% of the total large-volume supply in FY 2001, and it is estimated that this figure will rise to 4 or 5% in FY 2002.

On the other hand, it is expected that cost reductions through managerial effort of general gas utilities will steadily proceed as a result of these new gas suppliers' market entry as well as under the influence of competing electric utilities. When focusing on the major three gas utilities and electric power companies for example, total assets tend to drop from FY 2001 due to a decrease of capital investment. Since the sales expenses per volume of gas sold (or electric power) decreased due to cost reduction through managerial efforts, it is expected that the retail price will continue falling and price competition will be accelerated. (See Figure 2.)

**Figure 2 Past Trends in Capital Investment, Assets, and Sales Expenses Per Gas Volume/Electrical Power Sold in the Three Major Gas Utilities/Electric Power Companies**



Notes:

Capital investment index: The capital investment of each fiscal year is expressed in the form of an index by defining the investment in 1995 as 1.0 (base index). For gas utilities, three items (investments on manufacturing, supply facilities, and offices) are subject to capital investment. For electric utilities, those items other than main business operations, such as information and communication businesses, are excluded from capital investment.

Total asset index: The total assets of each fiscal year are expressed in the form of an index by defining the assets in 1995 as 1.0 (base index). In these charts, the assets of single companies are used instead of a consolidated account.

Sales expense index per gas volume/electrical power sold: The sales expense divided by the gas volume or electrical power sold is expressed in the form of an index by defining the figure in 1995 as 1.0 (base index). For gas utilities, sales expenses consist only of sales, supply, and administrative costs.

Sources: IR documents, Database of the Federation of Electric Power Companies (<http://www.fepc.or.jp/tokei/>)

In addition to managerial efforts, some gas utilities explicitly announce to become “multi energy suppliers”

via participation in other energy sectors, particularly electricity and LPG-related businesses. (See Table 2.)

In some gas utilities, mid-term business plans include options of business expansion through improvement of the gas supply chain: for example, the development of gas wells, the improvement of facility load factor through providing TPA (Third Party Access) services to LNG terminals and pipelines, and provision of various customer services (such as services aiming at energy-saving, and comprehensive facility related services from its introduction to maintenance).

**Table 2 Participation in Other Business Sectors, Cooperation, and Merger by Gas Utilities**

Item	Description
<b>Participation in the power generation business</b>	<p>In November 2001, Tokyo Gas and Nippon Oil Corporation jointly undertook construction of a natural gas power station in Kawasaki (capacity: 900,000 kW, planned startup: 2008). Osaka Gas undertook construction of the Senboku Natural Gas Power Station (capacity: 400,000 kW × four units, planned startups: 2008 and 2010) In December 2002, Osaka Gas's affiliate, Gas &amp; Power Investment acquired the equities of two companies holding IPP plants, Nakayama Kyodo Hatsuden (149,000 kW) and Nakayama Nagoya Kyodo Hatsuden (149,000 kW).</p>
<b>Participation in the LPG business</b>	<p>In December 2002, Tokyo Gas bought Showa Bussan (capital: 48,000,000 yen, number of customers: approx. 10,000). In September 2000, Osaka Gas acquired a 70% shareholding in Nissho Iwai Petroleum Gas Corporation.</p>
<b>Cooperation with other gas utilities and LPG suppliers</b>	<p>In October 2002, Tokyo Gas, Shizuoka Gas, and Teikoku Oil announced that they would jointly construct pipelines. In May 2003, Hiroshima Gas and Fukuyama Gas established a joint company to construct a pipeline. In November 2002, Tokyo Gas, in cooperation with wholesalers, manufacturers, and its affiliates, established "Gas Network Consortium 21" to investigate countermeasures against electrification, sales improvements, and other business issues. * In January 2003, Tokyo Gas, together with LPG suppliers, established a consortium, "G Line", to cope with electrification.</p>

**Source: Material prepared by the Institute of Energy Economics, Japan.**

### 3. The Gas Retail Sector in the United States

When considering the future of the gas retail system in Japan, an understanding of the current situation in foreign countries, particularly that of LDCs in the United States, will be helpful. In U.S., with a background of domestic natural gas resources and widely developed interstate pipelines and gas storage systems, a competitive wholesale market has been formed under "gas to gas competition".

From the institutional viewpoint, orders issued by the Federal Energy Regulatory Commission (FERC) prohibit interstate pipeline operator from sales functions (i.e., the operators are allowed to only transport gas) and promote secondary trading of pipeline excess capacity. In summary, a higher degree of flexibility and liquidity are ensured for the procurement of gas in U.S.

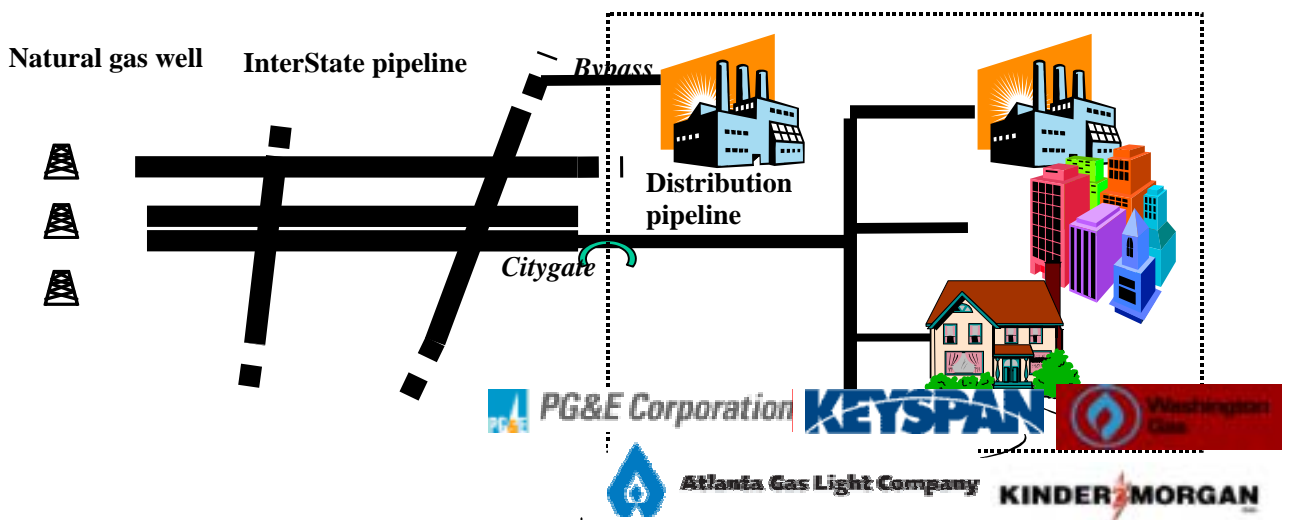
Some LDCs, together with marketers, electric utilities and interstate pipeline operators, are formed into energy holding companies. Such differences from Japanese case need further consideration in evaluating any influence on Japanese gas utilities who may lose customers as a result of market competition. (See Figure 3.)

Although there are some differences between the U.S. and Japan, as discussed above, many U.S. LDCs provide gas delivery/transportation services for marketers while maintaining their sales functions, and this is similar to the Japanese situation. With respect to liberalization of the residential gas customers, a subject for future study in Japan, the implementation level is different among states in the United States and, therefore, continued factor analysis is indispensable. (See Table 3.)

For example, Oklahoma and Texas are typical gas producing states and the residential gas price is relatively inexpensive. Furthermore, the ratio of natural gas consumed in households to total consumption is relatively low in these states, and the State Public Utilities Commissions recognize that the liberalization of residential customers would bring few benefits. Colorado is also a gas producing state and the Gas Unbundling Legislation was established in 1999, but has not penetrated into household level due to low natural gas prices.

Some states, for example Delaware and Wisconsin, canceled deregulation pilot programs targeting residential gas customers, because of natural gas price volatility and unpredictability, and resulting stagnating market entry by marketers.

Figure 3 Natural Gas Supply System in the United States

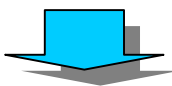


Interstate gas transaction  
(under federal regulation)

Gas retail business by LDCs and marketers  
(under state regulation)

- Domestic natural gas resources and nationwide interstate pipelines and gas storage systems  
-> “Gas to gas” competition, development of gas transaction points (Hubs)
- Deregulation by the FERC  
-> Prohibition of interstate pipeline operators from gas sales (only gas transportation), secondary trading of pipeline excess capacity (Order636)

- LDCs provide gas delivery/transportation services while maintaining sales function.  
\* Atlanta Gas Light in Georgia is an exceptional case.
- The rate setting of the LDCs is regulated by the State Public Utilities Commission.
- Marketers are partially regulated by the PUC with respect to requirements on market entry, but the rates are not regulated. (LDCs may own the marketers as affiliates.)



Higher degree of flexibility and liquidity  
for gas procurement

Source: Material prepared by the Institute  
of Energy Economics, Japan.

Table 3 Liberalization of residential gas customers – State-by-State Progress of Deregulation in U.S.

Degree of deregulation	State
Statewide unbundling 100% eligibility	<u>Washington D.C.</u> , <u>New Jersey</u> , <u>New Mexico</u> , <u>New York</u> , <u>Pennsylvania</u> , <u>West Virginia</u>
Statewide unbundling implementation phase	<u>California</u> , <u>Colorado</u> , <u>Georgia</u> , <u>Maryland</u> , <u>Massachusetts</u> , <u>Michigan</u> , <u>Ohio</u> , <u>Virginia</u>
Pilot program / partial unbundling	Florida, <u>Illinois</u> , <u>Indiana</u> , Kentucky, Montana, <u>Nebraska</u> , South Dakota, <u>Wyoming</u>
No unbundling - considering action	Iowa, Kansas, Maine, Minnesota, Nevada, New Hampshire, <u>Oklahoma</u> , South Carolina, <u>Texas</u> , Vermont
No unbundling	Alaska, Alabama, Arkansas, Arizona, Connecticut, Hawaii, Idaho, Louisiana, Mississippi, Missouri, North Carolina, North Dakota, Oregon, Rhode Island, Tennessee, Utah, Washington
Pilot program discontinued	<u>Delaware</u> , <u>Wisconsin</u>



**Notes:**

- States with double underlining were investigated by IEEJ in FY 2002 and those with single underlining were investigated in FY 2001.
- Pilot program: LDCs open the market with the permission of the state to evaluate the influence of the liberalization of residential gas customers. The period of the program is defined before the execution of the pilot program (for example, one or two years) and extended whenever necessary.

Source: Energy Information Administration (U.S. Department of Energy) Homepage

#### **4. Conclusion: Consideration on Future Japanese Gas Regulatory Reform Based on Case Studies of the United States**

There is a precondition that the approach to the deregulation of gas retail sector is different on a state-by-state basis in the United States, but when viewing the activities of individual states it can be seen that there are many examples that may be references to discussions about future Japanese gas regulatory reform.

These include: aggregation (an operation wherein a marketer/supplier provides gas service to aggregated multiple customers); variations of gas delivery/transportation charges according to the type of customer, contract style, or competitive alternate fuel price condition; requirements of the marketer by the PUC or LDC upon utilization of gas delivery/transportation services (gas supply capability, estimation of demand, marketer's flexible correspondence to customers load curve, financial guarantee, and the like); and policies for last resort gas supply (targets of customers, additional cost on providing such supply). (See Table 4.)

When an LDC is to execute its obligations, such as stable gas supply and last resort gas supply, in the competitive U.S. market, risks are shared between the LDC and marketers: for example, the marketer is required to certify its gas supply capability and financial guarantee<sup>3</sup>, and in some states a certain capacity of the interstate pipeline committed by existing LDCs is mandatorily assigned to the marketer to ensure its gas supply capacity without fail and to avoid creating stranded costs in the LDC<sup>4</sup>. These examples show that new market entrants do not necessarily enjoy easing regulations and, therefore, these points should be given due consideration<sup>5</sup>.

In some cases, both electric power companies and gas suppliers may be affiliated with same energy holding companies in the United States and, therefore, policies of fair competition through the reciprocal market entry by enterprises of different energy sector are not clearly analyzed in this report. The ideas of the regulatory bodies in each state should be studied in more detail in the future.

In addition, it may be necessary to research about the adequacy of a new market entry by a business entity with high market share in its main business operations, by referring the fair trade guideline<sup>6</sup> for the telecommunications sector in Japan, other than focusing only on foreign case studies.

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<sup>3</sup> Specifically, certification activities include the submission of financial statements or letters of credit, payment of security bonds, and presentation of surety bonds.

<sup>4</sup> When a marketer participates in the gas retail market, it must secure a certain level of capacity on the interstate pipeline and conclude a gas delivery/transportation agreement with an LDC.

<sup>5</sup> With respect to the so-called "balancing period" (the concept that supply must agree with demand within a given period) that is required of the marketer in gas delivery/transportation service, it is desirable to ease the balancing requirement (currently one-hour period) for market entrants. To do this, it is necessary to consider various factors, such as the mechanism of market demand in Japan, temporal and seasonal demand changes on the network used for delivery/transportation service, the form of the gas supply network, and supply backup capability.

<sup>6</sup> "Guideline for Promotion of Competition in the Telecommunications Business Sector", Fair Trade Commission and Ministry of Public Management, Home Affairs, Posts and Telecommunications.

**Table 4 Useful/Unrelated Case Study Results in Research of the U.S. Gas Retail Business**

Study results that are useful or need more consideration
<p><b>○ Gas delivery/transportation service</b></p> <p><b>Charging</b>            United States: Charges are determined after taking into consideration demand type, contract style (Firm, Interruptible), and competitive fuel prices*.            * <b>Targeting those users to which other fuel alternatives can be supplied (none-core users).</b>            Japan: Delivery/transportation charges are not determined by demand type or contract style.</p> <p><b>Gas metering</b>            United States: Not all market entrants estimate their customers' demand. For small-volume gas users such as households, the LDCs estimate and notify on the necessary supply volume.            Japan: Gas delivery/transportation service is limited to only large-volume customers and gas is metered through a tele-metering system. Each gas business entity must estimate its customers' demand.</p> <p><b>Balancing period</b>            United States: The supply and demand balance is generally controlled on a day-to-day basis.            Japan: The supply and demand balance is basically controlled by the hour.</p> <p><b>Requirements for utilizing gas delivery/transportation service</b>            United States: The new gas business operators are required to certify their gas supply capabilities during the winter season, as well as financial guarantee, by the PUC or LDCs. In some state, interstate pipeline capacity is mandatorily assigned to marketers.            Japan: If the delivered gas volume does not meet the (contracted) demand of users, compensation or backup charges are imposed to suppliers. However, certification of gas supply capability and financial guarantee is not required; in case of default, the transportation/delivery service agreement is canceled and the supplier must compensate the existing gas utility, if necessary.</p> <p><b>Information restrictions between transportation/delivery service and retail service (including retail business by affiliates)</b>            United States: The clause that prohibits network operators using information obtained from transportation /delivery services to other purposes (e.g. for the benefits of sales affiliates) and also forbids the staff of transportation/delivery service taking in charge of gas sales function at the same time under "Code of Conduct" in the LDC's tariff.            Japan: The transportation/delivery agreement prohibits using sales information obtained from transportation/delivery services in other purposes.</p> <p><b>○ Last resort gas supply</b>            In principle, each existing LDC must bear the responsibility of last resort gas supply (except the case of Georgia). Target users and supply conditions (for example, whether the rate for the last resort gas supply is higher than the regular LDC rate or not) are different in each state.            Example: Core customers are to be served (New York, California)                      Only residential customers are to be served (Virginia)                      Residential and commercial customers are to be served (Nebraska)</p> <p><b>○ Aggregation Service</b>            United States: Some states (for example, Ohio) adopt aggregation service at the community level.            Japan: The basic principle of the transportation/delivery service agreement is "one receipt point and one delivery point", and the concept of aggregation is not applied.</p>
Unrelated study results
<p><b>○ Fair competition between electrical power companies and general gas utilities</b>            → Information is too limited for proper research on this subject.</p> <p><b>○ Stranded costs</b> (relating to gas procurement and others)            → The gas procurement cost is mainly comprised of the commitment relating to interstate pipelines in U.S. There are secondary trading relating to a pipeline's extra gas transport capacity, and the gas supply system in the United States is extremely flexible, so information of U.S. case is not so instructive to Japanese case.</p>

Source: Material prepared by the Institute of Energy Economics, Japan.

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