

LNG Terminal Third-Party Use Regime in Japan

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Introduction

In parallel with the full liberalisation of city-gas retail sales in April 2017, the LNG terminal third-party use regime was activated in order to foster conditions to encourage new entrants into gas wholesale business and stimulate gas wholesale market development¹. This paper presents the outline of the LNG terminal third-party use regime and its terms and conditions, as well as the state of affairs of LNG terminal third-party use regimes in different countries, followed by brief discussions on remaining issues for the Japan's latest regime.

1. LNG terminals covered by the latest third-party use regime

The LNG terminal third-party use regime intends to enable third parties to utilise unused portion of an LNG receiving terminal (unused capacity of LNG storage tanks) which is owned by either a city-gas or an electric power utility company. The introduction of the latest regime is triggered by expectations that the full liberalisation of city-gas retail sales in April 2017 should encourage competition between city-gas retail providers resulting in lower prices for end-use consumers and more vibrant wholesale activities for LNG. During the discussions on how to effectively achieve such goals, there were concerns that new market entrants might find it difficult to enter into city-gas retail business if they did not have an LNG receiving terminal at all or one in the specific area where they wanted to enter into the business, even if they were able to procure LNG at lower prices². It would take a new entrant at least tens of billions of yens of investment and several years to construct a new LNG receiving terminal. Taking into account of potential difficulties for new market entrants to construct an LNG receiving terminal and the need to foster better environments to encourage new entrants for the city-gas retail market, the latest regime was introduced as part of the revised Gas Business Act enacted in April 2017, prohibiting owners of **primary LNG receiving terminals** with certain criteria from, without justifiable reasons, rejecting third parties that intend to use such terminals. An owner of a **primary LNG**

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¹ While the "(LNG) terminal third-party use" regime can be alternatively described as "TPA (Third Party Access)" regime, this paper uses "(LNG) terminal third-party use" as the basic expression for the latest regime in Japan.

² Before the latest regime, the extent of third-party use of LNG terminal capacity had been at the discretion of each terminal owner under the government's guideline of August 2004 titled "Appropriate ways of business practice concerning third-party use of LNG receiving terminals" which only stipulated desirable conducts but did not have enforceable power.

receiving terminal should notify the Minister of Economy and Industry of its intention to operate such a terminal in accordance with the revised Gas Business Act (Articles 2 and 86), whereas a **primary LNG receiving terminal** is a facility where LNG transported from overseas aboard a large-scale ocean-going LNG tanker is unloaded, stored, regasified and sent out via pipeline to end-use market according to consuming demand³.

An LNG terminal owner who, as an entity, has gross tank capacity of 200,000 kilo liter (kl) or more at its **primary LNG receiving terminal** sites and effectively and substantially operate and control the regasification and processing business shall be covered by the latest third-party use regime. That means not only city-gas companies who own **primary LNG receiving terminals** but also electric power utility companies and petroleum companies, and others, who own **primary LNG receiving terminals** and can conduct regasification and processing business shall also be covered by the latest third-party use regime.

While those **primary LNG receiving terminals** covered by the latest third-party use regime are listed in the *Note 2* at the bottom of this paper, among primary LNG receiving terminals owned by city-gas utility companies, only six operators are regulated by the latest LNG terminal third-party use regime as the only six companies have 200,000 kl or more tank capacity as an entity basis⁴. However, Hatsukaichi (Owned by Hiroshima Gas), Sendai (Sendai City Gas Bureau), Sakaide (Shikoku Electric Power, Cosmo Oil, and Shikoku Gas), Nagasaki (Saibu Gas), and Kagoshima (Nihon Gas) primary LNG receiving terminals have been excluded from the latest LNG terminal third-party use regime and are deemed to make voluntary efforts to make their terminal capacity available to third-party use, as their tank capacity is well below the 200,000 kl threshold. Those 200,000 kl or less terminals owned by electric power utility companies that are exclusively used to provide thermal power fuel and cannot send out gas via pipeline have also been excluded from the latest LNG terminal third-party use regime. Those are Sendai (Owned by Tohoku Electric Power), Joetsu (Chubu Electric Power), Yanai (Chugoku Electric Power) terminals⁵. Those operating entities of terminals owned by multiple companies have been allowed to act as a terminal owner in conjunction with the original owners of the entities, when the entity is an effective operator of regasification and processing business at the site.

³ A primary LNG receiving terminal may ship out LNG to a secondary LNG receiving terminal or a satellite LNG terminal via coastal LNG carrier ship or LNG carrier truck, as well as send out regasified LNG via pipeline.

⁴ The six companies include Hokkaido Gas, Tokyo Gas, Shizuoka Gas, Toho Gas, Osaka Gas, and Saibu Gas.

⁵ When in the future the terminal is connected with pipelines, it may be covered by the latest LNG terminal third-party use regime.

2 Terms and conditions to accept, limit and reject third-party use

The revised Gas Business Act requires the LNG terminal operators covered by the regime to submit and publish the terms and conditions for the third-party use, including calculation of the fees for use, as a package of terms and conditions (Article 89). The Act further stipulates that if the authorities find the terms and conditions inappropriate, the authorities could order the LNG terminal operators to revise the terms and conditions. In accordance with the revised Gas Business Act, each of the LNG terminal operators covered by the third-party use regime has already established and published a package of terms and conditions on its website and other communication means.

While the published terms and conditions may contain subtle differences between the LNG terminal operators, they mostly carry common items. Items to be published in the package of terms and conditions are categorised into the following two: (1) those concerning to acceptance of third-party use applications; and (2) those concerning to limitation and rejection of third-party use applications. With regard to the acceptance, the following conditions are listed:

- The third-party user should use such capacity within the spare capacity that the LNG terminal operator has without disrupting operations of the terminal;
- The relevant parties should agree on the annual program of receiving, send-out, and shipping of LNG cargoes;
- The third-party user should be able to conduct stable procurement and offtake of the relevant volumes;
- LNG qualities should be within the specified range;
- The relevant operations (receiving, storing and regasification of the LNG volumes) should be carried out by the LNG terminal operator;
- LNG carrier ships should be compatible with the relevant terminal so that unloading operations can be carried out safely and smoothly; and
- The third-party user should be responsible for coordination with other relevant parties, including applications to the government authorities.

With regard to the limitation and rejection, the following conditions are listed:

- When it is deemed necessary to maintain safety;
- When there is an irresistible force, including a natural disaster;
- When there is any malfunction or repair of the relevant facilities;
- When any impacts on other terminal users are anticipated;
- When it is required by law or a request from the government authority;
- When there is any incident that should prevent the LNG terminal operator from carrying out the relevant operation for the third-party user;
- When the third-party user does not fulfil its payment obligation for the third-party use

by the stipulated date; and

- When there is any default regarding the relevant third-party use contract obligation.

While the LNG terminal third-party use regime prohibits owners of **primary LNG receiving terminals** with certain criteria from, without justifiable reasons, rejecting third parties that intend to use such terminals, such justifiable reasons are listed above as conditions for the limitation and rejection. When the LNG terminal operator rejects the third-party use based on one of the above reasons, the LNG terminal operator should have the onus of proof. *The Agency for Natural Resources and Energy and the Electricity and Gas Market Surveillance Commission* have responsibility to monitor such activities.

2-1 Tolling fees for the third-party LNG terminal use

Fees for the third-party use that the LNG terminal operator should charge on the relevant third-party user should be "identical fees for the identical conditions". That means when the LNG terminal third-party use period and ways the LNG terminal is used are identical, identical fees should be charged, and this principle should be applicable to the relevant third-party user, as well as to the retail business unit of the terminal owner company. *The Agency for Natural Resources and Energy and the Electricity and Gas Market Surveillance Commission* have responsibility to ask the LNG terminal operator to provide information with regard to actual application of this principle of "identical fees for the identical conditions" to the LNG terminal third-party use and make an objective assessment. As it is not appropriate for the LNG terminal third-party user to have access to information regarding detailed costs of the LNG terminal which may be a competitor against the third-party user, the terms and conditions for the third-party use which the terminal operator should publish should not have to include details of operational costs for the calculation of fees for the third-party use but only should include main indicators for the calculation of fees.

Items referred in the calculation of fees for the third-party use of the LNG terminal are the following five:

- (1) Costs related to investigations necessary before the use;
- (2) Costs related to the actual third-party use;
- (3) Costs related to compensation;
- (4) Costs related to facility works; and
- (5) Other related costs.

Detailed explanations for them are described in the terms and conditions by the individual terminal operators. The terminal operators use these items in their calculation of fees, mostly volume-based, although some terminal operators use fixed fees in parallel.

3. Basic procedure of the third-party use

Timing of the LNG terminal third-party use application may differ between the LNG terminal operators. A typical example of the procedure of the LNG terminal third-party use is described in the following figure (Figure 1). When a third-party wants to use an LNG terminal, the third-party should submit an application to the LNG terminal operator to investigate the acceptability of the use.

Figure 1 Procedure of the LNG terminal third-party use

(1) Application by a potential LNG terminal third-party user

A willing third-party user should apply for consideration of use of the terminal to the relevant LNG terminal operator by the date specified by the relevant terminal operator during the fiscal year preceding the year of actual planned use of the terminal, which may vary between terminals from the end of May to the end of November, or any date in some cases.

(2) Notification of the outcome of consideration

The relevant LNG terminal operator should within three months of receipt of the application (in most case within three months, in some cases within one to two months depending on terminals or different conditions, and by the end of February of the preceding fiscal year in some cases), notify the applicant of the outcome of consideration.

(3) Detailed negotiations on terms and conditions of use

Immediately after the application is accepted, detailed terms and conditions should be negotiated.

(4) Agreement on the basic agreement

(5) Agreement on the annual delivery and offtake programme

(6) Agreement on the annual contract

Most LNG terminal operators stipulate that a use period starts in April and ends in March for one year, although some LNG terminal operators may accept multi-month use.

(7) Commencement of the third-party use

(Source) Institute of Energy Economics, Japan

4. Difficult issues surrounding the third-party use regime

4-1 Ensuring sufficient sales volumes (or gas demand)

First of all to make the LNG terminal third-party use regime work, a critical issue is whether the potential LNG terminal third-party user could secure sufficient sales volumes (or gas demand) to underpin the terminal use. A typical LNG carrier ship can transport

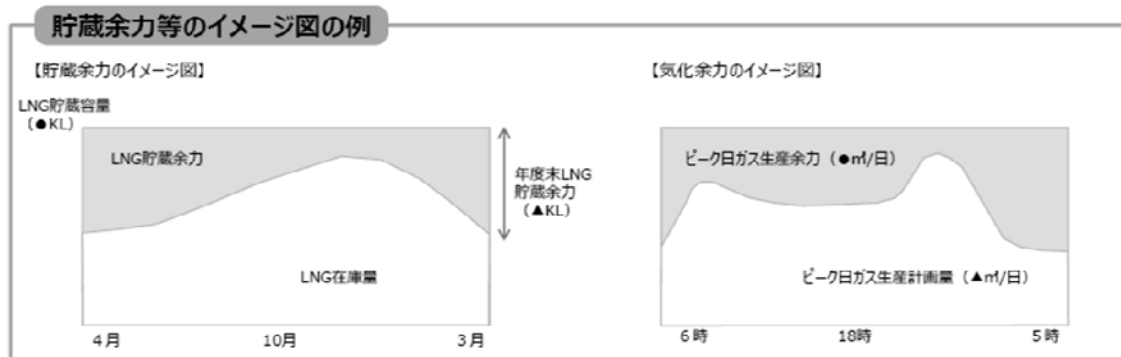
approximately 60,000 tonnes of LNG, which is equivalent to gas used by 200,000 homes annually. As under the LNG terminal third-party use regime the potential user must agree with the terminal operator on the annual delivery and offtake program during the fiscal year preceding the applied terminal use, the terminal user should ensure by that time that it would be able to secure sufficient sales volumes (or gas demand) equivalent to 60,000 tonnes of LNG.

Assuming the minimum 60,000 tonnes of gas (or LNG) sales volumes, it would be realistic to include power and industrial sectors as sales outlets, not restricting to residential gas sales. However, most of already operational and planned gas-fired power plants have already secured LNG as fuel sources. As for the industrial gas sales, as city-gas and electric power companies have been fiercely competing against each other, it would be difficult to secure new gas sales outlets. It is stipulated that if the LNG terminal third-party user fails to secure sufficient sales outlets resulting in left-over LNG volumes in the storage tanks a penalty should be assessed or the third-party LNG terminal user should take care of the left-over LNG volumes without wasting time. Details of such arrangements should be agreed upon in the contract between the terminal operator and the third-party terminal user. As it is expected to be difficult for the third-party terminal user alone to take care of the left-over LNG volumes, a penalty is most likely assessed in such cases.

4-2 Scope of spare capacity

Another critical question is whether there will be physical spare capacity. Owners of those LNG terminals covered by the third-party use regime are mostly city-gas and electric power companies. City-gas and electric power companies typically have peak demand in winter and summer respectively. Depending on sales outlets of the LNG terminal third-party user, the period when the third-party terminal user wants to use the terminal could overlap with the period when the terminal does not have spare capacity. Unlike other regions in the world with ample pipeline and storage facility networks, Japan in general does not have physical infrastructure capacity surrounding LNG terminals, limiting periods when spare capacity is available to third-party terminal users.

Another related question is how the scope of spare capacity is adjusted with the encouraged use of short-term and spot purchases. While the third-party user is expected to procure LNG under short-term contracts or spot arrangements, the LNG terminal operator may well consider spot procurements depending on the spot LNG market conditions. In that sense there is an additional question how such potential additional opportunistic spot procurements should be incorporated into the annual capacity use programme to be published during the preceding fiscal year. As the LNG terminal operator is allowed to publish the expected spare storage capacity in the form of illustration exemplified in the Figure 2, the scope of spare capacity is not strictly decided.

Figure-2 Illustration of spare storage capacity

(Source) #32 Session Gas System Reform Sub Committee (24 May 2016)

Some observers expect that LNG terminals owned by electric power companies will have more spare capacity as more reactors restart and more renewable energy capacity is introduced, reducing the need for imported LNG for their own power generation. However, even when electric power companies decrease use of LNG for power generation, many of the companies have long-term purchase contracts for LNG and ability to procure LNG in large volumes. As the companies could divert LNG to their own industrial and residential gas sales as well as wholesale of gas taking advantage of the large volume procurement, physical spare capacity of their facilities may not necessarily increase. There is also uncertainty over how much nuclear capacity will be reactivated and how much renewable capacity will be introduced in the future, as well as the resulting spare capacity of LNG terminals. Hence, potential LNG terminal third-party users should carefully watch how electric power companies assess their spare capacity at the terminals.

4-3 Long-term use of capacity by third-party users

There are also issues related to long-term use of capacity by third-party terminal users. Under the current LNG terminal third-party use regime, the terminal operator reserves the right to shorten the term of use or reject the use with regard to long-term use for which the terminal operator cannot certainly assess spare capacity during the requested period. If an LNG terminal third-party user with multi-year downstream gas sales commitment is not guaranteed the continued use of the terminal, the user must assume a significant risk. If a potential third-party user cannot reasonably assume continuous use of the terminal for multiple years, it could cause significant difficulties in considering the use. Some areas in the country do not have multiple LNG receiving terminals covered by the third-party use regime, or terminals are not connected with the pipeline networks, causing rejections of the use by the terminal operators or fewer alternatives in case of no availability

of the terminal capacity. Even if LNG can be alternatively procured by LNG trucks, the smaller-scale procurement could inevitably lead to higher procurement costs.

5. Precedents of third-party LNG terminal use in Europe and the United States

Practices of third-party use of LNG receiving terminals started in Europe and the United States in the 1990s, much earlier than Japan. Structures of the natural gas industry are different between those three regions. Europe and the United States do not depend on imports of gas or LNG so heavily as Japan as they produce much natural gas within their respective regions. Although they also import natural gas as Japan does, most of their imports come via pipeline instead of in the form of LNG and the roles of LNG terminals are different from those in Japan. As both Europe and the United States have established well-connected gas storage and pipeline networks, it is easier to store imported gas for a certain period and manage supply and demand balances than it is in Japan. The following sub-sections look at the LNG terminal third-party use regimes in Europe and the United States where liberalisation of the gas industry is considered to be more advanced than in Japan.

5-1 Europe (European Union)

Among European countries, third-party use of LNG terminals were first introduced in Spain in 1996 by *Royal Decree 2033*, requiring regulated third-party access to pipelines and LNG terminals. *The First EU Gas Directive* in 1998 expanded application of TPA throughout the EU. Before then there had been no rules on TPA to LNG terminals and gas supply infrastructure facilities had been owned by vertically-integrated companies in respective countries.

The First EU Gas Directive required member countries to choose either Regulated-TPA or Negotiated-TPA. However, as third-party use did not advance in many of the member countries under *the First EU Gas Directive*, *the Second EU Gas Directive* in 2003 did not allow negotiated TPA but principally required regulated TPA. On the other hand national governments were allowed to exempt LNG terminals that had not been built for a certain period of time (20 - 25 years) from regulated TPA, in order to encourage new infrastructure investment. This exemption rule was also passed on to *the Third EU Gas Directive* in 2009. Hence the European LNG receiving terminals are either subject to regulated TPA which is regulated by the European Commission and national regulatory authorities to be opened up to third-party users, or exempted from open-access rules with certain criteria. In accordance with this exemption rules, all of the LNG terminals built after 2000 have been exempted from regulated TPA in Northwest Europe which is considered to be advanced in gas business liberalisation. Even if an LNG terminal is exempted from

regulated TPA, *UIOLI (Use-It-Or-Lose-It)* rules⁶ have been applicable to keep primary capacity users from hoarding the relevant capacity and facilitate secondary capacity use. However, in reality, such secondary capacity is rarely utilised.

5-2 The United States

In order to foster more competition in the gas industry, *the Federal Energy Regulatory Commission (FERC)* enacted *the Order 636* in 1992, requiring interstate pipelines to offer third-party transportation services. LNG receiving terminals were also treated in the same manner as interstate pipelines and were subject to the third-party services rules.

However, when FERC provisionally approved Dynegy's plans to build an LNG receiving terminal in Hackberry, Louisiana in December 2002, the LNG terminal was exempted from the existing third-party access regulations and was left to bi-lateral negotiation between relevant parties for its operation. *The Hackberry Decision* was subsequently applied to newly built LNG terminals to be exempted from the third-party access regulations. Ultimately *the National Energy Policy Act (NEPA) 2005* stipulated that LNG receiving terminals to be built by 2014 should be exempted from third-party use regime⁷.

Judging from the developments, while third-party use regimes for LNG receiving terminals may be deemed as important ones to advance liberalisation in the gas industry, uniform application of the regimes are clearly recognised as discouraging new investment.

6. Conclusions

As described in the terms and conditions of third-party use by the LNG terminal operators, the third-party use services are now available to those potential LNG terminal users albeit various use conditions. However, there are still hurdles and challenges to overcome before they actually receive and market LNG and regasified gas at the terminals - including securing downstream demand, adjusting overlaps of peak demand with terminal operators, coping with lack of gas storage and pipeline capacity, and securing assurance for multi-year use. As of October 2017, many of new entrants into city-gas retail business are electric power companies who have their own LNG receiving terminals, or those LPG companies who partner with such electric power companies, and they can procure gas without taking advantage of the third-party use of LNG terminals.

In Europe and the United States, various regulatory initiatives were introduced to promote third-party use of LNG terminals from the 1990s. Since then the trend has turned

⁶ When a primary capacity holder does not use the capacity, the holder should offer the capacity to the market.

⁷ While effective from 2015, FERC has discretion whether or not it will apply *the Hackberry Decision* to new applications, no new application has been made for a new LNG receiving terminal.

back into exemption of new LNG terminals from third-party use due to concerns of disincentives to investment in terminals. Even after secondary capacity utilisation rules for unused capacity at the exempted terminals have been introduced, such secondary utilisation has been rarely realised.

Taking into account of the above-mentioned state, parties should not stick only to third-party use of LNG terminals but also to embark on infrastructure development including pipelines and storage facilities, as well as to make LNG procurement conditions more flexible by squeezing out destination restrictions, in order to gas wholesale activities more active. In addition, industry players should be able to make arrangements to exchange capacity slots and commodities between them to optimise the use of infrastructure, instead of solely relying on the third-party use regulations.

Note 1 Terms and conditions for third-party use of LNG terminals

- Article 89 An LNG terminal operator should stipulate and file with the Minister of Economy, Trade and Industry, terms and conditions, including fees, for third-party use of its LNG terminals (Services provided by the relevant LNG terminal operator, in accordance with request by the relevant third party, to process gas from liquefied gas owned by the relevant third party through the liquefied gas storage and related facilities owned by the relevant terminal operator) pursuant to relevant orders by the Ministry Economy, Trade and Industry. When the LNG terminal operator wants to modify or change the relevant terms and conditions, the LNG terminal operator should follow the same procedure as initial instalment of the terms and conditions.
- 2 An LNG terminal operator must not offer third-party use services with terms and conditions that are not included in those filed pursuant to the preceding section of this article. However, this section should not apply to special cases where the relevant terms and conditions are not applicable and third-party use services are provided in accordance with terms and conditions including service fees that the Minister of Economy, Trade and Industry has approved.
 - 3 The Minister of Economy, Trade and Industry reserves the authority to order an LNG terminal operator to revise the terms and conditions for third-party use of its LNG terminals in a certain period of time, if any of the following conditions are not met in the terms and conditions:
 - 1) The relevant potential LNG terminal third-party user is not expected to foresee significant difficulties in utilising services pursuant to the provisions in Section 1 of this article;
 - 2) Calculations of fees are appropriately and clearly stipulated; and
 - 3) No discriminatory treatment is made against specific parties.
 - 4 An LNG terminal operator should publish its terms and conditions for third-party

use of its LNG terminals pursuant to relevant orders by the Ministry Economy, Trade and Industry, immediately after it files terms and conditions for third-party use of its LNG terminals pursuant to the Section 1 of this article.

- 5 The Minister of Economy, Trade and Industry reserves the authority to order an LNG terminal operator to offer third-party use services when the relevant LNG terminal operator without justifiable reasons rejects to provide services to third parties. The Minister reserves the authority to order the relevant LNG terminal operator to offer third-party use services in accordance with the terms and conditions filed pursuant to the Section 1 of this article.

Note 2 Terminals covered by the third-party use regime

	Terminal operator	Terminal	Storage (kl)
1	Hokkaido Gas	Ishikari LNG Terminal	380,000
2	JXTG Energy	Hachinohe LNG Terminal	280,000
3	Nihonkai LNG	Nihonkai LNG Niigata Terminal	720,000
4	Inpex	Naoetsu LNG Terminal	360,000
5	Tokyo Gas / Nijio	Negishi LNG Terminal	999,000
		Ohgishima LNG Terminal	850,000
		Sodegaura LNG Terminal	1,385,000
		Hitachi LNG Terminal	230,000
6	TEPCO Fuel & Power	Minami Yokohama Thermal Power Station LNG Terminal	181,000
		Sodegaura Thermal Power Station LNG Terminal	1,275,000
		Higashi Ohgishima Thermal Power Station LNG Terminal	540,000
		Futtsu Thermal Power Station LNG Terminal	1,110,000
7	Shizuoka Gas	Sodeshi Terminal	337,200
8	Toho Gas	Chita LNG Joint Terminal	300,000
	Chubu Electric Power	Chita Midorihama Terminal	620,000
	Chita LNG	Chita LNG Terminal	640,000
9	Toho Gas	Toho Gas Yokkaichi Terminal	160,000
	Chubu Electric Power	Chubu Electric Yokkaichi LNG Center	320,000
10	Chubu Electric Power	Kawagoe Thermal Power Station LNG Terminal	840,000
11	Osaka Gas	Senboku Terminal 1	320,000
		Senboku Terminal 2	1,585,000
		Himeji Terminal	740,000
12	Kansai Electric Power	Himeji LNG Terminal	520,000
	Sakai LNG	Sakai LNG Center	560,000
13	Mizushima LNG	Mizushima LNG Terminal	320,000
14	Kyushu Electric Power	Tobata Terminal	480,000
15	Saibu Gas	Hibiki LNG Terminal	360,000
16	Kyushu Electric Power	Oita Terminal	460,000
17	Okinawa Electric Power	Yoshinoura Thermal Power Station LNG Terminal	280,000

Note 3 Terminals outside of the third-party use regime

	Terminal operator	Terminal	Storage (kl)	Note*
1	Hokkaido Gas	Hakodate Minato Terminal	7,100	A
2	Japex	Yufutsu Terminal	2,700	A
3	JXTG Energy	Kushiro LNG Terminal	10,000	A
4	Tobu Gas	Akita LNG Terminal	12,000	A
5	Sendai City Authority	Minato Terminal	80,000	B
6	Tohoku Electric Power	Shin Sendai Therma Power Station	320,000	C
7	Chubu Electric Power	Joetsu Thermal Power Station	360,000	C
8	Shikoku Electric Power Cosmo Oil Shikoku Gas	Sakaide LNG Terminal	180,000	B
9	Shikoku Gas	Takamatsu Terminal	10,000	A
		Matsuyama Terminal	10,000	A
10	Hiroshima Gas	Hatsukaichi Terminal	170,000	B
11	Okayama Gas	Chikko Terminal	7,000	A
12	Shikoku Electric Power	Yanai Terminal	480,000	C
13	Saibu Gas	Nagasaki Terminal	35,000	B
14	Nihon Gas	Kagoshima Terminal	86,000	B

*Reasons not to be covered by the third-party use regime

A: Secondary receiving terminal; B: Smaller storage less than 200,000 kl; and C: Dedicated only to power generation