The Gas Market Liberalization Progress under High Energy Price Environment

Yuichi Yanouchi[1]

1. Introduction

Six years have passed since Japan's city-gas retail market for all the market segments was opened for competition on 1 April 2017. This paper looks at the latest developments in the city gas market under the recent high commodity price environment, following the paper "Four Years of Competition after the Liberalisation of the City-gas Retail Market" by Mr. Daisuke Masago of the Institute of Energy Economics, Japan - IEEJ, presented at the 37th Conference on Energy System, Economy, and Environment in 2021.

2. High Energy Prices and Their Impacts on the Japanese Domestic City-gas Market

As energy demand rebounded with revitalized economic activities after relaxation of restrictions related to the Covid-19 Pandemic in 2021 and energy supply capacity did not catch up with the increasing demand due to sluggish performance of aggression in Ukraine in 2022, energy prices went up to the highest levels in the history in the year. Natural gas and LNG prices also surged to historical highs around the world from the Northern Hemisphere summer in 2021. The upward trend of LNG prices also continued at a slower rate in Japan, where long-term contracts with linkage to crude oil prices represent 70% - 80% of the total supply, with the average price reaching to the highest ever of JPY 164,922 per tonne in September 2022. However, as Japan does not have an integrated nationwide pipeline network, the retail gas business does not have as many new entrants as the electric-power retail business, nor an established wholesale gas market comparative to the Japan Electric Power Exchange (JEPX) in the electric power business. As new entrants in the retail gas markets depend on contractual arrangements for gas transportation and procurement with pipeline operators and wholesale companies, they do not directly suffer from surges in wholesale gas market prices. As gas source procurement costs for retailers can be passed onto retail sale prices, albeit some restrictions, retail companies do not make significant losses in retail sales even during the current high-LNG price period. The impact of the current high LNG prices on those retail sellers of gas has been relatively mitigated so far.

[1] Researcher, Gas Group, Fossil Energies and International Cooperation Unit.

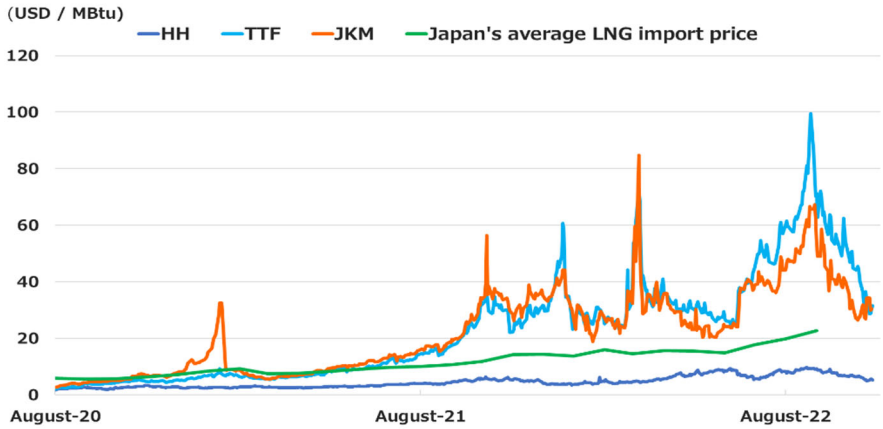

Figure 1: World natural gas and LNG price trends

3. Historical Developments and Objectives of Full Retail Liberalisation of the Gas Market

The retail gas market liberalisation in Japan started in 1995 when sales to customers of annual usage of more than 2 million m3, such as large manufacturers and large-scale medical facilities. The threshold of liberalised sales had been lowered in phases thereafter. At last, all retail sales, including those to small customers, were opened up for competition in April 2017. The pipeline operating divisions of the largest city-gas companies (Tokyo Gas, Osaka Gas, and Toho Gas) were legally unbundled from their gas sales activities in April 2022, as part of the nation's gas system reform.

4. Progress of Gas Retail Competition

4. 1. New Entrants into the Retail Segment

Before the full-retail liberalisation, the incumbent city-gas utility companies had been granted franchise business areas authorised by the nation's Minister of Economy, Trade and Industry. With the revision of the Gas Business Act enacted in April 2017, the retail gas business was transformed into one based on registrations to the Ministry of Economy, Trade and Industry (METI), and was fully opened up to competition. New entrants to the retail segment of the gas business have included LP-gas companies, electric power utility companies, new entrants into the electric-power retail business, and other various companies. As of 17 October 2022, the nation had 99 gas retail companies, while additional 44 companies had plans to start, or had already started, retail gas sales, increasing from 91 and 39, respectively, from 12 July 2021 when LNG prices started rising.

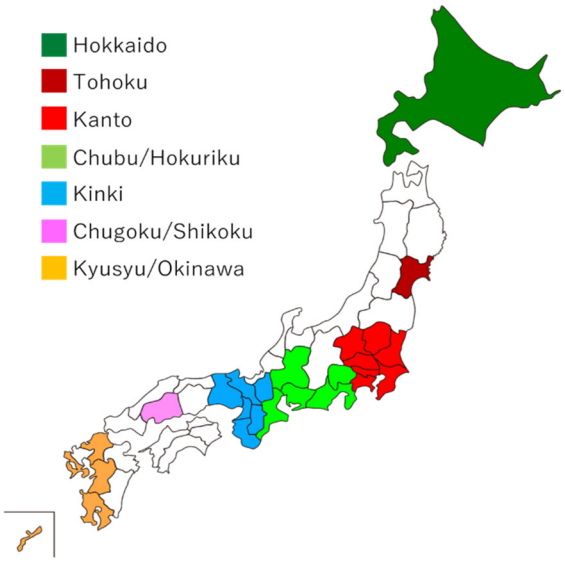

Figure 2: Areas where new entrant retailers' registrations of retail gas sales

Figure 2 indicates areas where the 44 prospective new entrants have made registrations of their planned retail gas sales. The incumbent gas utility companies have been categorised by size of business, capacity to procure gas sources, and supply facilities they have. 26 prefectures, where the first group of the largest incumbent companies (Tokyo Gas, Osaka Gas and Toho Gas) and the second group (Hokkaido Gas, Sendai-City Gas Office, Shizuoka Gas, Hiroshima Gas, Saibu Gas and Nihon Gas of Kagoshima) have business areas, have already had new entrants into retail gas sales. Declines in retail price levels and diversified retail service programmes have been observed in those areas where competitions are apparent with larger numbers of new entrants. On the other hand, the remaining 21 prefectures have hardly enjoyed positive impacts of the retail liberalisation in terms of retail price and service programmes unless the incumbent gas operators have tried to voluntarily improve them.

4. 2. Trends in Retail Customer Switching

One of the most important indicators to review the developments and progress of the full retail gas liberalisation is the number of switchings, or customers who change their retail gas suppliers. The author has reviewed cumulative numbers and rates of customer switchings by region in the retail residential gas segments based on monthly data of the gas market published by the Electric and Gas Market Surveillance Commission.

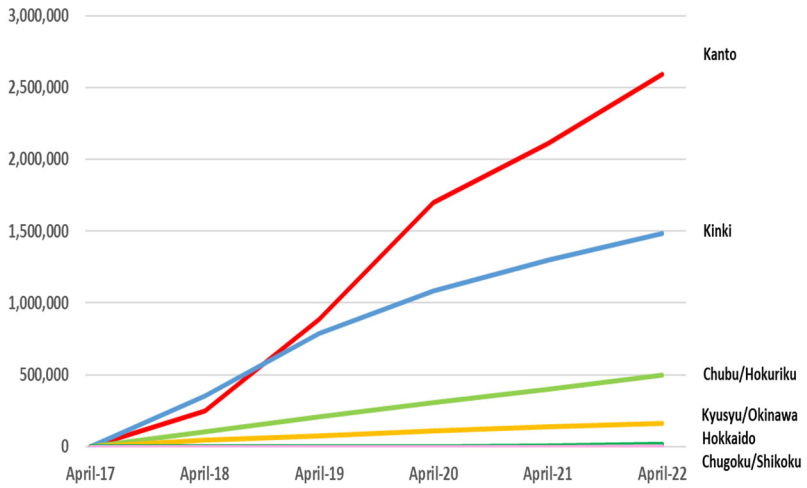

Figure 3: Cumulative switchings by region for residential retail gas providers

Figure 3 shows cumulative numbers of customer switchings in the retail residential gas segments in the six regions (Hokkaido, Kanto, Chubu/Hokuriku, Kinki, Chugoku/Shikoku, and Kyushu/Okinawa) where such customer switchings have been already reported. Although new entrants have been already registered in the franchise of the Sendai-City Gas Office in the Tohoku region, no such customer switchings have been reported yet. The nationwide total number of customer switchings in the residential gas sales segment was 4.89 million as of September 2022, increasing by 19% or 850 thousand from one year earlier, indicating a steadily increasing trend during the period of rising LNG prices from the summer of 2021. The largest numbers of switchings have been reported in the Kanto region since April 2019, after the Kinki region reported the largest numbers from the initial period of data collection until March 2019. The cumulative numbers of switchings were 2.68 million in Kanto representing 55% of the national total, 1.52 million or 31% in Kinki, 510 thousand or 10% in Chubu/Hokuriku, respectively. The three regions represented 4.71 million switchings, representing 96% of the total in the country.

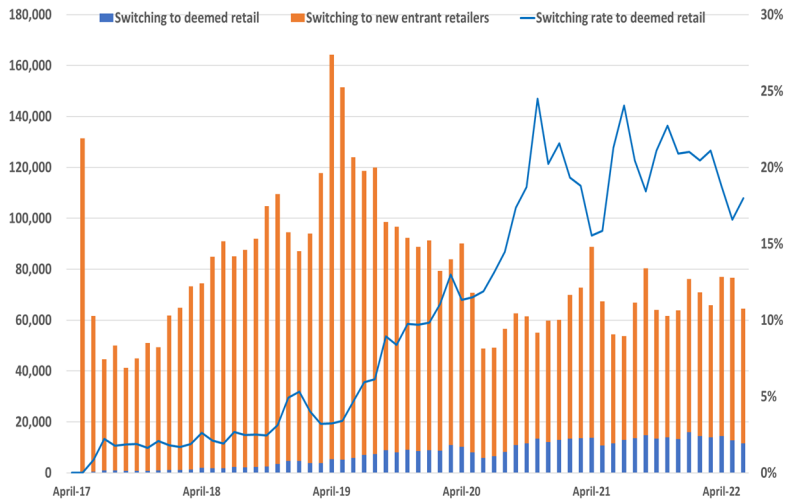

Figure 4: Cumulative switching rates by region for residential retail gas providers

Figure 4 indicates rates of customer switchings (shares of customers who have switched their retail suppliers in the total customers) by region in the retail residential gas segments. Kanto had the largest number of retail customers of 13.87 million as of September 2022, representing 52% of the national total, followed by 6.48 million in Kinki and 2.51 million in Chubu/Hokuriku. Although Kanto has recorded the highest numbers of monthly switchings in the residential gas retail segment since November 2018 mainly due to the largest total customer base compared to the other five regions, Kanto's cumulative switching rate lags behind Kinki's and Chubu/Hokuriku's. Although Kinki has the highest cumulative switching rate from the initial data reporting as of September 2022, the region has observed declines in the switching rate during the last three years, down to 2.77% during the last twelve months, the lowest since the start of the full retail liberalisation. While Chubu/Hokuriku and Kanto registered their highest switching rates in May 2017 and April 2019, respectively, the two regions have had still steady switching rates thereafter.

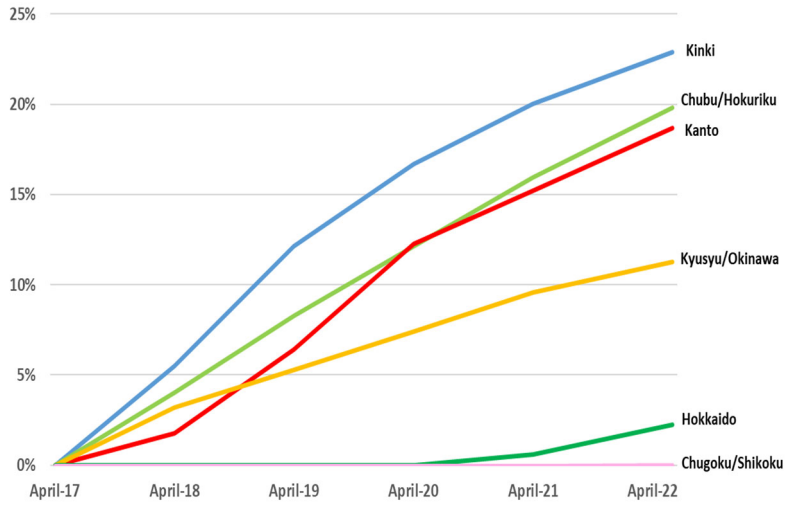

Figure 5: Monthly number of switchings to new entrant retailers and deemed retailers (incumbent city gas utility companies) for residential retail gas sales

Figure 5 indicates the national numbers of switchings to new entrants and those to the incumbent city-gas utility companies (so-called "deemed retailers") in the residential retail gas segment on monthly basis. From the beginning of the full retail liberalisation, monthly switchings to new entrants grew steadily to 189 thousand in April 2019. On the other hand, monthly switchings to the incumbent city-gas utility companies reached their highest, 16 thousand, in January 2022. Such switchings back to the incumbent city-gas utility companies have been in an increasing trend, representing one fifth of the total customer switchings during the last two years. While the trend will have to be further carefully analysed in the future, the increase in the switchings to the incumbent city-gas utility companies has been suspected to be caused by the increased customer bases of new entrants after they acquired 1.75 million retail customers in the first two years of the full retail liberalisation, as well as enhanced marketing efforts by the incumbents.

5. Startup Wholesale Programme

A new initiative to encourage new entry, the Startup Wholesale Programme was introduced in the fiscal year 2019 (from April 2019 to March 2020) in the regions where no or fewer switchings had been reported. Nine companies in the above-mentioned first and second groups have been required to offer such Startup Wholesale Programmes in their respective service areas. While there are 44 prospective new entrants into the gas retail business, 19 gas wholesale contracts had been concluded utilising the Startup Wholesale Programmes, including contracts covering multiple supply areas, by the end of March 2022.

The number represents a significant increase in such contracts from five as of 1 October 2020. As the programmes have been introduced for three years since 2019, negotiations have been suspected to have advanced and new entrants have been suspected to have taken advantage of such programmes in multiple supply areas, contributing to the increase. Thanks to such programmes, new entrants in retail sales have emerged in Hokkaido, Hiroshima and Shizuoka for the first time. While customer switchings in the residential segment in Hokkaido have been suspected to be only utilising such Startup Wholesale Programmes, 17 thousand customers out of 700 thousand city-gas customers in total in Hokkaido have switched in two years.

6. Conclusion

The recent high prices of LNG have not apparently caused significant adverse impacts on retail gas suppliers in Japan. Hence, the number of retail gas companies, customer switching rates, and other developments of retail gas market liberalisation have suffered only limited impacts from the high LNG prices. An increase in customer switching back from new entrants to the incumbent city-gas companies has been confirmed as a new trend. Causal relationship between the high LNG prices and switching backs should be further investigated, including contractual conditions of both ends. As new entries utilising the Startup Wholesale Programmes increased from five to 19 in one and half years and all of the previous non-competitive regions of the above-mentioned second group, except for the area of Saibu Gas, have reported new entries, the Startup Wholesale Programmes have partially achieved their goals. However, progresses in some areas have been slow as the supply area of Hiroshima Gas only reported 10 customer switchings during the ten months after the first case utilising the Startup Wholesale Programme in September 2021. While no numerical targets have been set for the Startup Wholesale Programmes, efforts should be made to vitalize competition through expanding areas of new entries and increasing switchings.

Reference

1) The Japan Gas Association, "About the Gas Business", last accessed on 20 March 2023 (https://www.gas.or.jp/seido/jiyuka/)
2) METI, The 54th Advisory Committee on Natural Resources and Energy, Electricity and Gas Basic Policy Subcommittee, Electricity and Gas Business Subcommittee, Document No. 5
3) METI, Registered Gas Retailers, last accessed on 20 October 2022, (https://www.enecho.meti.go.jp/category/electricity_and_gas/gas/liberalization/retail

ers_list/)
4) Electricity and Gas Market Surveillance Commission, "Status of gas transactions", last accessed on 20 October 2022, (https://www.enecho.meti.go.jp/category/electricity_and_gas/gas/liberalization/switch/)
5) METI, The 20th Advisory Committee on Natural Resources and Energy, Electricity and Gas Basic Policy Subcommittee, Electricity and Gas Business Subcommittee, Working Group on Gas Business System, Document No. 3
6) "Competitive Landscape After Four Years of Japan's City-Gas Market Full Retail Competition", Daisuke Masago, The Institute of Energy Economics, Japan, at the 37th Energy Systems, Economics, and Environment Conference in January 2021

Contact : report@tky.ieej.or.jp