Current Competition Condition in the Domestic Gas Station Market and Future Developments

1. Background of Study

Petroleum is a primary energy product which not only plays an important role in industrial production but also is closely associated with the daily life of people. Since almost all the domestic energy supply needed is imported, any instability or changes in international politics and economy can bring disadvantageous effects. Therefore, saving energy, developing alternative energy and stabilizing energy supply are important goals in domestic energy policy and the petroleum industry. The government used to keep the energy industry state-owned, such as the Chinese Petroleum Corporation, Taiwan (hereinafter referred to as "CPC") Taiwan Power Company, etc. However, as a result of drastic changes in the general environment and technology development, state-owned enterprises kept having issues in their basic management and were unable to adapt to the increasing competition in the market. The voice calling for liberalization grew louder and the government started to open up the petroleum market gradually. To stay in line with the government's economic liberalization policy and to allow private businesses to participate and invest in gas station operations, the Ministry of Economic Affairs announced the "Regulations Governing Gas Station Installation and Administration" in June 1987 to allow private businesses to set up gas stations. Later in June 1996, the "Regulations Governing Permission and Administration of Importation, Exportation, Production and Sales of Petroleum and Petroleum Products" was announced to promote the liberalization of crude oil refining operations by permitting private businesses to invest in production of petroleum and petroleum products and sell the products domestically. Again in October 2001, the Legislative Yuan passed the "Petroleum Administration Act" in the Third Reading, a law closely associated with the opening up of the domestic petroleum market, to ensure the liberalized market could develop in good condition. The legislation not only defined the basic framework of liberalization of petroleum product management but also provided appropriate regulations regarding issues related to the transition from state-owned monopolization to privatization.

Since the domestic petroleum product market was deregulated, both large domestic petroleum suppliers and petroleum importers have regarded "sales channels" the most important factor in market competition and market share acquisition. Formosa Petrochemical Corporation (hereinafter referred to as "FPCC"), for example, gained 30% market share after signing a franchise agreement with National Petroleum Corporation, the largest sales channel chain in the domestic market, in 2001. As for CPC, it claimed the rest of the market with its large number of directly-managed gas stations. Apparently, sales channels play a key role in the competition of the petroleum product market. The domestic gas station market is a mature and conventional industry which focuses on selling gasoline needed in daily life and enjoys rather stable profitability. Except for the competition in downstream gas station operation by the two petroleum refining companies, CPC and FPCC, there are also many gas station operator groups and individual gas station operators working hard to enter and compete in the market. As the market scale is limited and competitors continue to enter the market one after another, the market is now saturated. On top of that, gas station locations with growth potential are difficult to find. In consequence, related businesses are all working hard to increase their added value to boost their competitive edges. In addition, because of climate change, all governments have adopted reduction of the carbon emissions of transportation departments as an important goal, promoted development of electric vehicles and invested large amounts of resources in installation of charging stations, and offered subsidies to encourage consumers to replace gasoline-powered cars. At the same time, the Executive Yuan has also proposed the inter-ministry “Air pollution Control Plan “, which includes the policy goals of using electric vehicles for official uses by 2030, banning sales of gasoline-powered motorcycles (according to the Ministry of Transportation and Communications, prevention of air pollution and enhanced control of mobile pollution sources are an international tendency, but the implementation of the plan is yet to be finalized and the plan will be executed after comprehensive consultations between the industry, government and labor representatives are conducted) by 2035, and prohibiting sales of gasoline-powered cars by 2040. This policy is bound to have an impact on the future development of gas stations and market competition. Innovative measures must be taken to promote energy transformation and development of smart green energy at the earliest time to prevent the impact on the industry and changes in market competition. In this paper the current condition of competition in the gas station market, the impact of replacement of gasoline-powered cars with electric cars on gas station operators, and how gas station operators can cope with the changes in market competition will be analyzed. It is expected to gain a more profound understanding of competition that gas station operators are likely to face in the future by collecting industrial data, interviewing gas station operators, and administering questionnaire surveys in order to provide the FTC with references in its future enforcement.

2. Scope and Methods of Study

(1) Scope of study

Currently, CPC and FPCC are the two only wholesalers in the petroleum product market in the domestic market. The group of gas station operators supplied by CPC includes stations under CPC’s direct management, Mech Smile Inc., Taiwan Sugar Corporation, Chian Uen Gas Station Co., Ltd., Oil Group Co., Ltd. and Same Yong Industrial Co., Ltd., whereas the group of gas station operators receiving supply from FPCC includes Formosa Oil (Asia Pacific) Corporation (hereinafter referred to as “FOC”), National Petroleum Corporation (hereinafter referred to as “NPC”), Formosa Taffeta Co., Ltd., Jiou Jing Enterprise Co., Ltd. and Sure Service Station Co., Ltd. (hereinafter referred to as “SSSC”). Meanwhile, Shan Loong Transportation Co., Ltd. and North Star International Petech Co., Ltd. get supply from both CPC and FPCC. According to the statistics on the Petroleum Price Information Management and Analysis System of the Bureau of Energy of the Ministry of Economic Affairs, as of Oct. 30, 2019, there were 2,481 gas stations in the market and 1,310 of them were run by the top 13 gas station operators, accounting for 52.80% of the total number of gas stations. Therefore, this study will focus on the gas stations of the aforesaid 13 top operators. The paper begins with a description of the structure of the domestic petroleum product industry. Then, the current competition in the domestic gas station market is analyzed. Afterwards, data associated with changes in the global energy needs, the domestic energy transformation policy as well as emergence of electric cars and installation of charging facilities are sorted out to examine the challenges domestic gas station businesses will face and future development. In the end, based on the information collected and the data related to the subject of this study, concrete suggestions established in accordance with various angles and viewpoints are presented as references for the FTC in future enforcement associated with competition among domestic gas station operators.

(2) Methods of Study

A. The empirical method: During the period when the study was in progress, the researcher visited and gathered information from gas stations operated CPC's franchisees, FOC, NPC and SSSC in Taipei City, New Taipei City, Taichung City and Kaohsiung City to understand the prices of different gas stations, the competition of their promotional activities and the condition of their business diversification.

B. The interview method: Gas station workers were interviewed in order to understand their perceptions, viewpoints, feelings and opinions about certain issues or incidents to gain a better picture of the current competition in the gas station market, including installation of charging (battery swap) stations, business diversification and development.

C. The questionnaire survey method: A questionnaire survey was conducted to gather the opinions of gas station operators about the current market competition and future development in order to get a firm grasp of the situation of the domestic gas station industry and competition and what measure could be taken to facilitate transformation of the industry in the future.

D. The literature analysis method: Related literature was collected and sorted out. New and old data as well as market developments were compared to identify long-term changes and tendencies.

3. Conclusions and Suggestions

(1) Conclusions

The purposes of this study include 1) sorting out the condition and competition of domestic gas station operators to understand the current competition condition in the domestic gas station market; 2) collecting information with regard to changes in global energy needs as well as the domestic energy transformation policy and emergence of electric cars and installation of charging facilities to understand the tendencies domestic gas station operators are facing and possible responsive measures. The results of study are as follows:

A. Current competition condition in the domestic gas station market

(a) As of Oct. 30, 2019, there were 2481 gas stations in the market. If market concentration ratio (CRn) and the Herfindahl-Hirschman Index (HHI) are applied to measure the level of competition, the CRn of the four top operators is 37.44%. If only the HHI is adopted, the figure is 679, indicating it is a market with low concentration. In other words, competition in the domestic gas station market is rather fierce.

(b) After the gas station market was opened up in 1987, the number of gas stations increased each year. From 1988 to 2005, 100 gas stations were set up each year on average. It was a period of rapid growth and development. After 2006, the growth slowed down gradually and there were no significant increases or changes. From 2006 to 2011, the development market started to mature. However, the number appeared to be decreasing after 2012. Today, competition in the retail petroleum product market is rather fierce and the existing management conditions cannot attract new businesses to enter the market.

(c) Promotion and price wars are the measures most often adopted by gas stations to compete, including cash payment discounts, member credit card payment discounts and gift-giving (such as cash coupons for convenience stores). Interviews with gas station workers to understand their management situations and with the workers of gas stations under CPC's direct management indicate that, other than price and promotion competition, some of them also sell other products to diversify their business management, including car wash service, charging (battery swap) station service, CPC Life (compound store) and CupGo Coffee shop (CPC).

B. Tendencies that domestic gas station operators are facing and responding measures

(a) To cope with environmental protection issues, countries around the world have drawn up their policy blueprints for banning gasoline-powered motor vehicles. To clean up the environment, they have also pushed development of electric cars. Since 2005, many governments have announced and promoted the policy to ban sales of gasoline-powered cars. The plan is to prohibit part of or entire sales of vehicles powered by petrochemical fuels (including gasoline, liquefied petroleum gas and diesel) within decades to achieve the goal of improving air pollution and slowing down global warming. The Executive Yuan has also proposed the "Air Pollution Control Plan". Although the policy to ban sales of gasoline-powered motorcycles by 2035 as originally planned had to be postponed since May 2015 as a consequence of fierce protests from related businesses and motorcycle owners, it can be expected that, even without the pressure to push motor vehicle manufacturers to transform, electric motorcycles have reached a certain market scale due to the government's subsidization policy. As of December 2019, the number of electric motorcycles had reach 1.57 million, increasing by more than 100% compared to 2018.

(b) In this study, a questionnaire survey was conducted on gas station operators to obtain their opinions about the current competition in the market and future development, and also to evaluate the competition in the gas station market (SWOT analysis) by requesting those surveyed to assess their advantages, disadvantage as well as the opportunities and threats in the market. The ones who thought they had the location advantage accounted for 90%, and those thinking they had the hinterland advantage made up 28%. Other advantages include brand preferences, service quality and diversified business items. The ones considering investment in charging facilities a disadvantage took up 48% and limitation of hinterland area 40%. Other disadvantages include market shrinkage, price-cutting competition between groups, lack of manpower, land use zoning restriction and cost of environmental pollution control, etc. Those regarding diversified management an opportunity accounted for 78%. The ones considering cooperation with CPC or other enterprises to increase the number of charging facilities an option made up 50%. There were also 32% of the operators regarding other charging stations (such as charging facilities in parking lots) a threat and 58% thinking charging (battery swap) facility specifications were yet to be standardized a negative factor. Other threats include internalization of electric car manufacturing costs, electric car suppliers' influence on policy making, increase of number of electric motorcycles, etc.

(c) The domestic gas station market is very competitive. Survival of individual gas stations is full of challenges. The present tendency indicates that prevalence of electric cars and charging (battery swap) stations is inevitable. As the government policy continues to promote the electric car, the volume of gasoline dispensed at gas stations is bound to go down and the number of gas stations will decrease. In particular, gas stations with smaller hinterland will withdraw from the market due to lack of space for charging facilities and parking spaces for electric cars to charge their batteries. Plus, there is also no room for diversified business development. At the same time, the ones with less capital will also pull out of the market because they have no funds to invest in installation, operation and maintenance of charging stations.

(2) According to the aforementioned conclusions, the suggestions are as follows:

A. Conducting necessary interventions and investigations: As a result of the legislation of the Petroleum Administration Act, the domestic petroleum product market is completely deregulated today. Prices are determined according to the supply and demand in the market. The goal of the FTC in enforcement of the Fair Trade Law is to encourage market competition instead of conducting price control. Same as the competition law authorities of different countries, the FTC finds it inappropriate to decide what reasonable petroleum product prices should be. However, since all the crude oil needed in the country is imported and international crude oil prices and refined oil prices fluctuate all the time, it is necessary to monitor whether the changes of domestic gasoline prices and international oil prices are consistent. If inconsistency is too great or the key factors influencing gasoline prices change significantly, the FTC still has to initiate ex-officio investigation into the causes behind gasoline suppliers' price increases or refrainment from lowering prices and whether such activities are illegitimate and in violation of the regulations set forth in the Fair Trade Law with regard to monopolistic enterprises. If any businesses engage in concerted pricing, limitation of production, market division, exchange of sensitive competition information, or joint refusal to deal, the FTC has the responsibility to hand down sanctions according to related regulations in the Fair Trade Law to protect trading order and public welfare.

B. Establishing measures for management of electric car charging stations: According to the results of the questionnaire administered for this study, 58% of the gas station operators believe the threat to market competition comes from the fact that the specifications of charging (battery swap) stations are not standardized. For this reason, it is suggested that the government researches and establishes consistent standards for plugs and outlets for power output and input as well as set up a comprehensive mechanism for management of charging (battery swap) facilities and assurance of safety at such locations.

C. Allowing domestic gas stations to engage in diversification to an appropriate extent: According to the results of the questionnaire administered for this study, nearly 76% of the gas station operators consider that diversification will bring opportunities in their competition. Nonetheless, according to the land use zoning control regulations, the land in domestic gas stations applicable for management of diversified services is rather limited. For example, diversified service items that can be managed in an industrial zone include car repair, car wash, parking, maintenance, and car inspection. However, convenience store is the only option in a residential zone. Therefore, it is suggested that management of domestic gas stations, in addition to counting on gasoline suppliers offering reasonable wholesale prices, only appropriate allowance of diversification and enhancement of management structure will be the future tendency of development and survival for gas stations.

D. Assisting small gas station operators to transform and increasing subsidies for installation of charging (battery swap) stations: As indicated in the results of the questionnaire survey conducted for this study, nearly 40% of the gas station operators consider the investment in charging (battery swap) stations is to their disadvantage. Another 40% of those surveyed think they are limited by the size of hinterland. Hence, it is suggested that increase of subsidies for installation of charging (battery swap) stations and assistance to help small gas stations transform into charging and battery swap stations must be taken into consideration when full-scale promotion of electrical cars and motorcycles is launched in the future.

E. Selecting demonstrative gas stations and gradually expanding smart green energy gas stations and diversification: The questionnaire survey conducted for this study shows about 90% of those surveyed believe they have the location advantage and 28% think they have the hinterland advantage. Other advantages include brand preferences, service quality and diversified management. Therefore, it is suggested that gas stations with location and hinterland advantages can be selected as pioneering models to demonstrate how expansion is carried out gradually to transform gas stations into smart green energy gas stations or adopt diversified management to open up new revenue sources for gas stations.