Trends of Petroleum Distribution Business in China

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Introduction

Since the 1990s, the Chinese economy has been maintaining a strong growth of nearly 10% a year on average. Along with this robust economic growth, China's oil demand and oil imports from abroad have been increasing constantly and, as a result, Chinese oil firms have grown into such important players that they have been exerting an increasing influence on international oil markets. Against the background of globalization of the economy together with accelerated shifts to a market-economy system, CNPC and Sinopec, the two big groups of state-run enterprises, were in February 1998 reorganized into a vertically integrated company. In addition, following China's becoming a WTO member in December 2001, the oil market- and distribution-related regulations and systems have changed. This has produced significant impacts on competition and on markets at home and abroad. The question of what future developments will be is now attracting worldwide attention.

This report, which focuses on the Chinese oil distribution market, analyzes its distribution system and pricing policy, as well as trends and the present situation of major enterprises, including the two big groups CNPC and Sinopec. Based on the analysis results, future challenges that face the Chinese oil firms are discussed as well.

1. Distribution system of the big two oil groups

In February 1998 the Chinese oil industry reorganized the two companies CNPC and Sinopec into one integrated company. The background and reasons for this move are as follows: firstly, to stabilize the growth and earnings of the oil sector, which is the pillar industry of China, by increasing the efficiency of state-run enterprises; secondly, to vitalize the oil industry using the strengths of the market mechanism by introducing competition among a plural number of enterprises; and thirdly, to increase international competitiveness by creating all-round oil companies comparable to the international majors. Given these factors and others, China reallocated the assets of its oil firms. CNPC and Sinopec, which hitherto had been responsible for the upstream sector and the downstream sector, respectively, were reorganized into a vertically integrated big-two-company system that would manage the upstream and downstream operations jointly.

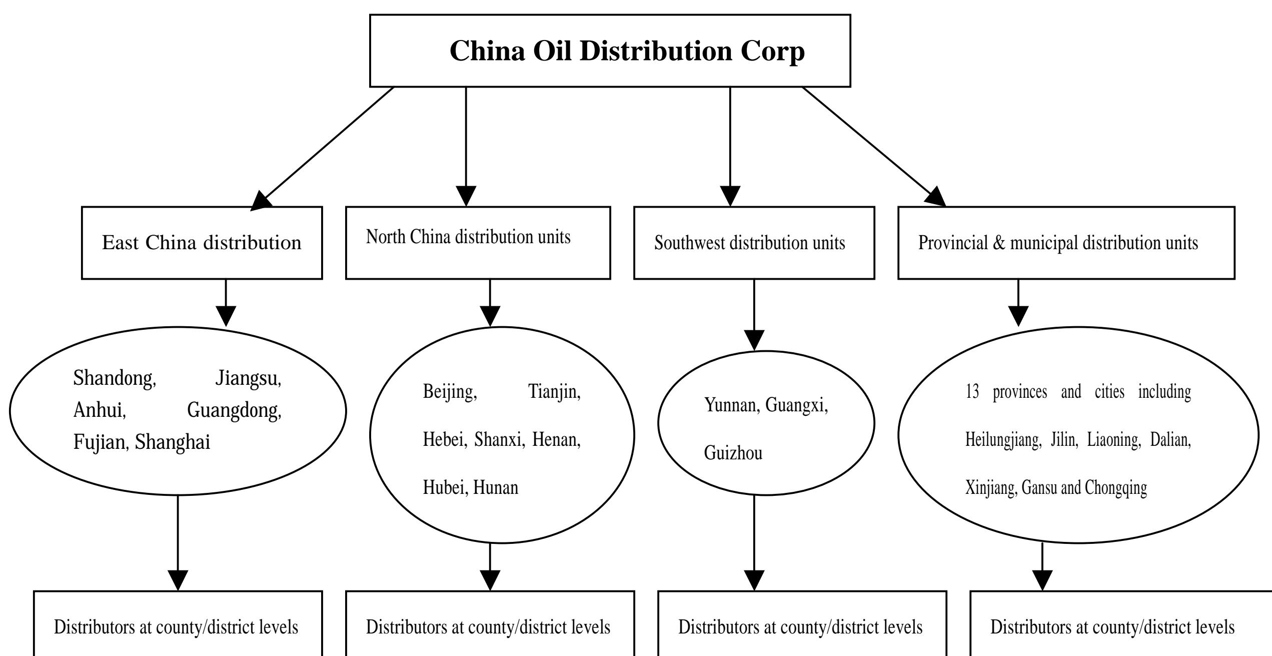
In this way, the Chinese government has created an oil distribution/marketing system, an oil pricing system and market management policies, among others, along with the changes in its system of

industry.

The business areas for CNPC and Sinopec are originally devided by provinces and some specific cities such as Beijing . CNPC covers the northeastern and northwestern parts of China, while Sinopec covers mainly the southeastern and southwestern parts. However, as far as marketing is concerned, the two groups are allowed to invade each others' thus-divided areas for commercial and sales activities, while continuing to hold more dominant positions in their homelands.

As illustrated in Fig. 1, CNPC's marketing system is three-tiered. The first tier is the "China Petroleum Refining and Sales Corp.," a 100% subsidiary of PetroChina. It is responsible for drawing up CNPC's oil product production/sales plans, selling products nationwide through its regional marketing units, and developing medium- and long-term marketing strategies. The second tier consists of four regional distributors – East China Distribution Corp., North China Distribution Corp., Southwest China Distribution Corp. and province & city distribution companies. These are engaged in wholesale/delivery services largely in the provinces to which they belong. The third tier is composed of provincial enterprises controlled by the aforesaid regional distributors. These are in charge of wholesale, retail and delivery services within their service areas. The fourth tier consists of county/district distributors belonging to related provincial enterprises. Their primary assignments are SS (service station) management and marketing/delivery services to general users, as well as affiliated/non-affiliated SSs.

Fig. 1 Oil Marketing System of CNPC

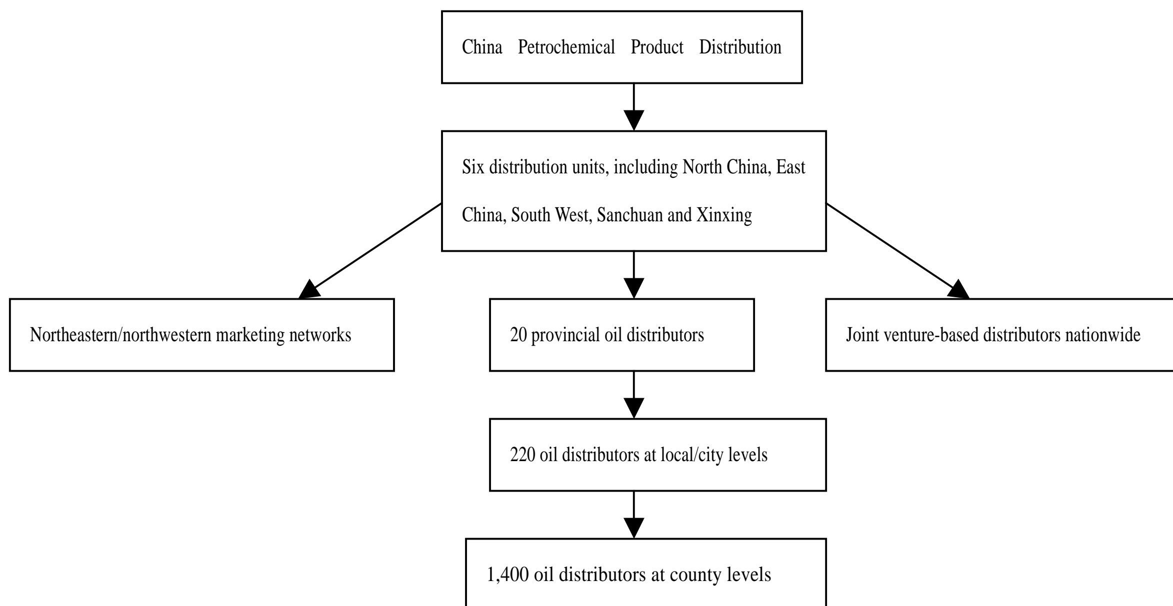


Note: The 13 provincial and municipal distribution units are those in Heilungjiang, Jilin, Liaoning, Dalian, Nei Mongol, Xinjiang, Gansu, Liaoxia, Shanxi, Qinghai, Xicang, Xichuan and Chongqing.

Source: Prepared from "Special Reports on Petroleum Product Distribution Business in China," Beijing, 2002.

The marketing system of Sinopec is also four-tiered(see Fig.2). The first tier consists of "China Petrochemical Product Distribution Corp.," a subsidiary fully-owned by Sinopec, and its six subordinate units, including North China, East China, Central South, Southwest, Sanchuan, and Xinxing. Their responsibilities are to collect petroleum products from Sinopec refineries, and then to transport and supply them to affiliated distributors. The second tier is formed of marketing networks that consist of 20 provincial-class subordinate oil firms and 1,400 county-class oil firms belonging to the provincial-class ones. The third tier is formed of marketing networks installed in the Northeast and Northwest markets, each controlled primarily by Sinopec Distribution Sanchuan Corp. and Xinxing Corp., which is a unit belonging to Sinopec Distribution Corp. The fourth tier is formed of marketing networks constructed by joint ventures between Sinopec and outside companies. These four tiers make up the nationwide marketing network of Sinopec.

Fig. 2 Marketing System of Sinopec



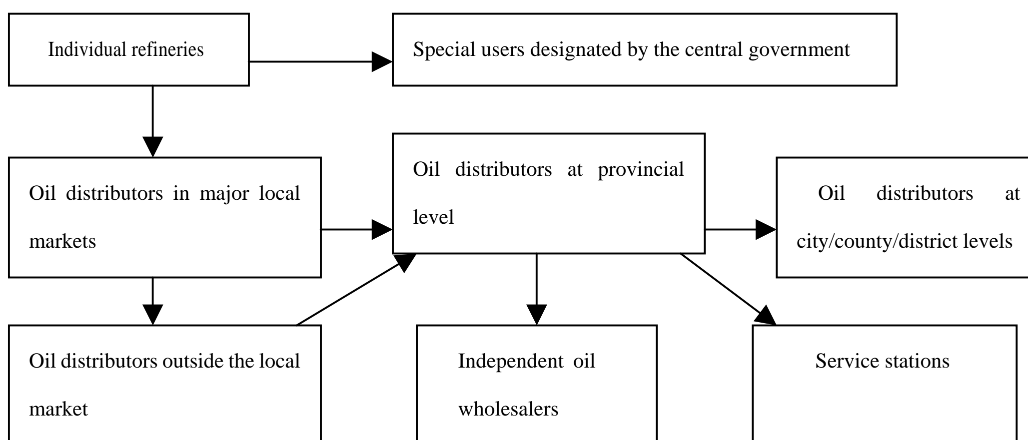
Source: Sinopec, "FY2002 Annual Report of the Chinese Oil Industry"; Sinopec Information Center, "The Chinese Oil Market: Present Status and Related Policies"

Since the big two oil groups were reformed and reorganized in 1998, China's oil distribution and marketing system has changed. The past system, with its division into upstream production and downstream operations and control by oil companies and local governments, has been replaced with a regional marketing system backed by a vertically integrated corporate scheme. CNPC and Sinopec are responsible for oil distribution. CNPC covers mainly Northeast/Northwest and Sichuan markets, while Sinopec covers the East China, North China, South China and Southwest markets.

The State Council of China assigns the big two oil groups to planning and management of the supply of oil products. The big two – CNPC and Sinopec – are responsible for wholesale business. They manage and purchase all oil products from both affiliated and non-affiliated refineries, and then distribute them. The big two are empowered to decide on matters relevant to distribution of such petroleum products as gasoline, kerosene and diesel, and the individual refineries have no discretionary powers to determine outlets, prices, etc. of their products. Despite this restriction, if permitted to do so by either CNPC or Sinopec to which they belong, individual refineries can set marketing units of their own, through which they can sell paraffin/wax and asphalt.

As shown in Fig. 3, distribution of oil products processed at individual refineries nationwide is mainly divided into six categories. The major outlets of wholesale business include large end users, independent distributors and special users directly involved in national interests designated by the government – namely public utilities, railways, airlines, the military sector and the like.

Fig. 3 Flow of Oil Product Market of China



Source: China OGP, Vol. 9, No. 6

At present, oil products supplied to the special users involved in public utilities, etc. are subject to direct or indirect intervention and control by the Chinese government (State Council) in such points as sales quantities and price.

With regard to all special users (e.g. public utilities) except military-related uses, the big two groups CNPC and Sinopec are authorized to set the product price within a range of up to 5% above or below the ex-refinery price designated by the central government (State Planning Development Council). In fact, the big two groups sell 10% of their total quantities of gasoline and diesel to the special users. The remaining 90% is sold at prices determined by the central government (State Planning Development Council) to individual wholesale/retail networks nationwide depending on market demand.

PetroChina, the holding company of CNPC, which operates in the northwestern and northeastern areas with its 13 provincial/municipal distributors such as Gansu, Liaoning and Dalian as the centerpiece (see Fig. 1), had gained 93% of the wholesale market in northern China by late 2000. Sinopec for its part is active largely in eastern and southern China and has developed marketing networks with bases provided by 20 distributors in Shanghai, Beijing, Tianjin, Jiangsu, Zhejiang, Guangdong, Fujian, Hunan, Hainan and other locations. As of the end of 2000, Sinopec had gained 84% of the wholesale market in southern China.

2. Pricing system

In China, the government has traditionally controlled the domestic sales price of oil products in order to protect the high-cost-prone oil industry. However, on account of the widening domestic-overseas differentials that resulted from the collapse of the international oil market in the second half of the 1990s, a huge amount of cheap oil products flowed into the country from overseas and sent the domestic product price plunging sharply. To ease the impacts of this situation, the Chinese government scrapped the long-standing “controlled price system” in force under the planned economy and, since the second half of 1998, has been utilizing a new “benchmark price system.” Under the benchmark price system, the big two oil groups decide actual sales prices on the basis of a benchmark price set by the State Planning Development Council in reference to the market prices of crude oil and oil products on the Singapore market.

The benchmark price of oil products is calculated by taking several parameters into account. These are: (1) FOB prices of gasoline and diesel on the Singapore market, (2) estimated international freight and premiums, (3) tariffs (gasoline 5%, diesel 6%), (4) consumption tax (gasoline 277.6 yuan/ton, diesel 117.6 yuan/ton) and VAT 17%, and (5) estimated domestic freight.

In reference to the benchmark price, CNPC and Sinopec are empowered to decide the retail price applied to their actual market transactions within a range of up to 5% above or below the government's benchmark price. The government has also given CNPC and Sinopec the right to decide the wholesale price of oil products, although this is not applicable to the case of special users such as the army, airlines and railway sectors. The oil product price applicable to special users is set by the government at lower levels than the wholesale price to ordinary users.

From June 1998 through June 2000, the government revised the benchmark price only three times in total. Since then, however, the principle of one revision per month appears to have been adopted. This has resulted in emerging problems for the government-instituted benchmark pricing system. Since late 2000, various arguments have been made within China, and problems including the following have been pointed out.[1]

(1) Because the price revision lags behind the overseas market moves, a price revision can be preceded by speculative activities on the domestic market.
(2) In view of the sharp fluctuations in the amounts purchased by product consumers every month depending on changing prices, the Chinese oil firms – notably CNPC and Sinopec – are being urged to hold massive product stocks.
(3) Price volatility on the international market has a direct impact on the domestic economy.
(4) The price fails adequately to reflect on-going supply and demand on the domestic market.

To deal with these problems, the government modified the benchmark price of oil products in October 2001. The modification is characteristic in that, when setting the benchmark price of products, the government quotes the monthly average FBO prices not only of Singapore but also of the Rotterdam and New York markets, and does not make product price adjustments each month. Instead, the benchmark price is revised only when FOB prices on the aforesaid three markets appear volatile and likely to move beyond a "certain range." However, the government has not dared to state clearly what it considers this "certain range" to be.

In addition, the government has given CNPC and Sinopec greater flexibility in retail product pricing. Specifically, they are now allowed to set their retail prices within a range of up to 8% above or below the indicator price, compared with the previous 5%.

In this way, the two big groups are carrying out product marketing operations based on the aforesaid benchmark price.

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[1] Yu Miyamori, "Energy Market and Policy Trends in China," IEEJ homepage, June 2001, p16; interview survey results gained in China January 2003.

3. Marketing business makeup and present status

The product marketing operations of Sinopec consists of three parts. First, Sinopec offers products directly to users through the retail networks (service stations, oil shops, and rural and waterborne sales networks) run by its marketing units. This is the core of Sinopec's product marketing operations and accounts for 44.92% of its entire marketing business. Second, through the wholesale centers operated by its marketing units, Sinopec supplies oil products to specified agents and retail companies. This part accounts for 23.90% of its entire marketing business. The third part, comprising the product sales to large users, accounts for 31.18% of the whole.

As shown in Table 1, Sinopec sold 70 million tons of oil products in 2002. Of this, the retailed amount reached 34.80 million tons nationwide, up 14.3% over the previous year[2]. Incidentally, the retailed amount by Sinopec in 2001 accounted for 72% of total consumption nationwide, while the Chinese product sales amount totalled 67.74 million tons. Of this, the retailed amount totalled 30.43 million tons, up 27.1% over the previous year, while the delivered amount ended at 11.64 million tons. Product exports by Sinopec amounted to 3.73 million tons.

In 2001 Sinopec had 3,803 newly constructed service stations, and the annual SS sales rose from 1,402 tons/SS in 2000 to 1,473 tons/SS in 2001.

Table 1 Status of Operations by Sinopec and CNPC (2002)

Unit: million tons

Item	Sinopec	(Share nationwide)	CNPC	(Share nationwide)
Crude oil output	38.0	22.0%	117.6	69.0%
Refining throughput	110.0	54.0%	89.5	48.0%
Product sales	70.0	58.0%	56.7	43.0%
Retailed	34.8	68.0%	12.0	23.4%
Wholesaled	35.2	…	39.0	45.0%

Source: Prepared from China OGP Vol11No.2 January 17, 2003; China OGP Vol11No.4-5 March 1, 2003.

Basically, the makeup of marketing operations of PetroChina is similar to that of Sinopec. In 2001, PetroChina sold a total of 53.91 million tons of products and increased its domestic market share from 40.6% in 2001 to 43% in 2002. In 2002 its product sales totalled 56.70 million tons, accounting for 43% of the national total. Retailed and wholesaled amounts were 12.00 million tons and 39.00 million tons, respectively, and accounted for 23.4% and 45% of nationwide records each (see Table 1). Also, its sales amount increased by 5.2% over 2001. The current product marketing capacity of PetroChina can be described as follows: a total tank capacity of 8.70 million m^3, 12,102 SSs, and over 50 million

[2]Source: Sinopec homepage (February 7, 2003)

tons of product sales yearly. Regarding distribution/transportation, PetroChina has a 15-million-ton-a-year marine transport capacity and a 9,000-vehicle railway transport capacity, the latter for inland transportation services.[3]

In 2003 China's domestic product consumption is projected to total 123 million tons[4], and crude oil throughput to reach 212 million tons. In order to meet the projected demand, Sinopec set the target of refining 114 million tons of crude oil and selling 72 million tons of products. Sinopec plans to increase its sales amount by 2.9% from 2002 and beyond. CNPC for its part hopes to increase the group's earnings from both upstream and downstream operations by 8% over 2002 records by processing 94.77-million tons of crude oil and boosting product sales, though a product sales target has not as yet been specified.

4. Retail sector including SS operation

4.1 Trends of the big two oil companies

As of December 31, 2001, there were some 80,000 service stations in China as shown in Table 2. Of them, PetroChina was operating 12,102 SSs and Sinopec 28,246 SSs meaning that a total of 40,348 SSs were being run by the big two. Among others, there are SSs owned and run by provinces, governments and independent operators. Additionally, foreign capital affiliated SSs number some 300.

Table 2 SS Distribution in China (As of 2001 yearend)

	Nationwide (Share %)	Southern (Share %)	Northern (Share %)
PetroChina	12,102 SSs (15%)	7%	(32%)
Sinopec	28,246 SSs (35%)	51%	(2%)
Rest	…	42%	(66%)
Foreign affiliated	300 (0.4%)	…	…
National total	80,000 SSs (100%)	55,000 (100%)	25,000 (100%)

Note: In 2002 CNPC (PetroChina) increased its number of service stations to 13,160 SSs through acquisitions and new construction.

Source: Prepared from Sinopec, "FY2002 Annual Report of the Chinese Oil & Petrochemical Industries," 2002, and other sources.

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[3] "Special Reports on Petroleum Product Distribution Business in China," Beijing, 2002, p77

[4] The products counted here are petroleum products including the four representative ones.

Table 3 Sales Amounts by Chinese SSs (tons/day)

	Nationwide	Southern	Northern
PetroChina	3.31	3.63	3.15
Sinopec	3.18	3.15	3.35
Rest	1.62	2.27	0.75
National average	2.42	2.81	1.56

Source: Prepared from Sinopec, "FY2002 Annual Report of the Chinese Oil & Petrochemical Industries," 2002, and other sources.

As already mentioned, since being reorganized into the big two-group system of CNPC and Sinopec, the oil groups have expanded their market shares through measures such as aggressive reforms of the marketing system. Under these circumstances, PetroChina and Sinopec Corp. are expanding their product retail networks by concentrating their efforts on new SS construction, acquisition and management.

Service stations run by the big two (PetroChina and Sinopec) recorded daily sales amounts of 3.31 tons and 3.18 tons each, larger by 31% than the national average (2.24 tons) (see Table 3). At present, new SS construction is in progress in China along with construction/expansion of road networks. Furthermore, the State Council of Economy and Trade decided to transfer from the second half of 2002 onward the rights to manage/control SSs which failed to meet certain standards for technology, services, etc. to PetroChina and Sinopec. Against the background of such moves and in order to grab larger a larger market share than its rival, each of the two big groups is in a fierce race to expand/install its sales networks, particularly by acquiring or franchising SSs run by local independent operators.

While Sinopec intends to expand the retail market for its oil products, PetroChina has adopted the strategy of broadening its marketing networks to the eastern and southern parts of China. In this context, in order to defend its market control, PetroChina plans to increase its share of the retail market from the present 40% by pouring in 31.3 billion yuan in 2003.

PetroChina, meanwhile, has a far smaller number of SSs than Sinopec (see Table 1). The main reason for this is that inland areas, particularly northeastern China, under the control of PetroChina are economically the least developed and are sparsely populated. For years, the surplus product output (20 million tons yearly) of PetroChina has been supplied to the markets controlled by Sinopec.

At the beginning of 2000, PetroChina started making aggressive efforts to construct its own distribution networks to cover the southern market, where its oil products used to be marketed via Sinopec. For example, in order to install the necessary infrastructure for sales activities, PetroChina has constructed more than 70 oil storage terminals and storage equipment/facilities, while SS

acquisitions are under way. Moreover, with 33 million yuan invested up to 2004, a storage terminal capable of storing 900,000 m^3 will be built and three storage terminals will be purchased in three cities in South China. The cities in question are Zhuhai City in Guangdong, Shishi City in Fujian and Ningbo City in Zhejiang. With an additional 2.6 billion yuan invested, construction of a 3.3-million-m^3 distribution/storage facility and others is now going ahead at a fast rate.

Thus, the big two oil groups PetroChina and Sinopec Corp. have been vying with each other actively in making moves to increase their retail market shares. On the other hand local product distributors, particularly the SSs with connections to local governments, which are well equipped with tank storage capacity and have good sales records, appear reluctant to join the franchise business offered by PetroChina and Sinopec. In this context, while PetroChina and Sinopec are rivals in the race for product market expansion, the formidable challenge from SSs run by local distributors as rivals against the big two should not be ignored.

4.2 Trends among foreign firms

Apart from the concentrated efforts being made by China's big two oil groups to expand their marketing operations, foreign firms are also actively moving into the Chinese oil product market. Foreign oil companies, including the majors, have entered the Chinese product market by installing SSs in such districts as Beijing, Tianjin, Shanghai, Guangzhou, Shenzhen, the Pearl River Delta and Hainun, where they are selling fuel oil/lubricants.

Exxon Mobil has been stepping up its operations in China. For example, the company acquired 19% of newly offered stock of Sinopec Corp. when it was listed on the New York and Hong Kong stock exchanges. As shown in Table 4, in recent years Exxon Mobil has already had 36 SSs built and is running them jointly with Sinopec. Also, in the first half of 2002, an agreement was concluded between Sinopec and ARAMCO to establish a joint venture "Sinopec/Exxon Mobil Fuel Distribution Corp." in Fujian, and to construct 500 SSs within the province by 2007. Among other developments, in Jiangsu, Shell currently has 40 SSs run by a joint venture with Sinopec. BP for its part has been going ahead with aggressive operations on the Chinese product market. In April 2001 BP established a product distribution firm in a joint venture with PetroChina, and also had 45 SSs in Zhejiang run in a joint venture with Sinopec. Furthermore, within the next five years BP plans to have an additional 500 SSs in Zhejiang built and run in a joint venture with Sinopec (Table 4).

Table 4 SS Operations by Foreign Firms including Majors

Foreign firms	No. of SSs	Partners	Areas	Year of entry
ExxonMobil	36 500	Sinopec and Aramco	Fujian	2002 2007(slated)
Sell	40 500	Sinopec	Jiangsu	Under way now 2007(slated)
BP	45 500 500	Sinopec PetroChina	Zhejiang Guangdong	2001 2007(slated) 2003(slated)
IDEMITSU KOSAN	5	China Oil Consortium	Dalian, etc.	2000

Source: Prepared from "FY2002 Annual Report on Chinese Oil/Petrochemical Industries"

Also, by 2003 PetroChina and BP plan to invest at the ratios of 51% and 49%, respectively, in an operation of 500 SSs in Guangdong. Aside from the majors, IDEMITSU KOSAN, a Japanese oil firm, has five SSs in Dalian and other cities, which are operated by a joint venture with China Oil Consortium.

In 1998 meanwhile, in a joint project with China Aviation Fuel Company Limited, BP incorporated in Guangdong a jet fuel oil manufacturing/marketing corporation, the only one of its type in China, which is supplying jet fuel to 15 airports in South China and Central South China, including Shenzhen Airport (see Table 5).

Table 5 Foreign Capital-affiliated Joint Ventures for Lubricants/Fuel Oil, etc.

Foreign firms	Service areas	Products	Year of entry	Name of joint venture
BP	South China, Central South Chia	Jet fuel	1998	Guangdong Fuel Oil Manufacturing & Marketing Corp.
Shell	200 cities based on Zhejiang, incl. Beijing, Shanghai, Kunming, Amoy, Guangzhou	Jet fuel Lubricants	1998 Operation slated for 2004	Zhejiang Shell Oil Corp.
Japan Energy	North China, etc.	Lubricants	1996	Shanxi Japan Energy Corp.
Nisseki Mitsubishi (New Nippon Oil)	North China, etc. East China, etc.	Lubricants Asphalt	1998 1994	Tianjin Nisseki Lubricant Corp. Nissho

				Ranzan Asphalt Corp.
IDEMITSU KOSAN	East China	Lubricants	1999	Idemitsu Kosan Shanghai Trading Corp.

Source: Prepared from "FY2002 Annual Report of the Chinese Oil & Petrochemical Industries," China OGP, etc.

Since 1998, through the joint venture "Zhejiang Shell Oil Co., Ltd." in which Shell has 85 interests with the rest owned by Zhapu-Port, a port managing body in Zhejiang, Shell has been going ahead with lubricant marketing operations through local lubricant distributors installed in 200 cities across China. Also, Shell and Sinopec plan to construct jet fuel sales networks that cover five cities including Beijing, Shanghai, Kunming, Amoy and Hangzhou, preferably by 2004, then further expand the networks to airports in seven cities, namely Guangzhou, Shenzhen, Chendgu, Nanking, Changsha, Qingdao and Tianjin. These 12 airports have a total demand of 3.20 million tons a year, accounting for more than 50% of nationwide needs.

Since 1996 Japan Energy, through its joint venture, "Shanxi Japan Energy & Lubricant Co., Ltd." has been producing and marketing lubricants on the Chinese domestic market. Nisseki Mitsubishi (at present Shin-Nippon Oil) also initiated in the second half of the 1990s local production and sales of lubricants by Tianjin Nisseki Lubricant Oil, and started marketing asphalt under an alliance with a local firm, Rizho lanshan Asphalt Corp. In the meantime, IDEMITSU KOSAN incorporated a lubricant trading house in Shanghai, which supplies 8,000 kiloliters per year mainly to Japan-affiliated firms there. Depending on Chinese demand, IDEMITSU intends to increase its marketing force in China.

Attracted by the vast size of China's oil market, China Petroleum Corporation (CPC) of Taiwan is also proceeding with an ambitious investment plan in Mainland China, and is transferring part of its distribution/marketing units to the Continent of China so that it can secure its share of the oil market and strengthen its sales activities there. To this end, CPC is currently conducting a feasibility study (FS) on the installation of oil product terminals and SSs in some cities along the Chang.

In addition, CPC initiated oil product marketing in the Continent of China at the start of 1999 and, since early 2000, has been selling 2,000 tons of LPG via Hong Kong. In 2003 an office of CPC is scheduled to open in Beijing in order to tap the oil products market in continental China[5]. The primary reason for which CPC has been making positive moves into the Chinese oil marketing business these

[5] Refer to the China Energy, February 21, 2003, p10.

years is that, now that Taiwan's 50-year monopolistic system is over and privatization is planned, CPC is expected to face fiercer competition from rival company groups on the Taiwanese market. It is also possible that CPC is expecting the Chinese product market to be further deregulated, among other developments.

Thus, along with growing oil demand and deregulation of the oil market, the latter in reflection of China's recently acquired WTO membership, foreign oil companies, notably the majors, have been stepping up their moves into the Chinese products market. As a result, China's two big oil groups, PetroChina and Sinopec Corp., are now facing serious challenges from foreign oil firms. According to interview survey results in China, the Chinese oil firms are positive in their attitude to the introduction of brands, know-how, funds and other resources of the majors and foreign firms into their marketing business, particularly the SS operation, and they plan to increase the number of SSs[6] through joint ventures. At the same time, competition with foreign firms on the domestic market seems inevitable.

5. Oil products markets by region

Along with growing oil demand attributable to the strong growth of the Chinese economy, the two big oil groups have boosted their product sales amounts (see Table 6) year after year. PetroChina and Sinopec are both making stepped-up efforts to increase product sales by invading the regional markets that have hitherto been under the other's control (see Table 7).

Table 6 Annual Consumption of Oil Products in China (million tons)

Year	Consumption
1995	74.91
1996	81.45
1997	92.84
1998	92.82
1999	104.36
2000	109.25
2001	114.63
2002	120.00
2003	126.05

Note: The figures for 2002 and 2003 are predictions.

Source: China OGP, Vol. 11, No. 3

At present Sinopec holds 68% in retailing on China's major oil markets (East China & South China) and PetroChina occupies 90% of the markets under its control (Northeast, Northwest &

[6] Besides SSs, CNG-station projects set to start. As of November 2002, there are 45 CNG stations in Beijing and 100 stations nationwide. At present, CNG is little recognized by general consumers and its demand remains limited. But, the Chinese oil industry believes that CNG projects provide a promising business chance and can be under way in the near future probably in the form of alliances/joint ventures with foreign firms.

Southwest)[7]. While Sinopec and PetroChina are entering each other's service areas, in which a remorseless race to grab a larger product market share is under way between them, the fact still remains that each is retaining superiority in its home regions[8].

(1) Characteristics of Northeastern market

This area is the largest production center of oil products in China, accounting for 29% of China's total primary crude oil processing capacity (270 mt/y). However, this area consumes only 11% of the oil products consumed in China nationwide. While its production centers on this area, PetroChina transports and sells some 55% of its product outside the area, with 40% shipped to the southern markets and 15% to North China. In October 2002, Sinopec established Northeast Distribution Corp. in the northeastern area and thus gained a foothold in the local market. For example, in Dalian, where PetroChina has been selling about 1.20 million tons of gasoline per annum in recent years, the group's gasoline sales dropped by 200,000 tons to one million tons in 2002 as a result of invasion by Sinopec[9]. From now on a fiercer competition on the northeastern product market is likely between the big two groups. Meanwhile, in addition to intensifying competition among domestic rivals, the Chinese oil firms are being challenged by foreign firms, including the majors[10].

Table 7 Product Sales Amounts of PetroChina and Sinopec on Major Competitive Markets

(Unit: 1,000 tons)

Provinces/areas	PetroChina	SINOPEC
Hebei	2,730	1,920
Beijing	860	1,860
Tianjin	900	1,160
Henan	1600	2,120
Shanxi	800	1,600
North China total	6,890	8,660
Anhui	380	2,700
Shandong	2,220	5,400
Jiangsu	1,830	4,100
Shanghai	770	2,030
Zhejiang	1,940	4,600
East China total	7,140	18,830
Fujian	1,260	2,690
Guangdong	5,810	7,420
South China total	7,070	10,110
Yunnan	1,010	1,190
Guizhou	210	930

[7] CHINA OIL, GAS & PETROCHEMICALS, Vol. 11, No. 3, p4
[8] This is attributable largely to the irrational regional production & distribution system historically formed by the big two groups.
[9] An information gained from an interview made to the president of PetroChina Dalian Distribution Corp. on January 7, 2003.
[10] BP plans to enter the oil market in the northeastern area (Liaoning Province). (China OGP, Vol. 11, No. 3, p5)

Guangxi	190	2,150
Southwestern area total	1,410	4,720
Grand total	45,020	67,190

Source: IEEJ materials, "The Chinese Oil Market and Oil Imports/Import Logistics"

(2) Characteristics of North China market

This area accounts for only 11% of the oil refining capacity available in China, but its demand for oil products amounts to 14% of the national total. Fortunately, this area has supply sources in neighboring markets, which include surplus oil products available on the adjoining East China and northwestern markets. For this reason, PetroChina and Sinopec, which have the control of the northwestern and East China markets respectively, are engaged in a price war in hope of grabbing the North China market. For example, in Henan Province located within the North China market, a joint venture between PetroChina and Henan Highway Development Corp. planned to construct 22 SSs along the highway in October 2001. However, Sinopec Henan Corp., which has long dominated this area, was so eager to maintain and protect its market share in Henan Province that the company reportedly put pressure on the Henan provincial government to stop the SS construction project by PetroChina and its partner[11]. This event naturally intensified the conflict between PetroChina and Sinopec.

(3) Characteristics of East China market

This area has the fastest-growing economy in China, and the constant growth has led to a much stronger oil product demand in this area than in the rest of the country. In 2002, this area accounted for a high 33% of product demand nationwide. This area, which is the largest oil-consuming market in China, is under the control of Sinopec. However, refining capacity available in East China is a mere 18% of the national total, and remains well below the 29% level of the Northeast.

In order to meet growing product demand, Sinopec is making concentrated efforts to expand the refining capacity of this area. For example, this oil group plans to construct a refinery having an annual capacity of 10 million tons in Qingdao, Shandong. On the other hand, in view of local demand trends and in order to increase its share in this area traditionally controlled by Sinopec, PetroChina has been constructing a sales network of its own by going ahead energetically with new oil tank construction and acquisition[12]. Thus, throughout this giant product market, the already fierce competition between Sinopec and PetroChina is likely to become even fiercer.

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[11] In sharp contrast with PetroChina having contributed little to local communities, Sinopec has paid 1.6 billion-yuan taxes to local governments every year and offered 200,000 jobs to local peoples, thus having a strong say in local areas. (China OGP, Vol. 10, No.13, and interview survey results)

[12] For this reason, however, PetroChina has to bear a rather high transport cost if oil products should be moved from North China/northeastern areas to East China.

(4) Characteristics of South China market

This area has the second largest product demand following that of East China. Its burgeoning product market combined with the strong economic growth offers oil firms good business opportunities. This area accounts for 26% of China's product demand and 18% of the country's refining capacity, the latter being identical to that of East China. The area's product market reflects local supply and demand so sensitively that product price volatility is already beginning to emerge here.

This area was opened up earlier than the rest of China, and therefore has a market economy that is well established in relative terms. For this reason, oil business operators find this area very attractive and more easily accessible than other areas. In recent years, PetroChina has entered this market and constructed marketing networks. This oil group also entered the product retail market by concluding an alliance/joint venture with BP. Recently, despite being structured as a vertically integrated oil firm with integrated upstream/downstream operations, CNOOC has also had its sights on this product market. Investing $2 billion from this yearend through the beginning of next year, CNOOC plans to initiate construction of a refinery with a large 12 million-ton-a-year crude oil throughput in Huizhou, Guangdong, and to put it onstream between 2006 and 2007. This is an essential step for CNOOC in constructing its sales network in the South China market[13].

(5) Characteristics of Southwestern market

This area consists of Yunnan, Guizhou and Sichuan Provinces and Chongqing City. Owing in part to its slower economic growth than that of East China, particularly the coastal areas, this area's demand for oil products is limited and accounts for a mere 7% of the needs of China as a whole. This area's oil product supply capacity – the so-called refining capacity – is a mere 0.2% of China's total capacity.

Thus, this area faces a short supply of oil products, particularly heavy fuel oil. As a result, oil products are priced higher than in the rest of China. To make matters worse, this area is located so far from refineries run by either Sinopec or PetroChina that its dependence on supply from outside the area causes serious transportation problems, which remain unsolved at the present time. So far, Sinopec and PetroChina have had little choice but to bear the heavy transportation cost incurred in their entry into this local market.

After coming onstream, an oil product pipeline running through Lanzhou, Chengdu and Chongqing is expected to ease the double handicap of short supply and high transportation cost that exists at

present. This pipeline, completed in November 2002 by PetroChina, is 1,250 km long and reportedly has a design capacity of 5.00 million tons. The completion of this pipeline will help PetroChina reduce its transportation cost considerably, increase the utilization factor of its refineries in the northwestern part, and expand its share of this southwestern product market. The pipeline will contribute to stabilizing the product price in this area as well.

On the other hand, the pipeline of PetroChina poses a threat to Sinopec, because it can compromise the presence of Sinopec in the southwestern area. In an attempt to defend its market share and counter the PetroChina drive, Sinopec integrated its local units in Sichuan Province and Chongqing City into Sinopec Chuanyu Distribution Corp. Sinopec is also planning to install an oil product pipeline originating from its refinery in Maoming City, Guangdong in South China, which is under its control, to Kunming.

(6) Characteristics of Northwestern market

The situations in this area are similar to those in the northeastern market. Responsibility for production/supply of oil products to this market belongs to PetroChina Including the refinery in Yumen, the several refineries operated by PetroChina in this area have a combined refining capacity that accounts for 13% of China's total capacity. On the other hand, owing to factors such as its socioeconomic development differences from East China, this area accounts for only 9% of China's product consumption, which is lower than its production share. Accordingly, 30% of the products refined in this area are shipped to markets in other areas (the southwestern area and South China).

The oil product price in this northwestern area has almost reached the ceiling of the benchmark price indicated by the central government. This is principally attributable to the dominant position established in this area by PetroChina. Meanwhile, in order to secure supplies through the aforementioned Lanzhou-Chengdu-Chongqing pipeline, PetroChina raised the capacity of its Lanzhou Refinery to 10 million tons a year.

From Sinopec's perspectives, the overwhelming presence of PetroChina threatens its potential distribution activities on this market. As a response to this perceived threat, Sinopec made inroads into the northwestern product market by forming in October 2002 Beixi Distribution Corp. in Xian, the center of Shanxi where the provincial government is located. However, this obliges Sinopec to pay extra costs, because the company has to transport oil products over a very long distance from its refinery in North China.

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[13] opus citatum China OGP, p6

Conclusion – major problems persisting on the Chinese oil distribution market –

Discussion so far has covered aspects of the Chinese oil distribution market such as its marketing system, policy and pricing, as well as market characteristics by area. In concluding this report, existing problems are reviewed once again.

China's oil distribution business is still affected by a number of unsolved problems.

First, distribution channels are complicated and the marketing cost remains high.

At present, oil product marketing in China needs in principle to pass through four channels. First, the headquarters instructs one of its regional units to ship products from a refinery to an oil tank in a given province. Then, the provincial unit forwards the products to one of its subordinate units at the county or city level. Lastly, the county or city unit delivers the products to service stations. In addition, since regional, provincial and municipal units (even some county/district units) all have oil tanks, the products can be transported between the tanks by either pipeline or truck. These multi-layered distribution/delivery routes are outmoded relics of the planned-economy era. Such an excess of distribution channels naturally pushes the marketing cost higher than more streamlined methods such as moving the products directly from a refinery to a tank, and from the tank to SSs. At present, China's product distribution costs probably account for as much as 60~70% of the sales price[14].

Second, price signals do not function well, and their changes are behind actual changes in supply and demand on the market.

As already mentioned, the benchmark price applied to oil product pricing in China is set in reference to monthly average crude oil FOB prices as well as product market trading prices on the Singapore, Rotterdam and New York markets. The two big oil groups are allowed to set their retail prices within a range of up to 8% above or below the benchmark price. The problem is that, because the benchmark price does not respond sensitively to the intricate and volatile market changes, the price signals set in this way always lag behind actual market changes, and thus fail to reflect on-going market trading prices and supply-demand situations.

Third, consuming areas are located far from refining centers.

Due to historical causes, almost all of China's principal refineries are concentrated in the northwestern and northeastern areas, whereas the country's product markets are maldistributed in East China and South China, the most developed areas of the Chinese economy. In addition, the big two

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[14] SINOPEC Institute of Economy and Technology, "A Research Report on Economics of the Chinese Oil & Petrochemical Industries, 2002," p196

groups CNPC and Sinopec in recent years have both expanded their refining capacities in the areas under their control, which by increasing the distance between refining centers and consuming areas runs contrary to remedying the contradiction.

Fourth, opening of the market is still incomplete.

Currently, China's oil product distribution market still features oligopoly by the two big groups – CNPC and Sinopec. To enter the oil distribution sector, other domestic firms and particularly foreign firms have to face a large number of regulations, notably the restricted ratios of investment in the wholesale/retail sectors.

From now on, amid advancing deregulation of the oil market as a result of China's accession to the WTO, it will be a matter of high priority for the Chinese oil firms to overcome these problems and thus to ensure sound development of the oil distribution market.

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