Chapter

1

Introduction

INTRODUCTION — BACKGROUND

In the 1960s and 1970s, China's domestic fuel consumption was relatively low with oil consumption growing at a manageable pace of 18.44 percent per year between 1964 and 1978.[1] As the Chinese economy was relatively underdeveloped, the numerical figures were also small. For example, in 1970, the number of motor vehicles in China was reported to be only 130,000, which was low even when compared to other developing nations, i.e. 1 car to every 5,711 Chinese in contrast to India's ratio of 1 to 902 or Thailand's 1 to 175.[2]

With its open-door policy, China's economy underwent a transformation and, by the time the economic reforms yielded results, China's thirst for oil became apparent. By 1985, China had caught up with other developing countries with an annual energy consumption

[1] Thomson, E. (2001). *China's Growing Dependence on Oil Imports. EAI Background Brief No. 87* (Singapore: East Asian Institute), p. 4.

[2] US Government Printing Office (1974). (printed for the use of the Committee on Foreign Affairs), *Oil and Asian Rivals* Hearings before the Submittee on Asian and Pacific Affairs of the Committee on Foreign Affairs House of Representatives 93rd Congress First and Second Sessions, 12 September 1973; 30 January, 6, 20 February, and 6 March 1974 (Washington: US Government Printing Office), p. 45.

rate of about 20 GJ per capita but they were still far from developed country levels.[3] In absolute numbers, though, the picture looked much different. In 1999, the total Chinese oil consumption was 200 million tons and ranked third in the world after the US (883 million tons) and Japan (259 million tons).[4] With the boom in the Chinese economy, China's consumption in crude oil has increased at a rate of 5.77 percent on average in recent years (see Table 1.1).

China's oil production also climbed up in the world rankings, becoming the sixth largest oil producer in the world three decades after Daqing's discovery in the late 1950s and, by 1995, she had an output of 2.98 million barrels per day (b/d) of oil, accounting for 17.9 percent of the country's total energy production.[5] Similarly, her refining industry was also upgraded during the 15 years after China rejoined the international community in the late 1970s, achieving crude distillation of 4.1 million b/d through a combination of intense investment and influx of foreign technologies, becoming the fifth largest refining industry in the world.[6] By the mid-1990s, China entered the top five ranking of both petroleum consumption and production tabulations (see Table 1.2).

Though China's production continued to increase from 104 million tons in 1978 to 163 million tons in 2000,[7] its domestic production lagged behind the increase in consumption and became a net importer in 1993.[8] See Table 1.3 for the crucial years in which China transitioned from oil supplier to importer.

Older oil fields like Yumen began to mature and experienced declining output. See Tables 1.4 and 1.5.

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[3] Smil, V. (1976). *China's Energy* (NY: Praeger Publishers), p. 4.

[4] Elpseth, T. (2001). p. 4.

[5] Fesharaki, F., Banaszak, S. and Wu, K. (1998). The Outlook for Energy Supply and Demand for Northeast Asia, *Institute on Global Conflict and Cooperation (IGCC) Policy Papers*, Paper p. 36 [downloaded on 1 January 2005], (California: University of California Multi-Campus Research Unit), available at the eScholarship Repository, University of California http://repositories.cdlib.org/igcc/PP/pp36, pp. 8–9.

[6] Fesharaki, F., Banaszak, S. and Kang, W. (1998). p. 8.

[7] Thomson, E. (2001). p. 1.

[8] Thomson, E. (2001). p. 1.

Table 1.1. China's crude oil production and consumption 1949–1997 (unit: million tons of oil equivalent).

Year	Production	Percentage change per year	Consumption	Percentage change per year
1949	0.12			
1953	0.62		1.44	
1957	1.45		3.10	
1958	2.22		4.83	
1959	3.80		6.78	
1962	5.77		7.64	
1965	11.32		13.57	
1970	30.56		30.05	
1975	77.05		66.93	
1978	104.03		90.83	
1979	106.10	1.99	89.27	–1.72
1980	105.95	–0.14	87.57	–1.90
1981	101.22	–4.46	83.14	–5.06
1982	102.12	0.89	82.03	–1.34
1983	106.07	3.87	83.59	1.90
1984	114.61	8.05	86.27	3.21
1985	124.90	8.98	91.69	6.28
1986	130.69	4.64	97.28	6.10
1987	134.14	2.64	103.12	6.00
1988	137.05	2.17	110.93	7.57
1989	137.64	0.43	115.84	4.43
1990	138.31	0.49	114.86	–0.85
1991	140.99	1.94	123.84	7.82
1992	142.10	0.78	133.54	7.83
1993	145.24	2.21	147.21	10.24
1994	146.08	0.58	149.56	1.60
1995	150.33	2.91	156.06	4.35
1996	156.43	4.44	172.50	10.53
1997	159.50	1.96		

Source: Wong, J. and Wong, C. K. (1998). *China's New Oil Development Strategy Taking Shape* (Singapore: World Scientific), p. 9.

Table 1.2. World's top ten crude oil-producing and consuming countries/regions.

Country	Crude oil consumption 1995 (million tons)
1. USA	806.8
2. Japan	267.3
3. China	157.5
4. Germany	135.1
5. Russia	146.2
Country/region	**Crude oil production 1996 (million tons)**
1. Saudi Arabia	404
2. CIS	352
3. USA	324
4. Iran	184
5. China	156

Source: Wong, J. and Wong, C. K. (1998). *China's New Oil Development Strategy Taking Shape* (Singapore: World Scientific), p. 9.

Table 1.3. China imports and exports, reflecting its change from oil supplier to customer (millions of tons).

	Crude	Products
Imports 1990	2.92	3.12
Imports 1993	15.67	17.39
Imports 1997	35.33	23.20
Exports 1990	23.99	5.42
Exports 1993	19.44	3.71
Exports 1997	19.83	5.56

Source: International Energy Agency (2000). *China's Worldwide Quest for Energy Security* (France: International Energy Agency), p. 49.

Table 1.4. Crude production by Yumen (mt).

1980	1985	1988	1990	1991	1992	1993
0.583	0.058	0.528	0.546	0.69	1.05	0.44

Source: Paik, K. W. (1995). *Gas and Oil in Northeast Asia* (Great Britain: The Royal Institute of International Affairs), p. 118.

Table 1.5. Crude production by Yumen (000 b/d) region/field.

1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
11	11	11	11	10	10	9	9	9	8	9	8

Source: Haijiang, H. W. (1999). *China's Oil Industry and Market* (The Netherlands: Elsevier), p. 84.

While the production shot up by a factor of 10 from 11 million tons in 1965 to 106 million tons in 1979,[9] growth between 1979 and 1993 cooled down to 2.3 percent and from 1994 to 2000, slowed down further to 1.64 percent.[10] Oil usage also began to exceed domestic production. The Middle East Economic Survey (MEES) in fact ran an article by Jonathan Story (Shell Fellow in Economic Transformation, INSEAD, Fontainebleau France), who argued that China was aware of its oil self-sufficiency slowly slipping away as early as 1986, when the State Planning Commission decided that the country must move away from oil self-sufficiency.[11]

China is now getting used to oil importing, different from the heyday of Daqing euphoria in which China she was even coined the "new Saudi Arabia".[12] Renowned academicians like Kim Woodard highlighted the rumors that China would overtake the USSR and the US in energy production shortly after 1980.[13] In that period, even International Energy Agency (IEA) admitted that experts suggested that the most promising Chinese hydrocarbon reserves could surpass that of Saudi Arabia.[14] It was a period of great optimism, one that

[9] Thomson, E. (2001). p. 2.
[10] Thomson, E. (2001). p. 2.
[11] Story, J. (2004). The Global Implications of China's Thirst for Energy, *Middle East Economic Survey* (*MEES*), Vol. XLVII, No. 7, dated 16 February 2004 [downloaded on 20 May 2004], available at www.mess.com/postedarticles/oped/a47n07d01.htm, p. 1.
[12] Smil, V. (2004). *China's Past, China's Future Energy, Food, Environment* (London: RoutledgeCurzon), p. 9.
[13] Woodard, K. (1980). *The International Energy Relations of China* (California: Stanford University Press), p. 5.
[14] International Energy Agency (2000). *China's Worldwide Quest for Energy Security* (France: International Energy Agency), p. 23.

had to be understood in its own context. The 1990s smashed any possible lingering remnants of this notion.

In 1995, China's oil consumption defined as consumption of petroleum products plus other uses of oil came up to 3.3 million b/d, more than twice the average of 1.7 million b/d in the 1980s.[15] The annual growth rate of petroleum product consumption in China was 4.9 percent between 1980 and 1995 before jumping to 7.3 percent between 1990 and 1995.[16] In 1995, China's net oil imports amounted to 230,000 b/d.[17]

Her consumption continued to grow. In 1995, China's petroleum product demand amounted to 3.2 million b/d, of which gas oil (including automobile diesel, industrial diesel, and diesel-range chemical feedstock) took up 33 percent, followed by fuel oil (including direct crude burning) 25 percent, and gasoline 22 percent.[18] Fuel oil is utilized for power generation, international shipping, and other various industrial applications. By 2003, China used about 250 million tons of crude oil, including 91.12 million tons imported, a year-on-year increase of 10 percent.[19]

Between 1990 and 2000, Chinese oil consumption increased 5.88 percent yearly while its local production trudged along at 1.54 percent annually.[20] According to the US Department of Energy (DoE) projections, China's domestic oil production will probably stay stagnant in the coming decades while its demand is projected to grow by 4 percent annually.[21] In 2025, the DoE extrapolates China's total utilization of oil will increase to 12.8 million barrels of oil daily while

[15] Fesharaki, F., Banaszak, S. and Wu, K. (1998). p. 8.
[16] Fesharaki, F., Banaszak, S. and Wu, K. (1998). pp. 8–9.
[17] Fesharaki, F., Banaszak, S. and Wu, K. (1998). p. 9.
[18] Fesharaki, F., Banaszak, S. and Wu, K. (1998). p. 19.
[19] People's Daily Online, Russia Welcomes China to Participate in East Serbia Oil Development, *People's Daily Online* dated 29 March 2004, [downloaded on 29 March 2004], available at english.peopledaily.com.cn.
[20] Wong, J. and Kong, W. C. (1998). *China's New Oil Development Strategy Taking Shape* (Singapore: World Scientific), p. 1.
[21] Klare, M. (2004). *Blood and Oil* (New York: Metropolitan Books), p. 165.

its production will remain at 3.4 million barrels, with a shortfall of 9.4 million barrels annually.[22]

In addition, the DoE also projects that, by 2025, China's industrial and economic capacities will expand its energy consumption by approximately 3.5 percent annually from 40 quadrillion Btu in 2001 to 91 quadrillion Btu in 2025, when its level of oil utilization will equalize with the sum of all Western European states combined and second only to that of the US.[23] To put the DoE's figures into perspective, however, it is perhaps necessary to point out that China's per capita consumption of crude gasoline and jet fuel has been comparatively low even on the eve of entering the 21st century when her annual per capita consumption of crude, gasoline and jet fuel came up to only a quarter, fifth and tenth of the global average.[24]

In 1999, China consumed 1.193 barrels of crude oil per capita, lower than the world's average of 4.546 and significantly lower than the US average of 25.545, Taiwan's 14.457, Malaysia's 9.207, and Indonesia's 1.929 (see Table 1.6).[25] It is the sheer absolute numerical size of China's population that is most significant in contributing to the figures that is making China a ranking consumer of oil globally. This perhaps is a concern for many analysts as China has proven oil reserves of 24 billion barrels (bb), which consists of 2.3 percent of the world's total for a country with 22 percent of the global population.[26]

Statistically, when China became a net oil importer in 1993, the Chinese government only allowed a limited quantity of foreign oil into China. However, the floodgates opened in 2000 when the year experienced a 92 percent increase in imported oil, 70 million tons, compared to 1999.[27] The year 2000 also marked the reduction of the

[22] Klare, M. (2004). p. 165.
[23] Klare, M. (2004). p. 165.
[24] Thomson, E. (2001). p. 5.
[25] Thomson, E. (2001). p. 5.
[26] Downs, E. S. (2000). *China's Quest for Energy Security* (Prepared for the United States Airforce) (California and Virginia: RAND), p. 6.
[27] Wong, J. and Wong, C. K. (1998). *China's New Oil Development Strategy Taking Shape* (Singapore: World Scientific), p. 1.

Table 1.6. International comparison of per capita consumption of crude oil, gasoline, and jet fuel, 1999 (barrels per year).

	Crude oil	Gasoline	Jet fuel
China	1.193	0.225	0.027
US	25.545	10.817	2.190
Western Europe	11.554	2.398	0.692
Africa	1.175	0.255	0.057
Singapore	56.060	1.591	4.586
Japan	16.290	2.817	0.627
South Korea	16.787	1.421	0.536
Taiwan	14.457	2.773	0.787
Hong Kong	11.782	0.320	3.458
Brunei	17.033	4.867	2.433
Indonesia	1.929	0.400	0.028
Malaysia	9.207	2.584	0.738
Philippines	2.232	0.368	0.089
Thailand	4.618	0.811	0.373
World	4.546	1.184	0.262
China as percentage of the world	26.240	19.000	10.310

Source: Thomson, E. (2001). *China's Growing Dependence on Oil Imports EAI Background Brief No. 87* (Singapore: East Asian Institute), p. 18.

country's dependence on coal by the Chinese government in favor of more environmentally friendly fuel.[28] Because of this increased demand, China could not afford to export this scarce resource as it gradually becomes a net importer of oil. Some observers marked this as the beginning of the abandonment of a jealously-held principle of self-sufficiency.[29]

Many reasons were offered as compulsions for China to turn away from the doctrine of self-sufficiency. One of the most important reasons is China's infrastructure development encouraged by the booming economy revitalized by the end of the Cultural Revolution as well as its acceptance of foreign investments. Another reason was situationally specific to the mid-1990s.

[28] Wong, J. and Wong, C. K. (1998). p. 1.
[29] Thomson, E. (2001). p. 4.

At that time, the three main oil-producing locations in China which included Daqing were considered to be nearing depletion, Xinjiang's geological makeup was seen as a deterring technologically challenging factor while the offshore East China Sea oil was considered to be expensive to extract while representing only 7 percent of total Chinese oil production.[30]

These factors then became a form of reality check for China's planners, including the then Premier Li Peng who promoted China's outward shift from oil intake in 1997: "as the economy develops and people's living standard rises, demand for oil and gas is certain to increase by large margins. While striving to develop our own crude oil and natural gas resources, we have to use some foreign resources."[31] Li Peng's remarks were also entrenched in a May 1997 policy paper in which he approved Chinese oil firms' exploration and development overseas oil and gas reserves, directly leading to subsequent aggressive foreign investments of China National Petroleum Corporation (CNPC) and China National Offshore Oil Company (CNOOC).[32]

With all these measures in place, beginning with 1993, China's imports of crude oil grew at an annual average rate of 9.1 percent in the 1990s.[33] Table 1.7 indicates that transportation, post, and telecommunications infrastructure accounted for the greatest increase in share of oil consumption (12.8–21.4 percent) between 1985 and 1998 when China was on the verge of joining the WTO while industry remained the largest user of oil by sector (67.3 percent in 1985 and 54.9 percent in 1998).

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[30] Troush, S. (1999). *China's Changing Oil Strategy and its Foreign Policy Implications, Center for Northeast Asian Policy Studies CNAPS Working Paper* [downloaded on 1 January 2005], available at www.brookings.edu/fp/cnaps/papers/1999_troush.htm.

[31] Troush, S. (1999). www.brookings.edu/fp/cnaps/papers/1999_troush.htm.

[32] International Energy Agency (2000). *China's Worldwide Quest for Energy Security* (France: International Energy Agency), p. 10.

[33] Troush, S. (1999). www.brookings.edu/fp/cnaps/papers/1999_troush.htm.

Table 1.7. China's consumption of oil in 1985 and 1998 (percent).

	1985	1998
Total consumption	100.0	100.0
Consumption by sector	8.3	6.5
Farming, forestry, animal husbandry, fishery and water conservancy		
Industry	67.3	54.9
Construction	3.2	1.5
Transportation, Post and telecommunications services	12.8	21.4
Commerce, Catering services, materials supply, marketing and storage	0.4	2.1
Others	5.5	8.6
Residential	2.5	4.9
Consumption by usage		
Final consumption	77.0	88.4
Industry	48.7 (of total)	44.0 (of total)
Intermediate consumption (Consumed in transformation)	19.0	10.6
Power Generation	15.5 (of total)	6.6 (of total)
Heating	3.1 (of total)	2.3 (of total)
Coking	0.4 (of total)	0.2 (of total)
Gas production	1.2 (of total)	1.6 (of total)
Losses in petroleum refining	2.7	1.0

Source: Thomson, E. (2001). *China's Growing Dependence on Oil Imports EAI Background Brief No. 87* (Singapore: East Asian Institute), p. 17.

POSSIBILITY OF CONFLICTS?

For some observers, because of growing consumption of oil in China and its shift towards foreign importation to meet its needs, the prospect of regional competition over oil between China and other East Asian powers (namely Japan) suddenly increased. But for others in the East Asian region like the Southeast Asian states, China presents itself as an opportunity in terms of raw materials exports, especially for oil-rich states like Indonesia, Brunei, Malaysia (palm oil), etc.

However, when framing the issue in Sino–Japanese terms, the picture is less optimistic with discussions often couched in relatively more pessimistic terms as the oil demands for Japan's economy as the world's second largest remained high (although tapering off with alternative energy sources) while China's economic development sees it consuming unprecedented levels of petroleum, shifting the country from a net energy exporter in the 1970s to a net energy importer in the early 21st century.

CHINA'S OIL NEEDS AND ASEAN

With China's thirst in energy, oil has come forward to assume a dominant position in the enhanced proposed cooperation between nations within the Pearl River Delta region. Research on the little-studied oil interactions between China and ASEAN countries in the Pearl River Delta region has potential to generate new knowledge at a time when the oil resource is increasingly coming under regional competition. The potential of the Thai Isthmus of Kra as a shortcut for pipelines/tankers/railway supplying oil to China or the prospects of Sino–Vietnamese issues in overlapping territorial claims are just some of the little-studied subjects with significant implications on the Pearl River Delta region.

CHINA'S OIL NEEDS AND NORTHEAST ASIA

Since China's oil energy needs increased exponentially, there has been a shift of Chinese focus in oil diplomacy from the Japanese to the Russians in the mid-21st century. The reasons for Chinese oil diplomatic shift from Japan to Russia can be classified into macro environmental geopolitical factors (end of Cold War, Chinese domestic economic factors, industrialization, and the need for oil and geopolitical concerns) as well as Japanese and Russian domestic factors.

Ironically, China's increased oil ties with Russia have seen the PRC come up against its former oil trading partner, Japan. Sino–Japanese rivalry in Russia is demonstrated most graphically and

dramatically by their competition over access to Siberian oil, pitting the world's second largest economy against the world's fastest-growing economy.

The outcome of Sino–Japanese rivalry over Russian oil resources will determine the shape of East Asian energy outlook for decades to come, perhaps, emblematic of Sino–Japanese competition over economic resources in East Asia in general.

MARITIME RESOURCES

Another area which had seen the rise of Chinese energy activism is in maritime energy resources. This untapped region potentially acted as a source of tension between China and Japan due to its evaluated large deposits of natural gas lie beneath the East China Sea. A major point of disagreement is how to demarcate the two states' exclusive economic zones (EEZ), which legally enables coast-lining states to control maritime resources for 200 nautical miles off their shorelines.

Tokyo's definition of maritime boundary centers on the median between the two countries' shorelines, while China, utilizing the U.N. Convention on the Law of the Sea, argues that its territorial waters extends to the end of its continental shelf, which includes the area claimed by Tokyo. (In a surprising turn of events, compromise was reached over one of these disputed islets Chunxiao in 2008. This will be discussed later in the book.)

Other territorial issues include the tussle over Diaoyu (known as Senkaku to the Japanese) islands with China. The stakes over these islands are high with some analysts suggesting the presence of oil under these islands.[34] China lost these islands to the Japanese in the 1894–1895 Sino–Japanese war. On 3 January 2003, when Japan decided to rent the islands out to a private organization, Japan's ambassador to China was summoned to the Chinese foreign ministry

[34] The Japan Times (2003). Japan has Land Lease on Another Senkaku Island, *Japan Times Online* [downloaded on 1 January 2004], available at www.japantimes.co.jp.

building to meet Vice Foreign Minister Wang Yi to face Chinese protestations over the islands.[35]

The Sino–Japanese tussle over Senkaku/Diaoyu is complicated by the fact that Japanese activities in the disputed islands had been traditionally associated with rightwing organizations in Japan.[36] In July 1996, a group of Japanese rightwingers constructed a lighthouse and raised the Hinomaru (Japanese flag) over the rocky hills.[37]

RENEWING OLD ENERGY RESOURCES

Besides turning outwards, China is also looking inwards to rejuvenate aging oilfields and find new ways to exploit them to meet energy needs. For example, the Liaoning Provincial Bureau of Foreign Trade and Economic Relations' development of oil shale resources within their provincial purview, especially since the new Chinese leadership is currently stressing on reviving the Northeast economy ("*zhenxin dongbei*").

ISSUES TO BE EXAMINED

With the above backdrop in mind, the following issues are examined in this book in the following order and chapterization:

(1) *Chapter 1: Introduction* — China benefits from globalization. In what ways does this impact on China's relations with other countries in its neighboring region when it seeks more oil importation from overseas sources?

[35] People's Daily Online (2003). To Occupy China's Diaoyu Islands, Japan's Fond Dream for Long, *People's Daily Online* [downloaded on 1 January 2004], available at english.peopledaily.com.cn.

[36] Kristof, N. D. (1996). Gang Ties Are Behind Japan's Furor Over Tiny Isles, *People's Daily Online* [downloaded on 1 January 2004], available at english.peopledaily.com.cn.

[37] People's Daily Online (2003). Reclaiming Diaoyu Island A Volunteer's Memoir, *People's Daily Online* [downloaded on 1 January 2004], available at english.peopledaily.com.cn.

(2) *Chapter 2: The Emergence of the Chinese Oil Industry in Northeast Asia — Transition from Japan (1978 Daqing Crude Trade) to Russian Oil Relations (Sino–Russian Oil Communiqués 2002/3)* — China's relations with Japan and Russia as well as interactions with other ASEAN countries would impact on China's oil supply and distribution.

(3) *Chapter 3: The Emergence of the Chinese Oil Industry in Southeast Asia: China–ASEAN Sub-regionalism — Pan Pearl River Delta (PPRD) Regionalism and Cooperation in Oil Energy* — China's industrial growth in the Pan PRD region is outstripping its oil supply and that it is turning to ASEAN countries connected to its Pearl River tributaries as a supply source. Pipelines in Myanmar and Thailand: How and where will they build these pipelines? What are the current proposals for these pipelines? Way-forward for diversification of energy sources and geopolitical challenges? Other proposals for oil delivery to China include building ports on both sides of the Isthmus of Kra, which allow tankers to deposit oil on one side of the Thai Isthmus of Kra, bypassing the congested waterways of the Straits of Malacca and transporting that oil through either railway or oil trucks connecting to the port on the other side of the Isthmus, facilitating deliveries carried forth by Chinese tankers waiting on the other end.

(4) *Chapter 4: The Emergence of the Chinese Oil Industry and Potential Flashpoints?* Sources of increasing tension. Pressure for new sources of oil. Can this pressure translate into tension and conflicts? Potential rivalries: What is the extent for rivalry between the two giants? Maritime disputes: For example, China's unhappiness with Petro Vietnam's oil exploration in South China Seas (and the precedent of the 1974 Paracel island episode). How will this impact on the development of oil resources in the South and East China Seas? Will it become a source of conflict? Competition over maritime resources will require bilateral and multilateral frameworks for easing of tensions, confidence-building, and perhaps resolution.

(5) *Chapter 5: Seeking Energy Security: Cooperation and Competition between China, Japan, and India.*

(6) *Chapter 6: Year 2004: China's Landmark Energy Crisis* — China's economic growth. The processes which generate greater demand for oil in China — How will China be able to strike a balance between economic growth and energy consumption?

(7) *Chapter 7: The New Energy Superpower's Internal Debates: Development or Environmentalism?* The growing importance of the post-industrial debate and environmentalism. What are the implications of post-industrialism for China?

(8) *Chapter 8: Conclusion — Alternative Energy Trends, Conservation and Renewing Old Resources?* The future. How will China utilize the options of alternative energy, energy conservation, and reinvigoration of old energy resources to meet its future oil needs?