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Coal Trends

Trends in coal supply, demand and prices as seen from statistics

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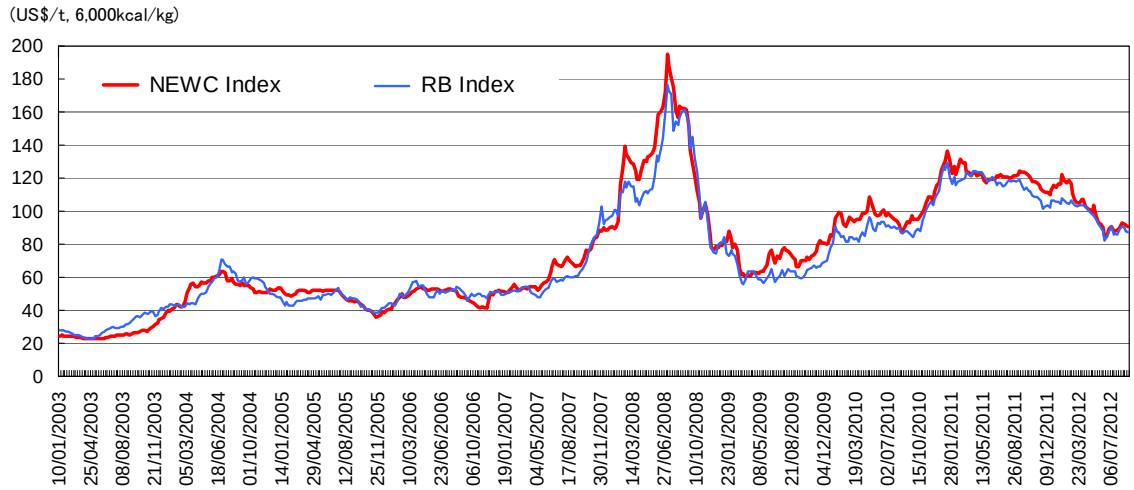
This paper begins with a discussion on the trends in the import price of coal to Japan and then addresses the characteristics and trends in coal imports in the Northeast Asian countries.

1. Japan's Coal Imports

(1) Continued fall in spot prices

As seen in Fig. 1, the spot price of thermal coal exported from Newcastle, Australia has fallen significantly, from US$120 per metric ton at the beginning of this year to US$84.98 per metric ton on June 22. Since then, it has rebounded slightly to trade around US$88-90 per metric ton in July.

Fig. 1. Transition of globalCOAL NEWC and RB index



Note: NEWC Index: FOB Newcastle, NSW, Australia price for thermal coal (6,000 kcal/kg net)

RB Index: FOB Richards Bay, South Africa price for thermal coal (6,000 kcal/kg net)

Source: globalCOAL

Heavy coking coal ex. East Coast Australia, which traded slightly above US$220 per metric ton until the beginning of July, began declining in mid-July and by the start of August it fell below US$200 per metric ton, dropping to US$172.50 by August 27 (final week of August). (Energy Publishing website)

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(2) Significant downturn in Import price to Japan

As indicated in Table 1, compared to the actual average January-June import price of coking coal, the fall in the import price in July further accelerated to -15.2% (Japanese yen basis), with a fall of 9.7% for thermal coal. These figures reflect the fall in the spot prices indicated in (1) above.

Table 1. Comparison of imported coal prices, landing in Japan
(July 2012 and January-June 2012 average)

	July 2012 Price		Jan.-Jun. 2012 Price		Change (Jul.2012/Jan.-Jun.2012)	
Total imports	yen/metric ton	yen/metric ton	yen/metric ton	yen/metric ton	% (yen)	% (US$)
	11,999	150.9	13,567	170.46	-11.6	-11.5
By coal type						
Coking coal	14,213	178.74	16,763	210.62	-15.2	-15.1
Thermal coal	10,225	128.59	11,329	142.34	-9.7	-9.7
Anthracite	14,645	184.17	15,811	198.65	-7.4	-7.3
By source						
Australia	12,029	151.26	13,688	171.98	-12.1	-12.0
Indonesia	9,372	117.85	10,391	130.56	-9.8	-9.7
Canada	16,074	202.14	19,164	240.78	-16.1	-16.0
China	14,922	187.66	15,297	192.20	-2.5	-2.4
USA	17,889	224.96	21,364	268.42	-16.3	-16.2
Russia	11,667	146.72	12,410	155.93	-6.0	-5.9
South Africa	10,291	129.42	10,026	125.97	2.6	2.7
New Zealand	19,177	241.16	13,567	170.46	41.4	41.5
Vietnam	15,177	190.86	16,275	204.48	-6.7	-6.7
Mongolia	-	-	23,076	289.94	-	-
Mozambique	-	-	21,860	274.65	-	-
Coking coal by source						
Australia	14,616	183.8	17,596	221.08	-16.9	-16.9
Indonesia	9,738	122.46	10,872	136.60	-10.4	-10.4
Canada	18,320	230.39	21,160	265.86	-13.4	-13.3
China	13,532	170.16	19,065	239.54	-29.0	-29.0
USA	20,656	259.76	21,969	276.02	-6.0	-5.9
Russia	15,535	195.37	17,158	215.57	-9.5	-9.4
New Zealand	19,177	241.16	22,001	276.42	-12.8	-12.8
Mongolia	-	-	23,076	289.94	-	-
Mozambique	-	-	21,860	274.65	-	-
Thermal coal by source						
Australia	10,580	133.05	11,532	143.66	-8.3	-7.4
Indonesia	8,958	112.65	9,832	122.48	-8.9	-8.0
Canada	9,100	114.43	11,616	144.71	-21.7	-20.9
China	11,786	148.22	12,842	159.98	-8.2	-7.3
USA	10,002	125.77	12,310	153.35	-18.8	-18.0
Russia	9,911	124.64	10,695	133.23	-7.3	-6.4
South Africa	10,291	129.42	10,454	130.23	-1.6	-0.6
		US1$=\79.52		US1$=\79.59		

Source: Monthly Report of Trade Statistics of Japan

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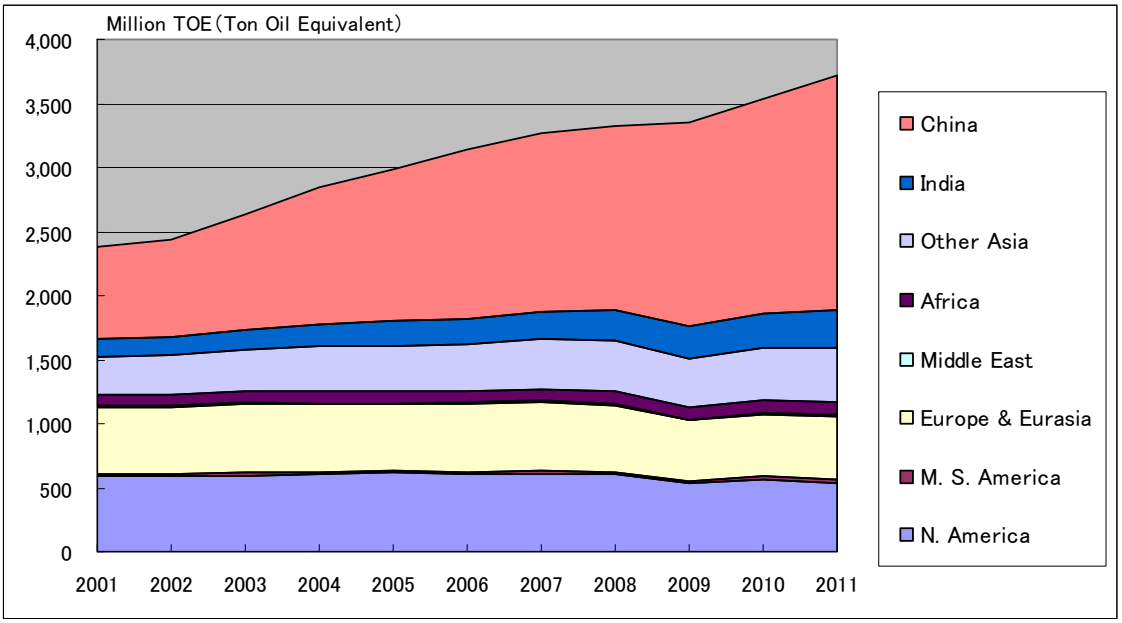
2. Coal Importing Countries of Northeast Asia

(1) China – How far will coal demand (import) continue to expand?

According to the bp Statistical Review, global consumption of coal increased 1.6-fold, from 2,381 to 3,724 MTOE (million metric tons of oil equivalent) between 2001 and 2011. Yet in the world excluding Asia, consumption fell from 1,221 MTOE to 1,171 MTOE in the same period (refer to Fig. 2).

The growth in coal consumption in Asia, especially in China, is staggering, and has increased 2.6-fold, from 720.8 MTOE in 2001 to 1,839.4 MTOE in 2011. The annual growth rate in the 10 years is significant at 9.8%, and its share in world consumption has soared from 30% to 49%. Currently, China alone consumes almost half of the coal produced globally.

Fig. 2. Transition of coal consumption by region (country)



Source: bp Statistical Review

However, when we see the growth in coal consumption in China focusing only on the past five years, we find that the annual growth rate falls to 6.9%[1]. Whether this falling trend continues will be the key to predicting the trend in global coal demand.

In the World Energy Outlook 2011 (New Policies Scenario), the International Energy Agency (IEA) shows a prediction of demand in China hitting the ceiling at 2,800 Mtce[2]

[1] While China's growth rate is decelerating, India's has increased to 8.6%. The country is expected to become a pacesetter forming the trend in the global coal trade.

[2] Approximately 1,960 MTOE (million metric tons of oil equivalent)

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(million metric tons of coal equivalent) in 2020 and continuing at a slightly lower level until 2035.

With the growth in demand, China's coal import has risen rapidly and, as seen in Table 2, imports that were only 18.6 million metric tons in 2004 increased to 51 million metric tons in 2007, and in 2009 marked a huge increase of some 86 million metric tons with the total figure of 126.64 million metric tons.

Lehman Brothers collapsed in 2009, plunging the world into an economic downturn, but in face of a global recession China increased its real GDP by 8.7% year-on-year. The 13% growth in its crude steel production in the same year with its strong economy and relatively high domestic coal prices for power generation compared to international prices are said to be behind this sudden increase in imports. The increase from 6.9 million metric tons of coking coal in 2008 to 34.50 million metric tons in 2009 can only be called astounding.

Naturally, its influence on Asia's coal supply and demand and pricing structure is growing increasingly strong. The compelling fall in imports casts a shadow on coal trade. Needless to say, this is the most important player in forecasting the trend in coal supply and demand, as well as prices.

Table 2. Transition of China's coal imports by source

(Mtce (million metric tons of coal equivalent))

	2004	2005	2006	2007	2008	2009	2010	2011
Indonesia	1.32	2.40	5.17	14.06	11.61	30.46	56.30	64.79
Australia	5.35	5.88	6.90	4.52	3.54	44.60	36.96	32.56
Vietnam	6.18	10.19	20.08	24.61	16.91	24.08	18.05	22.07
Mongolia	1.60	2.54	2.35	3.24	4.04	6.00	16.59	20.15
North Korea	1.57	2.80	2.48	3.74	2.54	3.58	4.64	11.05
Russia	0.61	0.90	0.99	0.27	0.76	11.79	11.62	10.60
USA	0.00	0.00	0.00	0.00	0.15	0.80	4.53	4.90
Canada	1.82	1.23	0.15	0.22	0.56	4.09	5.51	4.49
Others	0.16	0.18	0.13	0.34	0.72	1.23	12.05	11.78
Total	18.60	26.13	38.24	51.00	40.83	126.64	166.25	182.38

Source: China Customs Statistics

In 2009, while China rapidly increased its import, Japan's import fell by approximately 30 million metric tons, as seen in Table 3. Japan's import kept fluctuated back and forth, showing an increase of 23 million metric tons in 2010 but again fell by 9.4 million metric tons in 2011, affected by the Great East Japan Earthquake.

China, on the other hand, steadily increased its import and in 2011 it exceeded 182.38 million metric tons, surpassing Japan and becoming the largest coal importing country in the

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world.

Table 3. Transition of Japan's coal imports by source (reference)

(Mtce (million metric tons of coal equivalent))

	2004	2005	2006	2007	2008	2009	2010	2011
Australia	102.5	103.7	103.2	113.4	117.7	102.9	117.5	104.8
Indonesia	25.0	29.4	31.6	32.7	35.5	31.3	33.8	35.5
Russia	9.3	10.7	9.2	11.5	10.0	8.9	10.7	11.4
Canada	6.3	7.4	8.8	10.6	10.5	9.2	10.5	9.6
USA	4.0	2.1	0.4	0.0	1.6	0.8	3.1	6.3
China	29.0	24.0	20.7	15.2	13.3	6.2	6.3	5.0
Vietnam	2.5	2.4	2.2	2.2	2.0	1.3	1.7	1.3
South Africa	0.0	0.1	0.0	0.4	0.1	0.5	0.3	0.6
Others	1.4	1.1	1.2	0.6	0.9	0.5	0.6	0.8
Total	180.0	180.8	177.2	186.5	191.7	161.8	184.6	175.2

Source: Monthly Report of Trade Statistics of Japan

Mongolia supported the rapid expansion in China's coking coal demand.

Comparing China and Japan (comparison of Tables 2 and 3), the largest significant difference is the presence of Mongolia. While China recorded import of more than 20 million metric tons from Mongolia in 2011 (almost all in coking coal), Mongolia cannot be found as an import source for Japan (import of 60,000 metric tons of coking coal was recorded in 2010, but only 2 metric tons of thermal coal for testing were imported in 2012).

For Mongolia, enclosed by China and Russia, the only current export destination is China. Mongolia's coal production will probably increase further[3], but with the exception of the low demand period in China, there may not be many occasions in which coal will be exported to other Asian countries shipped out from Chinese ports.

There is interest in what will happen to Mongolian coal when China's demand hits the ceiling in 2020, as the IEA predicted.

(2) South Korea

We will attempt to outline the characteristics of South Korea's coal import by comparing it with Japan.

First we compare the two countries' imports by source as shown in Tables 3 and 4.

[3] Mongolia reportedly has plans to expand its export to around 70 million metric tons around 2025.

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While import to Japan in 2011 was 175.20 million metric tons, South Korea took in 129.20 million metric tons, or about 74% of Japan's amount. In 2011, South Korea was the third largest coal importer, following China and Japan. Yet its domestic production is just 2.10 million metric tons, not reaching even 1% of its import (bp Statistical Review 2012). This is very similar to Japan[4]. In other words, imports nearly equal consumption for both countries.

Table 4. Transition of South Korea's coal imports by source

(Mtce (million metric tons of coal equivalent))

	2004	2005	2006	2007	2008	2009	2010	2011
Australia	30.14	31.07	29.02	29.16	38.20	42.93	42.96	44.75
Indonesia	13.46	15.38	20.70	25.33	26.55	33.55	40.79	40.28
Canada	4.49	4.22	4.86	6.09	6.52	7.68	9.92	14.50
Russia	5.04	3.51	5.03	6.36	7.50	4.72	8.56	12.73
USA	0.97	1.16	0.66	0.30	1.04	1.57	2.71	6.07
China	23.99	20.84	18.74	19.92	17.88	9.67	7.29	5.18
South Africa	0.00	0.00	0.00	0.30	0.61	0.62	2.35	3.03
Vietnam	0.48	0.36	0.64	0.74	1.21	1.83	1.84	1.66
Others	0.40	0.22	0.07	0.08	0.08	0.41	2.15	0.95
Total	78.97	76.76	79.71	88.28	99.58	102.98	118.57	129.15

Source: Korea Trade Statistics

While the share of coking coal is 39% of total imports in Japan, South Korea is at 20%. Thermal coal is 58% and 73%, respectively for the countries, and the ratio of thermal coal is higher in South Korea than in Japan. In other words, more coal for power generation is imported.

By source, while Japan depends on Australia for 63% of its supply, South Korea remains at just 34%. Conversely, Indonesia's share in Japan is 19%, while it is 34% for South Korea. This is presumably caused by the higher import ratio of thermal coal in South Korea, depending on Indonesia's price competitiveness both in FOB prices and freight. The share of Indonesia for imports of thermal coal is high, at 41% (33% for Japan).

[4] Japan's domestic coal production is 1.3 million metric tons. (bp Statistical Review)

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Table 5. Comparison of South Korea and Japan (January-June 2012)

	Korea (Jan.-Jun. 2012)		Japan (Jan.-Jun. 2012)	
	Import quantity metric ton	Price US$/metric ton	Import quantity metric ton	Price US$/metric ton
Total imports	62019	138.35	88843.62	170.4594
By coal type				
Coking coal	12980	222.94	34288	210.62
Thermal coal	45231	110.25	51766	142.34
Anthracite	3807	183.88	2790	198.65
By source				
Australia	21389	156.36	55625	171.98
Indonesia	18493	94.4	17300	130.56
Canada	6197	169.41	4588	240.78
Russia	6084	134.08	5381	155.93
USA	3305	193.16	2943	268.42
China	2372	188.92	2046	192.20
South Africa	2298	126.94	241	125.97
Colombia	959	110.15	-	-
Vietnam	676	143.65	547	204.48
Mozambique	34	206.45	54	289.94
Mongolia	0		19	274.65
Coking coal by source				
Australia	6256	221.95	18360	221.08
Indonesia	0		8107	136.60
Canada	2965	236.11	3599	265.86
Russia	768	196.15	951	215.57
USA	2583	219.01	2765	276.02
China	280	229.52	333	239.54
Mozambique	34	206.45	54	274.65
Mongolia	0		19	289.94
Thermal coal by source				
Australia	14112	124.46	36641	146.88
Indonesia	18444	94.56	9192	125.21
Canada	3231	108.21	988	149.41
Russia	4763	119.02	3402	133.71
USA	699	98.45	177	150.12
China	677	151.7	1122	156.13
South Africa	2298	126.94	241	125.95
Colombia	959	110.15	-	-

Source: South Korea – Korea Trade Statistics; Japan – Monthly Report of Trade Statistics of Japan

Comparing import prices, while Japan's coking coal price was at US$210.62 per metric ton, it was slightly higher for South Korea, at US$222.94. However, for thermal coal, it was respectively US$142.34 and US$110.25 for the countries; considerably lower for South Korea. This is mainly due to the fact that while South Korea imports a large quantity of low-grade coal (5,000 kcal/kg level) classified among the subbituminous coal found in large quantities in Indonesia, Japan imports bituminous coal with a high calorific value from Australia, causing the large price gap.

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The five large South Korean power companies also conduct bidding to procure inexpensive coal and their quantities are increasing. The amount procured by contracts based on bidding has only increased by 1.2 million metric tons, from 6.12 million metric tons during January-June 2011 to 7.29 million metric tons in the same period in 2012. However, the amount put out to bid reportedly increased by more than 4 million metric tons in that period. Competition bidding works well when prices are falling, and this trend is expected to further expand.

Table 5 indicates the comparison between July 2012, and the average for January-June 2012, to show the trend of import prices.

In addition to the fact that prices for coking coal have dropped significantly, prices for thermal coal from all sources have also fallen, with the exception of Colombia. Australian coal prices have fallen significantly for both coking and thermal coal.

Table 6. Periodic comparison of imported price by coal type and source

	Jan.-Jun. 2012 Price % (US$)	July 2012 Price % (US$)	Change (Jul.2012/Jan.-Jun.2012) %
Coking coal by source			
Australia	221.95	181.66	-18.2
Indonesia	-	199.32	-
Canada	236.11	198.72	-15.8
Russia	196.15	183.61	-6.4
USA	219.01	185.34	-15.4
China	229.52	193.72	-15.6
Mozambique	206.45	207.32	0.4
Thermal coal by source			
Australia	124.46	107.51	-13.6
Indonesia	94.56	86.23	-8.8
Canada	108.21	107.76	-0.4
Russia	119.02	110.66	-7.0
USA	98.45	94.71	-3.8
China	151.70	-	-
South Africa	126.94	-	-
Colombia	110.15	113.25	2.8

Source: Korea Trade Statistics

We will next discuss Taiwan and then the exporting countries.

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