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Coal Trends

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

Coal: "To be, or not to be?" That is the question

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In this issue, we report on market conditions in Australia and South Africa, and trends in landed prices in Japan. We also explore some of the finer points of coal and CO_2.

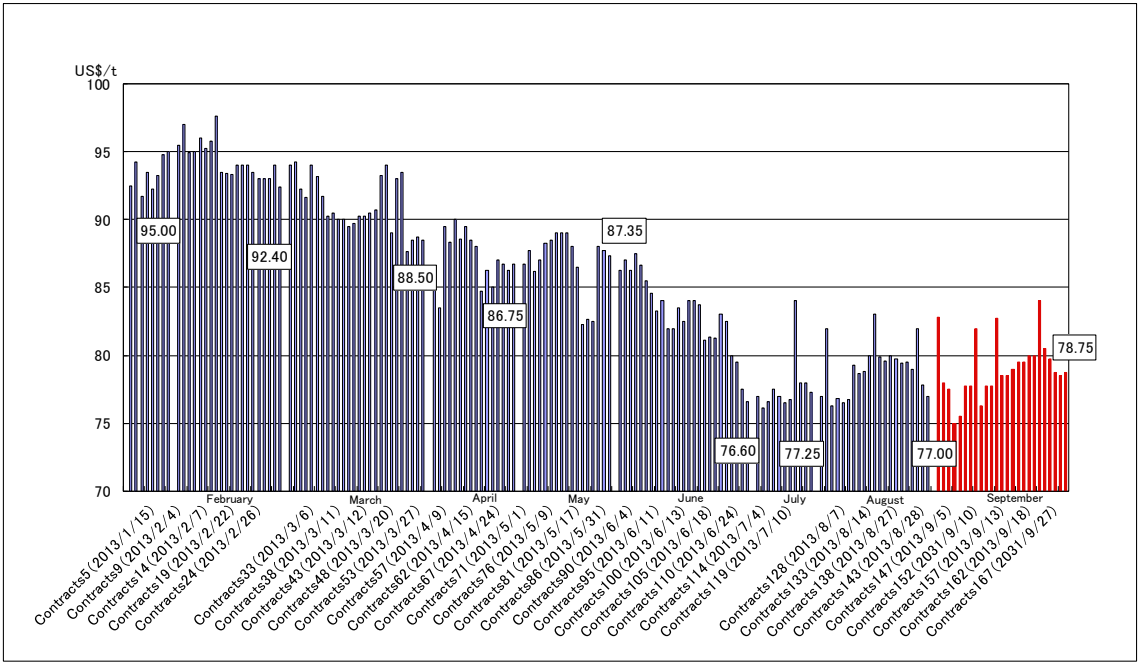
1. Spot prices for Australian and South African coal and landed prices in Japan

(1) Actual trading price trends for Australian and South African thermal coal (Jan-Sept 2013)

－ In both countries, getting a glimpse of leaning toward bottom －

Figure 1 shows contracted actual spot trading prices from January to September in a time-series for Newcastle (Australia).

Figure 1. Contract Prices FOB Newcastle, Australia (Jan-Sept 2013, actual)



Source: Prepared using globalCOAL materials

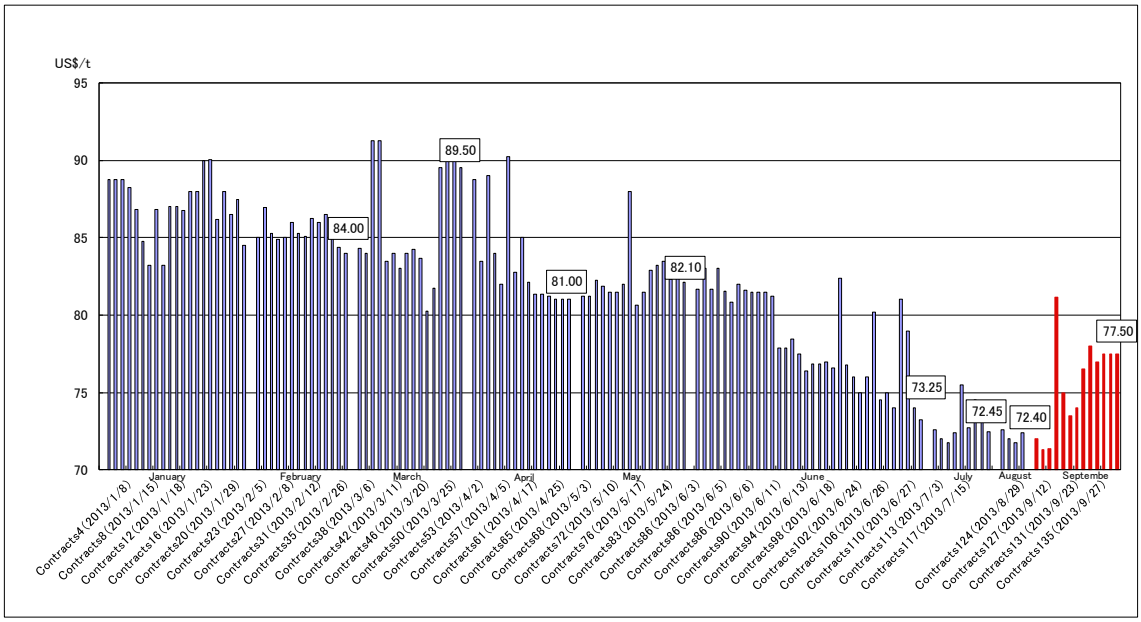
For Newcastle (NC), 25 spot contracts were recorded in September 2013, taking the total number

of contracts since January to 169. Alongside June, 25 is the joint second highest number of contracts during that period. The only month with a higher number of contracts was March, with 26.

The boxed numbers in Figure 1 indicate final trading prices for the relevant month. Having remained around US$77.00 per metric ton in June (US$76.60), July (US$77.25) and August (US$77.00), the final trading price rose to US$78.75 per metric ton in September, suggesting that prices may have bottomed out. This is supported by the fact that seven of the 25 contracts were at US$80.00 per metric ton or higher. As Figure 1 shows, prices rose higher in August than in July, and higher again, albeit slightly, in September compared to August.

Meanwhile, there were 13 contracts in September for FOB Richards Bay (RB), South Africa. Following on from a lack of vitality in July (nine contracts) and August (four contracts), a sense of upward momentum appears to have returned.

Figure 2. Contract Prices FOB Richards Bay, South Africa (Jan-Sept 2013, actual)



Source: Prepared using globalCOAL materials

With a final trading price of US$77.50 per metric ton for September, prices have risen by around US$4-5 compared to June (US$73.25), July (US$72.45) and August (US$72.40).

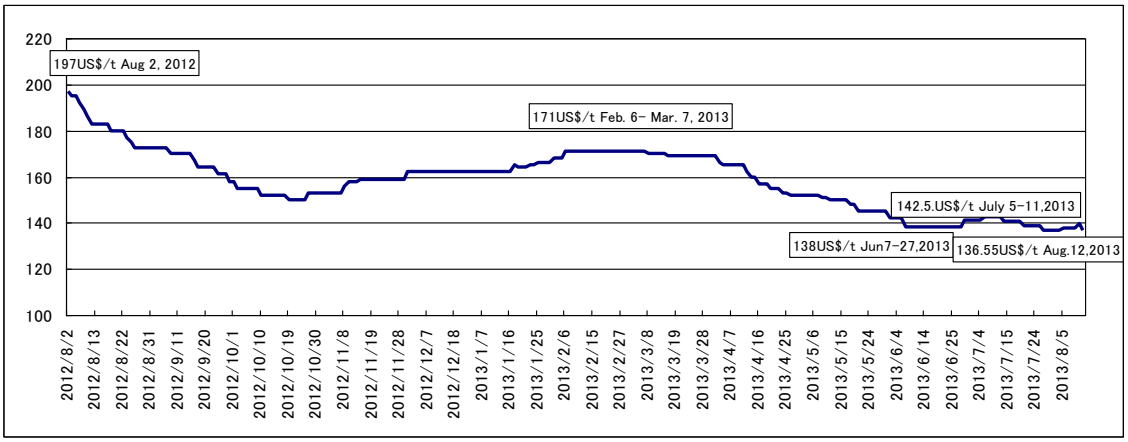
As with NC, the possibility of prices falling any further appears to be diminishing.

(2) Coking coal spot index

Previously in this section, we have focused on indexes for Coking Coal Queensland (CCQ) – the hard coking coal price index for East Coast Australia (Queensland) – on a daily basis (see figure

below). As we have been unable to obtain data from August 13, 2013 onwards, however, this section will be put on hold for the time being.

[Reference] Energy Publishing's CCQ (Coking Coal Queensland) Index
(August 2, 2012 – August 12, 2012)



Source: Energy Publishing

(3) Import prices landed in Japan

－Import prices are continuing to fall－

Table 1 shows changes in import prices for all coal imports in even-numbered months in 2013.

If we look at the landed price in dollar terms for all imports, coking coal, thermal coal, and anthracite in August, we find that none have been able to break out of the consistent downward trend.

As the table shows, this same downward trend remains unchanged, whether viewed according to source, coking coal source, or thermal coal source, indicating that the persistent downward trend is continuing.

Looking ahead to the near future, the key points in terms of monitoring imported coal prices in Japan are as follows.

- As outlined in the above section (1), spot trades are on the increase at the price of around US$80 per metric ton in NC and US$77-78 in RB. This suggests that the decline in prices has come to an end.
- The price of thermal coal starting October for the power industry in Japan has been agreed at US$85.80 per metric ton. This is a further decline compared to the price of US$95.40 starting April, and US$89.95 starting July.

・ For the third quarter, the price of coking coal for the iron and steel industry in Japan has been agreed at US$152.00 per metric ton. This is an increase of US$7.00 per metric ton compared to the second quarter (US$145.00). The price for the first quarter, however, was US$172.00 per metric ton.

Table 1. Japan-Landed Imported Coal Prices (February – August 2013)

	Feb-13		Apr-13		Jun-13		Aug-13	
	JPY/ton	US$/ton	JPY/ton	US$/ton	JPY/ton	US$/ton	JPY/ton	US$/ton
Total imports	11,811	127.56	12,905	134.12	12,460	125.70	11,757	119.63
By coal type								
Coking coal	12,936	140.98	14,661	152.37	14,028	141.51	13,393	136.28
Thermal coal	10,912	118.92	11,093	115.29	10,971	110.68	10,445	106.28
Anthracite	14,228	155.06	15,961	165.89	15,552	156.88	13,935	141.79
By source								
Australia	12,170	132.63	12,567	130.76	12,788	129.00	11,817	120.85
Indonesia	10,190	111.05	10,713	111.34	10,212	103.01	9,735	99.05
Canada	14,595	159.06	16,920	175.85	15,033	151.64	14,503	147.57
China	15,352	167.31	16,533	171.83	16,320	164.63	14,190	144.39
USA	13,710	149.41	15,914	165.39	17,556	177.10	17,176	174.77
Russia	11,683	127.32	11,956	124.26	11,492	115.92	10,850	110.40
South Africa	9,834	107.17	–	–	10,258	10.3.48	–	–
New Zealand	–	–	–	–	–	–	17,365	176.69
Vietnam	13,656	148.82	16,537	171.87	19,720	198.93	13,983	142.28
Mongolia	20,995	228.80	–	–	–	–	–	–
Mozambique	15,358	167.37	–	–	–	–	–	–
Colombia	–	–	16,395	170.39	–	–	10,709	108.96
Coking coal by source								
Australia	14,406	157.00	14,418	149.85	14,794	149.22	13,686	139.25
Indonesia	10,404	113.39	11,212	116.52	10,618	107.11	10,453	106.37
Canada	16,999	185.27	18,397	191.20	17,607	177.62	16,416	167.04
China	15,611	170.14	13,269	137.91	12,921	130.34	11,468	116.69
USA	15,969	174.03	18,370	190.92	19,779	199.53	18,188	185.07
Russia	13,143	143.23	13,513	140.45	13,561	136.80	13,341	135.75
New Zealand	–	–	–	–	–	–	17,365	176.70
Mongolia	20,995	228.81	–	–	–	–	–	–
Mozambique	15,358	167.38	–	–	–	–	–	–
Thermal coal by source								
Australia	11,227	122.36	11,394	118.42	11,304	114.03	10,801	109.91
Indonesia	9,956	108.51	10,052	104.48	9,422	95.05	8,772	89.26
Canada	11,248	122.58	11,243	116.85	9,745	98.30	9,767	99.39
China	13,019	141.89	14,798	153.80	12,496	126.06	12,176	123.89
USA	10,185	110.00	10,067	104.63	10,291	103.81	10,323	105.04
Russia	10,558	115.06	10,694	111.15	10,760	108.55	10,061	102.37
South Africa	9,834	107.18	–	–	10,259	103.49	–	–
Colombia	–	–	–	–	–	–	10,709	108.97
	US1$=¥91.76		US1$=¥96.22		US1$=¥99.13		US1$=¥98.28	

Source: Prepared using Trade Statistics of Japan Monthly Reports

2. Coal: “To be, or not to be?” That is the question

On a worldwide scale, coal accounts for considerable percentage of power sources.

As Table 2 shows, 40.6% of the world’s power is generated by coal.

The ratio of coal is particularly high in Asia and Oceania, accounting for 60.6% (China: 77.8%, India: 68.0%). Even North America, which is in the grip of the “shale gas revolution”, still relies on coal for 42.0% of its power.

Table 2. Breakdown of Worldwide Power Sources (2010, based on power output)

TWh

	Coal	Oil	Natural gas	Nuclear	Hydro & other renewables	Total	Coal percentage (%)
North America	2,082	56	1,070	930	825	4,962	42.0
Latin America	72	188	52	91	133	1,400	5.1
Europe	1,270	102	1,520	1,205	1,207	5,303	23.9
Africa	260	81	20	12	15	664	39.2
Middle East	35	29	544	0	18	882	3.9
Asia/Oceania	4,980	278	1,112	582	1,268	8,218	60.6
(China)	3,273	13	69	74	779	4,208	77.8
(India)	653	26	118	26	136	960	68.0
Worldwide	8,698	989	4,768	2,756	4,219	21,430	40.6

Source: Handbook of Energy & Economic Statistics in Japan

Along similar lines to Table 2, Table 3 shows a breakdown of worldwide power sources based on fuel input (consumption). The percentages for coal are even higher in this case. This is presumably indicative of the fact that coal-fired thermal power generation is less efficient than other power sources.

Table 3. Breakdown of Worldwide Power Sources (2010, based on fuel input)

Million tons oil equivalent

	Coal	Oil	Natural gas	Nuclear	Hydro & other renewables	Total	Coal percentage (%)
North America	483	13	197	242	93	1,027	47.0
Latin America	18	42	64	7	83	214	8.2
Europe	317	29	360	315	147	1,168	27.1
Africa	66	20	44	3	11	144	46.0
Middle East	8	86	127	0	2	223	3.4
Asia/Oceania	1,245	69	218	152	149	1,832	67.9
(China)	795	5	15	19	70	904	87.9
(India)	201	11	26	7	13	258	77.9
Worldwide	2,136	259	1,010	719	484	4,608	46.4

Source: Handbook of Energy & Economic Statistics in Japan

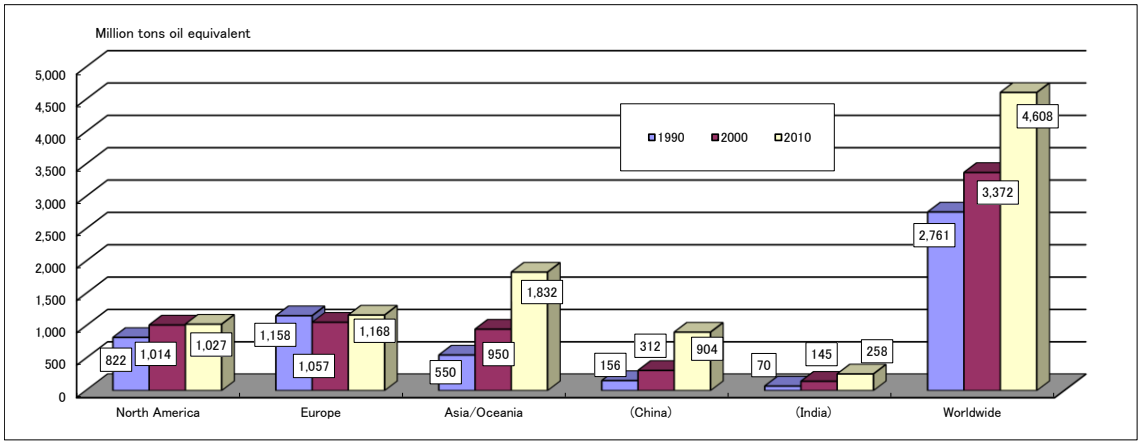
*Nuclear power converted at the rate of 2,606 kcal/kWh and hydro at the rate of 860 kcal/kWh (same below)

Figure 3 outlines trends in fuel input for power generation.

On a worldwide scale, in oil equivalent, fuel input (consumption) totaled 2.761 billion metric tons in 1990, 3.372 billion metric tons in 2000, and 4.608 billion metric tons in 2010. That works out as an average annual increase of 2.6% during the period from 1990 to 2010.

On a regional basis, the annual increase has remained at 1.1% for North America, and at 0.04% for Europe. The figure for Europe has remained unchanged for the last 20 years. In contrast, fuel input continues to increase rapidly in Asia and Oceania, coming in at 6.2% for the same period. With China and India in particular seeing increases of 9.2% and 6.7% respectively, fuel input is increasing at a considerably faster rate than the rest of the world.

Figure 3. Trends in Fuel Input for Power Generation

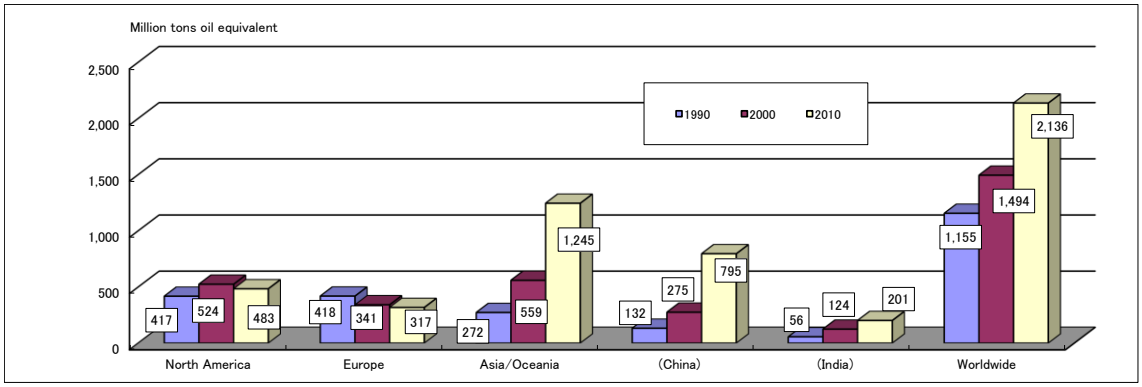


Source: Handbook of Energy & Economic Statistics in Japan (annual editions)

Figure 4 outlines trends in coal input for power generation.

On a worldwide scale, in oil equivalent, the amount of coal used to generate power totaled 1.155 billion metric tons in 1990, 1.494 billion metric tons in 2000, and 2.136 billion metric tons in 2010. That represents an 80% increase over 20 years, or 981 million metric tons.

Figure 4. Trends in Coal Input for Power Generation



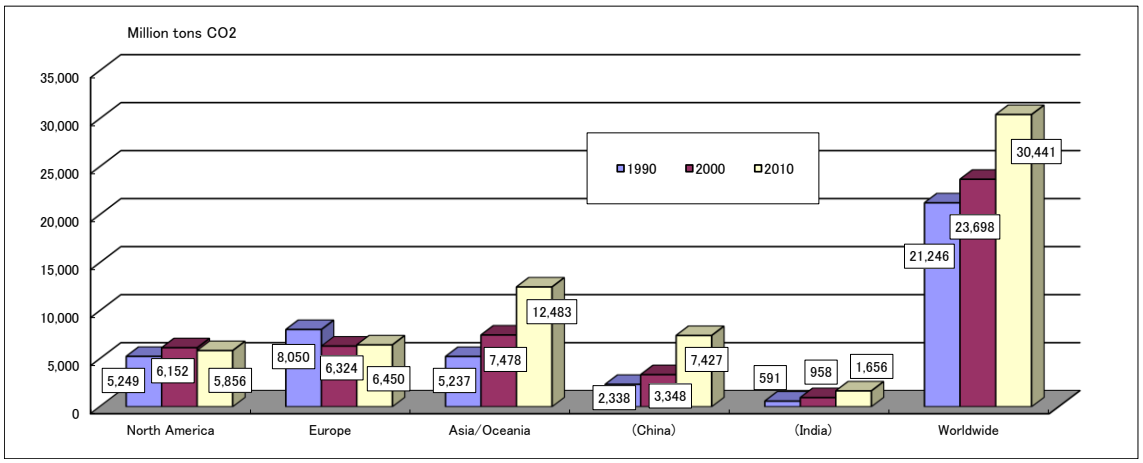
Source: Handbook of Energy & Economic Statistics in Japan (annual editions)

There are significant differences, however, when viewed on a regional basis. The input of coal has continued to decline in Europe ever since 1990, with the amount of coal consumed in 2010 equivalent to 76% of that in 1990. In North America too, consumption increased for a time but has now started to fall. By 2010, it was down by 8% compared to 2000.

In Asia and Oceania, meanwhile, coal consumption in the power sector has increased by 972.4 million metric tons during the same period (with 808.4 million of that total coming from China and India) in oil equivalent. That accounts for 99% of the overall worldwide increase in consumption during that period (981 million metric tons). In other words, increasing global consumption of coal for power generation is entirely down to one region – Asia and Oceania.

This essentially means that increases in worldwide CO_2 emissions from coal-fired power over the last 20 years have been attributed almost entirely to Asia and Oceania (particularly China and India).

Figure 5. Worldwide CO_2 Emissions



Source: Handbook of Energy & Economic Statistics in Japan (annual editions)

There is a sense that the current situation doesn't add up in some respects.

We have already seen that neither North America nor Europe is the cause of increases in CO_2 emissions from coal-fired power over the last 20 years.

Nevertheless, the US is following in Europe's footsteps and is in the process of tightening environmental regulations in an effort to reduce CO_2 emissions, forcing coal-fired power stations to reduce operating rates or shut down entirely.

The majority of people in Europe feel that there are very few options remaining for coal, other than **"Not to be."**

One of the prerequisites in order to resolve global environmental issues, however, is the

involvement of Asia and Oceania. Despite that fact, certain countries in the region are unable to see coal in any terms other than **“To be”** because it is essential to their future and their economic development.

The obvious conclusion is that, as it stands, we will simply be unable to resolve issues such as global warming.

That is the question.

(To be continued in the next issue)

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