



# Indonesian coal

Donald L. Ewart, Jr., and Robert Vaughn, Marston & Marston Inc., US, review the Indonesian thermal coal industry.

**I**ndonesia's coal industry continues to prosper and grow. Even as markets and prices diminish in the short-term, regional and domestic coal demands provide a robust long-term outlook for Indonesian coal producers.

Seaborne thermal coal trade has grown from 343 million t in 2000 to almost 555 million t in 2007, with roughly 43% of the total exports destined for Atlantic Basin markets and 57% supplied to Pacific Basin markets. Major Pacific Basin thermal seaborne coal consumers include Japan, Central and Southeast Asia and India. From 2000 to 2007, exports to Pacific thermal coal markets grew from 193 million t to almost 318 million t (Figure 1).

More than 95% of world seaborne thermal coal exports originate from just six countries, with the remainder being supplied from about a half dozen other nations. The six principal thermal coal exporting countries are Indonesia, Australia, Russia, South Africa, Colombia and China, while the smaller exporters include the US, Venezuela, Poland and Canada.

Indonesia is currently the world's leading exporter of thermal coal. In 2007 Indonesian producers shipped 165 million t, or almost 30% of global seaborne thermal coal supply. Australia is the second largest thermal coal

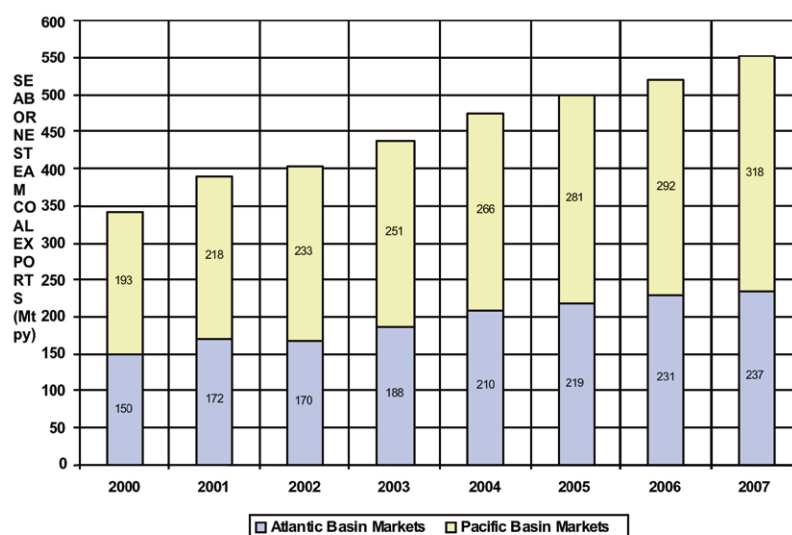
exporting country with 2007 shipments approaching 115 million t (representing a market share of 20.6%), followed by Russia with 2007 thermal coal exports of 72 million t (13% market share), South Africa with 66.2 million t (11.9%), Colombia with 64.6 million t (11.6%), and China with 45.3 million t (8.2%). A summary of 2007 seaborne thermal coal exports by source country is provided in Table 1.

## Indonesian coal production

International markets have traditionally been the principal destination for Indonesian thermal coals, with more than 75% of the country's total thermal coal production being exported in recent years. Major export markets for Indonesian thermal coals include Japan, Taiwan, South Korea, Hong Kong, India, other Southeast Asian countries and Western Europe. Indonesia currently supplies more than 30% of the Pacific Basin Market. Indonesia's thermal coal exports have almost tripled over the last eight years, increasing from 56 million t in 2000 to almost 165 million t in 2007 (Figure 2).

Considering only legal operations, Indonesia currently produces thermal coals from more than 40 different mines in East Kalimantan, South Kalimantan and Sumatra.

2007	Exporting country	2007 steam coal exports (million t)	Percentage of 2007 steam coal exports
1	Indonesia	165.0	29.8
2	Australia	114.5	20.6
3	Russia	72.0	13.0
4	South Africa	66.2	11.9
5	Colombia	64.6	11.6
6	China	45.3	8.2
7	US	10.3	1.9
8	Venezuela	8.3	1.5
9	Poland	4.0	0.7
10	Canada	3.7	0.7
11	Other	0.6	0.1
	Total	554.5	100



**Figure 1. Seaborne thermal coal exports.**

About two-thirds of the country's export thermal coal is currently produced from around two dozen mines in East Kalimantan with nine mines in South Kalimantan accounting for most of the remaining exports. Less than 4% of Indonesian thermal coal exports currently originate from the half dozen exporting Sumatran mines.

Coal production in Indonesia is from the following: 1) the state-owned enterprise PT Tambang Batubara Bukit Asam (PTBA); 2) holders of Coal Contracts of Work (CCoW) or 'Coal Contractors'; 3) Mining Authorisation (or KP) Holders; 4) Cooperative Units (KUDs). The larger producers dominate the supply of export coal, with the four largest suppliers jointly accounting for more than two-thirds of total Indonesian thermal coal exports in 2007. A summary of the major

Indonesian thermal coal exporters and their reported/forecast thermal coal export levels for 2006, 2007 and 2012 is provided in Table 2.

There are three generations of actively producing Coal Contractors in Indonesia with different ownership, royalty and tax provisions applying to each generation.

Currently, there are 17 identified major exporters of steam coal (i.e., companies with steam coal exports in excess of 0.5 million tpa) operating in Indonesia along with several smaller legitimate suppliers.

The largest export steam coal producer in Indonesia is Bumi Resources, which controls two operating subsidiaries: PT Arutmin Indonesia (Arutmin) and PT Kaltim Prima Coal (KPC). Indian power producer, Tata Power Ltd, recently acquired a 30%

stake in both the Arutmin and KPC operations.

The Arutmin operations include three operating coal mines, designated as Asam-asam, Satui and Senakin, associated barge-loading facilities for the respective mines and the North Pulau Laut coal terminal. The KPC operations consist of the Bengalon and Pinang coal mines, barge-loading facilities at the Bengalon Mine, the Tanjung Bara ship- and barge-loading terminal serving the Pinang Mine and various undeveloped coal resources.

Bumi Resources' Satui and Senakin operations produce higher-heat content bituminous steam coals almost exclusively for export markets. The Pinang and Bengalon operations produce a range of bituminous steam coals for both export and domestic customers, and the Asam-asam Mine produces low-rank, ultra-low sulphur coal primarily for domestic markets. In 2007 Bumi Resources' mines exported almost 50 million t of coal to overseas markets, accounting for almost a third of total Indonesian steam coal exports.

After Bumi Resources, the next largest Indonesian export steam coal producer is PT Adaro Indonesia (Adaro). Adaro produces mid-heat content, ultra-low sulphur sub-bituminous coal for both export and domestic markets from its Tutupan Mine. With a current capacity of 40 million tpa, Tutupan is currently the second largest coal mine in Indonesia behind Bumi Resources' KPC operation, and controls substantial low-rank coal resources in South Kalimantan. Tutupan's export steam coal shipments exceeded 26.5 million t in 2007, representing more than 16% of the year's total exports (gar) Indonesian coal.

Banpu Public Co. Ltd (Banpu), Indonesia's third largest export producer, currently operates three mines serving export steam coal markets. Banpu's Bontang and Trubaindo operations produce mid- to high-heat content bituminous steam coals exclusively for export markets. The Jorong operation supplies lower-heat content, ultra-low sulphur sub-bituminous coal to both a nearby power plant and offshore customers. Banpu's mines exported almost 17.5 million t of steam coal in 2007, which represented an export market share of 10.6%.

2007 export rank	Company	No. of export mines	Steam coal exports (million t)		
			2006	2007	2012
1	Bumi Resources	5	48.2	49.7	57.5
2	Adaro Resources	1 – 2	24.4	26.7	28.5
3	Banpu	4	17.9	17.4	24.4
4	Kideco Jaya Agung	2	13.5	15.5	16.0
5	Berau Coal	3	5.8	7.6	11.5
6	Straits Resources	2	4.8	7.5	8.0
7	Tanito Harum	2	4.1	5.0	5.2
8	Gunung Bayan Pratama Coal	3	1.3	4.9	9.0
9	Batubara Bukit Asam	1	3.2	3.8	3.2
10	Anugerah Bara Kaltim	1	2.5	2.5	2.5
11	Bukit Baiduri Energi	1	2.1	2.2	2.0
12	Mandiri Iniperkasa	1	0.9	1.8	1.0
13	Lanna Harita Indonesia	1	1.7	1.6	1.7
14	Multi Harapan Utama	1	0.9	1.0	1.0
15	Padang Karunia	2		0.8	1.3
16	Kapital Asia	1	0.4	0.7	1.0
17	Bornea Indobara	1		0.6	1.0
18	Other	n/a	13.8	14.2	5.2
	Total		145.5	163.5	180.0

The fourth largest Indonesian steam coal exporter is PT Kideco Jaya Agung (Kideco), which operates the Roto mining complex in southern East Kalimantan. Kideco's Roto North mining unit produces a borderline bituminous coal that is exported exclusively to South Korean power generators. The company's Roto South operation produces a range of sub-bituminous coals for both export and domestic markets. Steam coal exports from the Roto Complex totaled 15.5 million t in 2007, representing an approximate 9.5% share of the total Indonesian export market.

The other larger Indonesian steam coal producers exporting more than 4.5 million tpa in 2007 are PT Berau Coal (Berau), Straits Resources, PT Tanito Harum (Tanito) and PT Gunung Bayan Pratama Coal (GBP).

- ◆ Berau currently exports bituminous to sub-bituminous steam coals from its Binungan, Lati and Sambarata mines in East Kalimantan.
- ◆ Straits Resources exports bituminous steam coal from its Sebuku Mine, operated by the company's PT Bahari Cakrawala

Sebuku subsidiary, located on an island off the South Kalimantan coast, and both bituminous and sub-bituminous steam coals from its recently acquired Jembayan operation in East Kalimantan.

- ◆ Tanito exports bituminous coal from its mines in the Mahakam River Region of East Kalimantan.
- ◆ GBP presently exports higher-heat content bituminous steam coal from its Muara Tae Mine in the western Mahakam River Region and sub-bituminous coals from two recently opened operations, Perkasa Inakakerta (PIK) and Tambang, elsewhere in East Kalimantan. As well, GBP has several new projects in development or under study.

### **Indonesian coal quality**

Indonesia's export thermal coals are bituminous to sub-bituminous in rank with widely varying ash, moisture, sulphur and volatile matter characteristics. In Indonesia, coals with as-received heat contents in excess of 5300 kcal/kg (gar) are generally regarded as bituminous coals while

coals with as-received heat contents of 4100 to 5300 kcal/kg (gar) are classified as sub-bituminous coals. Typical coal quality specifications for Indonesian export thermal coals are summarised in Table 3.

The bituminous and higher heat content sub-bituminous coals produced from Indonesia are typically supplied to export markets. The lower heat content Indonesian sub-bituminous coals are supplied in varying proportions to both export and domestic markets. Most of the lowest rank Indonesian sub-bituminous coals have gained acceptance in export markets due to their ultra-low (i.e., less than 0.2%) sulphur contents.

Although domestic customers currently consume less than 25% of Indonesia's total coal production, an ever increasing share of the country's total coal output is expected to be consumed domestically as new coal-fired generating capacity is installed to meet growing energy demands.

Much of the increased production is expected to be from low-rank lignite and sub-bituminous coal deposits with as-received heat contents of about

Table 3. Typical quality specifications for Indonesian export thermal coals		
Quality parameter (as-received basis)	Bituminous coals	Sub-bituminous coals
Total moisture (weight percent)	10 – 12	24 – 38
Ash content (weight percent)	2 – 12	1.5 – 7.5
Volatile matter (weight percent)	31 – 42	28 – 37
Sulphur content (weight percent)	0.10 – 0.95	0.07 – 0.90
Heat content (kcal/kg)	5300 – 6700	4100 – 5200

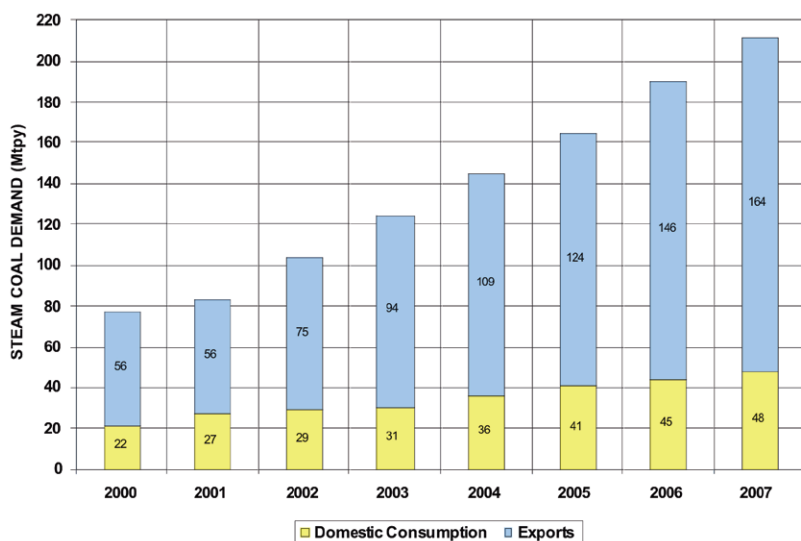


Figure 2. Indonesian thermal coal production.



Figure 3. PT Kideco Jaya Agung's Tanah Merah coal terminal.

3700 kcal/kg (gar) to 4200 kcal/kg (gar). Although Indonesian low-rank coals are typically ultra-low and low in ash and sulphur, total moisture contents are generally greater than 40%. Significant low-rank coal deposits are located in south Sumatra and in all major producing areas of Kalimantan.

### Inland transportation

Bumi's Pinang and Banpu's Bontang mines are currently the only two export coal operations in Indonesia capable of directly loading panamax size or larger ocean-going vessels. Other Indonesian export coals are typically loaded into barges at either river- or coastal-sited

loading facilities and transported to an offshore transfer point for loading onto ocean-going vessels or barged to a deep water coal terminal, such as the Balikpapan Coal Terminal, Indonesia Bulk Terminal or Arutmin's North Pulau Laut Coal Terminal.

Indonesian coal moves from mines to shipping points primarily via a combination of trucking and barging; however, some inland coal transportation is by rail (Sumatra) and conveyor. In Indonesia, coal trucking and barging operations are typically performed by contractors.

At most Indonesian export thermal coal mines, coal is trucked directly to a coal processing/barge-loading facility located on tidewater or on a barge-navigable river. Coal trucking distances for these direct-haul operations typically vary between 10 km and 35 km, with a few mines experiencing longer hauls of up to 75 km. Crushed coal is generally stockpiled and then loaded into barges and transported offshore for transfer to ocean-going vessels, with this process referred to as transshipping. Coal destined for the Indonesian domestic market and also for some nearby export destinations, such as Malaysia, is barged directly from Kalimantan or Sumatra to the end-users.

At several producers, the barging and transshipping operations are world-class. For example, Adaro's Taboneo Anchorage features floating cranes and a new floating loading facility that together provide a shiploading capacity of 80,000 tpd. The Bayan Group's Balikpapan Coal Terminal and Bumi Resources KPC and Arutmin loadout port facilities are also world-class. Kideco, Berau and Tanito have major barge-loading and transshipping facilities.

In summary, Indonesia's coal industry continues to grow with burgeoning regional and domestic demand. Producers and investors have continued to show great interest in Indonesian coal project development and expansions despite changes in markets, Government policies and the world economy. Indonesia's advantages in coal quality, transportation distance and cost structure continue to be attractive to producers and consumers alike. 