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THE HISTORY AND FUTURE OF INDONESIA'S COAL INDUSTRY: IMPACT OF POLITICS AND REGULATORY FRAMEWORK ON INDUSTRY STRUCTURE AND PERFORMANCE

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Over the past two years, with PESD support, Bart has been researching the development histories of the Indonesian and Australian coal industries. He has focused his research on the impacts that political and regulatory factors have had on the growth, structure, and performance of those two industries. He is also using his PESD research to speculate on alternative futures that those two industries will face in a carbon-constrained world. Bart has a PhD from the Department of City and Regional Planning at UC Berkeley with a specialty in energy planning. He lives in Bangkok, Thailand, with his wife Pornthip and his three sons, Romeo, Leonardo, and Valentino.

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List of Acronyms and Abbreviations

1 st Gen CCOW	First Generation CCOW
2 nd Gen CCOW	Second Generation CCOW
3 rd Gen CCOW	Third Generation CCOW
CAGR	Compound Annual Growth Rate
CCA	Coal Cooperation Agreement
CCOW	Coal Contract of Work
CEXIM	Chinese Export Import Agency
CIF	Cost, Insurance, Freight
COD	Commercial Operation Date
COW	Contract of Work
CSA	Coal Sales Agreement
CV	Calorific Value
DMO	Domestic Market Obligation
EPC	Engineer, Procure, Construct
FOB	Free on Board
FOBT	Free on Board Trimmed
GAD	Gross Air Dried
GAR	Gross As Received
gcNEWC	Global Coal Newcastle Coal Price Index
GCV	Gross Calorific Value
GOI	Government of Indonesia
IBT	Indonesia Bulk Terminal
ICI	Indonesian Coal Index
ICMA	Indonesian Coal Mining Association
ICPR	Indonesian Coal Price Reference
IM	Inherent Moisture
IPR	Izin Pertambangan Rakyat
IUP	Izin Usaha Pertambangan
IUPK	Izin Usaha Pertambangan Khusus
JORC	Joint Ore Reserve Committee

JPU	Japanese Public Utilities Reference Price
Km	Kilometer
KP	Kuasa Pertambangan
KPC	PT Kaltim Prima Coal
LC	Letter of Credit
LR	Low Rank
MEMR	Ministry of Energy and Mineral Resources
Mt	Million Tonnes
MTI	Ministry of Trade and Industry
Mtpa	Million Tonnes per Annum
MW	Megawatt
NEDO	New Energy and Industrial Development Organization of Japan
NEX	Newcastle Export Index
PERPU	Presidential Decrees and Emergency Regulations
PMA	Penanaman Modal Asing
PTBA	PT Bukit Assam
T	Tonne
TBCT	Tanjung Bara Coal Terminal
TM	Total Moisture
TMCT	Tanah Merah Coal Terminal
TNB	TNB
VAT	Value Added Tax
WP	Wilaya Pertambangan
WPN	Wilaya Pencadangan Negara

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The History and Future of Indonesia's Coal Industry: Impact of Politics and Regulatory Framework on Industry Structure and Performance

Bart Lucarelli

Section 1 **Introduction**

Over the past two decades, Indonesia's coal industry has transformed itself from being an unknown, minor player in Asia's coal markets to the world's largest exporter of steam coal. This paper tells the story of how Indonesia created this world-scale industry over two decades despite challenges created by widespread government corruption, a weak legal system, the Asian Financial Crisis of 1997, the fall of the Soeharto government in 1998, and assorted adverse political events between 2000 and 2008.

The paper also discusses the physical, technical, regulatory, and political factors that have acted as the primary drivers of the industry's phenomenal growth over the past two decades and identifies those that will be the most important drivers of industry expansion over the next two decades. With respect to future drivers of industry performance and structure, the paper concentrates on (a) estimates of Indonesia's coal resources and reserves, (b) Indonesia's favorable mining conditions and proximity to major Asian markets, and (c) the impacts of the passage of Indonesia's Mining Law of 2009 and its related implementing regulations.

Organization of the Paper

The remainder of this paper is organized into five sections as follows.

Section 2 reviews the history of Indonesia's coal industry over three distinct periods:

- The formative period (1967 to 1988) during which laws and regulations were put in place and contracts signed that provided the legal basis for the formation of Indonesia's coal industry.
- The take-off period (1989 to 1999) during which coal production grew from only 4.43 million tonnes (mt) (1989) to 80.89 mt (1999), a compound annual growth rate

(CAGR)¹ of 30 percent. During this period, the legal and regulatory framework was stable and until late 1997 the overall investment climate in Indonesia and external market conditions were positive.

- The localization period (2000 through 2009) during which majority ownership of the largest coal companies was transferred to local investors and provincial and regency governments gained regulatory control over the mining sector, especially over the issuance of new mining licenses.

The localization period was also a time when Indonesia's coal industry faced challenges caused by the 1997 Asian Financial Crisis, the SARS and bird flu scares, and adverse local political events, which negatively impacted the investment climate in Indonesia and the broader markets of the Asian Pacific region. Despite these political and economic challenges and the shift to local control, Indonesia's coal industry still expanded its production by 12 percent per year over the localization period and in 2005 was able to claim the title of "the World's largest exporter of steam coal."

Section 3 reviews current estimates of Indonesia's coal resources and reserves and the phenomenal growth in coal production and sales over the past two decades. It addresses two important questions:

- Are remaining reserves sufficient to meet domestic coal requirements over the next two decades as well as expected growth in demand for additional exports?
- On the assumption that reserves are adequate, can Indonesia's coal producers continue to expand their production capacities over the next two decades at rates of growth sufficient to meet the expected demands from both domestic and export customers or will Indonesia's coal industry fall victim to the law of big numbers and inland transport infrastructure constraints?

¹ The basis for all growth rates cited in this paper is the "compound annual growth rate" or CAGR. The equation for calculating the CAGR plus an example is shown below:

$$\text{CAGR} = ((\text{End Value}/\text{Start Value})^{1/n} - 1) = ((200/100)^{1/5} - 1) = 15\% \text{ per year}$$

Start Value = 100
End Value = 200
n = no. of time periods = 5

The author also addresses in this section the accuracy of Indonesia's official coal resource and reserve statistics and whether they provide a true picture of the coal industries potential to expand over the next two decades.

Section 4 assesses the impacts on Indonesia's coal industry of political events that have occurred over the period 1999-2008 and their implications for the continued growth of the industry over the next two decades. The central question addressed in this section of the paper is whether political events of the past decade have created serious and lasting damage to both the investment climate in the Indonesian coal industry and the reputation of Indonesian coal suppliers for reliability, thus harming its future prospects to remain the world's largest exporter of steam coal.

Section 5 examines the new Mining Law of 2009 and the current draft of the implementing regulations (IR) for this new law and discusses their likely impacts on Indonesia's coal industry. It considers whether the law and its IR, as they are currently structured, are likely to encourage or discourage foreign and domestic investors from making new sizable investments in the coal mining sector of Indonesia.

Section 6 summarizes the events of the last two decades and concludes with a depiction of two diametrically opposed futures that the government of Indonesia (GOI) must choose between in the near future:

- A regionally integrated future where the GOI allows its coal producers to export without significant interference from government and uses its resources to enhance regional economic cooperation and political influence; or
- An inward-looking future where the GOI views the country's resources as limited and to be used primarily for development of the domestic economy.

The author makes no prediction about the specific future that the GOI may choose but does lay out the implications of each in qualitative terms.

Section 2

History of Indonesia's Coal Industry²

When compared to the coal industries of Australia, the United States, the UK, South Africa, China, and India, Indonesia's coal industry is very young. Except for government-owned PT Bukit Asam (PTBA)³, Indonesia's major coal producers only started serious exploration work from the early 1980s, with commercial production at their mines commencing after 1988.

Indonesia's coal industry has existed much longer than 20 years. During the Dutch colonial period (1849–1945), coal was produced in small quantities from mines located on Kalimantan and Sumatra, with the coal being sold primarily to the shipping industry, which relied on coal to raise steam for purposes of powering the ship's engines.⁴ But the scale of the industry was minuscule compared with today's world-scale industry.

Moreover, the industry was a fragile one, built on a few mines that served mainly the shipping industry, which by 1940 was about to shift from coal to petroleum as its preferred fuel for ship propulsion. After 1941, when Indonesia's coal production peaked at 2 mt, Indonesia's coal industry entered into a prolonged and steep decline that lasted over three decades.

The initial causes of the decline were the adverse effects on mining of World War II and Indonesia's ongoing struggle for independence.⁵ It also was adversely affected by the ultra-nationalistic policies of President Sukarno, who ruled Indonesia from 1945 to 1965 and whose anti-Western rhetoric and incompetent management of the national economy discouraged foreign companies from making direct investments in Indonesia's mining sector from 1955

² Indonesia's coal resources are largely steam coal resources. It produces only small amounts of coking or metallurgical coals and those coking type coals are known as semi-soft and PCI coals, which are lower end coking coal products.

³ PTBA was previously known as PNTABA (Perusahaan Negeri [State Company] Tambang Arang Arng Bukit Asam), which was established in 1950. It had as its sole assets two Sumatra-based coal mines: Air Laya, which produced bituminous grade coal, and Suban, which produced anthracite coal. These two mines started operating in 1938. In 1981, PNTABA was converted into a limited liability corporation and its name was changed to PT Tambang Batubara Bukit Asam (PTBA). In 2002, PTBA was publicly listed on the Jakarta Stock Exchange with 35 percent of its shares held by the public and rest with the government of Indonesia (GOI). It trades under the code PTBA. (Source: www.ptba.co.id)

⁴ Michael Friederich and T.M. van Leeuwen, "Coal Exploration in Indonesia" (2002), p. 3.

⁵ Ibid, p. 4.

through 1965.⁶ Another contributing factor to the coal industry's moribund state after World War II was cheap oil, which made it cheaper to run ships and power plants on petroleum products rather than on steam coal.

By 1972, Indonesia's coal industry produced only 200,000 tonnes of coal, one-tenth of Indonesia's 1941 peak production.⁷ The main coal exports in the region during this period were coking coals supplied out of Australia.

The Formative Years (1967–1988)

It took a number of years for all of these coal mining impediments to be removed. The first corrective action occurred on the political front in October 1965, when General Soeharto wrested political control from Sukarno after a failed coup attempt.⁸ Soeharto was initially made chief of the army or ABRI as it is known in Indonesia. By March 1967, he was made acting president and then officially appointed as president the following year. Sukarno was kept under house arrest until 1970 when he died of kidney failure.

One of the first steps taken by Soeharto after being named acting president was to stabilize the economy through the implementation of new laws that were meant to establish Indonesia as an attractive venue for foreign investment.⁹ Changes included allowing foreign investment in the mining sector, reforming labor laws to standards acceptable to multinational corporations, providing foreign investors with legal guarantees of their rights to repatriate profits, and accepting funds from multilateral institutions such as the World Bank and bilateral aid agencies of Western nations.

⁶ Adam Schwarz, *A Nation in Waiting: Indonesia's Search for Stability*, Westview Press, 2000, p.18.

⁷ Ibid, p. 4.

⁸ In October 1965, Army troops led by then Major General Soeharto put down a coup attempt by rebellious troops who referred to themselves as the 30 September Movement. The coup attempt resulted in the kidnapping and murder of six generals in the Indonesian army, who were loyal to then-President Sukarno. The blame for the coup attempt and the murder of the six generals was placed on the shoulders of the Communist Party of Indonesia (PKI), which was closely aligned with the Sukarno regime. The army and Islamic sympathizers went on a rampage and, depending on whose figures you choose to believe, killed between 100,000 and 1 million members of the PKI and its supporters over a one-year period. The extermination of the PKI also led to the imprisonment of up to 1.5 million others, many of whom were not released from prison until 1979. The end result was the marginalization of Sukarno and his eventual replacement as president of Indonesia by Soeharto. For a thoroughly researched and balanced account of that period read Adam Schwarz, *A Nation in Waiting: Indonesia's Search for Stability*, Westview Press 2000.

⁹ During Sukarno's last two years in power (1963-1965), the Indonesian economy was on the brink of collapse with inflation running at 1000 percent and foreign investors having all but abandoned the country.

The government of Indonesia passed two laws in 1967 specific to the coal industry that were intended to encourage foreign investment in this heretofore moribund sector: the Mining Law of 1967, which allowed foreign companies to engage in coal and other mining activities and to export their products, and the Foreign Investment Act of 1967, which allowed foreign investors to repatriate their earnings and protected them from expropriation without just compensation. A team of U.S.-educated technocrats, who were popularly referred to as the Berkeley mafia, were instrumental in formulating and implementing government policies and regulations toward the coal mining industry during the formative period.¹⁰

Initially, foreign mining company interest was muted due to low oil prices. Then, in 1973, the Arab oil embargo resulted in a tripling of oil prices, which, combined with the mining and foreign investment laws of 1967, led to renewed foreign interest in the development of Indonesia's steam coal resources for export markets. The interest at that time was largely export driven — with Japanese, Korean, and Taiwanese power utilities requiring additional supplies of coal to fire new coal-fired power plants that would allow them to reduce their reliance on foreign oil.

However, the GOI initially tried to develop the coal industry as a source of fuel for new domestic power plants that would be built as replacements to oil-fired power plants. This import substitution policy was abandoned in the latter part of the 1970s. Due to the limited size of the domestic coal market in those days as well as the lack of a credit-worthy domestic buyer of coal in the power sector, the GOI was only able to encourage two significant international companies — Shell Oil Company affiliate, Shell Mijnbouw, and Rio Tinto Zinc (RTZ), now known as Rio Tinto — to invest in its nascent coal industry during the 1970s¹¹. These two companies, which in 1973 entered into Contracts of Work (COWs) with the government of Indonesia to “explore, extract and market coal,” focused their exploration activities on the island of Sumatra.

¹⁰ In an unusual “social experiment” during the late 1950s, the Ford Foundation provided scholarships to a group of young Indonesian economists to study economics at the University of California, Berkeley. They eventually returned to Indonesia and became ministers in the New Order government. They have been credited with bringing the economy back from the brink of collapse and turning it into one of Southeast Asia's economic success stories, which lasted until the fall of Soeharto in 1998. (See Ross H. McLeod, “Government-business relations in Soeharto's Indonesia” in *Reform and Recovery in East Asia*, edited by Peter Drysdale, Routledge Press 2000).

¹¹ Michael C. Friederich and T.M. van Leeuwen, “Coal Exploration in Indonesia,” 2003, p. 4.

Their exploration efforts were for naught. They discovered only low-rank coal that could not compete against high-quality Australian and South African bituminous coals. Due to the low quality of the coal that they discovered, both decided to relinquish their concession areas at the feasibility study stage. But these pioneer projects led to the extension of the contract of work concept, which had been successfully used for Indonesia's Freeport copper and gold mining project in Irian Jaya, to the coal mining industry. A decade later, this contract of work framework referred to as a coal contract of work (CCOW) served as the regulatory basis for creating Indonesia's "world-scale" coal industry.¹²

Indonesia's Coal Mining Regulatory Framework, 1967-1988

Indonesia's coal regulatory framework during the Formative period was based on the Indonesian Constitution of 1945, which stated that "Indonesia's natural resources are to be controlled by the State and must be used for the maximum benefit of the Indonesian people," and the following laws, regulations, and decrees: (a) the Mining Law of 1967 (Law 11/1967), which interprets the word "controlled" as used in the Constitution of 1945 to mean "owned" and therefore allowed companies to gain rights to mine and sell coal and other minerals but never to own outright those mineral deposits; (b) Government Regulation 32/1969 (related to Law 11/1967), which specified the terms and conditions for granting a CCOW¹³ (see Box 1) and a Kuasa Pertambangan (KP) (see Box 2), which is a license granted to coal mining companies that are fully owned by domestic shareholders.

Other important laws that supported the creation of the coal mining industry on Kalimantan are the following:

- (a) the Foreign Investment Law of 1967 (Law 1/1967) and its amendment (Law 11/1970), which provided guarantees that the government of Indonesia (GOI) will not nationalize a foreign investment or revoke rights granted to a PMA via special law unless an appropriate compensation is paid to the owners of that investment. These two regulations also provided guarantees to foreign investors allowing them to repatriate funds as profits and for payment of expenses including depreciation expenses and to appoint their management team without GOI interference.

¹² Ibid, pp. 5-8.

¹³ In Bahasa a CCOW is known as a PKP2B (short for Perjanjian Karya Pengusahaan Pertambangan Batubara) and is a special purpose contract for foreign investment companies, known as Penanaman Modal Asing (PMA).

(b) the Environmental Law of 1997 (Law 23/1997) and Government Regulation 27/1999, supported by the Decree of the State Minister for Environmental Affairs 17/2001 (Decree 17) and the Decree of the Minister of Energy and Mineral Resources #1457 K/28/MEM/2000 dated November 3, 2000 (Decree 1457). This law and related decrees specify the procedures for completing environmental impact studies and related studies and plans for coal mining projects. The process of applying for environmental approval and obtaining the necessary permits is known in Indonesia as the AMDAL process.¹⁴ The environmental approval process appears to be well-developed and mining companies are able to comply with its procedures.¹⁵

¹⁴ Analisa Mengenai Dampak Lingkungan (AMDAL).

¹⁵ In 1999, two other laws were passed that initially caused serious disruptions in the coal industry. They are Forestry Law 41/1999, which prohibited open-cut mining in areas designated as “forest conservation or protection areas,” and the Regional Autonomy Act of 1999. Both laws now seem to have been “assimilated” by the coal industry and any adverse impacts from their initial implementation have largely been resolved. They are discussed under Section 4 of this paper.

Box 1 CCOW Explained

Given the undeveloped nature of Indonesia's legal system during the formative period, the GOI was forced to enter into direct, bilateral contracts, known as coal contracts of work (CCOW), with foreign coal mining companies in order to obtain their investments and expertise. These contracts involved direct agreements between the GOI and locally registered foreign companies, known in Bahasa as Penanaman Modal Asing and generally referred to in Indonesia as PMAs.

Because CCOWs were between the GOI and a PMA, they carried "lex specialis" or special law status, which exempted their holders from any changes in Indonesian general law, such as revisions to the general tax code, investment laws, and land use laws, which occur after the CCOW was signed and which conflict with the terms of the CCOW. In this regard, each CCOW lays out in considerable detail specific tax liabilities that a PMA will incur over the life of its CCOW and the land area that has been approved for its mining activities.

Second, a CCOW provides the PMA with "conjunctive title" protection, which allows the PMA to conduct all stages of mine development from exploration to production, transportation and marketing without the need to go through a new tender or renegotiation of its CCOW. Allowing conjunctive title meant that each CCOW holder was able to make long-term decisions to invest in infrastructure and equipment on the basis of knowing that its right to mine the concession area was secure.

All CCOW issued during the Formative Years contained the same terms and conditions including (i) a fixed royalty charge of 13.5 percent for the term of the CCOW based on the FOB price per tonne of coal sold and (ii) a fixed term of 30 years from the date of commencement of commercial production of coal from the area covered by the CCOW with the option to extend the CCOW term for two additional periods of 10 years each.

Box 2 KP Explained

Local investors were also allowed to participate in the coal mining industry under a license known as a Kuasa Pertambangan (KP), which grants exclusive mining rights within a coal mining area for a specific stage of the coal mining program. A KP can be issued by any branch of government — regency (by the regency head), province (by the governor), or the central government (by the minister of energy and mineral resources). The specific government level that issues the KP will be determined by the location of the proposed mining area. If the mining area is contained within a single regency, the head of that regency will issue the KP. If it overlaps two regencies but is in one province, the provincial governor will issue the KP. If it overlaps two provinces, the minister of energy and mineral resources will issue the KP.

During the Formative period, local companies could obtain five different KPs depending on the stage of development of the coal mining operation. They are as follows:

- (a) General survey KP, which had a term of one year with the possibility of a one-year extension. The maximum area allowed under this KP was 20,000 hectares (ha).
- (b) Exploration KP, which was valid for a three-year period and could be extended twice by one year per extension. The maximum area allowed under an exploration KP was 10,000 ha.
- (c) Exploitation KP, which had a term of 30 years with the possibility of two 10-year extensions. The maximum area allowed under this type of KP was 5,000 ha. The exploitation KP could also contain terms related to processing, refining, transportation, and marketing. If these terms were not included as part of the exploitation KP and the KP holder wished to engage in these activities later on, he was required to file for these additional KPs separately.
- (d) Processing and refining KP, which had a term of 30 years with two extensions of 10 years each. This KP covered crushing, washing, upgrading, and drying of coal.
- (e) Transportation and marketing KP, which had a 10-year term and was extendable for an indefinite number of five-year periods.

KPs were transferrable to other parties if the original holder of the KP could prove that the other party had the necessary financial strength and technical capability to carry the mining activities into commercial production. On this basis, many transfers of KP licenses occurred over the years from the original holder of the KP to new companies with greater financial

strength and mining capabilities. The main requirement for any transfer was that the proposed KP holder should be a domestic company, not a PMA.

Royalty rates paid by KP holders varied between open-cut and underground mines and the grade of coal being produced. For open-cut mines the royalty rate was 3 percent of the FOB price for each tonne of coal sold and having a GCV of 5100 kcal/kg and below and 7 percent of the FOB price for each tonne of coal sold for coals having a GCV of 6100 kcal/kg and above. Coal derived from underground mines had slightly lower royalty rates of 2 percent for coals having a GCV of 5100 kcal/kg or lower and 6 percent for coals with a GCV of 6100 kcal/kg and higher.

Table 1 Eight of 10 original 1st Gen CCOW companies are still producing coal as of July 2010.¹⁶

Company	Original Shareholder(s)	CCOW Signing	Start Date for Commercial Production	Expiration Date	Initial Area (ha)	Retained Area (ha)	Resources/Reserves (mt)
1. Arutmin	ARCO & Utah International	2 Nov 1981	Dec 1989	Nov 2019	1,260,000	29,969	3.5/0.6
2. Adaro	Enadimsa	16 Nov 1982	Nov 1992	Oct 2022	148,148	35,800	3.5/0.9
3. KPC	RTZ/BP	8 April 1982	1991	2021	790,900	90,960	6.0/1.6
4. Kideco	Korea- Indonesia Resources	14 Sept 1982	April 1993	March 2023	254,804	50,400	3.8/na
5. Berau	n/a	26 Apr 1983	1994	2024	487,217	118,400	2.5/na
6. Indominco Mandiri	Salim Group	8 Oct 1990	1997	2027	99,922	25,000	1.5/0.24
7. Tanito Harum	Kiki Barki Family	30 Jan 1987	1989	2019	125,412	35,757	0.07/na
8. Multi Harapan Utama	Swabara Australia (40%), PT Agrarizki Media (38%), Ibrahum Risjad (12%), PT Asminco (10%)	29 Nov 1986	1990	2020	189,954	47,232	0.12/na

Notes: ha – hectares, mt = million tonnes; retained areas and resource/reserves estimates are 2008 figures.

Sources: Indonesian Coal Books, 2004/2005, 2006/2007, and 2008/2009 (www.petromindo.com), and Barlow Jonker, “Coal Supply Series Indonesia 2005” (15th ed.).

¹⁶ The other two 1st Gen CCOW companies — PT BHP Kendilo and PT Allied Indonesia — ceased production in 2006 and 2009, respectively.

The pioneer mining companies chose Kalimantan over Sumatra for a number of reasons. First, the Kalimantan resources were located within the provinces of South and East Kalimantan, with good access to navigable rivers or to coastal areas where ports could be built to load the coal onto sea vessels. Another location advantage of Kalimantan was its shorter sailing distance to the lucrative export markets of North Asia — Japan, Korea, and Taiwan — which would reduce the round trip journey by Panamax vessel by at least two days when compared with mines located on South Sumatra.¹⁷ Figure 1 shows the location advantage of Kalimantan coal resources compared with those of Sumatra.

Second, Kalimantan coals when compared with Sumatran coals had higher calorific values and lower sulphur and ash contents. For these reasons, companies applying for 1st Gen CCOW all favored Kalimantan over Sumatra and within a few years Sumatra and PTBA were eclipsed by production coming from the Kalimantan mines of companies operating under 1st Gen CCOW.

Due to the time required to complete exploration work and mine feasibility studies and then to actually bring the mines and related infrastructure into commercial production, Indonesia only started its relentless growth in production after 1988 when annual coal production stood at only 4.43 million tonnes (mt). But once these 1st Gen CCOW producers started their commercial production in 1989, the Indonesian coal industry entered into the take-off stage of development.

¹⁷ The round trip distance by sea from Balikpapan, East Kalimantan, to Japan is 760 nautical miles shorter than if the sea journey originated at Palembang in East Sumatra. This shorter travel distance translates into a two-day saving on the round trip sailing time, which would have resulted in a transport cost savings of \$0.60 to \$0.90/tonne depending on the charter rates and bunker fuel price adopted for the cost comparison.

Figure 1 Kalimantan and Sumatra are more favorably located to Asian markets than Australia.



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Source: <http://www.surftrip.com/image/maps/indonesia-map.jpg>

Take-off period (1989-1999)

The take-off period was a time of torrid and seemingly unstoppable growth, spurred on by a stable political climate and the “special law” protections provided to 1st Gen CCOW holders. Both factors led to foreign mining companies making the necessary investments that led to the impressive rates of production growth over the take-off period.

Between 1989 and 1999, Indonesia’s coal industry increased production from 4.43 mt to 80.89 mt, a spectacular growth rate of 30 percent per year. Export data were not available until 1995. However, in the short space of four years (1995-1999), Indonesia’s coal industry showed an impressive growth in exports of 15 percent per year, increasing from 31.32 mt in 1995, the first year when coal export data were available, to 54.58 mt in 1999.

The shift in production from PTBA and KP holders to CCOW holders was however the big story of the take-off period. At the start of the take-off period, PTBA, which operated a few mines on Sumatra, and KP holders accounted for 55 percent of total coal production, KP holders accounted for 24 percent, and 1st Gen CCOW holders accounted for 21 percent. By the end of the take-off period in 1999, companies operating under 1st Gen CCOW accounted for 72 percent of Indonesia’s total coal production, PTBA’s share had dropped to 14 percent of Indonesia’s 1999 coal production, and KPs (including other unaccounted for production) had increased their output to 9.1 mt or 11 percent of production.

Changes to the Regulatory Framework: During the take-off period, the GOI discontinued its highly successful 1st Gen CCOW program. It was not until 1994 that the GOI offered investors a revised model contract, now known as a 2nd Generation (Gen) CCOW. The GOI only offered the 2nd Gen CCOW for one year before it was withdrawn by the GOI for reasons that are unknown. Despite being offered for only one year, the 2nd Gen CCOW subsequently proved to be a moderate success. The GOI awarded 2nd Gen CCOW to 17 domestic companies of which 11 are still in production as of August 2010 (Table 2).

Table 2 Eleven of original 17 companies operating under 2nd Generation CCOWs remain valid as of 2009. Eight of these 11 were significant producers.¹⁸

Company	Location	CCOW Signing	COD	Expiry Date	Initial Area (ha)	Retained Area (ha)	Resources/Reserves (mt)
1. Antang Gunung Meratus	S. Kalimantan	15 Aug 1994	1999	2029	98,445	22,433	210/na
2. Bahari Cakrawala Sebuk	S. Kalimantan	15 Aug 1994	May 1998	April 2028	18,200	12,355	na/16.1
3. Borneo Indobara	E. Kalimantan	15 Aug 1994	June 2005	May 2025	112,107	24,100	1469/188.9
4. Gunung Bayan Pratama	E. Kalimantan	15 Aug 1994	1998	2028	100,000	24,546	169/23.2
5. Indexim Coalindo	S. Kalimantan	15 Aug 1994	1997	2027	100,000	24,050	128/na
6. Jorong Barutama Greston	S. Kalimantan	15 Aug 1994	1998	2028	98,418	11,478	Na/12.6
7. Kartika Selabumi	E. Kalimantan	15 Aug 1994	2003	2033	100,000	17,550	45.1/na
8. Mandiri Intiperkasa	E. Kalimantan	15 Aug 1994	June 2003	May 2033	50,000	9,240	88.5/25.7
9. Marunda Grahamineral	C. Kalimantan	15 Aug 1994	2004	2034	99,792	23,541	327/65.4
10. Riau Baraharum	Riau	15 Aug 1994	2005	2035	97,969	24,450	na
11. Trubaindo	E. Kalimantan	15 Aug 1994	2005	2035	94,415	23,650	na/80.8

Sources: Indonesia Coal Books for 2003/04 and 2008/09 (www.petromindo.com)

¹⁸ Jorong, which is owned by Banpu of Thailand through Indo Tambangraya Megah, Tbk, will be closed by 2015 when its remaining reserves will be exhausted. Banpu was also the original owner of Barasentosa Lestari, a 2nd Gen CCOW holder located in South Sumatra. Banpu was never able to bring Barasentosa into commercial operation, claiming that infrastructure development costs were too high. It also ran afoul of the 1999 forestry law, which limited the area that could be brought into production. As a result of these difficulties, Banpu sold its interest in Barasentosa to GMR Energy of India in February 2009 for US\$80 million. Five other 2nd Gen CCOW were terminated between 2000 and 2005. They are Bentala, Dutaputra, Nusa Minera, Ramdany, and Sinar Benua.

The 2nd Gen CCOW companies, which only commenced production in 1997, contributed 4 percent of total coal production by 1999.

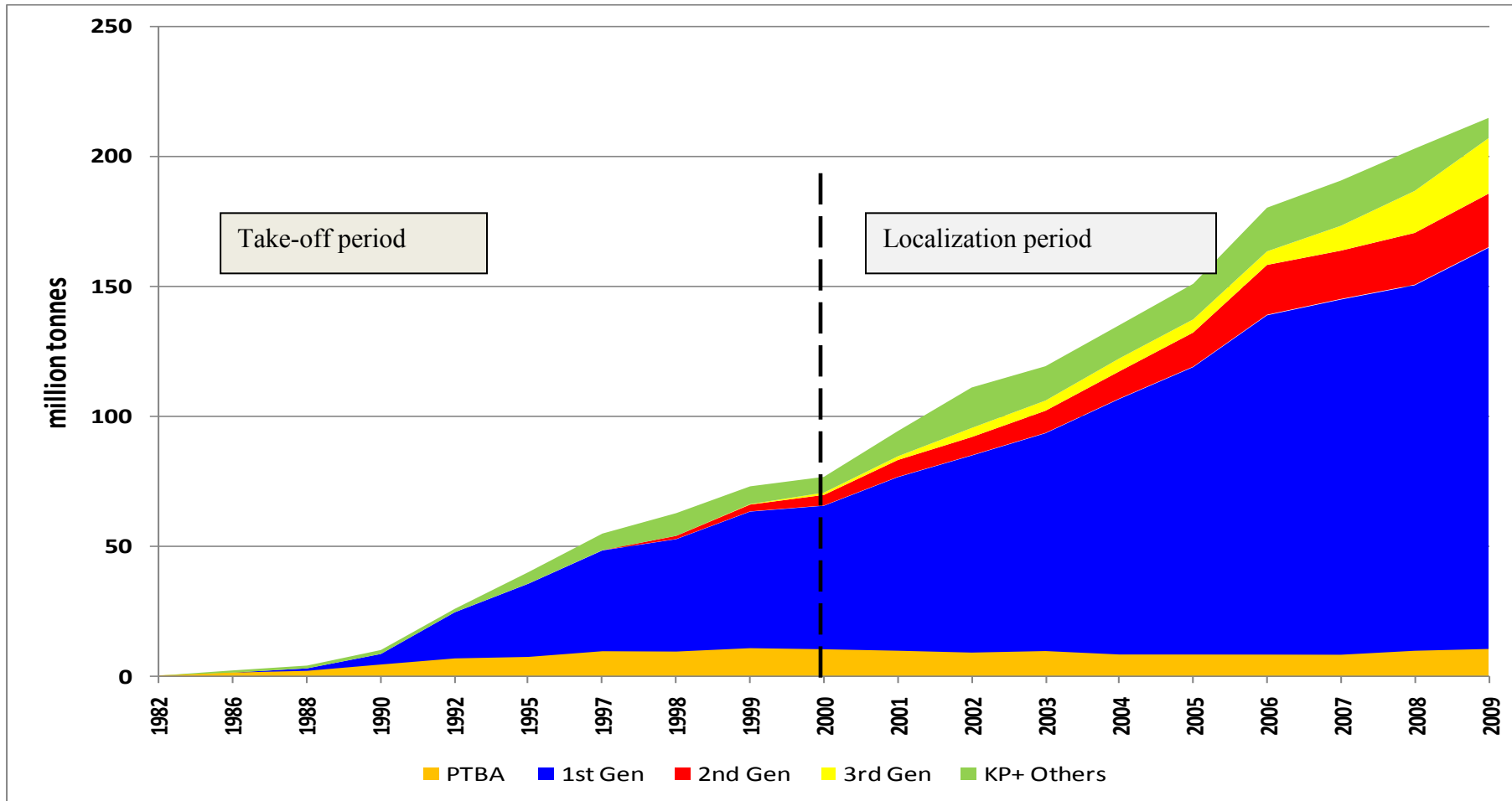
In 1997, the GOI made one further change to its CCOW program, when it issued a 3rd Generation (Gen) CCOW. This program lasted until it was discontinued in 2000.¹⁹ Companies operating under 3rd Gen CCOW did not start to produce coal from their concession areas until well after the start of the localization period. The 3rd Gen CCOW differed significantly from the 1st and 2nd Gen CCOW. The 3rd Gen CCOW program was open to both domestic and foreign investors; however the terms of the CCOW favored 100 percent domestic companies. During the three-year period that the 3rd Gen CCOW was offered to investors, 114 companies, almost all domestic firms, signed 3rd Gen CCOW.

By the end of the take-off period in 1999, private coal companies (CCOW and KP holders) were mostly located on Kalimantan and accounted for 86 percent of Indonesia's coal output, compared with only 45 percent at the start of the take-off period. Figure 2 shows the shifts in production by type of mining authorization — 1st, 2nd and 3rd Gen CCOW and KP — over the Take-off period and the following development period, the Localization period, which will be discussed shortly.

1st and 3rd Gen CCOW Compared: The terms of 1st Gen CCOW are recognized as being more favorable to foreign investors than those of 3rd Gen CCOW, which are viewed by the coal industry as less attractive due to a lack of clarity on tax liabilities and the weak protections afforded to foreign investors for repatriation of profits. Table 3 provides a comparison of principal terms of 1st and 3rd Gen CCOW. A cursory reading of this table might suggest that the 3rd Gen CCOW offered the better terms, but the differences of importance are the terms related to taxes and foreign exchange repatriation, which are clearly in favor of holders of 1st Gen CCOW.

¹⁹ After 2000, all mining authorizations were issued locally in the form of KPs (Source: Indonesian Coal Book 2006/2007).

Figure 2 Growth in Indonesia's Coal Production by Type of Mining Authorization, 1982 – 2009 (million tonnes)



Sources: (1) Barlow Jonker, "Coal Supply Series Indonesia 2005," 15th ed., 2006 for years 1995 and 1996; (2) Graeme Robertson, "Indonesian Coal Supply: Thriving in Adversity," published in Proceedings of the National Outlook Conference, Canberra, 29 February - 2 March 2010, Table 2, p. 217 for 1997 and 1998; Energy Publishing, "Indonesian Coal and Power Report," January to March issues for 2002 through 2010.

Table 3 Comparison of Terms of 1st Generation and 3rd Generation CCOW

Terms	1st Generation CCOW	3rd Generation CCOW
Government Counterparty	PTBA	MEMR
Mining Authorization	Although separate PTBA authorization is required for every stage of activity, CCOW holder effectively given “conjunctive title” over concession area. PTBA authorization was largely a formality.	Single “upfront” authorization for all mining activities
Exploration Stage	Must be completed before exploitation	Exploitation may commence during exploration period.
Export Approval	Government approval required for each export contract	Notification is only needed for long-term export contract (more than three years).
Domestic Market Obligation	Government may force CCOW holder to sell all or part of its coal in Indonesia if local demand is unmet.	Not certain
Levies and Royalties	13.5% of production paid in kind or cash at the request of the GOI	13.5% of production paid in cash (negotiable for special cases such as low grade coal of UG mining)
Advance Payment	Yes, but not onerous	None
Minimum Expenditures	Nominal amounts must be spent during: General Survey Phase: \$120/km ² Exploration Phase: \$500/km ²	No minimum expenditures required
Regional Taxes	Lump sum set at \$100,000 per year	None
Taxation	<ul style="list-style-type: none"> Corporate tax rate fixed at 35% for first 10 years and 45% for rest of CCOW term CCOW holder either exempted from other taxes or tax rate stated in CCOW 	Corporate tax rate and other taxes will vary from year-to-year based on changes to Indonesian tax regulations.
Tax Exemptions and Fiscal Incentives	<ul style="list-style-type: none"> Exemption from duties, fees, and taxes on material, equipment, and supplies brought into or taken out of Indonesia Investment allowance equal to 20% of total investment at rate of 5% per year. FOREX repatriation guarantee for profits, loan repayment, depreciation, and share sale process 	<ul style="list-style-type: none"> Same Same Forex repatriation requires approval of parliament and president; difficult to obtain

The Localization period

Between 2000 and 2009, domestic investors, with government of Indonesia support, gained majority ownership of Indonesia’s largest coal producers. During this same time period, the coal industry was subjected to greater regulatory control by provincial and regency governments. Despite these changes in ownership and regulatory control, Indonesia’s coal industry expanded during the Localization period at a still impressive, albeit slower, growth rate of 12 percent per year. In 2005, against all odds, Indonesia became the world’s largest exporter of steam coal with

total coal exports of 117 mt of steam coal against “runner-up” Australia’s 115 mt.²⁰ In 2009, Indonesia’s exports of steam coal had increased to 176.39 mt while Australia’s steam coal exports increased at much slower pace to 138.83 mt due to chronic transport infrastructure constraints.²¹

In each year of the localization period, companies operating under 1st and 2nd Gen CCOW achieved a minimum coal production share of 75 percent. It was also a time when 3rd Gen CCOW holders started to ramp up their production. In 2009, companies operating under 1st, 2nd or 3rd Gen CCOW accounted for 87 percent of total coal production while PTBAs and KPs had sunk to almost irrelevant shares of 5 percent and 4 percent, respectively.²²

What made this achievement of CCOW-backed companies even more impressive was that it occurred at a time when

- ownership of coal-producing companies operating under 1st Gen CCOW was being transferred to local entrepreneurs;²³
- Indonesia was experiencing considerable political instability as it struggled to transition from Soeharto’s “New Order” government to a political process based on free elections, regional autonomy, and participatory democracy (in particular, between 1999 and 2004, it suffered through three weak and unstable governments, which were unable to control

²⁰ Source for Indonesian data: Energy Publishing, “Indonesian Coal and Power Report,” p.11, May 2006. Australia data obtained from Coal Services Pty Ltd (www.coalservices.com). Interesting side note: If one were to compare the coal export levels of both countries on an energy adjusted basis, it is likely that Indonesia would not have surpassed Australia as the world’s leading steam coal exporter until 2007. It should also be noted that, according to Coal Service, Australia in addition to its steam coal exports of 115 mt in 2005 also exported 118 mt of coking coals. Australia is in the process of completing a major program to expand the capacities of its rail networks and coal handling ports in Queensland and NSW, which will allow Australia to support total coal exports of 550 mt by 2015 and steam coal exports of around 250 mt. Port and rail infrastructure capacity is forecast to increase to 600 mt by 2020, which will support steam coal exports of around 300 mtpa. (See Bart Lucarelli, “Australia Black Coal Industry: Past Achievements—Future Challenges,” PESD, forthcoming 2010.)

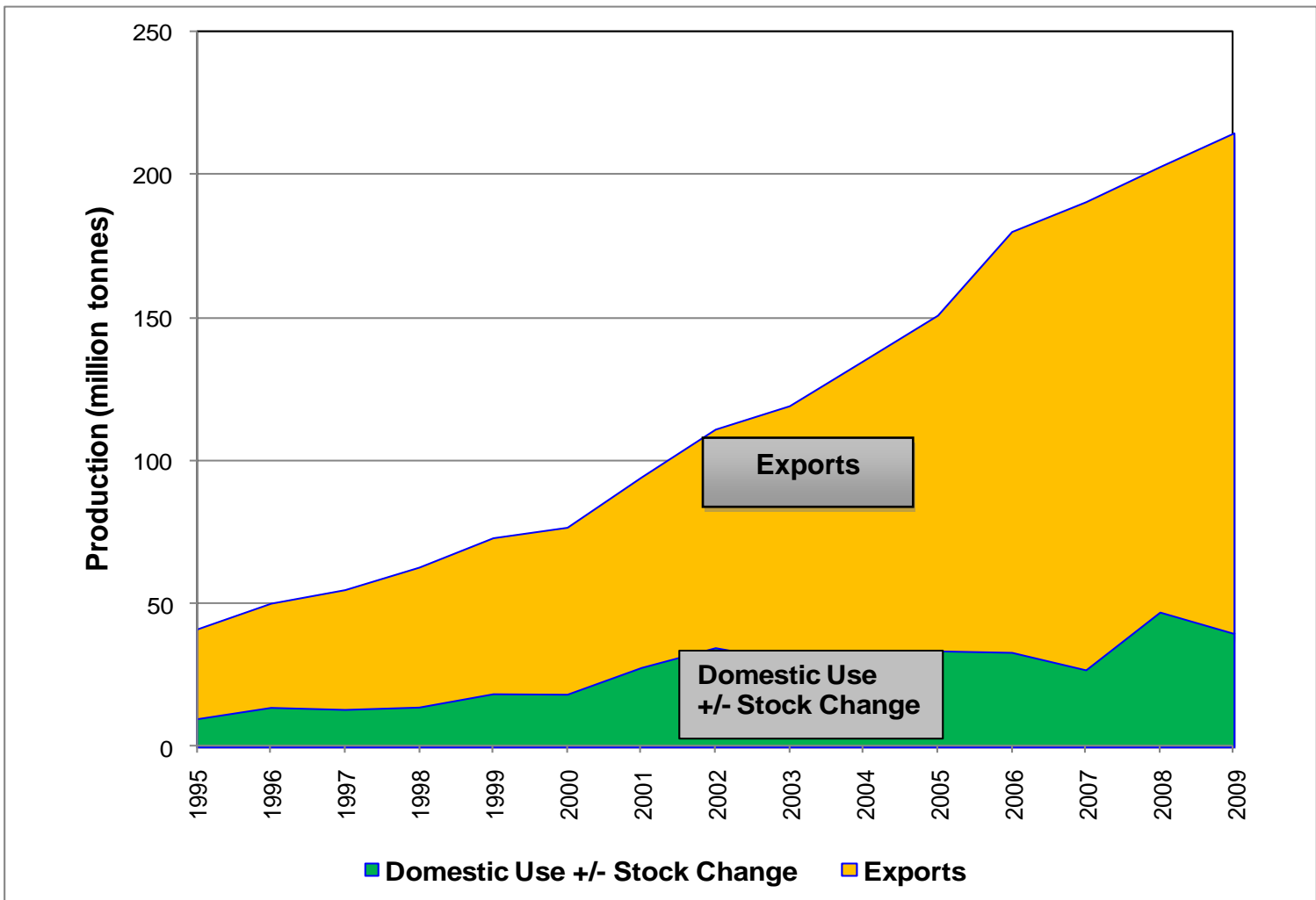
²¹ Source: Energy Publishing, “Indonesian Coal and Power Report,” August 2010 (for Indonesia coal export data) and “Australia Coal Report,” p.14, August 2010 (for Australian thermal coal export data).

²² Source: Company specific data on production were obtained from Energy Publishing, “Indonesian Coal and Power Report,” May 2010, p. 9. The author then identified each company according to its mining authorization and then summed the production amounts by mining authorization.

²³ Under the terms of their contracts, 1st Gen and 2nd Gen CCOWs were required to offer and sell to domestic entities (defined to include governments, Indonesian citizens, and domestic companies) a minimum of 51 percent ownership in their companies by the 10th year after they started commercial coal production. For the top four coal producers (KPC, Adaro, Arutmin, and Kideco) those sell-by dates fell between 1999 and 2005 while the sell-downs occurred between 2002 and 2005.

- newly empowered regional governments and special interest groups); and
- the Asia Pacific region was still trying to overcome the effects of the Asian Financial Crisis of 1997 and follow-on economic shocks caused by the SARS and bird flu scares.

Figure 3 Export and Domestic Sales of Indonesia Steam Coal, 1995-2009 (mt) Ω



Note: Domestic sales included any changes in stock levels at mine sites and ports.

Source: Barlow Jonker, “Coal Supply Series Indonesia 2005,” 15th ed., 2006, for years 1988-2003; Energy Publishing, “Indonesian Coal and Power Report,” for years 2004-2009.

Between 2002 and 2005, domestic investors either acquired majority ownership stakes or managerial control of Indonesia’s four largest coal producers — KPC, Arutmin, Adaro, and Kideco — which in 2002 accounted for 57 percent of total coal production.

Sell-downs during this period included the following:

- (a) BHP selling its ownership in Arutmin, Indonesia's fourth largest coal company in 2002, and BP/Rio Tinto selling its ownership in Kaltim Prima Coal (KPC) in 2003 to Bakrie Brothers;
- (b) New Hope Mining of Australia selling out its stake in Adaro in 2005 to the Rachmat/Soerydjaya/Garibaldi families in 2005 and giving up managerial control of Adaro to its new local owners; and
- (c) Samtan of Korea selling out a portion of its majority share to the Sudwikotmono family in 2004, which put Samtan in a minority ownership position.²⁴

In place of the pioneer foreign developers of Indonesia's coal industry, one now found instead domestic companies holding majority stakes in the largest Indonesian coal companies, as well as most of the smaller companies. Foreign ownership still continues on a minority basis, with new foreign owners coming mostly from either regional power companies (for example, Tata Power of India and Huadian of China) trying to secure access to Indonesian coal supply by taking partial equity stakes in Indonesian coal producers or from international investment banks and funds such as Goldman Sachs, Merrill Lynch, Saratoga Investments, and Farallon Capital Management.

Except in two cases, operational control of the mining operations has passed to the new Indonesian owners. The two exceptions are the following:

- Kideco, which continues to be managed by Samtan of Korea, its previous majority owner (Samtan also holds the right to market all coal exports under a 10-year marketing agreement that expires in 2012); and
- Indominco Mandiri, which is a publicly traded Indonesian mining company but effectively managed and controlled by Banpu of Thailand.

Expatriate managers, many of whom were long-term residents of Indonesia, continue to hold senior management positions on an "as needed" basis. In at least three instances — KPC, BHP, and Kideco — rights to market coal exports are held by foreign companies. For example, KPC

²⁴ See http://goliath.ecnext.com/coms2/gi_0199-5630951/Indika-Group.html.

has contracted with Glencore to handle all of its coal exports under a 10-year marketing agreement that will expire in 2013. BHP has a similar marketing services agreement with Arutmin that will expire in 2011. Kideco and Samtan appear to have a more open-ended marketing agreement that is renewed every few years. In return, these “export marketers” are paid a fixed commission for each tonne of coal sold, based on the contract value of the coal that is sold.

Most mining companies that hold CCOW, although localized, have a strong international outlook and observe best industry practices with respect to environmental protection and community responsibility. They are also significant contributors to the Indonesian economy and the government exchequer.

With respect to companies operating under 2nd Gen CCOW, 12 of the 17 awarded in 1994 achieved commercial production over the next 15 years. As of 2009, 11 were still in operation and four of these 11 2nd Gen CCOW companies have established coal mining operations that are considered significant contributors to Indonesia’s coal production and exports. These are the four:²⁵

- PT Gunung Bayan Pratama;
- PT Jorong Barutama Greston;
- PT Trubaindo; and
- PT Mandiri Inti Perkasa.

²⁵ Jorong and Trubaindo along with Indomnco Mandiri, a 1st Gen CCOW company, and Kitadin, a KP, are owned by Banpu, a Thai company that is listed on the Stock Exchange of Thailand. Its Indonesian registered holding company — PT Indo Tambangraya Megah, Tbk — is listed in the Indonesian Stock Exchange.

The companies operating under 3rd Gen CCOW did not achieve significant production levels until 2009. A number of reasons have been cited for the failure of the 3rd Gen CCOW program to make a significant contribution to Indonesia's coal production. First, most of the areas available under the program were either low-quality deposits located within areas relinquished by 1st Gen and 2nd Gen CCOW or were located very far inland and away from navigable rivers, e.g., Central Kalimantan. Second, most areas had little or no geological data to allow a value to be placed on them. Third, many of the 114 companies that signed up for 3rd Gen CCOW had no background in mining. They were simply in the business of collecting success fees, obtaining free carried interests, and “flipping their assets” to others in an attempt to make some quick money.²⁶

By 2007, 59 of the 114 original 3rd Gen CCOW contracts had been terminated — either by the company holding the CCOW or by the MEMR (Ministry of Energy and Mineral Resources). In 2009, only 17 of the remaining 55 companies holding 3rd Gen CCOW had operating mines, although an additional seven companies were said to have mines under construction.²⁷

After 2007, however, holders of 3rd Gen CCOW seem to have achieved some success increasing their levels of production, largely due to the positive impact that higher coal prices had on their mining projects. Holders of 3rd Gen CCOW increased their share of total production from 3 percent in 2006 to 10 percent in 2009, which is equal to the 2009 share of production achieved by holders of 2nd Gen CCOW.

A number of 3rd Gen CCOW companies are still in the exploration and feasibility stages of development (35 in total). Eleven of the 35 companies are clustered in the Muarateweh area of Central Kalimantan, which is known to contain high-quality coking coals. Seven of those 11 companies (Juloi Coal, Kalteng Coal, Lahai Coal, Maruwai Coal, PT Pari Coal, PT Ratah Coal, and Sumber Barito Coal) are owned jointly by BHP Billiton (75 percent share) and Adaro Coal Indonesia (25 percent share).

They are currently attempting to develop the high-quality coking coal deposits found within their concession areas. However, infrastructure constraints, such as draft limits on the northern branch of the Barito River and the unwillingness of the East Kalimantan provincial government to

²⁶ Barlow Jonker, “Coal Supply Series Indonesia, 2005” (15th ed.), 2006.

²⁷ *Indonesian Coal Book* 2008/2009, pp. 283-286.

support a project to construct a railway line from Muarateweh to Balikpapan, have constrained the development of their high-quality coking coal resources. However, if successfully developed, the BHP-Adaro consortium and other 3rd Gen CCOW companies located in Central Kalimantan may change Indonesia from being an exporter of mostly steam coal to a balanced supplier of both steam and high-quality coking coals.

Finally, KP mining companies have amounted to an unfulfilled promise. KPs have made only a small contribution to Indonesia's coal production, especially when one considers the large numbers of KPs that are still active.²⁸ In general, the mining areas allowed under an exploitation KP are too small to allow the most efficient mining methods and the companies holding these KPs tend to be undercapitalized and lack the technical capability to develop their resources in a timely and cost-effective manner.

At this point in time, 2nd and 3rd Gen CCOW holders, which contribute roughly the same share of Indonesia's total coal production, are mere shadows of the 1st Gen CCOW mining companies. This vast difference in scale of operations is reflected in the average mine sizes operated by the different entities. Table 4 shows the average mine size in thousand tonnes of 2009 production per mine for companies operating under different mining authorizations. The difference in scale between 1st Gen CCOW companies and all others is so vast that the 1st Gen CCOW companies appear to come from an entirely different industry, if not country. The issue of disproportionate mine scale for different generations of permit holders is one that will continue to create difficulties for Indonesia's coal industry as it transitions to a new licensing and regulatory system under the Mining Law of 2009.

²⁸ The MEMR speculates that the KP contribution to Indonesia's coal production is much greater than official production statistics indicate — perhaps as much as 20 mtpa. Local governments, which are responsible for collecting and reporting KP production data to the MEMR, may not have strong enough capability for collecting monthly production data from each KP holder, leading to the very low KP production figures (interview with Agus Yulianto of MEMR).

Table 4 Production Per Mine by Type of Authorization

License Type	2009 Production	# of Operating Mines in 2009	2009 Production/mine (mt/mine)
1 st Gen	154.23	9	17.14
2 nd Gen	20.51	9	2.28
3 rd Gen	21.52	17	1.27
KP	6.51	14	0.47

Note: The author identified 14 KP mines that were producing coal in 2009 although it is highly likely that more than that number were operating in that year.

Section 3

Resources, Reserves, and Levels of Production

Indonesia's ability to sustain its title as world's largest steam coal exporter will depend largely on the size and quality of its remaining coal resources and reserves. In this regard, the MEMR, in a 2007 joint study with the New Energy Development Organization of Japan (NEDO), revised Indonesia's coal resource and reserve estimates to levels that were dramatically higher than resource and reserve estimates from 2005 (Joint Study). If the MEMR's updated resources and reserves estimates accurately reflect Indonesia's remaining coal resources and reserves, Indonesia should be able to maintain its position as a dominant exporter for the foreseeable future.

However, it is impossible to have full confidence in these statistics since the Indonesian Ministry of Energy and Mineral Resources (MEMR) has thus far refused to release the Joint Study to the public, including major Indonesian coal suppliers. As a result, many of the underlying assumptions of that study, such as reporting basis, remain unknown. The revised MEMR statistics should therefore be used with caution, given the past experiences in Indonesia with overstated mineral resources and reserves.²⁹ It is an uncertainty that can lead to mistaken conclusions about the ability of Indonesian coal suppliers to meet future demand forecasts and can also lead to inappropriate government policies and regulations for the coal industry.

Resources and Reserves

Indonesia has substantial thermal coal resources, which the MEMR estimated at 104.76 billion tonnes in 2009 with 20.2 billion tonnes of remaining economically recoverable coal reserves in that same year. However, it remains uncertain on what basis the reserves and resources are being reported — as-received or air-dried — and whether the data have been collected according to the 2004 Joint Ore Reserves Committee (JORC) standard, or some other standard.³⁰ For lack of

²⁹ For example, see <http://geology.about.com/cs/mineralogy/a/aa042097.htm> for a discussion of the 1997 Bre-X gold scandal that occurred toward the end of the Suharto era.

³⁰ Estimates of Indonesia's 2009 resources and reserves were taken from the *Indonesian Coal Book 2008/2009*, which is available from www.petromindo.com. The data are disaggregated by province and CV content without

better information, the author assumes that the data have been reported on a gross, air-dried basis.

Unlike Australia, which has vast reserves of high-quality bituminous thermal and coking coals with higher heating values that range between 6000 and 7500 kcal/kg (gar), Indonesia's coal resources and reserves are mostly sub-bituminous (4500 – 5800 kcal/kg, gar) and lignite-grade coals (<4500 kcal/kg, gar) (see Table 5 and Table 6).

Table 5 Classification of Indonesia's Coal Reserves by Coal Rank (as of 2007)

Coal Rank	Calorific value (kcal/kg)		Reserves (in million tonnes) (gad)			% of total
	GAD	GAR	Probable	Proven	Total	
Lignite	<5100	<4500	4,292	1,105	5,397	29%
Sub-bituminous	5100– 6100	4500 -5800	8,214	2,971	11,185	60%
Bituminous	>6100	<5800	744	1,385	2,129	11%
Total	n/a	n/a	13,250	5,461	18,711	100%

Source: Indonesian Coal Book, 2008/2009, ICMA, July 2008

Table 6 Classification of Indonesia's Coal Resources by Coal Rank (as of 2007)

Coal Rank	Calorific value (Kcal/kg, gar)	Resources (million tonnes) (gad)					% of total
		Hypothetical	Inferred	Indicated	Measured	Total	
Lignite	<4500	5,058	6,579	3,652	5,750	21,039	23%
Sub-bituminous	4500 – 5800	16,925	22,104	9,042	10,867	58,938	63%
Bituminous	>5800	1,650	6,515	968	4,293	13,426	14%
Total	n/a	23,633	35,198	13,662	20,910	93,403	100%

Source: Indonesian Coal Book, 2008/2009, ICMA, July 2008

The MEMR increased its estimates of resources and reserves from 60.51 billion tonnes and 7 billion tonnes respectively in 2005 to 93.4 billion tonnes and 18.7 billion tonnes in 2007.³¹ These increases translate into a 62 percent increase in the 2007 resource base and a huge 167 percent increase in 2007 reserves over the 2005 estimates. The MEMR in 2009 made another upward

mention of a reporting basis for the CV content. Reference is made in the *Indonesian Coal Book* to a Joint NEDO-MEMR Coal Reserve and Resource Study, which was issued in early 2008. This author has assumed that resource and reserve data contained in the *Indonesian Coal Book* 2008/2009 have been reported on an air-dried basis, which is the same reporting basis adopted by previous editions of the *Indonesian Coal Book*.

³¹ *Indonesian Coal Book* 2004/2005 and *Indonesian Coal Book* 2008/2009.

revision to its 2007 resource and reserve estimates with a 29 percent increase in resources from 93.4 to 104.76 billion tonnes and an 8 percent increase in reserves from 18.7 billion tonnes to 20.2 billion tonnes. The MEMR has not yet released a breakdown of 2009 resources and reserves by coal types and location.

Table 5 and Table 6 reveal for 2007 that lignite and sub-bituminous coals comprise 86 percent of resources and 89 percent of reserves.³² Only 11 percent of reserves and 14 percent of resources are classified as bituminous.³³

With respect to the overall coal resource base, the picture for bituminous coals is less stark, but the main finding is that future coal supplies from Indonesia will be of sub-bituminous and lignite-grade coals. This shift in coal quality also means that the amount of tonnage being mined, trucked, and barged will increase over time if Indonesian coal suppliers wish to maintain existing energy equivalent levels of coal exports over the next decade.³⁴

Sumatra, which contains 56 percent of Indonesia's 2007 coal resources, is home to the largest share of Indonesia's coal resource base when measured in raw tonnes, even if one excludes speculative resource measures such as hypothetical and inferred resources (Table 7). Kalimantan accounts for 43 percent, and only a meager amount equal to 0.4 percent of the total resource base is estimated for other islands.

³² The *Indonesian Coal Book* 2008/2009 had a significant difference between estimates of coal reserves by province (11.85 billion tonnes) and by coal type (18.74 billion tonnes). The author assumed that the estimate by coal type was the correct total figure.

³³ The *Indonesian Coal Book* 2008/2009 does not identify the CV basis for its coal reserve and resource estimates. The author believes that reserve estimates provided in the *Indonesian Coal Book* 2008/2009 have been reported on a gross, air-dried basis, which is the reporting basis adopted for previous coal books. To convert these assumed air-dried units to gross as received units, the author first identified representative coals listed in the *Indonesian Coal Book* with air-dried GCVs close to the values shown in the calorific value column of tables 3-1 to 3-4 and compiled data on total moisture (TM) and inherent moisture (IM) for those coals. He then converted the GCV air-dried values shown under the calorific value column to gross as received values using the following equation:

- $CV(gar) = CV(gad) \times [(100 - TM)/(100 - IM)]$.

The quantities reported remain air-dried measures but the ranges now represent units easily recognized by industry analysts and energy researchers.

³⁴ Given that Indonesia's coal mining and transport operations are almost 100 percent reliant on trucks, barges, generator sets, and pumps that operate on diesel, the amount of diesel consumption in the coal mining sector is expected to climb to record levels unless electricity and alternative fuels, such as CNG, are used as substitutes for diesel.

Table 7 Government of Indonesia's Estimates of Coal Resources by Province, 2007

Province	Resource Category (In Million Tonnes)					
	Hypothetical	Inferred	Indicated	Measured	Total	% of Total
Sumatra	20,148	13,949	10,735	7,699	52,532	56.2%
Kalimantan	3,389	21,029	2,894	13,156	40,468	43.3%
Other	96	220	33	55	403	0.4%
Total	23,633	35,198	13,662	20,910	93,403	100.0%

Source: Indonesian Coal Book, 2008/2009, ICMA, July 2008

If one looks only at reserves, Kalimantan has a clear advantage, accounting for 60 percent of proven and probable reserves and 83 percent of proven reserves (Table 8). Sumatra accounts for the remaining 40 percent of proven and probable reserves and 17 percent of proven reserves.³⁵

Table 8 Estimates of Coal Reserves by Province, 2007

Province	Reserve Category (in Million Tonnes)				
	Probable	Proven	Indicated	% of Total Reserves	% of Proven Reserves
Sumatra	3,781	905	4,686	40%	17%
Kalimantan	2,605	4,557	7,162	60%	83%
Other	0	0	0	0%	0%
Total	6,386	5,462	11,848	100%	100%

Source: Indonesian Coal Book, 2008/2009, ICMA, July 2008

Coal Production and Sales

Over the past decade, coal producers located on Kalimantan have accounted for more than 90 percent of Indonesia's coal production and exports. This industry concentration on Kalimantan is not surprising, given that the island accounts for more than 65 percent of economically recoverable reserves. However, as mentioned in the previous section of this paper, the concentration of coal production capacity on Kalimantan is also due to its proximity to the large power markets of Japan, Korea, Taiwan, and China, which have been the fastest-growing coal markets in Asia for the past 30 years. A third explanation is that Kalimantan's coal reserves have higher typical calorific values (CVs) and are located closer to either the coast or navigable rivers such as the Barito and Mahakham.

³⁵ Source: *Indonesian Coal Book* 2008/2009, p. 3, Indonesian Coal Mining Association, July 2008.

Between 2000 and 2009, Indonesia's coal industry increased its output by 12 percent per year from 76.86 mt in 2000 to 214.60 mt in 2009, partly due to the region's recovery from the Asian Financial Crisis and partly due to increases in the price of steam coal over this period. With respect to increases in Asian coal prices over this period, the globalCOAL Newcastle price index (gcNEWC) increased from \$26 per tonne in 2003 to \$49 per tonne in 2006.³⁶ Over the next two years, the gcNEWC index price climbed to an all-time weekly high of \$184 per tonne during July 2008.³⁷ The average monthly gcNEWC index price for the first eight months of 2010 was \$96.00 per tonne, almost a doubling of the average gcNEWC price for 2006 (\$49 per tonne) and an increase of 167 percent over the average gcNEWC price for 2003 (\$36 per tonne).

In response to these price increases, the Indonesian coal industry increased its production from 111.1 mt in 2002 to 214.6 mt in 2009, a 93 percent increase over 2002 production levels and a 10 percent annual rate of growth (Table 9). What made this growth even more impressive is that it occurred at a time when (i) political events were threatening the survival of Indonesia's coal producers; (ii) Indonesian ownership of the largest coal producers was transferring from international resource companies to local companies; and (iii) economic uncertainty, resulting from the lingering effects of the 1997 Asian Financial Crisis and the SARS and bird flu scares, were negatively impacting new investment decisions.

Kalimantan's largest coal producers — KPC, Adaro, Kideco, and Arutmin — are expected to continue showing a minimum 10 percent annual growth in production over the next five years, which should result in Indonesia increasing its total coal production close to 315 mt by 2013 and up to 380 mtpa by 2015.³⁸

³⁶ Annual average globalCOAL Newcastle price derived from weekly gcNEWC prices. Weekly and monthly gcNEWC values are available from www.globalcoal.com.

³⁷ The gcNEWC index measures prices for coals with approximate heating values of 6,300 kcal/kg (gar) based on actual trades over the globalCOAL electronic trading platform with all trades for physical delivery, FOB Newcastle. Prices of Indonesian coals are linked to indices that are priced against Newcastle coals.

³⁸ Adaro and Kideco originally planned to bring their low rank Wara and Samarangau coals into production in late 2009. Kideco achieved this milestone with an initial production of 2 mt. Adaro, on the other hand, delayed its production of Wara coal until 2010 but still plans to expand its coal production to from 38.5 mtpa in 2008 to 80 mtpa by 2015. Kideco is also expected to double its production to 40 mtpa by 2015 and Arutmin will increase its production from 15 mtpa to more than 30 mtpa by 2015. KPC has plans to increase output from 36.3 mt in 2008 to 65 mt by 2015. In total, these planned increases in output by the top four producers equal 104 mt.

Table 9 Coal Production and Sales, 2002-2009 (in million tonnes)

Year	2002	2003	2004	2005	2006	2007	2008	2009
Production	111.1	119.3	135.1	150.9	180.1	190.6	202.8	214.6
Domestic	31.1	30.2	30.3	39.1	33.5	39.2	47.8	47.5
Exports	76.3	89.1	105.4	117.2	147.0	163.5	158.0	176.4
Domestic + Exports	107.4	119.3	135.7	156.3	180.5	202.7	205.8	223.9
Stock Change + Statistical Discrepancy	3.7	0	-0.6	-5.4	-0.4	-12.1	3.0	-9.3

Source: Energy Publishing, “Indonesian Coal and Power Report” (various monthly issues from 2004 through February 2010)

If between 2010 and 2015, the rate of growth in coal output reduces from 10 percent per year to a significantly lower figure of, say, 6 percent, Indonesia’s total coal output would still increase from 215 mt in 2009 to 270 mt in 2013 and 305 mt in 2015.

Although Newcastle coal prices have declined significantly from their peak in July 2008, the gcNEWC price for all of 2009 was around \$72.30 per tonne, which is substantially higher than the average gcNEWC price for 2006 (\$49 per tonne) and 2007 (\$66 per tonne). For the first eight months of 2010, the gcNEWC, which is published weekly and monthly by globalCOAL, has averaged \$96.00 per tonne while the Japanese Public Utilities Reference Price (JPU), which is published by Energy Publishing, was set in April 2010 at \$98 per tonne for Japanese fiscal year 2010.³⁹ One can therefore still expect substantial increases in Indonesia’s coal production by the end of 2010 in response to the substantial increase in coal prices over the past four years.

Indonesia’s coal industry, in addition to being geographically concentrated on the island of Kalimantan, is also concentrated by producer. Indonesia’s top six producers, which are all located on Kalimantan, accounted for more than 75 percent of Indonesia’s coal production between 2002 and 2009 (Table 10). The share of production accounted for by the “Big 6” (Bumi, Adaro, Kideco, Berau, Banpu, and PTBA) is expected to increase over the next decade. The Big

³⁹ For gcNEWC data, go to www.globalcoal.com. Energy Publishing provides current and past Australian coal price estimates in its monthly publication: “Australian Coal Report” available on a subscription basis through www.coalportal.com.

6 also accounted for more than 75 percent of Indonesia's coal exports between 2003 and 2009 (Table 14).

Table 10 The Big 6 accounted for most of Indonesia's coal production between 2002 and 2009

Company	Coal Production (in million tonnes)							
	2002	2003	2004	2005	2006	2007	2008	2009
Bumi Resources (KPC+ Arutmin)	28.2	29.8	36.3	44.6	51.6	54.9	52.0	57.5
Adaro	20.8	22.4	24.3	27.0	33.5	36.0	38.5	40.6
Kideco	11.5	14.1	16.9	18.1	18.9	20.6	21.9	24.7
Berau	7.1	7.4	9.1	9.2	10.8	11.8	12.9	14.3
Banpu (Indo Tambangraya Megah Tbk) (Indominco Mandiri, Jorong, Trubaindo, and Kitadin)	9.6	11.5	12.6	12.2	18.2	18.0	18.8	21.5
Bukit Asam (PTBA)	9.4	10.0	8.7	8.7	8.7	8.6	10.1	10.8
Subtotal	86.6	95.2	107.9	119.8	141.7	149.9	154.2	169.4
All Others	24.5	24.1	33.1	31.1	38.4	40.7	48.6	45.2
Total	111.1	119.3	135.1	150.9	180.1	190.6	202.8	214.6
Big 6 as % of total	78%	80%	80%	79%	79%	79%	76%	79%

Source: Energy Publishing, "Indonesian Coal and Power Report," July 2010 for 2009 estimates, February 2004 through February 2009 for 2002 through 2008 estimates.

Barring a serious government misstep on regulatory matters, the outlook is for the Big 6 producers to embark upon a substantial expansion program over the next decade. Bumi, Adaro, and Kideco have all announced plans to increase coal production by 104 mt by 2015.⁴⁰ They will also be ramping up their production levels to capture the low rank (LR) coal market that will be created by PT Perusahaan Listrik Negara's (PLN) "fast track program," which is expected to add 9,458 MW of new coal-fired capacity between 2011 and 2015.⁴¹ In addition, independent power producers (IPPs) are expected to add 4,340 MW over the same period.

PLN's Fast Track Program and Its Impact on Domestic Coal Requirements In May 2006, PLN announced a 10,000 MW fast track program to build 33 coal-fired power projects with a total capacity of 9,483 MW.⁴² Most of these plants have been designed to burn Indonesia's LR coals. Ten of the plants with a total capacity of 7,520 MW will be located on Java. The

⁴⁰ Source: Phone survey of these coal suppliers in April 2009 by author of this paper.

⁴¹ Nur Pamudji, "The Role of Coal in Indonesia's Future Domestic Energy Mix," Coaltrans Asia, May 31, 2010.

⁴² PLN initially referred to this program as its 10 GW "crash" program although the total capacity is 517 MW short of 10 GW. It changed the name to "fast track" in late 2009.

remaining 23 plants with 1,963 MWs of capacity will be located on the outer islands. Table 11 provides details as of June 2009 on the fast track program.

PLN initially targeted completion of its 10,000 MW fast track program by 2009. It has long since recognized that achieving this tight schedule is not possible and has extended the date of completion for the 9,483 MW of new coal-fired plants to 2012, which is still too optimistic. To speed things along, the government of Indonesia required PLN to sign an MOU with a Chinese consortium consisting of China National Technology Import Export Corporation (CNTIEC), Harbin Power Company, Dongfang Electricity, and Shanghai Electricity Corporation to develop at least 17 of the 33 coal-fired power plants with a combined capacity of 8,000 MW at an estimated value of US\$5.6 billion. However, the Bank of China, China Development Bank, and CEXIM, which are reportedly financing a large portion of the crash program projects, required the GOI to guarantee PLN's credit risk, which delayed the program by at least one year.

PLN and the Chinese engineering, procurement, and construction (EPC) contractors have agreed that construction of each plant will finish within 36 months of groundbreaking, but that will require financing to be in place before groundbreaking. Table 11 indicates that two Java-based plants with a total capacity of 1,260 MW were nearing completion in mid-2009. Another three large Java-based plants with a combined capacity of 2,245 MW were more than 70 percent complete by mid-2009.

Table 11 PLN's 10,000 MW Fast Track Program

On Java-Bali							
No	Project	Total MW	US\$ Portion (M)	Bank	IDR Portion (B)	Bank	Construction Progress (%)
1	Labuan, Banten	630	289	BNI	1,189	BCA	95
2	Rembang, Jateng	630	262	CDB/Barclays	1,911	Mandiri	87
3	Indramayu, Jabar	990	592	CDB	1,273	BNI	78
4	Suralaya, Bantem	625	284	CEXIM	735	Mega	76
5	Pacitan, Jatim	630	293	Pending	1,046	Bukopin	72
6	Paiton, Jatim	660	331	CEXIM	601	Mega	59
7	Teluk Naga, Bantern	945	455	BOC	1,607	Bukopin	43
8	Pelabuhan Ratu, Jabar	1,050	482	CEXIM	1,874	Mega	39
9	Tanjung Awar Awar, Jatim	700	372	Pending	1,155	BNI	2
10	Adipala, Jateng	660	468	Pending	1,890	Pending	0
	Total	7,520	3,827		13,282		

Off Java-Bali							
No	Project	Total MW	US\$ Portion (M)	Bank	IDR Portion (B)	Bank	Construction Progress (%)
1	Meulaboh, NAD	220	124	CEXIM	614	Asbanda	25
2	Pangkalan Susu, Sumut	400	209	Pending	781	Mega	25
3	Tarahan, Lampung	200	119	Pending	460	Mega	21
4	Susel, Barru	100	52	BRI	380	BRI	9
5	Kalteng 1, Pulang Pisau	120	62	Asbanda	414	Mega	2
6	Teluk Sirih, Sumbar	224	138	Pending	521	Asbanda	1
7	Kalsel, Asam-Asam	130	84	SRI	313	SRI	1
8	Katbar 1, Pant Baru (LOI)	100	62	Pending	111	Pending	0
9	Others (15 small plants <100MW)	469	n/a	n/a	n/a	n/a	n/a
	Total	1,963	1,104		6,050		

Source: Energy Publishing, "Indonesian Coal and Power Report," Issue 0141, June 2009, pp. 1-3

One Indonesian coal and power sector expert has estimated that 4,155 MW will be in commercial operation by the end of 2010 and also predicts that all remaining PLN plants will

enter into commercial operation by the end of 2012.⁴³ This author has a less sanguine view of the program's completion date. He expects that 7,000 MW will be in commercial operation by 2013 and that the remaining 2,438 MW will be in operation sometime between 2014 and 2015. In addition, one can expect that an additional 4,350 MW of IPP-supplied coal-fired power plants will be in commercial operation by 2013.

The delays in commissioning these plants will delay PLN's forecasted increases in domestic coal usage. The investment bank, UBS, estimates that Indonesia's coal requirements will increase from 55 mt in 2008 to 94 mt by 2012 with 28 mt of that additional 39 mt of new coal demand resulting from the fast track program's coal plants coming online.⁴⁴ This projection is realistic assuming that LR coal is used in all plants. If higher rank coals are used, then the total increase in domestic coal demand will be less than 28 mt by 2012.

As of July 2010, a number of power plants have been delayed in achieving commercial operation due to technical problems. For example, the Paiton Baru project is one year behind schedule due to soft soil conditions that were only discovered after construction had started.⁴⁵ Other plants have had generator failures that have delayed commercial operations by at least six months. PLN discovered that after it had secured low rank coal supplies for the Labuan and Indramayu plants, it needed a higher-quality coal than it had procured. Until the coal procurement mistakes are rectified, PLN is being forced to run these two plants at less than their rated capacities.

Nonetheless, PLN will eventually succeed in commissioning all plants proposed under the crash program, which should lead to an increase in total domestic demand to 44 mt of additional LR coals by 2013 and to 61 mt by 2015 (Table 12). There may be other large coal-fired plants built in the future but the amount of new coal-fired capacity is likely to be much lower than the fast track program and will include IPP-built plants that are likely to be based on sub-bituminous

⁴³ James Booker, PT JBCS Indonesia, "Power Project-Status: Eurocham Infrastructure Group," February 16, 2010.

⁴⁴ UBS Investment Research, "Indonesia Market Strategy," July 21, 2009, p. 8.

⁴⁵ Source: e-mail communication with James T. Booker of James T. Booker Associates, an independent power consultancy based in Jakarta, August 2009.

coals. They will also likely apply supercritical technology, which will reduce the coal requirements per MW.

Table 12 Forecast of Domestic and Export Coal Demand, 2008-2015 (in million tonnes)

Coal market	2008	2012	2013	2015
Power	30	55	60	70
Other Domestic	25	36	39	46
Total Domestic Demand	55	91	99	116
Exports	158	212	229	267
Total Demand	213	303	328	383

Source: LP Power Demand Forecast based on inputs from James T. Booker and Associates and UBS report on PLN's Fast Track Program⁴⁶

Many financial analysts, when they initially saw PLN's forecast of new coal requirements, concluded that Indonesia and the region were heading for a coal supply shortage. This is definitely not the case. In fact, PLN's fast track program will lead to increased investment in the production of low rank coal resources. Short-term supply shortages are, of course, possible in one or two years over the next decade. But given Indonesia's large untapped LR coal resource base and its ability to rapidly add infrastructure and increase output by up to 20 percent in one year, Indonesia's coal industry should be able to meet increases of this magnitude without difficulty. In summary, the coal production levels required to meet the coal needs of PLN's fast track program and new IPP projects are significant but achievable domestic supply targets for coal producers on Kalimantan.

Indonesia's largest coal suppliers, such as Arutmin, Adaro, and Kideco, are developing low rank (LR) coal resources within their concession areas and have announced plans to quickly ramp up

⁴⁶ The domestic demand forecast assumes 7 GW of new PLN and IPP coal plants are commissioned in 2012 followed by additional 2.5 GW in 2013 and 1.0 GW in 2015 with plants running at 75 percent capacity factor in 2012 and 80 percent thereafter with an HHV heat rate of 9750 Btu/kWh (35 percent). These power plant performance assumptions are consistent with proposed parameters suggested by James T. Booker and Associates. "Other domestic" demand is assumed to increase at 10 percent CAGR. Export growth is in accordance with assumptions made by UBS.

their LR coal production between 2010 and 2014. The forecasted sales figures, which assume 25 mtpa is sold to PLN in support of its fast track program, are shown in Table 13 for Arutmin, Adaro, Kideco, and a small coal producer named Padangbara. They do not represent the production limits of the four companies but, instead, are the amounts that these four companies believe they can sell by 2014. Other Kalimantan-based LR coal suppliers, such as Bayan Resources and Churchill Mining, and suppliers located on Sumatra will also support the local LR coal market over the next decade.

Additional domestic demand is likely to follow over time, but what was once viewed by industry analysts as an “either-or” situation, with Indonesia’s coals going to either the domestic market or the export market, now appears to be an enabling program that will enhance and strengthen the development of the Kalimantan coal supply chain, including increased investments in inland transport facilities (roads, barge ports, and overland conveyors [OLCs]) and offshore coal loading facilities. The PLN fast track program will also serve to expand the pool of LR coal producers from just a handful to perhaps 10 to 12 located on the islands of Kalimantan and Sumatra. Indeed, the fast track program may finally provide the impetus for developing the vast LR coal resources of Sumatra, which have not been developed thus far due to transportation infrastructure constraints and a lack of market.

Table 13 Summary of Low Rank Coal for Four Indonesian Coal Suppliers^a for 2008 with Forecasts for 2009-2014 (in thousands of tonnes)

Market	Contract Type	2008	2009	2010	2011	2012	2013	2014
Domestic	Spot	372	2,005	513	713	709	700	700
	Term	1,425	4,560	10,440	13,800	18,260	22,350	24,000
Total Domestic		1,797	6,565	10,593	14,513	18,969	23,050	24,700
Export	Spot	1,658	4,031	4,082	4,858	5,235	5,871	6,033
	Term	6,136	5,980	9,366	11,933	15,451	23,464	27,298
Total Export		7,794	10,011	13,448	16,791	20,686	29,335	33,331
Total		9,591	16,576	24,401	31,304	39,655	52,385	58,031

^a Arutmin, Adaro, Kideco, and Padangbara

In summary, it is almost certain that the coal industry of Kalimantan will have another large expansion of its production over the next decade: one that will result in total coal production reaching at least 370 mtpa by 2015 and exports reaching 250 to 270 mtpa, depending on the

actual commissioning dates for PLN's crash program plants and new coal-fired IPP power plants.

Indonesia's Coal Exports

Indonesia increased its exports of steam coal by 13 percent per year over the localization period from 58.30 mt in 2000 to 176.4 mt in 2009. In 2008, exports declined by 3 percent to 158 mt from 2007 export levels, largely due to a reduction in exports by KPC but then recovered strongly to 176.4 mt in 2009.

Coal exports over the period 2000–2009 went mostly to other Asian countries with limited quantities being exported to Europe and the United States. Japan was Indonesia's largest export customer until 2009 when China imported 34.3 mt of Indonesian coal, replacing Japan by a wide margin as the largest importer of Indonesian steam coal. Japan dropped to third largest customer for Indonesian steam coal in 2009, with imports of 22.9, down from 30.1 mt in 2007 (Table 14). India remained Indonesia's second largest customer for steam coal and its share is expected to grow over the next 5 to 10 years.⁴⁷

Table 14 Indonesia's Coal Exports 2007 versus 2009 by Destination Country (in mt)

Country of Destination	2007 Coal Exports	% of total	2009 Coal Exports	% of Total
Japan	30.3	19%	21.0	12%
India	22.6	14%	25.9	15%
China	22.0	14%	32.2	18%
Taiwan	21.6	13%	19.1	11%
South Korea	21.2	12%	19.7	11%
Hong Kong	12.9	8%	10.2	6%
Malaysia	7.0	4%	7.5	4%
Thailand	6.6	4%	6.3	4%
Philippines	2.5	2%	2.1	1%
Europe	14.5	9%	10.7	6%
USA	3.9	2%	0.6	<1%
Statistical discrepancy & other	-5.5	n/a	+21.4	12%
TOTAL	163.5	100%	176.4	100%

⁴⁷ Energy Publishing, "Indonesian Coal and Power Report," January 2009–January 2010.

Source: Energy Publishing, “Indonesian Coal and Power Report” (various issues for 2007, 2008, 2009, and 2010)

Note: The amounts shown as statistical discrepancy and other are those required to bring export totals in line with those shown on Table 8.

Questions have been raised by one coal analyst about the permanence of the Chinese export market, which burst onto the Indonesian coal supply scene almost overnight.⁴⁸ The growth in Indonesia’s coal exports to China is not the result of domestic coal shortfalls but due to Indonesian steam coal currently having a significant price advantage into southern Chinese ports when compared with the landed costs of domestic coal into the same southern Chinese ports.

There is a distinct possibility that the Chinese coal suppliers and coal buyers, with Chinese government prodding or insistence, may break the deadlock in annual price negotiations for Chinese domestic coal supplies, which could result in a significant reduction in Indonesian coal exports to China.⁴⁹ India’s imports of Indonesian coal, on the other hand, can be viewed as structurally sound and of a more permanent nature due to chronic and seemingly unending shortages of steam coal to support the expansion of India’s power supply system. If volatility in demand should occur, it would be caused by changes in export flows from South Africa to Europe and not due to significant declines in Indian demand for imported steam coal.

As with production, the six largest Kalimantan producers — Bumi, Adaro, Kideco, Berau and Banpu and PTBA — dominated the export trade, accounting for 79 percent of total exports in 2009 (Table 15). Indonesia’s largest coal exporter in 2009 remained Bumi Resources, owner of KPC and Arutmin.⁵⁰ Adaro, which is Indonesia’s second biggest coal exporter, achieved a 10 percent increase in its volume of coal exports between 2007 and 2008, while Arutmin and Kideco achieved an 8 percent growth in their combined exports over the same period. All of the Big 6 increased their exports of coal between 2008 and 2009.

Even with the successful implementation of the PLN program, it is unlikely that Indonesia’s exports of coal will fall below 70 percent of total coal production through 2020. Many power

⁴⁸ Richard Morse, “The Chinese Factor: Short- and Long-Term Drivers of China’s Coal Imports,” paper presented at Coaltrans Asia, May 30–June 2, 2010, Bali, Indonesia.

⁴⁹ Ibid.

⁵⁰ KPC experienced a significant but temporary decrease in production and exports between 2007 and 2008 partly due to a political events that forced the closure of its mine for 45 days (discussed in Section 4) and partly due to weather-related supply disruptions.

plants built in Asia since 2000 have been designed to take Indonesia's low sulphur, low ash, sub-bituminous and bituminous coals.

Table 15 Indonesian Coal Exports by Major Producer, 2003-2009

Company	Coal Exports in mt						
	2003	2004	2005	2006	2007	2008	2009
Bumi (KPC + Arutmin)	29.8	34.5	39.1	47.5	51.2	46.3	52.5
Adaro	14.2	16.5	17.3	24.7	27.3	30.2	31.6
Kideco	8.9	11.0	11.8	13.6	14.5	16.1	19.2
Berau	5.4	6.2	5.8	7.4	7.6	8.2	10.1
Banpu (Indominco Mandiri, Jorong & Trubaindo)	8.6	9.8	9.5	15.7	16.5	16.3	18.8
Bukit Asam (PTBA)	2.2	2.7	2.5	3.2	3.8	4.4	4.4
Subtotal (Big 6)	69.1	80.7	86.0	112.1	120.9	121.5	136.6
Others	20.0	24.7	31.2	34.9	42.6	36.5	39.8
Total	89.1	105.4	117.2	147.0	163.5	158.0	176.4
Big 6 exports as % of total exports	78%	77%	73%	76%	74%	77%	77%

Source: Energy Publishing, "Indonesian Coal and Power Report" July 2010 for 2009 figures, February 2005 through February 2009 for 2003 through 2008 figures

The outlook for the next decade is for significant growth in steam coal demand coming from China, Korea, and India with moderate growth coming from the Philippines, Malaysia, and Thailand. China is expected to show continued growth in coal imports for the next two to three years. Thereafter, growth in exports to China will largely depend on the differential between Chinese domestic coal prices and Indonesian coal prices, CIF (cost, insurance, and freight) to Quangzhou or other major ports in southern China. Japan is not expected to show significant growth in steam coal demand due to limited power demand growth and environmental factors that are expected to lead to renewed growth in nuclear power plants.⁵¹

Inland Transport Infrastructure

Almost all coal produced in Indonesia is produced by truck and shovel methods, which have been widely adopted in Indonesia for a number of reasons. First, Kalimantan's coal deposits require little or no blasting, which make these deposits suitable for truck and shovel mining.

⁵¹ In 2007, Barlow Jonker forecast that Indonesia would expand its exports from 163 million tonnes in 2007 to 220 million tonnes by 2010 and then plateau at 260 to 265 mtpa between 2015 and 2020. Other industry sources predicted even stronger growth with total exports forecast to grow by 65 mtpa by 2010 and over 150 mtpa by 2020.

Second, spare parts, operators, and maintenance staff for such equipment are widely available in Indonesia. Third, equipment to support the expansion of a truck and shovel operation can be procured quickly and at a low cost relative to other mining methods. Finally, until recently, most Kalimantan coal deposits had very low stripping ratios and the government of Indonesia heavily subsidized the price of diesel until 2005.⁵²

Coal transport from the mine stockpile to a barge port is either by truck or by OLC, or by barge down either the Barito or the Mahakam river and on to a transshipment facility. A major Kalimantan producer would likely adopt a mine-to-barge port delivery system that uses (i) large diesel-powered shovels having bucket capacities of up to 34 m³ for overburden removal; (ii) mega-dump trucks, with capacities for transporting 185 tonnes of overburden or coal per haul, for purposes of transporting the overburden to a reclaim storage area and coal to the mine stockpile; (iii) large trucks with carrying capacities from 60 t to 240 t per journey for hauling the coal from the mine stockpile to a barge port or in a few cases to a fixed land port; and (iv) flat-top barges pulled by a tug with the barges having carrying capacities ranging from 3 kt to 12 kt.

The main exceptions to this truck and barge dependent haul approach are KPC, which operates a 13 km electric overland conveyor from its mine stockpile to the Tanjung Bara Coal Terminal (TBCT), which can accept barges and sea vessels up to 120kt, and PT Bukit Asam, which transports its coal by rail for distances of up to 416 km to the port of Tarahan in western Sumatra or for a shorter 167 km journey to Kertapati.⁵³ Table 16 describes the inland transport arrangement adopted by the major coal producers of Kalimantan.

Table 16 Internal Transport Arrangements for Indonesia's Six Largest Coal Producers^Ω

Company	2009 Production (mt)	2009 Exports (mt)	Mine Site to Barge Port (km)	Barge Port to T/S Facility (km)	Remarks
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⁵² With the decontrol of diesel prices and the depletion of reserves with low stripping ratios, some industry experts felt that as of early 2008 Indonesia's costs of production were dangerously close to those of Australian coal producers.

⁵³ The KPC conveyor is powered by electricity from a 2 x 5 MW coal-fired power plant located at the Tanjung Bara Coal Terminal.

KPC	38.2	35.3	13 (conveyor)	1/9 (conveyor)	Geared/gearless
Adaro	40.6	31.6	79 (truck)	250/450 (barge)	Taboneo anchorage/IBT
Kideco	24.7	19.2	39 (truck)	58 (barge)	From TMCT to FC via 8KT -12KT barges
Arutmin	19.3	17.2	7 -18 (truck)	124/199 (barge)	Geared vessel/ Satui Port via 3.5KT – 7KT barges to NPLCT
Berau	14.3	10.1	13 (truck)	74 (barge)	From Lati to Muara Pantai
Indominco	12.4	13.1	35 (truck)	0/9 (conveyor)	From Port to Bontang Coal Terminal

⁹ The six producers accounted for 69 percent of 2009 production and 72 percent of 2009 exports.

Source: Production and export figures: Indonesian Ministry of Energy and Mineral Resources; industry sources for all other data

The diesel-based truck and barge inland transport system has allowed Indonesian coal producers to bring their coal reserves into production quickly without the associated transport infrastructure constraints experienced in Australia, South Africa, China, India, and Russia and has allowed its coal producers to beat its main competitors — Australia and South Africa — to new markets in China and India.

However, the flexibility has come at a cost — a heavy reliance on diesel-driven trucks and barges and an exposure to volatile oil product prices. After the extraordinary jumps in the price of diesel in 2008, most large Indonesian coal suppliers are considering the construction of on-site coal-fired power plants with low rank coal as the design coal. The electricity produced from these mine mouth power plants will be used to reduce each mine's diesel usage by replacing diesel-fueled shovels and dump trucks with electric “in-pit” crushers and conveyors and installing electric OLCs for transporting coal from the mine site to the barge ports, instead of using trucks running on diesel.

As of 2010, inland transportation pathways range from the following:

- The long-distance pathway of Adaro, which requires coal to be hauled over a 79 km sealed haul road to a central river barge port at Kelanis. From there, coal is transported in tug-pulled single barges, ranging in size from 6,000 tonnes to 14,000 tonnes, over a distance of 250 km down the Barito River to the Taboneo anchorage offshore from

Banjarmasin.⁵⁴ In some cases, Adaro ships its barges an additional 200 km to the Indonesia Bulk Terminal (IBT) located on South Pulau Laut, an island offshore of the province of South Kalimantan.

- The short-distance pathway of KPC, which involves a short 13 km conveyance of the coal from the mine stockpile via an electric-powered OLC directly into the hold of either the sea vessel or barge. A portion of the coal is shipped by barge from the Tanah Merah Coal Terminal (TMCT) to an offshore floating facility located around 9 km offshore from TMCT.

Barging coal down either the Barito or the Mahakam river is a relatively low-cost method of transporting coal when compared with the cost of truck transport. However, prior to January 2009, barging coal down the Barito River was limited to the high-tide period of the day, due to reduced draft at low tide on a 13 km channel from the river mouth out to the sea. A number of government agencies and the shareholders of Adaro Energy formed a company to fund the dredging of a new 13 km channel near the mouth of the Barito River. This dredging project, which was completed in January 2009, now makes it possible to operate barges up to 15,000 tonnes capacity, 24 hours a day, year-round.

Dredging the new channel also allows Indonesia's coal producers, especially Adaro, which is totally reliant on the Barito River for barging its coals to domestic customers and transshipment terminals, to achieve a significant expansion of their coal exports. As a result of the successful dredging of a new barge channel, Adaro expects to expand its coal sales from 38.5 mt in 2008 to 80 mt by 2015. More than 30 percent of Indonesia's coal production is currently being transported by barge directly to customers on Java and as far away as the Philippines (Figure 4).

⁵⁴ Adaro in 2009 started to deploy self-propelled barges with capacities of 12,000 to 15,000 tonnes, which will be used initially to haul directly to domestic customers. Self-propelled barges use diesel at half the rate per tonne-km than tug-pulled barges do.



Figure 4 Tug pulling a 12kt barge down the Barito River during high tide (Photo courtesy of Adaro)

With respect to coal transshipment facilities, Kalimantan's coal exports are currently being loaded onto seagoing vessels at six land-based ports, with a coal handling capacity of around 50 to 80 mtpa, and as of December 2008 at 34 floating transshipment facilities, with a coal handling capacity of around 170 mtpa. These transshipment facilities range in size from small floating cranes with rated capacities of 3 to 5 mtpa to more advanced floating facilities that can handle up to 15 mtpa (Figure 5).



Figure 5 Floating crane loading a Cape-size vessel directly from barge to ship using pivoting crane and grab-type unloaders⁵⁵ (Photo courtesy of Adaro)

Indonesia's coal suppliers rely heavily on floating transshipment facilities, instead of fixed land ports, for the following reasons.

- a) Shorter gestation periods: Transshippers and floating cranes take around one to one and a half years to bring into operation, from date of order to start of operation, while a land-based port can take 7 to 10 years to bring into operation due to the long lead times needed for acquiring land, obtaining necessary permits, and carrying out the construction.
- b) Low first cost: Transshipment facilities cost between \$7 million and \$20 million per facility to purchase and move into position, ranging from \$7 million for a 3 mtpa (10 kt/d) floating crane facility to \$20 million for a 10 mtpa floating loading facility (35 kt/d) with storage capacity. A fixed port facility with a capacity of 30 to 40 mtpa would cost \$100 million plus.

⁵⁵ Transshippers (no photo available) load coal from barges into hoppers located on the transshipper vessel. The coal is then transferred to the sea vessel via a single conveyor. Transshippers have much faster loading rates than floating cranes, cost less per tonne of handling capacity, and are less expensive to operate.

Although the fixed port will be of larger total capacity and have substantial coal storage capacity and a longer operating life, the capital costs per tonne of capacity for transshippers and floating cranes are so much lower than those of a fixed port that they are the preferred transshipment technology in Indonesia.

- c) Modular additions to ship loading capacity: Transshippers and floating cranes offer the ability to add small increments of new ship loading capacity (as low as 3 mtpa per facility) and to more closely match growth in coal demand with new transport infrastructure. The reliance on floating transshipment facilities also allows coal suppliers to locate ship loading facilities closer to the sources of supply.

The Kalimantan floating facilities are located at 10 offshore anchorages while Sumatran coal producers have access to two offshore anchorage areas.⁵⁶ The floating crane and transshipment facilities have maximum throughput capacities that range from 4 to 15 mt per annum (mtpa). Most can load “Cape-size” vessels. More transshippers and floating cranes are being added as required each year, which enables Indonesian coal suppliers to meet their coal demands without the infrastructure-related shipping delays being experienced in Australia.

Shift to Low CV Coals and Impacts on Inland Transportation Costs

Prior to 2007, most of Kalimantan’s coal suppliers offered significant quantities of bituminous and high rank sub-bituminous coals under long-term contracts with prices discounted 10 percent to 20 percent to the price of Newcastle coal sold into Japan. These traditional discounts were applied after making price adjustments due to any differences between the CV of the Indonesian and Newcastle coals.

⁵⁶ Due to the relatively calm waters off of Kalimantan and parts of Sumatra, Indonesian coal miners rely on floating transshipment facilities, rather than land-based ports. The only drawbacks to these mobile loaders are their inability to operate continuously between December and March when storms or rough seas occur and the slower loading rates for floating cranes, which have loading rates of only 15,000 tpd. Fixed land ports are able to load vessels at rates ranging from 35,000 to 45,000 tpd. However, floating loading facilities (FLFs) are now being used, which have loading rates of up to 40,000 tpd. Over time, as FLFs replace the smaller floating cranes, the loading speed advantage of fixed ports will disappear.

Starting in 2007, Indonesian coal suppliers were no longer willing to offer these traditional price discounts. Instead, Indonesian sub-bituminous coals are now being priced on an energy-adjusted par with Australian Newcastle grade coals. The market is also witnessing the emergence of low CV, high-moisture Indonesian lignites as the long-term replacements for the established sub-bituminous and bituminous coals. This impending shift in the quality of Indonesian coal supply is related to the success with which Indonesia's coal suppliers have marketed their supplies of higher rank coals and the expected success of PLN in commissioning the coal-fired power plants being built for its fast track program. Most large coal producers on Kalimantan have either already entered into long-term contracts that will exhaust the remaining reserves of their higher rank coals through the period of each supplier's CCOW or will shortly reach this point.

These low rank coals may account for more than 30 percent of Indonesia's coal production (in raw tonnes) by 2015. Except for the timing of the transition to low rank coals, this news should not be a surprise. Thirty percent of Indonesia's remaining coal reserves are classified as "lignites" and the government of Indonesia has chosen to use these low rank coals as the design coal for 9,458 MW of new coal-fired power plants.

A number of Indonesia's coal producers have attempted, at the demonstration project level, to "upgrade" their LR coals before transporting them to barge ports. Upgrading high-moisture, low CV coal typically requires coal producers to employ coal drying technology. But the results, thus far, have not been encouraging. Either the costs of upgrading have been too high or the upgraded product has not been stable enough for overland and sea shipping. In most cases, the upgraded product either crumbles and forms excessive fines or reabsorbs moisture during handling and storage. It is therefore expected that most of Indonesia's LR coal will be sold in raw form through the next decade.

With the shift to low CV, high-moisture coals, one can expect significant growth in the total tonnage of coal that will be shipped over each coal supplier's inland transportation route. This growth in tonnage will be required to meet the growing requirements of coal consumers for energy measured in gigajoules of coal over time as opposed to raw tonnes. This increase in raw

tonnage will also result in increased use of diesel for mining and transport unless comprehensive mine site electrification programs are implemented.

Section 4

Political Events Affecting the Indonesian Coal Industry, 1999-2008

With the passing of the Soeharto regime in 1998, three decades of political stability and investment certainty came to an abrupt end. Over the next decade, the GOI, as well as Kalimantan's provincial governments, took a number of destabilizing actions that threatened to kill the coal industry goose that was laying the golden eggs of employment, tax revenue, and royalty payments. Specific actions included attempts by the central government and provincial and regency governments of Kalimantan to rescind CCOWs and KPs and impose onerous new taxes on companies operating under 1st and 2nd Gen CCOW.

During the period 1999-2008, there were also numerous incidents of local government-instigated work stoppages and illegal mining activities that many industry analysts claim were occurring due to either benign neglect on the part of local governments or the active connivance by these governments in furtherance of other goals.

These and other government actions at times threatened the continuation of a number of coal mining operations on Kalimantan, frustrated industry representatives, and even prompted the U.S. government to publicly call into question the GOI's commitment to a strong and growing coal export industry.⁵⁷ Despite the many political challenges faced by Indonesia's coal producers, they have, to date, effectively managed them.

The level of political risk faced by each coal supplier in the past and its ability to mitigate those risks have been largely a function of the type of mining authorization held by the coal supplier. Companies such as KPC, Adaro, Kideco, Arutmin, and Berau, which operate under 1st Gen CCOW, faced the lowest risk of supply disruption caused by changes in tax and land use policies. The highest risks were faced by companies operating under 3rd Gen CCOW and KP, which must accept whatever changes are made to general tax laws and have fewer protections for

⁵⁷ See: U.S. Embassy, Jakarta, "Coal Report Indonesia, 2003" and "Coal Report Indonesia, 2004" (<http://199.236.85.158/econ/coal/coal-2004.html>).

expatriating revenues to pay offshore debt, operating expenses, and dividends to foreign investors.

The main complaints of the coal mining industry over the past decade have focused largely on tax and fiscal policies that are said to be discouraging new foreign investments in the coal mining sector. The problems caused by the government attempts to impose new taxes have been compounded by overlapping and competing political interests and legal jurisdictions between the MEMR, the Ministry of Forestry, the Ministry of Finance, and the Ministry of Trade and Industry, which have created inconsistencies in setting and implementing land use and tax policies. Although not currently a major problem, union unrest and illegal mining have adversely affected a number of large coal mines in the past.

The background and status of these political events that have affected Kalimantan's coal producers in the recent past are summarized below. They will serve as useful historical background to the following discussion of the impacts that the Mining Law of 2009 and its IR (implementing regulations) might have on the Indonesian coal industry over the next two decades.

Changes in General Law

During the Suharto era, the central government exercised complete regulatory authority over the mineral extraction industry and collected all taxes and royalties. All this changed in 1999, during the short interim presidency of Jusuf Habibie, who signed into law the Regional Autonomy Act of 1999 and the Forestry Act of 1999.

The Regional Autonomy Act of 1999: The Regional Autonomy Act of 1999 (Law 1999/22) and the related Law on Fiscal Balance between the Central Government and the Regions (Law 1999/25) gave provincial governments a greater share of both decision-making authority on natural resources and revenues derived from their development and sale.⁵⁸ The laws were passed

⁵⁸ Embassy of Indonesia, Ottawa, "Decentralization in Indonesia since 1999 – An Overview," September 7, 2010 (<http://www.indonesia-ottawa.org/page.php?s=2010background>).

without adequate development of administrative capacities of the regional (provincial) and local (regency) governments to conduct their new responsibilities in an efficient and professional manner.⁵⁹

By 2003, the process of regionalization and decentralization of natural resource management was in a state of confusion and intergovernmental conflicts were common due to (a) lack of regional government capacity to administer their new responsibilities and lack of accountability for their action, (b) ineffective central government supervision of regional governments, (c) poorly demarcated separation of responsibilities between the central and regional governments, and (d) “the strong role of ‘money politics’ in the election of Head of Regions (Kepala Daerah) by the regional councils.”⁶⁰

With respect to the coal mining sector, regional and local governments located in east and south Kalimantan started to play a more proactive role with the coal miners located in their respective provinces. In most cases, corrupt provincial and regency government officials were only interested in earning “unofficial tax revenues” for their own purposes. In an attempt to receive these additional revenues, provincial government officials threatened to nullify contracts and/or to instigate actions that would interfere with the operations of coal mining companies.

In a few instances, provincial and regency governments attempted to impose new “official” taxes and charges on coal miners operating in their administrative areas. The coal mine companies managed to defeat most of these illegal actions, which violated not only the special law status of 1st and 2nd Gen CCOW but also, in most cases, laws on corruption. They were successful largely due to strong support from the central government, which stated that existing contracts will remain in force and cannot be changed under international law, and the Indonesian courts, which struck down most of the new provincial and local tax laws. At the moment, provincial and local government attacks on coal producers appear to be over. But a change in political control at the central government level can easily bring this issue of the past back to center stage.

⁵⁹ Ibid.

⁶⁰ Ibid.

Passage of Government Regulations 144/2000 and 65/2001: The provincial and regency governments were not the only governments testing the limits of the special law status of the CCOW. The central government also attempted to impose new taxes and fees on holders of 1st and 2nd Gen CCOW. An excellent case in point is Regulation 144/2000, which changed a long-standing government tax policy allowing coal producers to recover their input VAT (value-added tax) from output VAT. According to Ministry of Finance interpretations of Regulation 144/2000, sales of unprocessed coal were, as of the year 2000, a zero-rated VAT commodity and all coal suppliers, including companies operating under CCOWs, could no longer offset their input VAT for imported and domestically procured materials and services against the output VAT they had previously charged to customers on their coals. Regulation 65/2001 imposed VAT on equipment and materials that previously were exempted from VAT.

These two Ministry of Finance regulations were said to have increased the cost of mining operations on Kalimantan by 6 percent to 10 percent. Although the Indonesian Supreme Court later nullified these two regulations, it did not set a date for their formal removal so the situation was never considered resolved.

Companies operating under 1st and 2nd Gen CCOW claimed that they were protected by very clear language in their CCOW that indemnified them against any additional Indonesian taxes, duties, fees, and royalties levied by the government, except for those taxes and fees listed in their CCOW. In this particular case, the eight largest coal producers — all operating under 1st Gen CCOW — simply withheld the input VAT charges from the 13.5 percent royalty payments they owed the government. The Ministry of Finance argued for some time that the coal suppliers first needed to pay both their royalty bill and their input VAT bill to the responsible tax offices and then apply for a refund to the appropriate department within the Ministry of Finance. The 1st Gen CCOW companies argued that the whole exercise was moot based on the Supreme Court ruling on the matter in 2003 and continued to offset input VAT from their royalty payments.

The situation continued to fester until July 2008, when the GOI confiscated the passports of the directors of Indonesia's largest coal producers — Bumi Resources (the owner of KPC and Arutmin), Adaro, Berau, and Kideco, which prevented these executives from traveling overseas

and disrupted their businesses. At the time, the GOI claimed that it would continue to hold their passports until the VAT offset matter has been settled to its satisfaction.

After making headlines for some months, the issue simply went quiet in 2009. The local press and industry newsletters speculated that the coal companies operating under 1st and 2nd Gen CCOW and GOI officials finally reached a settlement on the issue whereby these coal companies agreed to pay the VAT amount and the Ministry of Finance agreed to refund the amount. However, given that this event happened in mid-2008, after the Indonesian Supreme Court had ruled the regulation to be “illegal,” suggests that political risk has started to reemerge in Indonesia. Unless rule of law prevails on such matters, investors will give pause before making significant new investments in Indonesia’s coal sector.

Imposition of a 5 Percent Export Tax on the FOB Price of Exported Coal: A second attempt by the central government to impose a change in general tax law on holders of 1st and 2nd Gen CCOW occurred in October 2005 when the GOI passed Regulation No. 95/PMK.02.05, which imposed a 5 percent tax on all coal exports. Instead of basing the export tax on the actual export price of each coal shipment, the GOI imposed a “deemed” FOB coal price of US\$32/tonne, which at that time was disadvantageous to existing and aspiring exporters of lower rank coals, as the FOB price upon which the 5 percent export tax would be applied.

Companies operating under 1st and 2nd Gen CCOW rightly claimed that they were exempted from this tax due to the tax indemnification provisions written into their agreements with the government. Nonetheless, this regulation acted to discourage 3rd Gen CCOW and KP permit holders from pursuing export opportunities since they would be at a cost disadvantage relative to 1st Gen CCOW companies. In late 2006, the Indonesian Supreme Court struck down this export tax as illegal and it was quietly dropped from further consideration by the GOI.

Enactment of Forestry Law 41/1999: In 1999, the GOI enacted a new forestry law known as Forestry Law 41/1999, which prohibited open-cut mining in areas designated as “forest conservation or protection areas.” Officials within the Ministry of Forestry in cooperation with

certain members of Indonesia's House of Representatives⁶¹ tried to enforce this law upon all coal mining companies, even those operating under CCOW that were signed long before the 1999 forestry law took effect, which, due to their special law status, should have exempted them from the forestry law.

Before this matter was resolved, Forestry Law 41/1999 forced the suspension of exploration activities within 150 mining concessions on the grounds that the areas being explored in these concessions were located in "protection forest areas." In response, more than 100 companies terminated their mining concessions. The 50 that stayed the course petitioned the Ministry of Energy and Mineral Resources to reconsider their cases. Resolution of these cases was slow, with NGOs and industry groups lobbying both the Parliament and the Ministry of Energy and Mineral Resources with their opposing views.

The government of Indonesia tried to resolve the conflict in favor of a subset of affected mining companies through Presidential Decrees and Emergency Regulations (PERPU) such as:

- Presidential Decree 41/2004, which authorized 13 companies affected by Forestry Law 41/1999 to continue their mining operations despite 41/1999 provisions.
- Emergency Regulation 1 (2004), which also authorized the 13 affected companies to continue their mining operations in protected forest areas despite 41/1999.
- Forestry Regulation P.12/MENHUT-II/2004 (12/2004), which also stated that the 13 affected companies could continue their open-cut mining operations but all others must comply with 41/1999.
- Forestry Regulation P.43/MENHUT-II/2008 (Reg 43/2008), which clarified the actions that a mining company must take that will allow it to conduct open-cut mining within protected forestry areas and the amount of compensation it must pay to the Ministry of Forestry for carrying out those mining activities.

Any forestry law issues related to CCOW holders appear to have been resolved through the application of the above-mentioned regulations and decrees.

⁶¹ The official name of the Indonesian House of Representatives is "Dewan Perwakilan Rakyat" (DPR), which means People's Representative Council.

Industrial Relations and Wage Rates: Work stoppages are common in Indonesia, despite the fact that Indonesia continues to have one of the highest unemployment rates in Asia. One factor that contributed to the level of worker agitation was the GOI decision in 1999 to transfer responsibility for minimum wage level determination from the central to the provincial governments. The result was very large minimum wage increases such as a 67 percent increase in the minimum wage in East Kalimantan in 2002 followed by 8 percent per annum increases between 2003 and 2007. Labor laws continue in a state of flux with “hire and fire” regulations changing frequently and open to liberal interpretations by most courts.

The government was supposed to have revised the Labor Law of 2003 to rectify the situation but massive protests led to the government canceling the submission of proposed revisions to the labor law to the Parliament. In this “worker-friendly” environment, labor unions and individual employees tended to test the limits of mining company resolve with occasional work stoppages and unreasonable wage and severance pay demands.

Thus far, union activity has not led to any disruptions in coal supply from Indonesia. Coal mining companies appear to have dealt with these labor issues without serious problems. Part of the explanation for their peaceful labor relations is that they contract out most of their labor-intensive mining and transport activities. Any labor dispute issues are handled by their contractors. In addition, most if not all coal mining companies are now majority-owned by Indonesians, who seem able to handle labor issues without causing disputes that lead to prolonged work stoppages.

Illegal Mining

Coal producers have had to cope with “unofficial” tolerance by local governments of illegal mining activities within their coal concession areas. Illegal mining operations were estimated to have “siphoned off” 4 mt to 8 mt per annum of coal from existing mines in 2004 and may have reached 20 mtpa between 2005 and 2008, with most of the illegally mined coal coming from “operations adjacent to existing legal operations.”⁶²

⁶² Paul Baruya, “Prospects for coal and clean technologies in Indonesia,” IEA Clean Coal Centre, Report # CCC/148, June 2009, p. 33.

The illegally mined coal was even identified under the heading “KPs/others” by Barlow Jonker and its successor, Energy Publishing, when reporting production statistics for Indonesian coal until 2009 when Energy Publishing decided to discontinue the practice of reporting the “others” category.⁶³

The primitive and short-term mining approaches followed by these illegal miners were reportedly causing permanent losses to remaining reserves, which the industry refers to as “the sanitizing of reserves.” Illegal mining activities were reportedly most pronounced in the province of South Kalimantan, where the coal mining operations of Adaro and Arutmin are located, but were also a factor in East Kalimantan, where KPC, Berau, and Kideco are located.

Today, illegal mining continues on both Kalimantan and Sumatra with estimates of the “lost production” as high as 20 mtpa.⁶⁴ The illegal mining activities occur within either unlicensed areas or those areas that operate under a KP.

Unauthorized Police Actions

In July 2008, a rogue captain in the national police force shut down the entire operation of Kaltim Prima Coal (KPC), which is owned by Abdul Rizal Bakrie, an influential businessman and also the minister of social welfare at the time of the police shutdown. The police occupied the site and established police cordons around mining equipment and coal haul trucks, effectively shutting down the KPC operations for more than 45 days, before the occupation was called off and the rogue police captain was transferred to an inactive posting elsewhere in Indonesia.

The reported reason for this action was the expiration of an environmental permit by KPC, which had filed for a renewal of its permit; but, due to bureaucratic inertia, the new permit was not issued prior to the old permit’s expiration. Rather than declare force majeure and damage its reputation and that of the country, KPC, Indonesia’s largest coal producer from 2005 through 2007, continued to honor its contracts, arranging for alternative sources of coal, and working with its customers to reschedule their orders.

⁶³ Barlow Jonker, “Coal Supply Series Indonesia 2005” (15th ed.), p. 43.

⁶⁴ Discussion with MEMR official who wishes to remain anonymous, Jakarta, April 2010.

This police action occurred at a time when coal prices were at their peak with the gcNEWC having reached \$184/tonne during the week of July 19, 2008. The action lasted for 45 days and, according to reports from within KPC, it eventually cost the company million of dollars in lost sales revenues and demurrage charges on vessels that were forced to wait offshore until the issue was resolved. Other companies were reported to have suffered shorter shutdowns of their operations causing significant financial losses, but none as severe as KPC.

GOI-Forced Contract Renegotiations

In July 2008, the MEMR notified a number of coal companies that some of their contracts contained price terms that it deemed to be too low. MEMR informed these companies that they had two choices: renegotiate the price terms of these contracts to conform to newly issued “guidelines” on pricing of coal under export contracts or terminate the contracts. Adaro was one of the companies so notified. It agreed, under pressure from MEMR, to renegotiate 23 contracts, which had low fixed prices relative to the spot prices for Indonesian coal at that time. The reason offered by the MEMR for this action was “suspicions that a number of coal producers were self trading with offshore affiliates,” which allowed them to pay lower royalties and income tax on their net revenues.

Adaro dutifully attempted to renegotiate its fixed price coal sales agreements (CSAs) with the unfortunate customers, which ranged from TNB in Malaysia to multiple customers in Spain and the United States. For those customers that refused to renegotiate, Adaro declared “an event of Government force majeure” under its contracts and suspended shipments to those customers. Arutmin was also requested to renegotiate a fixed price contract that it had signed with TNB of Malaysia. It however told TNB that it had to renegotiate that contract directly with the MEMR. In the end, a number of the affected customers, such as TNB, agreed to renegotiate their contracts. It appears that by the time the renegotiations were completed, 2008 coal prices were on a steep decline and the MEMR significantly softened its position on new price terms.

LC Requirement

The Ministry of Trade and Industry (MTI) imposed a new regulation in early 2009, which required foreign coal customers procuring coal shipments with a value above \$1 million to

arrange an irrevocable, at sight LC (letter of credit) through a domestic foreign exchange bank.⁶⁵ The LC requirement was imposed to ensure that exporters declared the full value of their exports for purposes of calculating company tax.

The list of affected customers included creditworthy power utilities from Japan, Korea, Taiwan, Hong Kong, and Malaysia, in addition to small traders and single plant IPPs. Past payment history had no bearing on the requirement to put an LC in place. This caused significant consternation among long-standing, credit-worthy power utilities from Japan, Korea, and Taiwan. It also created concern among smaller coal buyers who had never issued such LCs before and did not know the mechanics of arranging an “at sight” LC in Indonesia and what its total financial exposure might be under the new regulation.

In response to industry complaints, the Ministry of Trade and Industry (MTI) postponed the implementation of the LC regulation numerous times with the potential for further postponement for those exporters who had contracts in place prior to the passing of this LC regulation. It also issued an evergreen exemption to holders of 1st and 2nd Gen CCOW as the imposition of the LC rule would conflict with the fiscal terms of their CCOW. However, buyers of coal from 3rd Gen CCOW and KP holders were for awhile required to put irrevocable, at sight LCs in place in accordance with the MTI regulation. Similar to the experience with other ill-advised tax regulations, the LC regulation was officially revoked in early July 2010.⁶⁶

In summary, “caveat emptor” is the order of the day for both coal buyers and coal sector investors in the Indonesian coal industry. Indonesia’s favorable geological conditions and location relative to markets of East Asia make its coal sector a desirable venue for foreign investors. Unfortunately, political risk and seemingly angry, ham-fisted government policies and regulations that smack of the economic nationalism of the bygone Sukarno era continue to damage the underlying fundamentals of the Indonesian coal mining sector. Rogue actions by government agencies, including Indonesia’s national police, are especially troubling examples of political risk gone wild.

⁶⁵ Regulation of the Ministry of Trade, Republic of Indonesia Number 01/M-DAG/PER/1/2009 as revised by the Ministerial Regulation 10/M-DAG/PER/3/2009 (“LC Regulation”).

⁶⁶ Energy Publishing, “Indonesian Coal and Power Report,” pp. 1-2, July 2010.

This experience with political risk events over the past decade does have a silver lining. Coal mining companies have managed to prosper during this period despite the numerous political risk events and economic challenges posed by the Asian Financial Crisis, SARS and bird flu scares. It is against this backdrop that the next political saga —implementation of Indonesia's Mining Act of 2009 and its IRs — is unfolding. Success in handling the challenges posed by this new mining law and its system of regulations will largely determine whether Indonesia will play a leading coal supply role in Asia or will slowly drift into a secondary supply role as has been the case in the oil and gas sectors.

Section 5

Indonesia's New Mining Law

In January 2009, the GOI, after years of aborted efforts, finally passed a new mining law, officially known as Law No. 4 of 2009 on Mineral and Coal Mining (Law 4/2009).⁶⁷ Four IRs have been issued as of July 1, 2010, to support the implementation of this law: two by the Ministry of Energy and Mineral Resources and two by the GOI.⁶⁸ These four IRs will need to be supplemented by other regulations due to their lack of specificity in certain areas. Moreover, still other supporting regulations are under review within the MEMR.⁶⁹

Given the poor regulatory performance by the GOI and regional governments over the past decade, Indonesia's coal suppliers are understandably concerned about a number of aspects of the new mining law and its IRs that could potentially have a serious impact on production and exports. The main attributes of the new mining law and its supporting regulations are summarized below along with a review of those aspects of the law and its regulations, which are causing greatest concern among coal producers.

⁶⁷ The full title of the law is Law of the Republic of Indonesia Number 4 of 2009 concerning Mineral and Coal Mining.

⁶⁸ The two ministry regulations are PerMen 28/2008 (issued on September 30, 2009) and Permen 34/2009 (issued on December 31, 2009). PerMen 28/2008 covers the hiring of mining services contractors. It requires that "mining services" be provided by an Indonesian company with priority given to companies that are wholly owned by Indonesians. In addition, PerMen 28 requires that mining service companies use local goods, local subcontractors, and local labor. Permen 34/2009 established procedures for setting "domestic market obligations" for all mining companies. The regulation lays out the procedures for minister of MEMR to determine the DMO prior to the start of any calendar year. The two government regulations are GR 22/2010 and GR 23/2010. Both were issued on February 1, 2010. GR 22/2010 states the procedures for establishing different types of mining areas while GR 23/2010 establishes procedures for managing mining business activities. Both government regulations are viewed by industry representatives as lacking the detail and clarity needed to implement the sections of the mining law that they purport to cover. Additional regulations are under consideration at the MEMR that will cover coal and mineral price benchmarking and mine closing and reclamation and mineral and coal mining direction (see PricewaterhouseCoopers, Indonesia, *Mining in Indonesia: Investment and Taxation Guide*, May 2010, p. 7).

⁶⁹ PricewaterhouseCoopers, "Energy, Utilities & Mining: New Mining Regulations" (NewsFlash* Special Edition, March 2010, #34), pp. 1-11.

The Mining Law of 2009 and Its IR

Law 4/2009 and its IRs have made the following changes to the legal framework under which coal mining companies previously operated in Indonesia.

- (a) Mining can only take place in zones designated by the national government as open for mining (Wilayah Pertambangan or WP). Mining zones can be of three types:
 - Mining business areas (Wilayah Usaha Pertambangan or WUPs), which are areas open to private businesses on a competitive tender basis;
 - Community mining areas (Wilayah Pertambangan Rakyat or WPRs), which are reserved for community mining activities; and
 - State reserve areas (Wilayah Pencadangan Negara or WPNs), which are areas reserved for the strategic national interest and reserved for government-owned corporations.
- (b) The WPs shall be determined by the government after coordinating with relevant regional governments and the Indonesian House of Representatives. By establishing mining zones in advance following a transparent “zoning process,” the government hopes to avoid the land use conflicts that resulted from the passage of Forestry Law 41/1999.
- (c) New mining authorizations for private companies will be in the form of mining permits known as Izin Usaha Pertambangan (IUP) with separate IUPs issued for exploration (IUP Eksplorasi) and for production (IUP Operasi Produksi).
- (d) Special permits, known as IUP Khusus (IUPK), are available on a preferred basis to government entities that wish to develop special mining areas, which are located in state reserve areas. Two types of IUPK permits are available: IUPK Eksplorasi and IUPK Operasi Produksi. If there are no government entities interested in developing these special mining areas, the MEMR is then free to offer them on a competitive tender basis to private companies.
- (e) Small-scale mining permits, known as Izin Pertambangan Rakyat (IPR), which allow communities to operate mines within a very small area of less than 10,000 hectares.
- (f) Regional governments, mainly provincial governments, but in some cases regency governments, will be responsible for issuing most of the exploration permits with MEMR oversight or regulation to prevent abuses of process. The exceptions are where a proposed mining area overlaps two provinces. In these instances, the MEMR will be

responsible for issuing the permit.⁷⁰

- (g) Exploration permits can only be issued through a transparent commercial tender.

However, once a company is awarded such a permit, it is guaranteed the right to an IUP Operasi Produksi (production permit) without needing to go through a new tender as long as it has fulfilled the terms of its exploration permit.

- (h) Companies that are in commercial production under terms of a CCOW will have their terms respected until the expiration of their initial contract period. However, the mining law and GR 23 also contain some confusing language to the effect that “with the exception of state revenues,” the terms of the CCOWs needed to be “adjusted” within one year of the “promulgation” of Law 4/2009 (Article 169 of 4/2009).⁷¹
- (i) Prior to the expiration of its CCOW, a company can negotiate a 10-year extension, but this will require the CCOW holder to accept a production permit in its place. It is not clear how certain issues such as taxation and maximum size of the mining area will be dealt with when a CCOW is converted over to a production permit.
- (j) KPs must be converted into an appropriate exploration permit or a production permit not later than the first anniversary of the final IR being issued.
- (k) Within nine years of commercial production, foreign investment companies holding mining licenses will be required to divest a minimum of 20 percent of the issued capital of the IUP or IUPK holder to Indonesian nationals.

Potential Areas of Concern

The coal mining industry and passive investors to the industry have raised a number of concerns about the specific rules and regulations that will be applied. These concerns are summarized below.

⁷⁰ Christian Teo & Associates, “Summary and Analysis of Key Articles of the “Implementing Regulations on Mining Area Determination for Indonesia’s 2008-2009 Mining Law,” March 1, 2010, p. 4.

⁷¹ The first and second drafts of the IR to the Mining Law of 2009 made no mention of any changes in CCOW terms that may be requested by the MEMR. Then, on June 16, 2009, the MEMR issued a list of 10 changes it wanted to negotiate with companies operating under CCOW. The list included immediate changes and changes that would be made once the CCOW expires. The companies operating under a CCOW have agreed to deal with these issues as a united front through the Indonesian Coal Mining Association. All CCOW companies have reportedly told the MEMR that they have no intention of changing the terms of their CCOW prior to their expiration.

Slowness in Issuing Regulations and Lack of Clarity for Issued Regulations: The Indonesian regulatory process has never been one to be admired. But the pace with which the MEMR and the GOI have followed in issuing regulations and the weak and unclear wording of those regulations that have been issued have exceeded the worst expectations of many industry analysts. The industry is also concerned by the issuance of regulations that limit the freedom of choice of miners when hiring mining service contractors and their ability to sell their output on a long-term basis into export markets.

Transitioning of CCOW to IUP Permits: Companies operating under 1st Gen CCOW accounted for 72 percent of 2009 production. If we include 2nd and 3rd Gen CCOW holders into the total, the share of total 2009 coal production jumps to 92 percent. These large mining companies are expected to hold their preeminent coal supply positions until the 1st Gen CCOW expire. For Arutmin, that date will come in October 2019, while KPC, Adaro, and Kideco will have their CCOW expire in 2021, 2022, and 2024, respectively. With respect to 2nd Gen CCOW, they will expire between 2025 and 2030, while 3rd Gen CCOW will expire after 2030.

Under Law 4/2009, if PMAs operating under CCOW wish to continue their mining operations for an additional 10 years, they will be required to convert their CCOW into a production permit six months prior to the expiration date of the CCOW. It is unclear how the MEMR will deal with certain issues that could affect the sustainability of their future operations.

Specific areas of uncertainty include the following:

- (a) **Limits to the maximum mining area:** CCOW have mining areas that range between 25,000 and 140,000 hectares. Under Law 4/2009, companies operating under production permits will be limited to 15,000 hectares.
- (b) **Tax liabilities:** Revised tax imposts may increase the cost of coal production. This is an uncertainty more than a risk at this time. The 1st Gen CCOW are now paying a 45 percent corporate tax rate, which is much higher than the general maximum corporate tax rate of 25 percent. They also pay withholding taxes and other fees as part of the

CCOW. So it is not clear that the change in tax regime will be an additional cost to CCOW holders.

- (c) Mining service companies: Articles 124 to 127 under the new mining law require the permit holder to “only cooperate with local and/or Indonesian national mining services companies.” Currently, most mining services are being provided by large PMA service providers such as Leighton and Thiess. A premature move to impose this provision could significantly increase the cost of mining and possibly cause coal supply shortages if labor shortages occur and/or if local mining contractors are moved prematurely into lead contractor roles without first demonstrating a strong capability in this area. The issues raised here about necessary transitions to a localized mining services industry will likely be resolved well before the first CCOW expires in 2019 (the Arutmin CCOW) but, if handled inappropriately, could damage the ability of Indonesian coal miners to expand their production as quickly and cost-effectively as they have in the past.

Imposition of a Domestic Market Obligation: The MEMR issued PerMen 34/2009 on December 31, 2009, which in accordance with the Mining Law of 2009 establishes procedures for the minister of MEMR to follow when setting a domestic market obligation (DMO) for each coal producer. The GOI later issued GR 23/2010, which provided the full legal basis for the issuance of this regulation and its contents.

PerMen 34/2009 establishes a DMO for each calendar year as a percentage of total production that each coal producer must make available to domestic customers. The process specified in PerMen 34/2009 requires the MEMR to survey domestic customers about their coal requirements for a particular calendar year by March of the preceding year. The minister is then required to issue a “DMO decree” by June, which provides the DMO for the next calendar year along with the list of domestic customers and their requirements that was used in setting the DMO. Mining companies are then required to submit production plans to the MEMR by November of the year preceding the year when the DMO will apply. Each producer must show in its production plan how it intends to meet its fair share of that year’s DMO.

The MEMR has indicated that the DMO in any year will never exceed 35 percent of a producers' total production, which should not be a concern for most coal producers if the domestic prices are competitive with export prices. For example, Arutmin has plans to sell at least 50 percent of its Ecocoal production to domestic customers. Adaro in 2008 had domestic sales of its Tutupan coal equal to only 24 percent of its total sales in that year. However, it is forecasting that 35 percent of its 2013–2015 sales of low rank “Wara” coal will be sold to domestic customers. Coal suppliers appear to be taking the necessary steps in their forward planning activities to mitigate most if not all of the risk that the DMO regulation might have created for their export customers.

The problem with the DMO regulation is not the domestic requirement per se but the lack of a contractual obligation on the part of buyers to take the DMO once offered. If sellers are unable to arrange the sale of their DMO quantities within a certain time period, they will be allowed to sell those untaken amounts on the export market. However, the period of time they must wait before they are released from their DMO has not been specified. In any case, this evergreen obligation to reserve a certain percentage of production for the domestic market without having firm contracts in place could lead to any untaken DMO coal flooding the export markets and driving down the spot price for Indonesian coals, which would lead to lower royalties and corporate tax revenues for the GOI.

There are many other unresolved questions of detail surrounding the DMO such as (a) Should the DMO amount be based on tonnes of coal requirement regardless of coal rank or should the DMO be broken into subcategories based on the coal quality parameters such as CV, moisture, ash, and sulphur limits, which define the specifics of each customer's coal requirements? (b) What happens if in any year a producer is unable to fulfill his DMO due to an event of force majeure? Is he relieved of his DMO or must he fulfill it by reducing his exports? In general, how will Indonesia retain its reputation as a reliable coal supplier in the region if its long-term customers feel that they can be cut off from their Indonesian supplies from year to year due to priority being given to domestic customers?

The requirement for a DMO is one aspect of the Mining Law of 2009 that is in need of serious revision. In this author's view, the DMO should only be imposed when a clear coal supply

emergency exists and should not be imposed as a routine annual compliance procedure. It is simply too complex and too difficult to be administered by the MEMR. Its incompetent administration could lead to serious damage to Indonesia's reputation as a reliable coal supply country and could destabilize spot prices in export markets.

Determining an “Indonesian Coal Price Reference” (ICPR): GR23/2010 and the Mining Law of 2009 state that the government through the MEMR will establish a monthly reference coal price that coal producers must charge as a minimum price to its export and domestic customers. This policy was instituted because the GOI suspected coal exporters were basing royalty payments on artificially low prices charged by the Indonesian coal producer to an offshore affiliate, which later sold this coal at a substantially higher price to export customers.

On 23 September 2010, the MEMR issued Permen 17/2010 (Procedure for setting Minerals and Coal Benchmark Selling Price) as an official regulation under the Mining Law of 2009. Its successful implementation will largely depend on the specific MEMR formulas that allow price adjustments for coal quality, in addition to the routine price adjustments based on a coal's heating value. The specific formulas that will be used to set the Coal Benchmark Selling Price will be announced shortly by the MEMR through its Director General of Mineral, Coal and Geothermal.

The MEMR's draft ICPR price adjustment mechanism (as of September 2010) follows a formulaic methodology that allows price adjustments based on differences in the heating value of the coal and the weighted average heating value of the coals that make up the MEMR ICPR.⁷²

The ICPR for any coal will be calculated each month in two steps. First, the MEMR will calculate the simple average of four independent index prices:

- (a) the Barlow Jonker Index (now called the NEX index), which reports spot prices for Newcastle grade coal;

⁷² The proposal is available on the MEMR/ESDM website (www.esdm.go.id) for viewing and comment. One must select “Mineral Batubara and Panas Bumi” from the top of the first page and then “Informasi Harga Batubara (download PDF)” from the next page.

- (b) the global COAL Newcastle Index (gcNEWC), which is also a Newcastle linked spot price index;
- (c) the Platts Indonesia Coal Index for spot sales of coal with a CV of 5900 kcal/kg; and
- (d) the ICI 6500, which is produced by Argus Media in partnership with an Indonesian organization called Coalindo, for spot sales of coal with a CV of 6500 kcal/kg.

After establishing this “benchmark price,” reference prices are then calculated for eight reference coals, which represent more than 80 percent of the coal that is currently being produced in Indonesia. The formulas for calculating the reference prices for these eight coals adjust the simple average benchmark price for CV, moisture, sulfur, and ash. Coals not represented by these eight coals are allowed to adopt other specific equations provided on the MEMR website.

It is expected that this price adjustment mechanism will be announced by MEMR as official MEMR policy during October 2010. If it is implemented in its current form, low rank coals would, in many cases, be priced higher than the market will bear. Implementation of this policy therefore comes with significant risk of harming Indonesia’s price competitiveness for low rank coals. The possibility exists for this cumbersome and possibly unworkable proposition to go the same way as the 5 percent export tax, the MTI Letter of Credit Obligation Decree, and other ill-advised policies and regulations pushed by government officials and politicians with hidden agendas. But it is more likely that after struggling with it for some time, the MEMR will find a way to either render the ICPR mechanism impotent or rescind the mechanism entirely, similar to what has recently happened to the Ministry of Trade and Industry’s Letter of Credit Obligation Decree.

In summary, the Mining Law of 2009 and its draft IR should be viewed as a necessary step in the maturation of Indonesia’s regulatory framework. If fairly implemented, they should lead to improved regulation of Indonesia’s coal mining industry. Although the CCOW mechanism enabled Indonesia to create the world’s largest steam coal export industry, the need to rely on government-to-business contracts that have special law status was required because of the undeveloped state of Indonesia’s legal system at the time of their signing. The time is now right for the GOI to transition from that approach to the more internationally accepted approach of

governments issuing either licenses or permits that mining companies will operate under and leave the court system to handle any contract disputes. Moving to a permit system will also allow the GOI to apply changes in general laws to permit holders, which will allow much more flexibility in achieving changes to the mining sector over time.

However, for the new mining law and its implementing regulations to work in an efficient and equitable manner, the GOI and its partners in local governments will need to refrain from engaging in the types of political events that have occurred over the past decade. With respect to the law and its already issued regulations, a number of concerns exist about the way in which the GOI may implement Law 4/2009. Chief among those concerns are (a) placing excessively small limits on the size of mining areas under a production permit, which may not allow mining companies to achieve the economies of scale required to make investments in supporting transport infrastructure; (b) the prospect that the GOI may use “extra-judicial” means to force changes to the terms of existing CCOW prior to their expiration dates; (c) an unwillingness to allow international mining service contractors the right to provide their services; (d) the possible attempt to use the general tax code against the coal mining industry as a means of financing various government initiatives; and (e) incompetent implementation of the DMO and ICPR in a manner that damages the country’s reputation as a reliable coal supplier and increases coal price volatility.

Section 6

Conclusions and Alternative Indonesian Coal Futures — The Next 20 years

The formative years of Indonesia's coal mining industry began in 1967 with the passage of the Mining Law of 1967 and the Foreign Investment Act of 1967. This formative period lasted for 22 years during which a functioning regulatory framework was put in place and the GOI signed “investor-friendly” contracts with foreign mining companies.

Indonesia's coal production did not start to “take off” until 1988, a time when Indonesia's coal industry was dominated by PTBA, the government-owned coal company operating from coal mines located in Sumatra. Between 1988 and 1999, Indonesia's coal production grew by an astonishing 30 percent per year from 4.43 mt in 1988 to 80.89 mt in 1999. In the space of that one decade, Indonesia's coal industry shifted from being a Sumatra-based industry under the control of a government-owned company to an industry located predominantly on the island of Kalimantan and comprising a diversified group of privately owned companies that were mostly run according to international standards by world-class mining and resource development companies. The coal industry's growth during the take-off period was aided by a stable political and investment climate within Indonesia. It was also aided by strong growth in demand for Indonesia's low sulphur, low ash steam coals from the power industries of Japan, Korea, and Taiwan.⁷³

During the localization period (2000–2009), the expansion rates for the coal industry slowed considerably from the 30 percent annual rate of growth during the take-off period to 12 percent. But the slowdown was not due to the process of localization. It was mostly caused by the “law of big numbers” coupled with the continuing drag of the Asian Financial Crisis on regional economies; the political instability of Indonesia during this period and specific political events directed at the coal industry, which negatively impacted the expansion plans of some companies

⁷³ Because Indonesia's coal mining companies were still unproven in export markets as reliable and efficient suppliers, during the take-off period, they offered their customers significant FOB price discounts, equal to 10 percent to 20 percent of the Japanese Benchmark Price, the prevailing price benchmark for all export coals in Asia at that time. The large price discounts also aided the exceptional rates of growth achieved by Indonesia's coal industry during the take-off period.

until 2004; the short-term, adverse economic impacts from SARS and bird flu; and low prices for steam coal worldwide.

After 2004, the expansion of the Chinese economy started to have its salutary effects on many Asian economies, resulting in demand for new power plants and a concomitant increase in demand for steam coal from Indonesia. The rest is recent history starting with the late 2008 bursting of the Asian commodity bubble and the passage in January 2009 of Indonesia's new mining law. Indonesia is now the largest exporter of steam coal in the world and is expected to continue high levels of growth over the next decade. Thereafter much will depend on the manner in which the MEMR implements the Mining Law of 2009 and its IR.

A number of important conclusions can be drawn from the history of Indonesian coal industry from 1967 to 2008.

Supportive Regulatory Framework: First, the successful establishment of a world-class coal industry was largely due to the regulatory framework created in the 1967 by the Soeharto "New Order" government. It involved the establishment of direct contractual obligations between the Indonesian government and foreign mining companies. The original terms of those agreements were in English and provided foreign investors with strong protections and incentives. Given the undeveloped legal system and judiciary process in Indonesia at the time, it would not have been possible to jump-start the coal mining industry of Indonesia based on foreign investment and technology without such an arrangement.

Long Lead Times to Reach Commercial Production: Even with "special law" arrangements and attractive contractual terms in 1967, it took more than 20 years before Indonesia's coal production started to take off. Arutmin, the first company to sign a 1st Gen CCOW, did so in 1981 but did not start producing coal in commercial quantities until early 1990, nine years after contract signing. Other CCOW were signed with Adaro, KPC, and Kideco over the next two years. They too required about nine years from the date of CCOW signing to achieve commercial production. The long lead times resulted from the need to complete extensive drilling programs and detailed feasibility studies, to obtain financing for their mining projects, and then to develop

the mines, construct the roads, and build the necessary ports and other supporting infrastructure. These staged, long lead-time implementation projects also had very high first costs and could have been canceled at any time if either market conditions or domestic political conditions had deteriorated during the period they were being implemented.

Stable Political Climate and Buoyant Markets: Fortunately, enabling political and economic conditions did not change. From 1982 through 1997, coal market conditions remained buoyant with growth in steam coal demand from Japan, Korea, and Taiwan driving the growth of Indonesia's steam coal industry. Indonesia's political situation remained stable and its foreign investment climate positive. The pioneer coal sector investors — those who signed 1st Gen CCOW — also had one other major advantage that led to their success — the right to choose the most attractive coal concession areas. They were also allowed to establish initial exploration areas that were larger than the concession areas allowed to later entrants.

Their ability to tie up vast concession areas amenable to open-cut mining and in many instances with locations close to the sea allowed these pioneer investors to quickly achieve economies of scale in their mining operation and least cost construction of their inland transport systems. Today, their retained areas are much smaller due to relinquishment requirements under their CCOW, but they are still very large (25,000 to 118,000 hectares) when compared with the maximum retained area of 15,000 hectares that will be allowed under the Mining Law of 2009.

The 2nd Gen CCOW companies were allowed many of the same benefits enjoyed by 1st Gen CCOW companies — favorable contract terms and access to large concession areas. The 3rd Gen CCOW program, on the other hand, had some significant differences with respect to foreign exchange repatriation rights and various fiscal terms that made this program less attractive to most foreign investors than the 1st and 2nd Gen CCOW programs. These unfavorable foreign exchange and fiscal terms — coupled with either poor quality reserves or unattractive (Central Kalimantan) locations for most concession areas and Indonesia's weak economic and political conditions from 1999 through 2004 — all contributed to the slow development of coal mines under the 3rd Gen CCOW program. Yet, by 2009, 11 years after the signing date of most 3rd Gen CCOW, companies operating under a 3rd Gen CCOW have finally started to achieve significant

levels of coal production. They now supply the same share of total production as mining companies operating under 2nd Gen CCOW. If the infrastructure constraints of Central Kalimantan are resolved, there is the prospect that Indonesia will become a major exporter of coking coal as well as retain its spot as the world's largest steam coal exporter.

KPs, despite the large numbers that remain effective, have not developed into a significant coal supply source. In 2008, KPs are estimated to have supplied around 16 mt of coal if one generously includes “other unaccounted for” coal production in the total for KPs. Without the inclusion of this “other” allowance, KPs would have accounted for only 7.8 mt of coal production in 2008.⁷⁴ Moreover, KPs tend to be undercapitalized and will never be able to achieve the economies of scale of a CCOW holder due to the very limited size of KP concession areas — 5,000 hectares. In addition their weak capital base and lack of significant access to international financial markets mean that most KPs are at risk of financial collapse during downturns in the market.

The Mining Law of 2009 may lead Indonesia down the same path as the KP program due to the limited sizes of mining concession areas allowed under exploration and production permits. The experience with the KP program shows that small coal producers can form a part of the coal industry but can never form the mainstay of an industry that has reached the scale of the Indonesian coal industry.

Changing Market Factors and Regulatory System: With the collapse of the Soeharto government in 1998, Indonesia's long period of political stability and its positive investment climate were suddenly upended. Between 1999 and 2008, Indonesia's coal producers were confronted by a series of political events, which at an earlier stage in the industry's development might have stopped any further coal mine expansions. Instead, given their size, financial strength, and political clout, the major coal producers were able to withstand and eventually overcome the many political events that transpired over this period. The major coal producers

⁷⁴ Production data for KPs are highly unreliable. Many analysts simply determine the KP production in any year by taking the difference between estimated total production and production from companies operating under CCOW. The MEMR openly acknowledges that KP holders and local governments are very lax in reporting their production and export tonnages in a timely manner.

were helped immensely in their struggles with the GOI and provincial governments by their CCOW, which provided them with “special law” status under the Indonesian Constitution and successfully protected them from changes in general laws and more importantly from capricious, if not rapacious, actions by provincial and regency governments, which had gained administrative control over coal mining companies as a result of the Regional Autonomy Act of 1999.

Conclusions for the Next 20 Years

The experience of the past two decades can provide observers with some optimism that the coal industry of Indonesia will continue to grow and prosper over the next two decades. In the midst of considerable economic and political uncertainty Indonesia’s coal industry still grew at an impressive rate of 12 percent per year between 2000 and 2009. However, the experiences over the past decade also create legitimate concerns that the GOI and its partners in local government may take ill-advised actions that adversely affect investments in new coal mines and related infrastructure as well as the ongoing operations of the major coal producers, which will in turn adversely affect the ability of Indonesia’s coal industry to meet future domestic and export demand.

For the new mining law and its IRs to work in an efficient and equitable manner, the GOI and its partners in local governments will need to refrain from engaging in the types of political events that have occurred over the past decade. With respect to the law itself, a number of concerns that have been presented here exist about the way in which the GOI may implement Law 4/2009 and its IRs.

If the GOI implements the new mining law in an impartial manner, which encourages broad investor participation in the mining sector and allows flexibility in the size of mining areas and the use of foreign mining contractors and if the MEMR’s 2009 resource and reserve estimates are accurate, one can have a high degree of confidence in the ability of existing coal mining companies and new entrants to expand Indonesia’s coal production to much higher levels of production. But government non-interference and at times its strong support will be a requirement for those potentials to be realized.

However, if the GOI and its partners in local government choose to behave in the manner they have behaved over the past decade, the Mining Law of 2009 may end up destabilizing the Indonesian steam coal industry. In its place will be an industry that is a shell of its former self, similar to Indonesia's hapless oil and gas industries.

These are two very discrete, mutually exclusive paths that GOI can choose to follow. One such path is for the GOI to adopt inward-looking coal policies that encourage if not force the husbanding of its remaining coal resources for domestic use with the "leftovers" sent to export customers. This path would be based on the mistaken perception that Indonesia's largesse of remaining coal resources represents a zero-sum game in which sufficient resources are not available to meet the needs of both domestic and export customers. That level of economic nationalism has not yet taken hold in Indonesia; but, over the past decade, its siren call has been heard by enough observers of the Indonesian coal scene that the alarm has been sounded in the international investment community.

The GOI will hopefully choose an alternative path to coal sector development, which is inclusionary and allows foreign and domestic investors, guided by fair and consistent rules and regulations, to exist side by side. This path would also encourage the increased integration of Indonesia into the Asian economy and allow Indonesia to play a stronger role as supplier of energy resources to Asia. It is the path that will best serve the interests of the Indonesian people as well as the economies of Asia.

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