

PERSPECTIVE

RESEARCHERS AT ISEAS – YUSOF ISHAK INSTITUTE SHARE THEIR UNDERSTANDING OF CURRENT EVENTS

Singapore | 18 March 2016

The China-Indonesia Energy Entanglement Moves in a New Direction

*By Cecilia Springer**

EXECUTIVE SUMMARY

- Coal is the dominant source of energy in Asia, with China and Indonesia as leading producers and consumers.
- For many years, China and Indonesia maintained a huge, mutually beneficial coal relationship. However, in 2015, the China-Indonesia coal trade dropped precipitously in light of new political and economic incentives faced by both countries to decrease this trade.
- The air pollution and climate mitigation policies recently implemented by China led to a large decrease in the demand for coal, while Indonesia introduced new policies to restrict exports, promote economic development and nationalize its coal industry.
- These have pushed the China-Indonesia coal relationship in a new direction. Going forward, this relationship will no longer be defined by trade and export, but will instead shift towards investment, with China becoming more involved in the building of coal-related infrastructure in Indonesia.
- Both countries see this as a more beneficial form for their coal resource relationship.

** Cecilia Springer is a MS/PhD student at the UC Berkeley Energy and Resources Group, focusing on energy economics and policy in Asia. Previously, she worked at a climate policy consulting firm in Washington, DC and served as a Fulbright researcher in Tianjin, China. This article is based on a presentation made at an ISEAS Writers' Workshop on "Chinese Natural Resource Extraction in Southeast Asia: Cooperation or Conflict" held on 25-26 May 2015.*

INTRODUCTION

Coal dominates the energy scene in Asia due to its abundance, affordability, and reliability. In fact, around 70% of the electricity supply in Asia comes from coal, compared to a 40% global average.² Asia accounts for nearly all the growth in demand for coal in developing countries.

Coal's trade and production patterns can potentially shed light on the larger political and economic relationships between regional partners. China is the world's top producer and consumer of coal, while Indonesia holds the same dubious honours within Southeast Asia. The coal industry has major political sway in both countries, and has therefore contributed to the two becoming politically and economically entwined. For the past several years, their intimate import-export relationship has dominated global steam coal trade in both volume and market power.¹

Such dominance can leave other coal-using countries dependent on the China-Indonesia relationship to set the price – as well as the governance policies – for coal in the global market. China does have other major coal suppliers, such as Australia, but this paper focuses on Indonesia due to the growing importance of the China-ASEAN relationship for global resource governance.

This *Perspective* explores how the powerful coal industries in China and Indonesia became tightly interconnected through trade, and also elucidates the reasons behind a recent downturn in coal trade. However, it also suggests that the China-Indonesia coal relationship will persist since political factors in both countries make them see a more investment-oriented relationship to be mutually beneficial.

CHINA AND INDONESIA: THE ERA OF ENTANGLEMENT

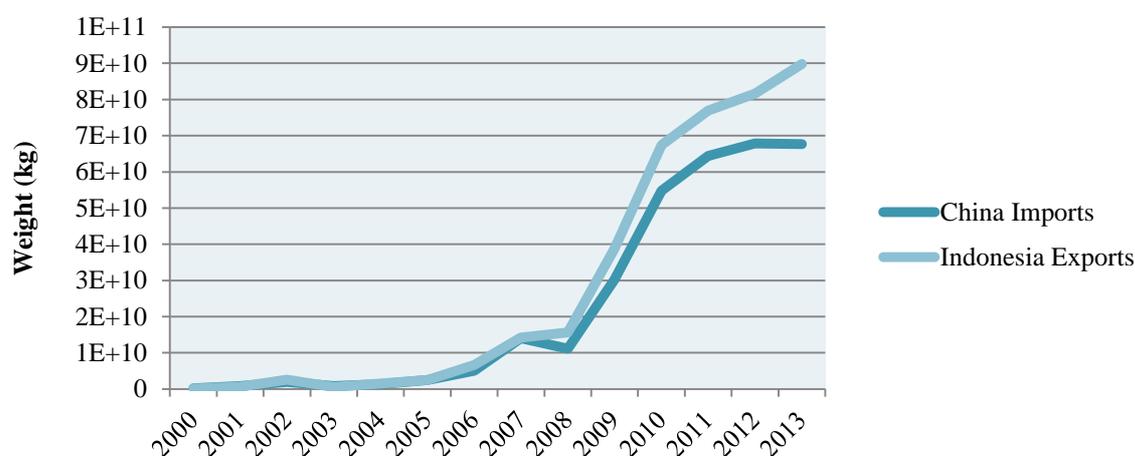
Coal is a pillar of both the Chinese and Indonesian economies. China has plentiful coal reserves and produces nearly half of the world's coal, the vast majority of which is consumed domestically.² Centralized state planning since the founding of the People's Republic of China prioritized heavy industry fueled by cheap commodity inputs, like coal. Despite disgruntled coal producers, China maintained low coal prices even after the reform period of the 1980s, when general commodity pricing became more liberalized.³ This enabled the Chinese economy to take off at an unprecedented rate through manufacturing and heavy industry being fueled by cheap coal.

Coal is also plentiful in Indonesia, and constitutes a critical part of the Indonesian economy. Growth in Indonesia's mining industry is driven by coal, the production value of which has an annual growth rate of roughly 10%.⁴ Indonesia is also the world's largest exporter of coal. Historically, Indonesia has oscillated between nationalizing its coal industry and opening it up to foreign investment. Since the Suharto era, Indonesia has increased protection for foreign investors and allowed investment in the mining sector from

companies like Shell and Rio Tinto.⁵ Indonesia further expanded its coal industry after petroleum became scarce domestically in the 1990s.⁴

These two powerful but relatively separate coal economies have become increasingly entangled in recent years. The year 2009 was a momentous one for the international coal market, and marked a major step in the entanglement of China and Indonesia through coal. In the years prior to 2009, a number of trends in both countries set the stage for the strengthening of this coal relationship.

Figure 1: Coal Volumes Traded from Indonesia to China, 2000 - 2013



Source: UN Comtrade Database. Since there is a discrepancy between reported data from China and from Indonesia, both series are displayed.

In China, coal supply and demand are geographically separated. China’s ample coal reserves and its major mines are concentrated in its northern and western provinces.⁶ The Pearl River Delta in southeastern China is a major centre of energy demand due to its large population and its heavily industrialized economy. Because transporting coal to the Pearl River Delta from northwest China by rail or truck is prohibitively expensive, coal is instead moved by rail to ports on the northeastern coast, then shipped to southeastern China. These rail-to-sea links are expensive and can account for 50-60% of the price of coal in southeastern China.⁷

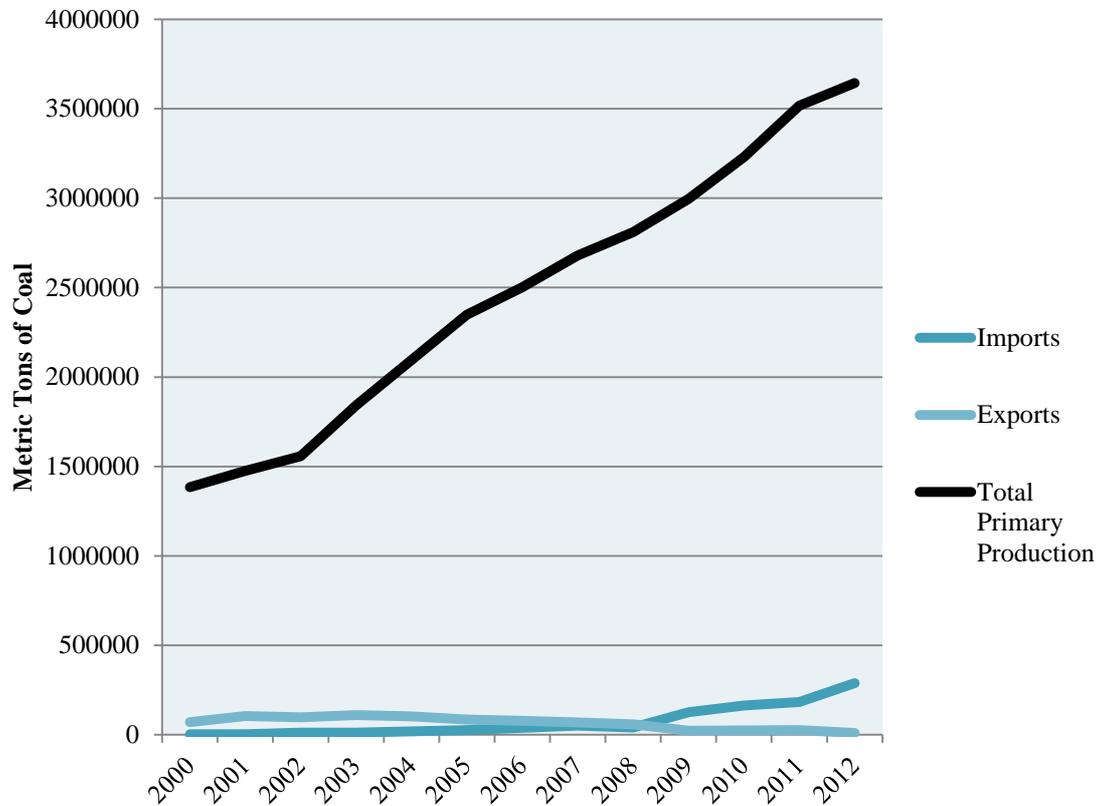
China’s rail and freight transport infrastructure has found it hard to modernize, in part due to the monopoly power of its regulator, the Ministry of Railways. In contrast, China’s ports were opened up to competitive investment in the 1990s and have enjoyed relatively greater construction investments proportional to coal capacity.⁸ Importing coal through coastal routes avoids further pressure on China’s railways, reducing the need for costly government infrastructural investment.⁸ Thus, coastal import of coal has become an increasingly attractive option. Unless China builds massive transmission infrastructure from its supply regions to overcome rail transport bottlenecks, imported coal is often cheaper to transport than domestic coal.⁶

In addition, disputes between coal companies and electricity companies within China over contract prices for steam coal (the primary type of coal in Indonesia) led the utilities to move towards imports.⁹ In China's electricity industry, contract prices for steam coal were maintained at artificially low levels until 2006, when China's National Development and Reform Commission began to deregulate. However, due to electricity price controls, utilities had trouble passing on the rising cost of coal to customers, and began instead to import low-cost coal.⁸

The Chinese government has encouraged the import of resources over domestic sourcing when imports are cheaper, through the "two markets, two resources" policy. This policy was first promulgated in the 1990s and has since been applied to energy, agricultural, and mineral sourcing decisions,²⁴ and it holds for coal as well.⁷ In addition to economic benefits, China promotes this policy in order to avoid other externalities associated with resource extraction. For example, the coal production process is highly water-intensive. Northern and western China, where most coal reserves are located, are arid regions facing extreme pressure on water resources. Indonesia has more fresh water per capita than China, and a more optimal fresh water to coal production ratio than China.⁸ Thus, China can alleviate its water scarcity by importing water-intensive resources like coal. China has both price and environmental motivations for looking overseas for coal. Importing water-intensive resources like coal certainly helps China alleviate its water scarcity.

The global recession was the tipping point for China's flip from being a net coal exporter to a net coal importer. The recession caused flagging demand for coal in many markets – but not in China. Freight costs dropped in other countries, but not by as much in China, which weathered the recession relatively well. This meant that coal purchasers in China could take advantage of recession-hit countries where transport costs had dropped, like Indonesia, rather than face the relatively expensive Chinese coal transport system.⁷ Taken together, these trends lowered the cost of importing coal over sourcing it domestically, demonstrating why China became a net importer of coal in 2009 despite the abundance of domestic coal reserves.

Figure 2: Coal Production, Import, and Export in China, 2000 - 2012



Source: Energy Information Administration

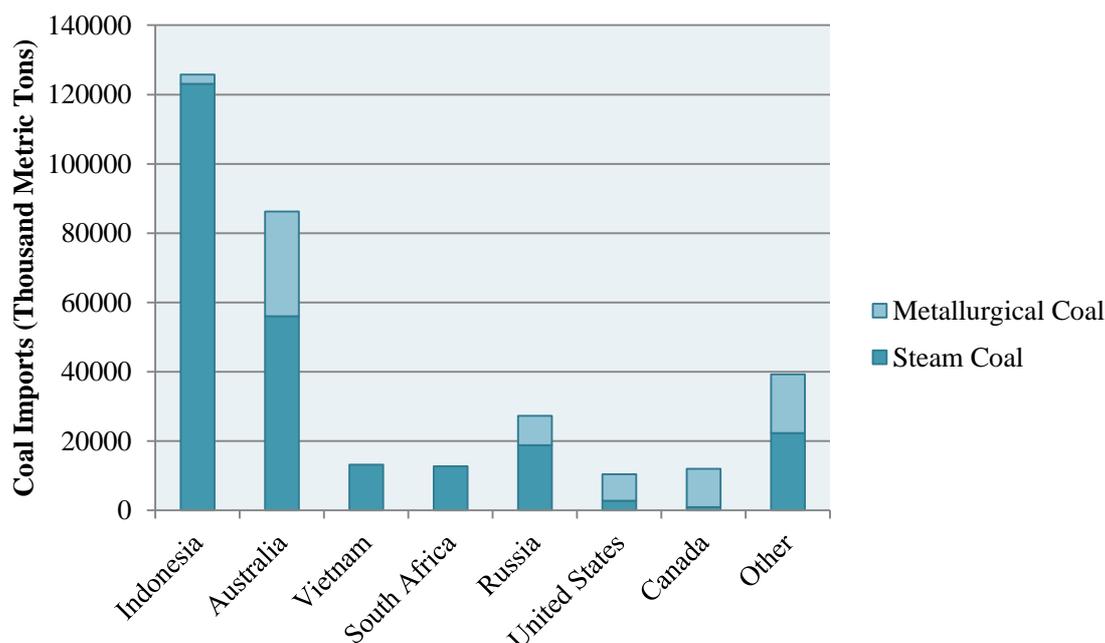
In the span of a year, Chinese demand came to account for 15% of internationally traded coal.⁷ Even though imports only make up about 10% of China’s coal supply, China is now the world’s largest coal importer.

In 2009, Indonesia’s export-oriented coal industry was well equipped to satisfy China’s new appetite for overseas coal. As China flipped from net exporter to net importer, Indonesia emerged as China’s biggest overseas supplier of coal. Indonesia has a competitive advantage over other countries (primarily Australia) that export coal to China. Its geographic proximity to China and historically low freight costs make imports of coal cheaper than coal exported from other countries. In 2013, freight costs for coal shipped from Indonesia to southeastern China were \$6-\$10/ton, while freight costs for that shipped from Australia were \$10-\$18/ton.

95% of Indonesian coal exported to China is steam coal, which is burned to produce electricity. Indonesian steam coal is particularly cheap due to its high ash content and low energy content, its low price further stoking Chinese purchases. The other primary type of coal is metallurgical coal, which is mostly used for industrial processes and steel production. The steam coal and metallurgical coal markets are distinct from each other, and

metallurgical coal has a much higher price (justifying the higher shipping costs from Australia). Indonesia has historically exceeded its primary competitor, Australia, in exports of steam coal to China. However, the types of coal coming from Indonesia have recently fallen out of favour in China due to environmental concerns, as discussed in the following section.

Figure 3: China Coal Imports by Country and Type of Coal, 2013



Source: International Energy Agency, Coal Information 2014

THE CHINA-INDONESIA COAL TRADE UNDER STRAIN

China is devoting major political resources to reducing domestic air pollution and carbon emissions, and a large part of its air and climate strategy is about cutting down coal burning in China. Several cities and provinces have capped coal use, and the Natural Resources Defense Council and Chinese government stakeholders are discussing a national coal cap. In addition, China has been considering for some time a ban on the import of low-quality coal (such as the type found in Indonesia) with sulfur and ash content above a certain quantity.¹⁸ China has also begun testing the quality of imported coal, while high ash-content coal has been refused at some ports.

Due in large part to these policies, coal consumption in China dropped 4.7% in the first quarter of 2015. To match decreased demand for coal, small domestic coal mines responsible for about 200 million tons of local production were closed down. China then decided to cut imports rather than shut down more domestic mines. In February 2015, Chinese coal imports from Indonesia were down 65% compared to February 2014.¹⁹

Indonesia also has its own motivations for decreasing coal exports to China. Historically, the regulation of Indonesia's coal industry has been characterized by tension between nationalization versus openness to foreign involvement.⁵ The 2009 Mining Law was meant to increase the value-added of Indonesian mining industries by using more domestic commodities, services, technologies, and labour. The Mining Law also includes the stipulation that Indonesian coal producers must sell at least 21.47% of their coal to the domestic market, beginning in 2011, thus restricting the percentage of coal available for export.⁴

In addition, the Indonesian government is trying to crack down on illegal mining and exports, which have reached a volume of nearly 10% of legal exports. It wants to control supply in order to boost prices and reduce royalties lost through illegal mining and exports.

Energy security concerns in Indonesia are also driving a decrease in exports. As the Indonesian grid expands, the country is expected to have a greater reliance on coal given the high price of imported oil and the difficulty of accessing domestic natural gas.²⁰ Coal in Indonesia is plentiful and cheap, and coal-fired power plants use established technology and can be built rapidly. Indonesia's National Energy Policy aims to make coal a core energy source over oil and nuclear power, increasing the share of coal for primary energy from roughly 25% to 30% by 2030.²¹ Thus, as the government promotes electrification, Indonesia seeks to retain more of its own coal to bolster the domestic energy supply.

In sum, the recent slump in coal import-export relationship between China and Indonesia can largely be attributed to policy and political changes within each country driven by separate domestic needs.

IMPLICATIONS AND NEW DIRECTIONS

This recent downturn does not mean that the China-Indonesia coal relationship is over – the two countries still enjoy political benefits by linking their coal industries. While trade may be depressed for the foreseeable future, China's investment in the Indonesian coal industry is increasing, signaling that the two countries' coal relationship is moving in a new direction.

China's economic diplomacy often emphasizes resource development in other countries, and the Chinese government and investors have recognized the political and strategic importance of supporting Indonesia's coal industry. State investments in particular allow the Chinese government to accumulate raw materials, transcending the benefits of trade by securing long-term access to resources.²⁶ Development finance also helps China build political good will. The New Development Bank (headquartered in Shanghai) and the Asian Infrastructure Investment Bank will channel South-South public finance to developing countries, much of it in energy and mining. Currently, Indonesia is the 6th greatest recipient of pledged development finance from China, and the top recipient in Asia.²⁵ China's 'Going Global' policy has opened up a fresh wave of investment from private and state-owned firms

in China. In 2013, China's Ministry of Commerce statistics show that 23% of outbound Chinese investment went to the mining sector.²⁷

China's foreign investment goals align well with Indonesia's need for infrastructure development for economic growth. The country's infrastructure index remains very low, and government infrastructure spending in 2011 as a share of GDP fell by nearly 50 per cent as compared to the first half of the 1990s, and is well below that of other faster-growing Asian economies. Indonesia is actively encouraging investment from its regional partners. President Jokowi visited China and met with President Xi Jinping in March 2015 as part of a diplomatic trip to encourage further investment from China in Indonesia. Investments from China will play a pivotal role in achieving the Indonesian government's target of accelerating and expanding infrastructure development in the country.²⁸

In addition to diplomatic courting of potential investors, Indonesia's government is also attempting to coerce investment by restricting the export of raw materials. Part of the Mining Law's implementation includes a new ministerial regulation to encourage the development of high-value industries in Indonesia by phasing out exports of raw materials, including coal, by 2014.⁴ Although this has clearly not happened in full, Indonesia means to send a strong signal to trading partners that they need to invest in Indonesia's processing and manufacturing industries in order to have a share of raw materials. The policy has yet to yield the desired results, and for some commodities, it is being relaxed. However, it demonstrates Indonesia's preference for an investment-based relationship around coal over the export model that previously defined its resource relationship with China.

Some high-profile investments in Indonesia's coal sector include China Huaneng Group's purchase of a 51% stake in PT Berau Coal, Indonesia's fifth-largest coal producer. In 2013, the China Investment Corporation invested \$1.9 billion in Bumi Resources, Indonesia's largest coal company.¹⁰ China is not only investing in coal mining in Indonesia, but also in power generation projects or combined mine-mouth coal plants, including a massive 2100 MW project in South Sulawesi built by Gezhouba.

CONCLUSION

The China-Indonesia coal relationship reflects a convergence of economic and political interests within each country. Although Chinese imports of Indonesian coal have declined in recent years owing to externality-driven policy changes in China, and nationalization-related policies in Indonesia, their coal relationship is likely to continue in a significant manner through investment.

The China-Indonesia coal relationship is a valuable way to view the priorities of the two countries in a highly interconnected system of trade and finance. Coal can demonstrate the complex geography of commodity relationships between countries. Recent trends in the China-Indonesia coal trade reveal resource security priorities in both countries, as well as the political benefits of remaining entangled through investment. The decisions of both

countries with respect to coal will have a major impact on the environmental and energy future of Asia and the world.

Bibliography

1. Paulus, M., Trueby, J. & Growitsch, C. *Nations as Strategic Players in Global Commodity Markets: Evidence from World Coal Trade*. (Energiewirtschaftliches Institut an der Universitaet zu Koeln, 2011). at <https://ideas.repec.org/p/ris/ewikln/2011_004.html>
2. IEA & AIE. *World Energy Outlook 2014*. (2014).
3. Wright, T. *The Political Economy of the Chinese Coal Industry: Black Gold and Blood-Stained Coal*. (Routledge, 2012).
4. Bernadetta Devi & Dody Prayogo. *Mining and Development in Indonesia: An Overview of the Regulatory Framework and Policies*. (2013). at <<http://im4dc.org/wp-content/uploads/2013/09/Mining-and-Development-in-Indonesia.pdf>>
5. Lucarelli, B. The history and future of Indonesia's coal industry: impact of politics and regulatory framework on industry structure and performance. *Program Energy Sustain. Dev. Freeman Spogli Inst. Int. Stud. Stanf. Univ. Stanf. Calif. USA* Retrieved May **10**, 2011 (2010).
6. Paulus, M. & Trüby, J. Coal lumps vs. electrons: How do Chinese bulk energy transport decisions affect the global steam coal market? *Energy Econ.* **33**, 1127–1137 (2011).
7. Gang He & Richard Morse. in *Globalization, Development and Security in Asia* 69–85 (WORLD SCIENTIFIC, 2013). at <http://www.worldscientific.com/doi/abs/10.1142/9789814566582_0032>
8. Tu, K. J. & Johnson-Reiser, S. *Understanding China's Rising Coal Imports* February 16, 2012. at <http://carnegieendowment.org/files/china_coal.pdf>
9. Jianjun Tu. *Industrial Organization of the Chinese Coal Industry*. (2011).
10. Wang, C. & Ducruet, C. Transport corridors and regional balance in China: the case of coal trade and logistics. *J. Transp. Geogr.* **40**, 3–16 (2014).
11. UPDATE 1-China sets tax on low-grade coal imports; Indonesia unaffected. *Reuters* (2013). at <<http://www.reuters.com/article/2013/09/02/china-coal-tax-idUSL4N0GY1YP20130902>>
12. IEA. *Key World Energy Statistics 2012*. (Organisation for Economic Co-operation and Development, 2013). at <http://www.oecd-ilibrary.org/content/book/key_energ_stat-2012-en>
13. Chen, Y., Ebenstein, A., Greenstone, M. & Li, H. Evidence on the impact of sustained exposure to air pollution on life expectancy from China's Huai River policy. *Proc. Natl. Acad. Sci.* **110**, 12936–12941 (2013).
14. Point of No Return. *Greenpeace International* at <<http://www.greenpeace.org/international/en/publications/Campaign-reports/Climate-Reports/Point-of-No-Return/>>
15. Fatah, L. The Impacts of Coal Mining on the Economy and Environment of South Kalimantan Province, Indonesia. *ASEAN Econ. Bull.* **25**, 85–98 (2008).

16. Thomson, E. & Finenko, A. Estimating the Potential Emissions from Chinese Power Plants that Use Coal Which Has Been Mined Illegally in Southeast Asia. *Energy Procedia* **61**, 2716–2720 (2014).
17. Cleaning China’s Smoggy Skies: China Released Draft Air Pollution Law Amendments for Public Comment | Barbara Finamore’s Blog | Switchboard, from NRDC. at <http://switchboard.nrdc.org/blogs/bfinamore/cleaning_chinas_smoggy_skies_c.html>
18. China’s Coal Market - Can Beijing Tame ‘King Coal’? *Oxford Institute for Energy Studies* at <<https://www.oxfordenergy.org/2014/12/chinas-coal-market-can-beijing-tame-king-coal-2/>>
19. China coal imports from Australia and Indonesia slip in February. *World Coal* at <<http://www.worldcoal.com/coal/23032015/China-coal-Australia-Indonesia-February-2093/>>
20. Gunningham, N. Managing the energy trilemma: The case of Indonesia. *Energy Policy* **54**, 184–193 (2013).
21. International Energy Agency. Energy Supply Security: Indonesia. (2014). at <http://www.iea.org/publications/freepublications/publication/ESS_Indonesia_2014.pdf>
22. Buisset, M., Jenie, E. & Kurniawan, T. Indonesia tightens its coal export policy, effective 1 October 2014 | Lexology. at <<http://www.lexology.com/library/detail.aspx?g=cea6988a-fa8d-4d13-bce8-eef424a97277>>
23. Reuters. China’s Q1 coal imports from Australia fall 27 pct on year. *Reuters* (2015). at <<http://af.reuters.com/article/commoditiesNews/idAFL4N0XII1VV20150422?sp=true>>
24. Hickey, D. & Guo, B. *Dancing with the Dragon: China’s Emergence in the Developing World*. (Lexington Books, 2010).
25. Wolf, C., Wang, X. & Warner, E. China’s Foreign Aid and Government-Sponsored Investment Activities. (2013). at <http://www.rand.org/pubs/research_reports/RR118.html>
26. Lee, C. K. The Spectre of Global China. *New Left Rev.* 28–65 (2014).
27. China’s Outward Foreign Direct Investment in 2013 | Climate and Finance Policy Centre. at <http://www.ghub.org/cfc_en/?p=591>
28. Zhao Hong. China-Indonesia economic relations: Challenges and prospects. (2013). at <http://www.iseas.edu.sg/documents/publication/iseas_perspective_2013_42_china_indonesia_economic_relations.pdf>
29. Singh, R. K. India Poised to Overtake China as Biggest Thermal Coal Importer. *Bloomberg.com* at <<http://www.bloomberg.com/news/articles/2015-04-15/india-poised-to-overtake-china-as-biggest-thermal-coal-importer>>

<p>ISEAS Perspective is published electronically by:</p> <p>ISEAS-Yusof Ishak Institute 30 Heng Mui Keng Terrace Pasir Panjang Singapore 119614</p> <p>Main Tel: (65) 6778 0955 Main Fax: (65) 6778 1735</p>	<p>ISEAS-Yusof Ishak Institute accepts no responsibility for facts presented and views expressed.</p> <p>Responsibility rests exclusively with the individual author or authors. No part of this publication may be reproduced in any form without permission.</p> <p>Comments are welcome and may be sent to the author(s).</p> <p>© Copyright is held by the author or authors of each article.</p>	<p>Editorial Chairman: Tan Chin Tiong</p> <p>Managing Editor: Ooi Kee Beng</p> <p>Editors: Lee Poh Onn and Benjamin Loh</p> <p>Assistant Editors: Danielle Hong Yuan Hua, Vandana Prakash Nair, Veena Nair and Michael Yeo Chai Ming</p>
--	---	--