

China-Indonesia Coal Relationship: A New Phase under the Belt & Road Initiative

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SYNOPSIS

Chinese companies are global leaders in coal-fired power plant technology and have the funds to invest in Indonesia's coal-fired power sector in the framework of the Belt & Road Initiative (BRI). This policy brief reviews the current state of the China-Indonesia coal relationship and analyses the new phase of the relationship in the context of the BRI.

KEY POINTS

- As a result of fast economic growth and rising domestic demand for energy, Indonesia is diverting away from energy exports to fulfil domestic demand.
- Indonesia aims to provide 35,000MW of additional power generation capacity by 2019 and a significant portion will come from coal, which the country has plenty of.
- The Indonesian government faces many challenges in achieving the target for new coal-fired power generation plants, including technology, finance and labour, as well as governance issues related to project transparency and land procurement.
- As a global leader in coal-fired power plant technology and motivated by the Belt and Road Initiative, Chinese companies can address Indonesia's growing energy needs. These investments herald a new phase in the China-Indonesia coal relationship.
- However, many of the new Chinese-built coal-fired power plants are not the most technologically advanced. Furthermore, Chinese companies often bring the majority of workers needed for the construction work from China, thus reducing the involvement of local workforce.
- The growing environmental and societal pressures against these Chinese projects add a significant element of uncertainty to this new phase of the bilateral relationship.

INTRODUCTION

Indonesia is the world's fourth most populous country and it has shown impressive economic growth in recent years. The annual economic growth rate of Indonesia from 2000 to 2015 averaged at about 5.5 per cent and this is resulting in the rising appetite for energy. Indonesia's increasing energy demand and decreasing oil production has led the country to revise its energy consumption mix for 2025. According to Indonesia's Electricity Supply Business Plan, coal will overtake oil as Indonesia's primary energy source for consumption. The government plans to divert its coal exports to domestic power generation in order to meet local demand for electricity

generation. At the same time, oil production has been declining since the mid-1990s while domestic consumption continues to increase rapidly, driven by economic and population growth.

As a result, Indonesia is in transition to become a net energy importer. Furthermore, as coal-fired power plants will be a major electricity supply source in Indonesia in the near future, there is a need to develop a large fleet of coal-fired power plants and this would require major investments. China's expertise, technology and funding of coal-fired power plants can address Indonesia's needs. The following analysis discusses the key challenges

Indonesia face in seeking to increase power generation capacity, the projected growth in domestic coal consumption, and the implications of China's BRI for the China-Indonesia coal relationship.

ANALYSIS

Indonesia's Growing Power Generation Challenges

Indonesia was the world's 5th largest coal producer in 2012 and in 2011 it overtook Australia as the world's largest exporter. However, Indonesia now plans to divert its coal exports to domestic power generation to meet its domestic demand for electricity. Indonesian President Joko Widodo, also known as Jokowi, announced his ambitious power generation plan in 2015. Under this plan, Jokowi outlined an agenda to provide 35,000MW of additional power generation capacity by 2019, which represents an ambitious target to almost double generation capacity, which stood at 40,000MW in 2015.

According to the Investment Coordinating Board of Indonesia (BKPM), coal-fired power plants will account for 19,713MW or 55 per cent of the additional 35,000MW under this plan, with the rest from gas and renewable sources. Indonesian coal is primarily located in Sumatra and Kalimantan, islands with high electricity demand and strong economic growth potential. Both islands are also close to Java, Indonesia's largest electricity market. The coal-fired power plants under construction are mostly located in South Sumatra and West Java. According to BKPM, the plan to add an additional 35,000MW power generation capacity is estimated to cost over US\$88 billion. However, Indonesia's state-owned electricity provider, Perusahaan Listrik Negara (PLN), does not have enough financing capability to undertake these projects on its own. Therefore, Indonesia will have to seek foreign investment to develop its coal-fired power generation capacity. This will however be difficult on account of trends in the power sector both at home and internationally.

Domestically, Indonesia's ambitious plan to develop coal-fired power plants has faced financing and administrative hurdles. PLN has blamed the setbacks on the Indonesian Ministry of Finance, the institution responsible for issuing business feasibility guarantees to

secure overseas funding. Indonesia's energy sector investments are further complicated by bureaucratic delays. In 2016, Indonesia ranked 91st on the World Bank's Ease of Doing Business Index. In this regard, governance issues relating to project transparency and land procurement continue to constrain progress towards Jokowi's 35,000MW target.

Internationally, the increased regulatory risks, environmental concerns, and overcapacity have all decreased capital flows into coal-fired power projects. Companies from Europe, the United States, and Japan are under heightened pressure to reduce both domestic and global coal investments. As a result, global coal production declined by 10 per cent or 800 million tonnes over the 2013 to 2016 period. According to the International Energy Agency, this was the largest decline in absolute terms since 1971. Indonesia's increasing reliance on coal is therefore going against the global trend.

Table 1: Status of Indonesian's Electricity Target as of December 2017

Status	Progress	Share of target (35,000MW)
PPA* committed/ signed	Commercial operation	4% (1,358MW)
	Ongoing construction	48% (17,096MW)
	Pre-construction phase	35% (12,724MW)
PPA not signed	Procurement	8% (2,894MW)
	Planning	5% (1,788MW)

Source: Investment Coordinating Board of Indonesia (BKPM)
*PPA: Power Purchasing Agreement

Table 1 shows the development progress of the overall plan for 35,000MW additional capacity. As of December 2017, only 1,358MW of the total 35,000MW target was in commercial operation, and government officials have expressed doubts on Jokowi's target, predicting that only 23,000-25,000MW would be attainable by 2019. Furthermore, due to Indonesia's sluggish electricity demand in 2017, PLN cancelled the allocation of around 22,000MW of power projects. Jokowi has expressed frustration at the slow progress but

has nevertheless stuck to his target of 35,000MW by 2019.

China as an Investor

Indonesia needs significant funding to develop its coal-fired electricity sector and China has emerged as a significant investor in this regard. Overseas investment is critical to satisfying Indonesia's energy needs in the coal-fired power sector, an industry where China has been a global leader in recent years. It has the world's largest fleet of ultra-supercritical plants and is one of the few countries with a large-scale, integrated gasification combined cycle demonstration plant. China is the world's top coal producer and hopes to export its labour, skills, technology, and financial investments to countries seeking greater deployment of coal-fired power generation.

Many of the future investments for Indonesia will come as a part of China's BRI. The BRI seeks to advance interconnectivity, global trade, and infrastructure investment in an area covering about 65 per cent of the world's population and one-third of the world's GDP. Indonesia is a primary target of the BRI in the energy sector of Southeast Asia, and China has expressed an interest to support Indonesia's plans for building new coal-fired power plants since BRI was announced in 2013. In fact, following Chinese President Xi Jinping's visit to Indonesia in 2013, China's FDI to Indonesia has been growing rapidly from US\$800 million in 2014 to nearly US\$2.74 billion in the first nine months of 2017, according to BKPM.

Among the current top ten largest investors from China in Indonesia, two are from the energy sector, namely China Shenhua Energy and China Huadian Engineering, with both investing in the electricity sector in Indonesia. The reason behind this is very clear. Indonesian and Chinese electricity generation are both heavily dependent on coal; this reflects a broader Asian trend, since 70 per cent of regional electricity supply comes from coal. The global average, on the other hand, is only 40 per cent.

However, China is reducing its domestic coal production and consumption due to growing environmental pressures from its local constituents. China's state-owned coal mining enterprises have targeted coal capacity cuts of

12.65 million tonnes for the year of 2018. The elimination of coal-fired power generation capacity within China is also actively encouraged. As China commits to reduce its local coal production and use, Indonesia is on the other hand pursuing policies, highlighted above, to divert its coal from export to domestic electricity generation. At the same time, with skilled labour and having one of the most advanced generation technology in coal power plant sector, China is diverting its domestic coal power plant construction capacity to foreign markets. The Chinese therefore regard Indonesia as a prime foreign market for coal-fired power plant investment. This complement of interest can help balance the supply-demand equilibrium of coal power plant-related financing, labour and technology between China and Indonesia.

Implications for the China-Indonesia Coal Relationship

The China-Indonesia coal relationship has been developing steadily over the past decade. China's main economic and electricity growth sectors are in the Southeastern part of China while its coal resources are concentrated in the North and Northwest of the country. The transport of coal by rail within China is costly due to inadequate infrastructure. Chinese coal producers have been involved in disputes over pricing for steam coal used for electricity generation, creating further hurdles for domestic coal-based electricity generation. Unlike the Chinese rail sector, coastal infrastructure sector in China has been liberalised since the 1990s. Moreover, the 2008 global recession forced many coal exporters to lower their price for coal exports, enabling cheaper imports into China.

Due to these market dynamics in China, it has often been cheaper for coastal provinces in China to import coal from countries like Australia and Indonesia instead of transporting its domestic coal from the North. Consequently, Indonesia fits well into the Chinese coal puzzle, with its geographic proximity to both China's Southern ports and electricity demand hubs. In 2017, China imported 110 million tonnes of coal from Indonesia and the import is increasing in 2018.

In recent years, the Chinese-Indonesian coal relationship has been experiencing significant

changes. Indonesia is diverting more of its coal exports to domestic use for power generation; while China is shifting its domestic coal use and capacity for constructing coal-fired power plants to overseas destinations such as Indonesia. These two trends, coupled with the BRI, have triggered a new phase in the China-Indonesia coal relationship. China's ambition to build coal power plants overseas can satisfy Indonesia's domestic needs for expansion of its electricity generation capacity. At the same time, China's macroeconomic situation encourages outward direct investment and the huge amount of accumulated international reserves provides Chinese state-owned enterprises the potential to invest abroad. Indonesia's demand for investments and technology of coal power plants can thus absorb China's domestic overcapacity.

However, this relationship has its challenges. According to the database, China's Global Energy Finance, constructed by the Global Development Policy Center at Boston University, the coal-fired power plants that are newly built or under construction in Indonesia by Chinese companies are mostly critical or sub-critical, with only a small number of ultra-supercritical plants. Furthermore, Chinese companies often bring in the majority of workers needed for the construction work from China, thus reducing the involvement of the local workforce. These two factors have aroused dissatisfaction in local communities where the plants are constructed. The growing environmental and societal pressures against coal-fired power plants adds a significant element of uncertainty to this growing relationship between China and Indonesia.

The long-term result of this growing relationship remains to be seen. Yet what is certain is that the current bilateral relationship can help reach the equilibrium of supply-demand of coal power plant investments and technology between China and Indonesia. It can also help the development of Chinese investments in other sectors in Indonesia, such as the metallurgical (nickel, steel) and cement industries and industrial estates.

Ultimately, the success of the relationship will depend on what technologies China bring to Indonesia, how these investments will affect the local environment, and the extent to which

Chinese companies employ the local workforce. Only when these environmental and societal issues are carefully addressed can the new phase of relationship flourish.

CONCLUSION

With growing energy demand and the ambitious power generation target set by Jokowi, Indonesia is in urgent need of investments to finance the construction of its coal-fired power plants. At the same time, Chinese companies are willing to make overseas investments under the BRI arrangement. This is reconfiguring the China-Indonesia coal relationship—from China being an importer of Indonesian coal to being a promoter of coal-fired power plants to Indonesia.

WHAT TO LOOK OUT FOR

- The pace of construction of coal-fired power plants in Indonesia in the face of domestic financial, administrative, and social obstacles.
- The financing model for the Chinese-built coal-fired power plants.
- The rate that China deploys more ultra-supercritical technology in Indonesia.

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