

# Contemporary coal dynamics in Indonesia

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## Contents

<b>Acknowledgements</b> .....	<b>4</b>
<b>Executive Summary</b> .....	<b>5</b>
List of terms .....	7
<b>1. Introduction</b> .....	<b>8</b>
1.1 Coal production and global coal markets .....	8
<b>2. A decade of rapid coal expansion</b> .....	<b>9</b>
2.1 Sectoral overview .....	9
2.2 Factors driving an increase in production .....	10
2.3 The legacies of a boom in coal production .....	15
<b>3. Reining in or ramping up?</b> .....	<b>18</b>
3.1 Domestic policy changes .....	18
3.2 Changing economics of coal production .....	21
3.3 A changing financial landscape .....	23
<b>4. Future trajectories</b> .....	<b>24</b>
<b>5. Conclusions</b> .....	<b>26</b>
<b>References</b> .....	<b>27</b>
<b>Annex 1. Laws, policies, regulations and other relevant instruments related to coal mining</b> .....	<b>30</b>

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## Executive Summary

This paper explores the political economy of coal mining in Indonesia, and looks at how policy changes over the last few years might affect coal production and export.

Indonesian coal production has risen dramatically over the last 10 to 15 years, and Indonesia has emerged as one of the world's largest exporters of coal, and the largest exporter of steam coal. This expansion has been at least partly triggered by a chaotic growth in licensing of new coal mines, following the roll-out of Indonesia's decentralization agenda. This rapid and unstructured expansion has created a raft of problems, including deforestation, rampant corruption, illegal mining, overlapping land claims, and resource "sterilization" concerns. Mining companies also are rarely rehabilitating and closing mines as required. All these issues reinforce the public's perception that regulation of the mining sector is weak.

In recent years, the government has tried to address these problems through a number of policy and regulatory changes. In 2014, Indonesia withdrew local governments' authority to issue mining permits and handed it to the provincial governor. The "One Map" policy was also introduced in 2014, to consolidate information on land use and permits and thus improve the regulation of land permitting across different portfolios and levels of government. In 2015, Indonesia began its "Clean and Clear" program to screen all mining licenses and check for compliance with license conditions. Government officials have also announced, on several occasions, that there will be a moratorium on new coal mining licenses. Furthermore, the national government included a cap on overall coal production rates in its Mid-term National Development Plan for 2014-2019, and it has signaled that there will be a continuous increase in the proportion of coal that mining companies must sell domestically. Lastly, in the past two years, the Corruption Eradication Commission has focused on the coal mining sector, which has drawn attention to some of the ways mining is intertwined with corruption.

Outside Indonesia, international dynamics are also likely to affect the viability of future coal production. Recent years have seen high fluctuations in the international coal price, and when the price is low some Indonesian producers suffer. Future prices remain highly uncertain. Renewable energy costs are becoming competitive with coal-based electricity, the international community is ramping up ambition to tackle climate change, and financial institutions (especially international banks and pension funds) are showing a weakening appetite for coal assets.

What do these changes mean for the future of coal production in Indonesia? On the surface, these changes might all constrain the growth in coal production, at least in the short term. However, their implementation on the ground is uncertain and to date there are no obvious signs of production stagnating. What's more, the fundamental structures of the system that triggered a rapid growth in coal production over the last decade remain relatively unchanged. Politicians retain financial interests in coal mining activities, corruption continues to incentivise local and national bureaucracies to support mining, and the management and administration of mining is lax. Meanwhile, the National Energy Policy and the Mid-term National Development Plan both envision a massive expansion in Indonesia's coal-fired electricity generation capacity, generating strong signals about future growth in domestic demand for coal. In 2012, the only area of Kalimantan left relatively untouched by mining and palm oil was formalized as a new province, North Kalimantan. If this province follows the pattern of others on the island, then we may see a rapid new expansion of the coal mining frontier. Although Indonesia's NDC commits to decreasing greenhouse gas emissions by tackling deforestation and promoting renewable energy, it does not mention coal and the massive planned build-out of coal generation capacity.

Despite this, the government recently has shown greater interest in renewable energy as costs have come down. This means that the delays in building new coal plants might provide an opportunity for more of these proposed plants to be substituted by cleaner alternatives. The proliferation in small-scale mining over the last decade also is likely to mean some deeper reserves become less economically viable over the longer term, particularly if commodity prices follow a downward trend in the future. Finally, there is increased public discussion about the enforcement of mine rehabilitation requirements; if this translates to the implementation of license requirements, it would raise mining costs and drive some mines out of production.

The fundamental structures of the system that triggered a rapid growth in coal production over the last decade remain relatively unchanged.

Reflecting on all of the above, it may seem premature to consider what will happen in Indonesia's coal mining regions if the coal sector enters structural decline. There is certainly no visible dialogue within Indonesia about the possibility of global demand falling away significantly, or of the resulting effect. Consequently, the government is not considering alternative visions for socio-economic development or a future in which coal mining does not feature centrally. This lack of debate seems risky, as international climate policy ratchets up, cleaner energy becomes less expensive, and more financial institutions divest from coal assets. Main export destinations like China also might opt to curtail some planned coal-fired power generation capacity as they grapple with air pollution. This paper aims to synthesise some of the complex dynamics that could affect Indonesia's future production and export levels, as a basis for a dialogue about how the country can balance its coal reserves with local and national socio-economic development priorities and with global environmental challenges.

## List of terms

Term in English	Term in Bahasa	Abbreviation in Bahasa
Circular Letter	Surat Edaran	
Indonesian Association of Coal Mining	Asosiasi Pertambangan Batubara Indonesia	APBI
Ministry of Energy and Mineral Resources (MEMR)	Kementerian Energi dan Sumber Daya Mineral	ESDM
People's Mining License	Izin Pertambangan Rakyat	IPR
Mining Business License	Izin Usaha Pertambangan	IUP
Special Mining Business License	Izin Usaha Pertambangan Khusus	IUPK
East Kalimantan	Kalimantan Timur	Kaltim
Corruption Eradication Commission	Komisi Pemberantasan Korupsi	KPK
Coordination and Supervision Unit for Mineral and Coal Sector	Koordinasi dan Supervisi atas Pengelolaan Mineral dan Batubara	Korsup Minerba
Community-based Organisation	Organisasi Kemasyarakatan	Ormas
Regional Regulation	Peraturan Daerah	Perda
Gubernatorial Regulation	Peraturan Gubernur	Pergub
Ministerial Regulation	Peraturan Menteri	Permen
Presidential Regulation	Peraturan Presiden	Perpres
Coal Contract of Work (CCOW)	Perjanjian Karya Pengusahaan Pertambangan Batubara	PKP2B
State Electricity Company	Perusahaan Listrik Negara	PLN
Government Regulation	Peraturan Pemerintah	PP
Midterm National Development Plan	Rencana Pembangunan Jangka Menengah Nasional	RPJMN
National General Energy Plan	Rencana Umum Energi Nasional	RUEN
Electricity Supply Business Plan	Rencana Usaha Penyediaan Tenaga Listrik	RUPTL
Law	Undang-Undang	UU
Licensable Mining Area	Wilayah Izin Usaha Pertambangan	WIUP
Special Licensable Mining Area	Wilayah Izin Usaha Pertambangan Khusus	WIUPK
Mining Area	Wilayah Pertambangan	WP
State Reserve Area	Wilayah Pencadangan Negara	WPN
People's Mining Area	Wilayah Pertambangan Rakyat	WPR

## 1. Introduction

### 1.1 Coal production and global coal markets

This paper explores the complex political economy of coal mining in Indonesia and discusses some of the recent dynamics that may affect domestic coal production and coal export volumes. Over the last decade or so, Indonesia's rate of coal production has risen dramatically, and it has emerged as one of the largest exporters of coal – and the largest exporter of steam coal – in the world. The country currently exports in the vicinity of 80% of its annual production.

While Indonesia has been ratcheting up production, the global coal market has been shifting. Globally, renewable energy costs are declining rapidly. Many international financial institutions are showing weaker appetites for investments in new coal plants, and some have announced intentions to fully divest from coal assets within a few years (Polkinghorne 2017). The declining costs of Liquefied Natural Gas (LNG) could affect Indonesia's domestic energy mix and thus domestic coal demand, as it could replace coal-fired electricity generation. Furthermore, international coal prices have periodically suffered significant drops over the last five years; this had a material impact on domestic production rates, as seen in 2015 when many Indonesian mines ceased activity (Idris 2016). Although prices have since shown signs of recovery, some observers expect a declining coal price to be structural, and thus indicative of a longer-term trajectory (Katakey 2017).

Despite these uncertainties about future coal markets globally, countries endowed with coal reserves appear, by and large, to continue to emphasise coal extraction. Producers like China and India focus on mining to supply domestic energy demand. But major coal exporters like Australia, Colombia, Indonesia and South Africa subsidize the industry and push strong political narratives around the socio-economic role of coal production and trade, encouraging further investment in new coal production capacity. The international narrative about the decline of coal is not obviously translating to a shift in social or economic policies, at least not in all coal-producing countries. This is intriguing, and suggests either that some producers don't believe that the market is entering a long-term decline, or that they hope to get as much out of the ground as quickly as possible before the physical reserves are no longer economically valuable. This strategy poses considerable risks. Among them: the potential lock-in of carbon-intensive infrastructure and financial assets; forest loss and other environmental legacies; and the opportunity costs of not promoting alternative socio-economic development strategies in and around mining areas.

In Indonesia, licensing of new coal mines has risen dramatically over the last 15 years, amplifying production and export rates. This has created a raft of problems, including deforestation, rampant corruption, illegal mining, and overlapping land claims, as well as concerns over resource "sterilization" and un-rehabilitated mine sites.

In this paper, we explore some of the undercurrents that materially influence the exploration, production, consumption and export of coal in Indonesia. In Section 2, we look at the political economy around coal mining, and, in particular, at the way that the interests and norms of various actors and institutions shape the sector's legitimacy and its character. We examine the origins and effects of the deep intertwining of coal mining with Indonesia's political landscape – at both the national and local level – and we also look at the factors shaping Indonesia's approach to energy policy and what these suggest for future domestic coal demand. We discuss the resulting consequences on the scale, location and type of coal production, as well as the legacies of a boom in coal mining. In Section 3, we review factors that could affect the rate of coal production, including some recent, government-introduced policies and the emerging dynamics of international coal markets. In Section 4, we briefly discuss possible future trajectories of Indonesia and its coal sector.

The insights presented throughout this paper are based primarily on a series of in-depth, semi-structured interviews conducted in Jakarta and in East Kalimantan in late 2016. Interviewees included individuals from various ministries of the national government and East Kalimantan provincial government, as well as Samarinda local government officials, coal mining companies, energy companies, local and national civil society organisations, and researchers. To supplement these interviews, we also draw on published information describing some of the recent political economy dynamics.



## 2. A decade of rapid coal expansion

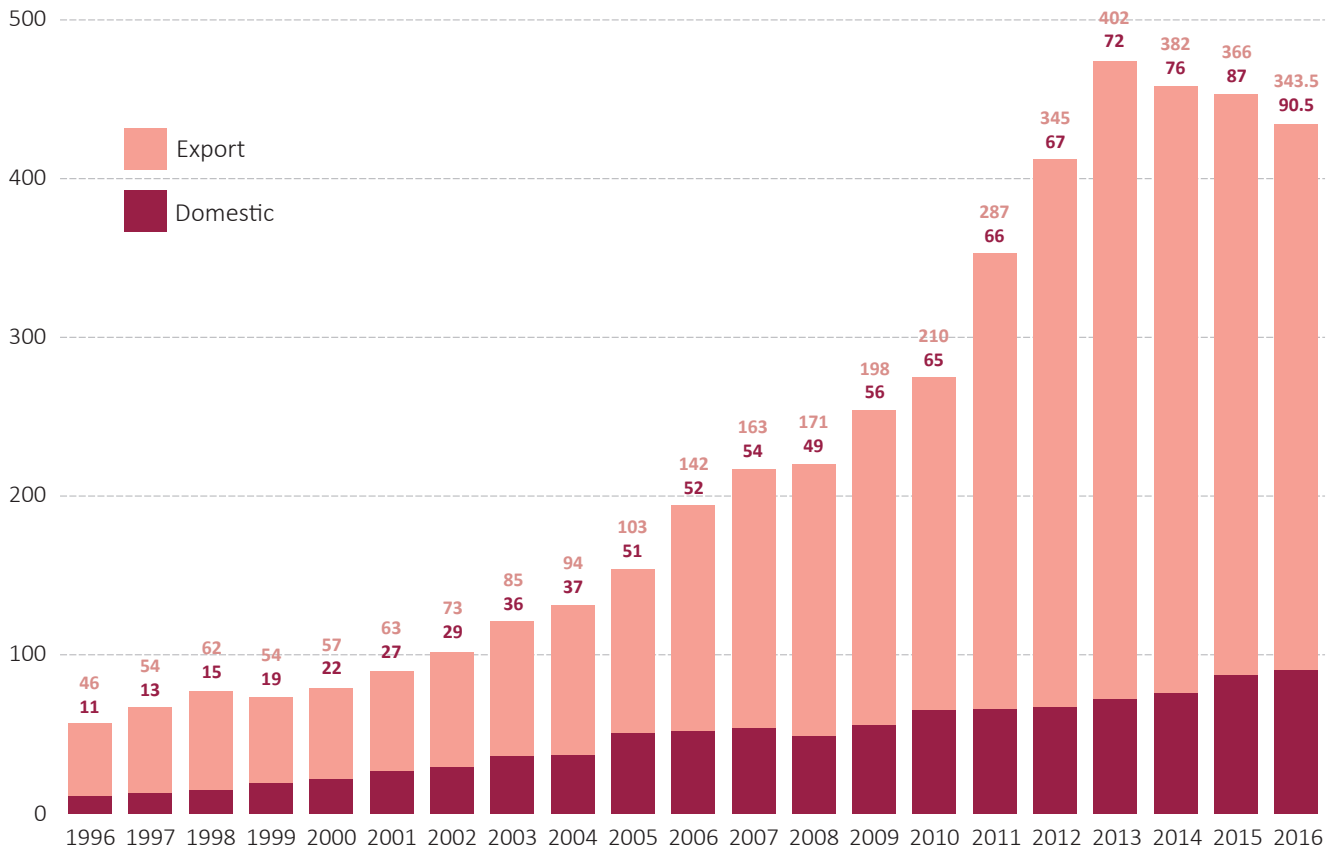
### 2.1 Sectoral overview

Indonesian coal production began as a series of small-scale operations during Dutch colonial times in the 19th century, when the coal was used primarily for the shipping sector. A period of decline and stagnation followed in the first part of the early 20th century, thanks to war, cheap oil and a restrictive political environment. Investment was reignited in the 1960s, after the election of President Suharto and the introduction of the Law No. 11/1967 on Mining, which allowed foreign companies to invest in mining and to repatriate profits. Coal mining received a further boost when global oil prices rose dramatically in the 1970s and Indonesia's Asian neighbours began demanding more coal for power generation (Lucarelli 2010).

The real surge in production, however, is relatively recent. In 1989, annual production was only about 4.4 million tonnes (Mt). A decade later, it had increased to 80 Mt, growing at nearly 30% annually (PWYP Indonesia 2017). Since then, production has expanded to the point where Indonesia has become the world's largest exporter of steam coal (Cornot-Gandolphe 2017). Though production figures vary – even between different government sources – all are in general agreement on the overall pattern. Based on government data, as shown in Figure 1, production tripled from 154 Mt in 2005 to 474 Mt in 2013 and has since been maintained at or slightly below 2013 levels. The trend in export volumes has generally followed overall production. Although domestic demand has been growing steadily, exports have grown faster. The country's total coal reserves are estimated at about 99 billion tonnes; of that, 13.3 billion tonnes of proven reserves are estimated to last until the mid-2040s at current production rates (PWYP Indonesia 2017).

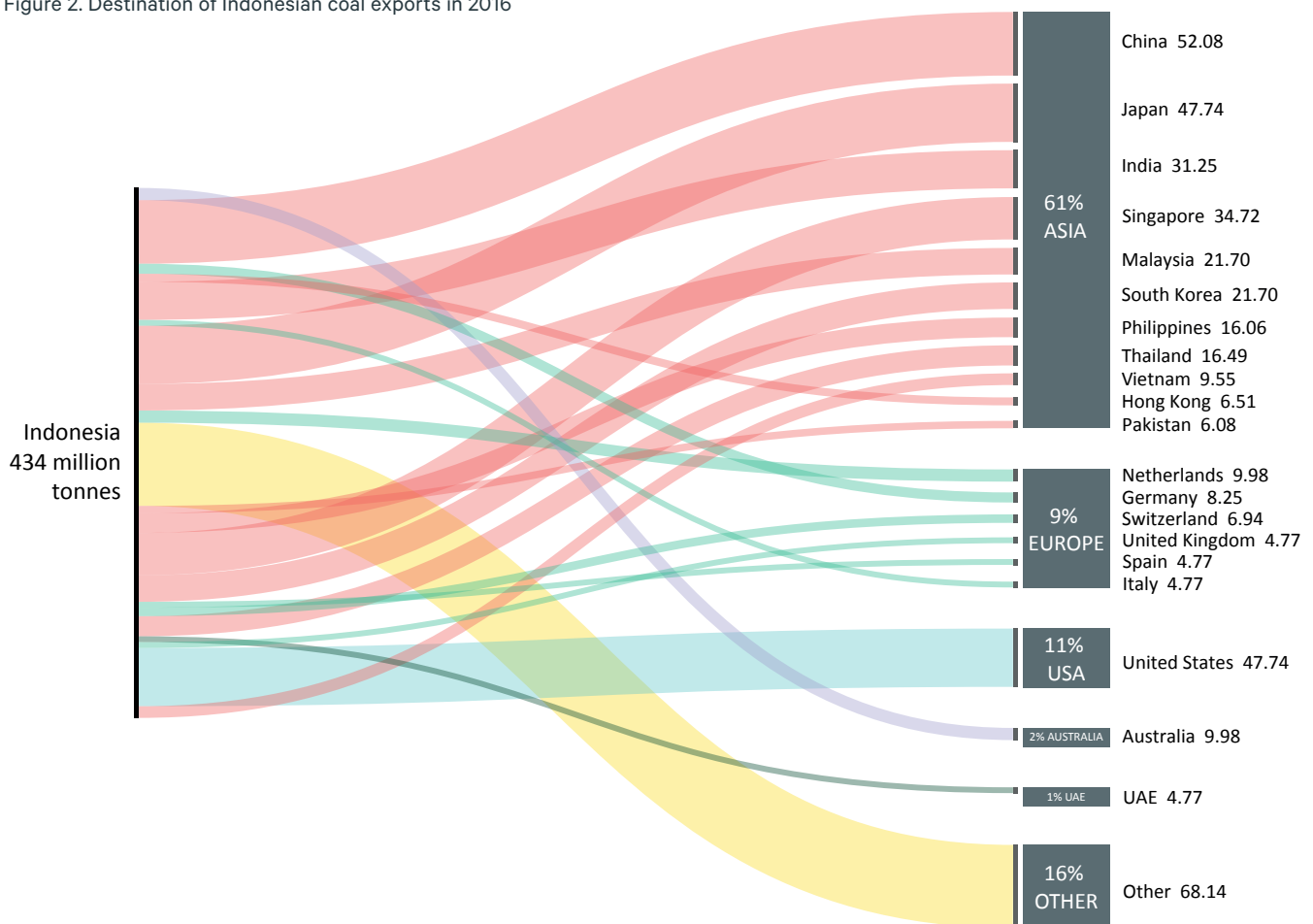
Since 2013, the share of coal production exported has fallen slightly from 85% in 2013 to 79% in 2016. The majority is exported to countries in Asia: mainly to China (27%) and India (33%), followed by Japan, South Korea and other countries in the region (EIA 2015) (see Figure 2).

Figure 1. Annual production and export over time (units in Mtonnes)



Data sources: Data for 1996 to 2004 comes from Osman 2013; Data from 2005 to 2016 comes from Report on Performance of Directorate General of Mineral and Coal (2015-2016) (MEMR 2017) (adapted from Figure 1 in PWYP Indonesia 2017)

Figure 2. Destination of Indonesian coal exports in 2016



Source: authors' representation using data from the Observatory of Economic Complexity, <https://atlas.media.mit.edu/en/>

Although an important foreign exchange earner, coal's contribution to Indonesia's gross domestic product (GDP) is relatively low; in 2016, it accounted for only 1.9% (roughly 25% of the total contribution of the mining and quarrying sector) (PWYP Indonesia 2017). Interestingly, the total number of miners employed in the coal sector actually declined from about 154,000 in 2012 to about 121,000 in 2014 (MEMR 2015).

## 2.2 Factors driving an increase in production

Indonesian coal production has undergone rapid expansion – in land area, number of mines and total output – and it is worth exploring the underlying reasons for this transformation. In this section, we draw attention to three dynamics: First, the interaction between the country's political decentralization agenda and the regulatory regime for mine permitting and allocation of mining rents. Second, the intertwined nature of coal mining and Indonesian politics, through ownership of mining activities and funding of election campaigns. And third, the framing of energy security in policy and planning, particularly at the national level. The first two have generated a raft of incentive structures for local politicians to aggressively issue new permits. The third has provided legitimacy for the national government's fiscal and policy support to the sector, and has reinforced the material incentives for political leaders to introduce measures that deliberately stimulate domestic coal demand (examples of which are described in Section 3).

### 2.2.1 Decentralisation of permitting

Mining activities are regulated in various ways by the government – including licenses to operate (including post-mining rehabilitation), production caps and quotas, transportation permits, and the setting of domestic reference prices – and different levels of government have responsibility for different parts of the regulatory picture.

Prior to 2009, mining permits were granted based on the Law No. 11/1967 on Mining and associated regulations. A central feature of this regime was the individual contracting of mining companies by the national government, under Coal Contracts of Work (CCOWs). These contracts provided mining companies with protection against future changes in law and an ability to repatriate profits; they also introduced clear compensation mechanisms in the case of nationalisation of mining by the government. The introduction of this regime stimulated foreign investment in the sector and dramatically scaled up production (Lucarelli 2010). In all, there were three phases of CCOWs. Today there are around 74 CCOW miners still operating, and together these make up the largest share of overall production (268 Mt, or around 61% in 2016) (MEMR 2017).

In 2009, the national government made important changes to the way coal production is regulated, through the introduction of Law No. 4/2009 on Mineral and Coal Mining (hereafter, Mining Law 2009). This included a shift from contracts to a licensing system, with three types of licenses<sup>1</sup>: (i) Mining Business License (Izin Usaha Pertambangan, or IUP) (ii) Special Mining Business License (Izin Usaha Pertambangan Khusus, or IUPK) and (iii) People's Mining License (Izin Pertambangan Rakyat, or IPR). In each category, separate permits are issued for exploration and production. CCOW miners with contracts under the previous system continued to operate according to their original contracts, with the intention that they would eventually be transferred to the new license system once the original contracts expired. Under the 2009 law, the national government determined the areas that can be mined, and in most cases<sup>2</sup>, district (i.e. municipal and regency) heads were granted the authority to issue IUPs within these areas. This allocation of responsibilities continued until the introduction of Law No. 23/2014, when licensing authority was shifted from the district to the province (see Section 3). Implementation of the Mining Law 2009 depends on the introduction of a number of regulations; some have been introduced (included in the list in Annex 1), although some issues remained unclarified in 2017 (PWC 2017).

The transfer of licensing authority in Mining Law 2009 reflects the country's wider decentralisation agenda. Decentralisation, a political project to devolve considerable authority to provincial and local jurisdictions, was brought about by Law No. 22/1999 and gave district and provincial governments semi-autonomous rule over their territories. Since these 1999 reforms, provincial and district governments have been empowered to manage most issues, with the exception of matters related to foreign policy, defence, national security, the judiciary, and national monetary and fiscal issues (Government of Indonesia 2004).

From 2009 onwards, the number of mining licenses ballooned dramatically. In 2001, there were only 750 mining permits, including coal, issued across Indonesia (PWYP Indonesia 2017). With the transfer of authority to district heads, the number of mining permits grew to more than 8,000 by the end of 2008 and increased to nearly 11,000 by 2014 (Hayati 2015). Around 40% of these are coal licenses (IUPs), mostly "small and medium sized mines" (HFW 2014), which cover roughly 16.2 million hectares of land area, while CCOW miners are permitted over approximately 1.95 million hectares (PWYP Indonesia 2017).

To understand why decentralization led to such a dramatic expansion in mining permits, it is necessary to appreciate *how rents from mining are distributed*, and also *how mining and politics are intricately connected*, since both create incentives for district politicians to maximise the number of licenses issued.

### 2.2.2 Rents and revenue sharing

The State receives both tax and non-tax revenue from the mining sector. In 2016, mining made up around 7.2% of the country's total GDP, with coal mining contributing roughly a quarter of this figure (Badan Pusat Statistik 2017).

Tax revenue<sup>3</sup> consists of corporate income tax, value-added tax, withholding tax and import duties for equipment. Beside state tax, mining companies are obliged to pay regional taxes and other retributions,

1 The three types are mining business license (IUP); special mining business license (IUPK), and People's Mining License (IPR). For more details on the differences among these licenses, see <https://www.pwc.com/id/en/energy-utilities-mining/assets/May%202016/PwC%20Indonesia-mining-in-Indonesia-survey-2016.pdf>

2 The exceptions to this were cases when a mining area crossed district or provincial boundaries, in which case authority transfers, respectively, to the provincial governor or to the national government.

3 A range of different taxes are paid to both the central and regional governments. Central government collects land and property tax and corporate income tax, while sub-national governments can also collect taxes related to mining activities, including taxes on motor vehicles, heavy equipment, use of underground water, and on non-metal minerals and rocks.

which differ by regions. The non-tax revenue consists mainly of royalties and land rent. Royalty payments are the largest source of government revenue from mining (Lubis 2017) and are calculated as a percentage of gross sales value (i.e. on a revenue rather than profit basis). Depending on the type of mining (open pit or underground) and quality of coal (calorific value), the royalty rate ranges from 2% to 7% of the sales revenue as set out in Government Regulation No. 9/2012. For CCOW miners, the royalty percentages are established by their original agreements, which were individually negotiated and can be decades old; however, Government Regulation No. 55/2005 fixes rents on production outputs (royalty and sales) at 13.5%. Some companies indicate that the government used to take royalty payments “in kind”, as coal for the domestic market, but now expect it as revenue. Land rent payments are based on the mining area, and Government Regulation No. 9/2012 sets a standard rate of USD 2 per hectare annually for exploration and USD 4 per hectare annually for production.

Revenue from land rents and royalties is shared between central and sub-national governments, based on arrangements set out in Law No. 33/2004 (amending Law No. 25/1999) and Government Regulation No. 55/2005 on the distribution of state revenue from coal mining. Regional governments receive 80% of revenue from natural resources (apart from the oil and gas sector, for which the central government retains a much larger share). Of this, 64% is redistributed to the districts and 16% is retained by the province (as shown in Table 1). For the land rent component, the district component goes only to the producing districts, whereas for royalties the amount is shared between all districts (with 32% for producing districts and 32% equally divided among the non-producing districts within the province). Since land rent accumulates only to the producing district – and since it is based on area rather than productivity or profit – district governments have a fiscal incentive to maximise the land area that is permitted for mining. But this is not the only incentive for local politicians to permit new mines.

Table 1. Distribution of state revenues from coal mining

Type of revenue	National government	Provincial government	Producing district	Other districts within same province
<b>Mining Business License (IUP) including coal</b>				
Producing district				
– Land rent	20%	16%	64%	-
– Royalty	20%	16%	32%	32%
Producing Province				
– Land rent	20%	80%	-	-
– Royalty	20%	26%	-	54%
<b>Coal Mining Business Work Agreement (CCOW)</b>				
Land rent	20%	16%	64%	-
Production outputs (13.5%):				
– Royalty (3-7%)	20%	16%	32%	32%
– Sales (13.5 deducted by 3-7%)	100%	-	-	-

Source: Lubis 2017, based on Government Regulation No. 55 /2005.

### 2.2.3 Political links to coal mining

Coal mining and Indonesian politics are deeply intertwined, linked by ownership relationships and by the role that financial contributions play in funding local election campaigns.

Various NGOs have compiled analysis of the ownership linkages between mining and politicians (and also senior figures in the police and military), using data from the Ministry of Human Rights and Law to track shareholdings down to multiple layers of subsidiary companies. This unpublished work suggests there are widespread, if opaque, links between coal mining shareholders and some members of the country’s political elite. Most interviewees said it was “common knowledge” that politicians own or financially benefit from many coal mining operations, along with oil palm plantations. These include

local politicians as well as highly ranked Ministers in the national government; for example, some of the largest coal producers, such as Bumi Resources, Kaltim Prima and Arutmin, have been owned – or are owned currently – by Aburizal Bakrie, a former Cabinet minister and a prominent figure in the Golkar party (Apriando 2017).

Beyond ownership, natural resources play a large role in elections, both politically and financially. Local and provincial candidates need large sums to fund election campaigns, and interviewees suggest that district heads raise money for elections by issuing licenses in return for illegal financial payments (Faisal 2015). As a rough indication, one interviewee suggested that a large permit (for a concession of 100-200 ha) might typically cost an applicant about IDR 5 billion (or USD 350,000) in a payment “under the table”. Coal payments are described as broad, occurring not just across government but also in communities, where needed, to curtail local opposition. This liberal distribution of financial support means, according to interviewees, that every party benefits financially from an active coal industry.

Provincial administrations, too, have incentives to support mining. Access to and control over energy resources can put regional governments in a strong negotiating position with the national government. In 2012, for example, the national government rejected East Kalimantan’s request for a larger fuel allocation. The governors of Kalimantan responded by delivering an ultimatum to the national government: if fuel supplies were not increased, the province would stop the delivery of coal to Java. River transport was blocked, and ultimately the national government agreed to increase the quota of fuel, signing a Memorandum of Understanding to this effect in June 2012 (BPH MIGAS 2012).

#### 2.2.4 The norms and interests shaping domestic energy policy

While the Indonesian coal sector is heavily export-oriented, its fortunes are increasingly related to national energy policy. With uncertainty about global markets, future demand may depend significantly on how the government’s energy policy, and those responsible for implementing it, follow through on its vision to use more of the country’s coal domestically.

Energy and Mineral Resources have been united in a single ministerial portfolio since 1978, which has tended to reinforce a strong link between coal production and the country’s energy policy.<sup>4</sup> The National Development Plan and the National Energy Plan are both influential in setting the forward agenda for the energy sector.

The Mid-term National Development Plan 2015-2019 (RPJMN 2015-2019) includes an ambitious goal to expand electricity generation capacity by 35 GW by 2019. The government envisions just over half of this new capacity (19.8 GW) will be sourced from coal plants.<sup>5</sup> If this scale of expansion is actually achieved, annual domestic demand for coal is predicted to rise from an average of 90 Mt to around 200 Mt by 2019.<sup>6</sup> However, recently there have been signs of the government scaling back these ambitions as a result of over-supply to the electricity market (Woods 2017).

Since 2007, the National Energy Council, which is currently chaired by the Minister of Energy, has guided the preparation of the National General Energy Plan (Rencana Umum Energi Nasional, RUEN). The 2017 plan forecasts a 2050 energy mix that would nearly triple the use of domestic coal from today’s levels.<sup>7</sup> The regulation suggests coal exports will be gradually curtailed in order to meet this rising domestic demand.

4 A former senior bureaucrat in the Energy and Minerals Resources ministry explained that from the introduction of General Policy on Energy 1980 until the end of the 1990s, the main thematic elements of the country’s energy policy were (i) energy intensification, particularly encouraging exploration; (ii) energy diversification, in light of the country’s high dependence on oil; (iii) energy conservation, particularly improving efficiency of energy use; and (iv) energy “index-ism”, ensuring suitability between supply and demand by selection of the most appropriate energy sources.

5 Initially the larger portion of the planned 35 GW was given to PLN to supply, but because PLN is also responsible for investment in the grid, the government reshuffled more of the planned new capacity to other entities. Of the 19.8 GW, around 2.2 GW will be developed by PLN and 17.6 GW by independent power producers (PWC 2016). Some interviewees consider the expectation that IPPs will deliver the largest chunk of the new capacity to be “unrealistic”.

6 According to the Mid-term National Development Plan 2015-2019, the estimated domestic use of coal in 2015 was 101 Mt (roughly 24% of total production), while the projected 2019 total domestic use is 240 Mt (around 60% of total production).

7 Renewable sources are projected to rise from 5% in 2015 to 23% by 2025 but then only to 31% by 2050. Meanwhile, coal is projected to increase in share from 26% in 2015 to 30% by 2025 and still be at 25% by 2050. These represent large real increases in coal use, given the projected rise in domestic electricity demand. (See: <https://www.iea.org/policiesandmeasures/pams/indonesia/name-140164-en.php>).



Coal barge on the Mahakam River, East Kalimantan © MAY THAZIN AUNG / SEI

There are various factors influencing the direction energy policy is taking. First, the national government, along with many other Indonesian actors, has adopted a view that *equates energy security with energy independence (or self-sufficiency)*. The government ultimately wants to reduce dependence on imported fuels for financial reasons; the petrochemical industry already depends heavily on imports that cost around USD 8 billion per year (Baiquni 2014). However, the government's approach probably also partly reflects the regional geopolitical context. Indonesia's relations with its neighbour Australia – a large energy exporter – oscillates; within Indonesian policy circles, this could be seen as an uncertain proposition for ensuring long-term energy supplies. Hence, the government wants to ensure indigenous coal resources are available for the country's own use. Second, the government places a strong focus on *natural resources as the basis for economic and social development*. Coal is framed less as a commodity than as an enabler of development and an engine of economic growth. Thus, decisions about the sector are not only about maximising government revenue but also about delivering on electricity expansion, employment and regional growth.

The state-owned electricity company, PT Perusahaan Listrik Negara (PLN), also has significant influence over energy policy, and thus future coal demand. As the sole player in the electricity market, PLN has considerable political power, and by reputation has actively opposed suggestions for ambitious expansion of renewable energy.<sup>8</sup> Monopoly state-owned enterprises (SOEs) in the energy sector often seem reluctant to shift from large centralized generation models to more distributed renewable energy sources (Eskom in South Africa is another example). However, PLN has a unique challenge, thanks to the regulatory requirement that it return a profit for the government. PLN thus uses an energy mix structured fundamentally around its own internal operating costs, and the company claims that higher-cost energy supplies like renewables are difficult to include. Thus, any regulations to expand renewables are difficult for PLN to implement, because they must do so without additional money to cover potentially higher costs.<sup>9</sup> This means there can be a disconnect between government energy policy and PLN's management of the country's energy supply. To address this, in 2017 the Ministry of Energy and Mineral Resources introduced a regulation<sup>10</sup> requiring PLN to purchase all electricity made available by renewable independent power producers (IPPs) on a "take or pay" basis, establishing new feed-in tariffs for renewable supply, and effectively capping these costs for PLN so they do not exceed local generation costs (Susanto 2017).

There are some discussions within Indonesia about whether PLN's role in the energy system should be changed. For example, PLN could be tasked only with managing transmission, while the private sector provides all generation capacity. Some stakeholders believe that opening up the electricity market to more players would make the entrance of new and renewable energy projects more likely. Another idea that has been discussed is whether a new SOE dedicated to purchasing renewable energy might be set up alongside

<sup>8</sup> For example, the release of a National General Energy Plan prepared in 2016 was delayed because the plan's target for share of renewables (23% by 2025) did not match the target in PLN's Electricity Supply Business Plan, or RUPTL (less than 15% by 2025).

<sup>9</sup> To address this problem, a former minister proposed an "Energy Resilience Fund", which was never introduced, to enable PLN to purchase new and renewable energy at higher energy costs. This would have been funded by government profits from the fuel sector, during times when the domestic fuel sale price was higher than the international market price.

<sup>10</sup> MEMR Regulation No. 12/2017 on Utilisation of Renewable Energy Resources for Provision of Electricity (later replaced by MEMR Regulation No. 50/2017)

PLN (Asmarini 2016). PLN is apparently resistant to any changes, and argues that building and operating its own power plants provides greater energy security for the country. In February 2016, the Ministry of Energy and Mineral Resources announced its intention to allow independent producers to enter the electricity market in six regions with low electrification rates (West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua, Maluku and North Maluku), which could be an indication that the government plans to open up the sector (GBG Indonesia 2016).

## 2.3 The legacies of a boom in coal production

Although licenses were issued frenetically in the 2000s and early 2010s, local governments lacked the sophistication and/or will to properly manage this process. Consequently, many districts issued licenses without any strategic plan for maximizing exploitation of the reserves or for managing competing land uses – and in some cases, they didn't follow the formal regulatory process. This led to a proliferation of relatively small mining operations, and an array of environmental, social and economic problems, as well as overlapping licenses and lax enforcement of operational requirements such as post-mine rehabilitation.

Here we describe some of these impacts, which are useful to understand because they catalysed many of the recent changes introduced by the national government that affect the sector, which are discussed in Section 3.

### Poor oversight and conflicts in land management, including deforestation

Weak administration and poor data management means there is limited oversight of the sector, and thus at a provincial level it can be difficult to confidently estimate the number of companies operating.<sup>11</sup> There are also spatial discrepancies between mining permits and areas where mining is taking place.

There are significant concerns about the number of mining concessions that have been granted in protected forest areas, which is not legal. According to Law No. 41/1999 on Forestry Affairs, mining activities are heavily restricted in conservation forest and protected forest areas. Only underground mining is permitted in Protected Forests, subject to conditions, and mining is prohibited in areas designated as Conservation Forests. Indonesia's Corruption Eradication Commission (KPK) reports that in 2014 mining permits in Conservation Forest and Protected Forest areas covered roughly 6.3 million hectares, of which 940,000 hectares (around 15% of the total) were coal concessions (PWYP Indonesia 2017). Several interviewees suggested that the situation will worsen with the development of a new Russian-financed railway that will open up new areas of Kalimantan for coal and palm oil activities.

### Violence, social conflict and displacement

Myriad social problems and conflicts have been described, particularly at the local level, as a result of the proliferation of coal mining activity. On the one hand, mining appears not to have significantly benefited local communities or improved poverty outcomes, and it may even have exacerbated poverty compared to areas without mining (Edwards 2017; Bhattacharyya and Resosudarmo 2015). Outside West Papua, there are reportedly no examples of benefit-sharing arrangements where communities are given a percentage stake in the mining activities.

At the same time, a wide range of negative impacts have been described. Mining concessions are not supposed to be issued inside residential areas (within 500 meters of houses); however, bupati (district regents) nonetheless have issued such permits, even in urban communities. Local civil society organisations suggest this has led to conflicts over land. Residents have been displaced in some cases; for example, Kaltim Prima Coal (KPC), initially owned by the corporation Rio Tinto, moved a whole village for one mine, according to one interviewee. Local Dayak people in Kalimantan claim to have lost land to mining, including community forests. Although there are supposed to be compensation mechanisms in place ("ganti rugi" refers to a compensation fee, or exchange for loss)<sup>12</sup>, those affected by displacement have complained that these are inadequate and that compensation discussions often happen after their land has already been cleared by miners. Similar problems also afflict areas where oil palm plantations have been developed. Other

<sup>11</sup> In East Kalimantan, where 8 of the 10 districts have coal mining, some estimates suggest there are around 1,200 active IUPs, comprising nearly 700 exploration permits and 500 production permits. There are also 23 active CCOW contracts, and a number of inactive contracts. Other provincial officials suggest there are around 850 active miners, of which roughly 300 have exploration permits.

<sup>12</sup> Any transfer of land ownership usually involves *ganti rugi* which means 'compensation for damage'.

Implementation and enforcement of reclamation requirements has been weak, meaning many mines are not properly rehabilitated.

social impacts mentioned by interviewees include health issues, an increase in prostitution, damage to local infrastructure (particularly roads where coal is hauled by trucks), and the corruption of local officials and due process. Several interviewees suggested that in East Kalimantan, local opponents of mining have been regularly subjected to physical violence. Some mining companies engage local armed groups, which are legally registered as community-based organisations (called Ormas), to intimidate, assault and evict local people. These groups<sup>13</sup> began operating after regional autonomy, when District bupati took over the issuing of licenses. Interviewees cited examples of some Ormas attacking civilians who attempt to resist the eviction of local people from their houses, and threatening local NGOs who report on mining infringements.

While there are signs of local opposition to coal mining, this appears not to have much influence. In addition to contending with potential violence, those opposed to mining must also deal with administrative blockages. In one instance, a local NGO, the Mining Advocacy Network (Jaringan Advokasi Tambang, JATAM), sued the government of the Kutai Kartanegara district for not making available information about mining licenses, as they are required to do under Law No. 18/2008 on Public Information. JATAM eventually won the case, but only after an extended three-year legal battle (Jacobson and Hardjanto 2016).

#### Resource sterilization

The permitting boom has led to a proliferation of small, fragmented mining activities. This is of particular concern to parts of the national government (such as the Ministry of Energy and the Ministry of Finance) and some bigger industry players, because mining in this way ultimately makes deeper coal deposits more difficult to mine in the future. It thus introduces the likelihood of resource “sterilization”, when some coal reserves become inaccessible or rendered uneconomical to mine. Interviewees suggest this problem is exacerbated by the issuance of mining licenses without an overall mining plan for the deposit itself.

#### Illegal mining

There has been a proliferation of illegal mining. This usually refers to either mining outside (often adjacent to) the permitted area or mining when the permit has been (temporarily) closed, and there are estimates that illegal mining amounts to 50-80 million tonnes per year (Coaltrans 2014). “Semi-legal” mining is also a problem; cases include, for instance, when a miner has a permit that should not have been issued because the mining area is within a protected forest reserve.<sup>14</sup> Illegal behaviour in the coal supply chain extends beyond the mining itself; it is also evident in the transport of coal via unauthorised waterways and in the under-reporting to government of actual production levels (i.e. illegal exports).<sup>15</sup> Both resource sterilisation and illegal exports result in the loss of potential resource rents to the national government.

#### Mine rehabilitation

Under the Mining Law 2009 and subsequent regulations, mining companies must prepare and execute mine reclamation plans that are approved by the Mining Office. They must also deposit a reclamation guarantee of IDR 60-70 million (between USD 4,000 and 5,000) per hectare in a state-owned bank (Article 37, Government Regulation No. 78/2010). Reclamation of the mining area should begin two years before mining finishes. In practice, implementation and enforcement of these requirements has been weak, meaning many mines are in fact not properly rehabilitated, and (as of December 2015) less than half the license holders in East Kalimantan had reclamation guarantee funds in place (Apriando 2017). Some interviewees estimate around 80% of IUPs do not comply with their reclamation plan. Although companies may simply walk away from the mines when prices plummet, many licenses are still active even though mining is not operating because a license cannot be returned to government if its requirements have not been fulfilled.

One problem is a loophole in the regulations that permits a change of use; this allows companies to avoid reclamation by claiming “local people want a reservoir”. Although licenses can be revoked if the conditions of operation are not being met, governments are reluctant to do this because the clean-up responsibility may then fall on the provincial government. Consequently, there are very few cases of licenses being revoked for non-compliance, even while there are high rates of non-compliance.

<sup>13</sup> Examples of Ormas offered by interviewees included PP (Pemuda Pancasila) and GEPAK (Gerakan Pemuda Asli Kalimantan)..

<sup>14</sup> One interviewee estimates there are “thousands” of licenses in this category.

<sup>15</sup> “According to Bob Kamandanu, chairman of the Indonesian Association of Coal Mining (Asosiasi Pertambangan Batubara Indonesia, APBI), 60 million tons of coal per year is not listed by any authority and thus can be labeled ‘illegal’. Illegal coal mining also implies that the Indonesian government misses out on about IDR 5.6 trillion (USD \$495.6 million) per year.” (<http://www.indonesia-investments.com/news/news-columns/plan-to-increase-revenues-from-indonesias-coal-sector-may-backfire/item1091?searchstring=coal>)



Following public outcry over a spate of children drowning in abandoned mining pits,<sup>16</sup> in 2016 the central government established a regional level Post-Mining Reclamation Supervisory Commission in East Kalimantan (*Komisi Pengawasan Reklamasi dan Pasca Tambang*)<sup>17</sup> to review reclamation plans and their implementation, and to check that the required guarantee payment has been made. The Commission reports its findings and recommendations to the Province – to Mining and/or to Environment, depending on the findings of the review – and the Governor then makes a decision about what to do. The focus of these reviews is only on the mining pit, not on other social or environmental problems associated with the mining.

### Corruption

Whether corruption is a legacy of coal mining or a contributing factor in its boom is a moot point; it is both, and the deep penetration of corrupt processes exacerbates some of the dynamics described above. According to some observers, decentralization has increased corruption in land administration and natural resource management generally, including in the coal sector (GAN 2017; Kiswanto 2017). Discussing the corruption of legal processes and rights is complex in relation to Indonesia, because various forms of corrupt behaviour are institutionalised to the point where the functioning of the system almost depends upon it. This is particularly the case in the payments to subvert regulatory processes, which appear common. Here, we highlight several concerns (italicized) raised by interviewees about the way corruption occurs in the mining sector.

Some district heads are described as aggressively offering land for mining permitting, even where they had received no requests from companies, in the hope of securing *under-the-table fees*. Some interviewees also claim that the *issuance of mining permits in protected forests* has, in some cases, been the product of informal agreements between the national Ministry of Forestry and the district head. Observers suggest companies also offer *payments to avoid reclamation obligations*, to either the central government, the environment and technical divisions at the Ministry of Mining and Energy, or the district mining office. Because the Corruption Eradication Commission has focused on the issuance of mining licenses, some interviewees see a shift in corruption practices to the area of transportation, particularly in the use of the river barges necessary in Kalimantan for bringing coal to port. Before a barge goes downriver, it needs letters of inspection to verify, for instance, coal volumes. Companies provide *informal payments* to government inspectors to speed up the process, to approve shipment without inspecting the coal load, or to overlook a company's decision to use waterways other than those stipulated in their operating license. The preparation of shipping "envelopes" has, several interviewees suggest, become an institution.

Tackling this kind of financial corruption has proven difficult. There are few high-profile examples of corrupt behaviour being punished; one was the arrest in 2016 of the Governor of Southeast Sulawesi for indiscretions related to the issuing of mining licenses (Post 2017). Local NGOs report that anti-corruption procedures are slow, and that in some instances these are stopped following an "intervention from Jakarta".

Other forms of corruption are observed too, such as the deliberate *non-collection of resource rents* (gaps in revenue collection are discussed below), *unaccounted production* (Sanzillo 2015), and suggestions of *money being stolen* by local officials. Further, some forms of tax avoidance by mining companies may be legal but morally questionable, like the use of offshore tax havens to siphon off mining profits without paying taxes in Indonesia, a practice cited as widespread.

Taken together, this array of negative impacts has prompted the national government to introduce some changes in the management of coal sector, discussed in Section 3, which could have a material effect on where and how much coal is produced.

<sup>16</sup> An estimated 27 people, mostly children, drowned in abandoned mining pits in East Kalimantan between 2011 and 2016 (Apriando 2017)

<sup>17</sup> Komisi Pengawasan Reklamasi dan Pasca Tambang was based on Regional Regulation No. 8/2013. But the actual body was only established three years later in 2016, under Gubernatorial Regulation No. 53/2015.

## 3. Reining in or ramping up?

### 3.1 Domestic policy changes

The Indonesian government has introduced a number of changes in recent years that are intended to tackle some of the problems described above.

Some have targeted the various issues related to licensing. A key change came in 2014, when a revision of the Decentralisation Law (Law No. 23/2014 on Local Government) shifted authority for issuing mining permits from the District to the Provincial governor.

In 2015, the national government initiated the Clean and Clear program through MEMR Regulation No. 43/2015. Clean and Clear is a review process that certifies miners have no outstanding royalty obligations or tax debts, have fulfilled environmental commitments (including those related to mine rehabilitation), have no property delineation issues, and have obtained any necessary forestry permits. Districts are expected to report details of all their issued licenses to the Province, which is evaluating permits with the national government's Post-Mining Reclamation Supervisory Commission. The official explanation for Clean and Clear is that the government wants to improve governance of the sector and manage the industry better, including for tax, revenue and administrative reasons. However, the government was also under a lot of public pressure to tackle mining infringements following the drownings in abandoned mining pits. In 2016, Indonesia's Corruption Eradication Commission (KPK) recommended that 3,900 mining permits be revoked (Coca 2016). All CCOW miners have Clean and Clear certification, and, as of late 2017, about 6,565 licensed mining companies (including those that mine coal) had received Clean and Clear certificates (Indonesia Investments 2015; Datu Aprilatu 2017). However, most companies without Clean and Clear certificates seem to still be in operation, including mines covering nearly 1.4 million hectares in Conservation Forest areas and 4.4 million hectares in Protection Forest areas (2016). In 2017, government officials announced that the provincial mining board had withdrawn around 400 licenses (of the 1,400 issued) in East Kalimantan, the majority for not having received Clean and Clear certification. They also indicated that a further 400 "will be revoked in the near future" (Yovanda 2017).

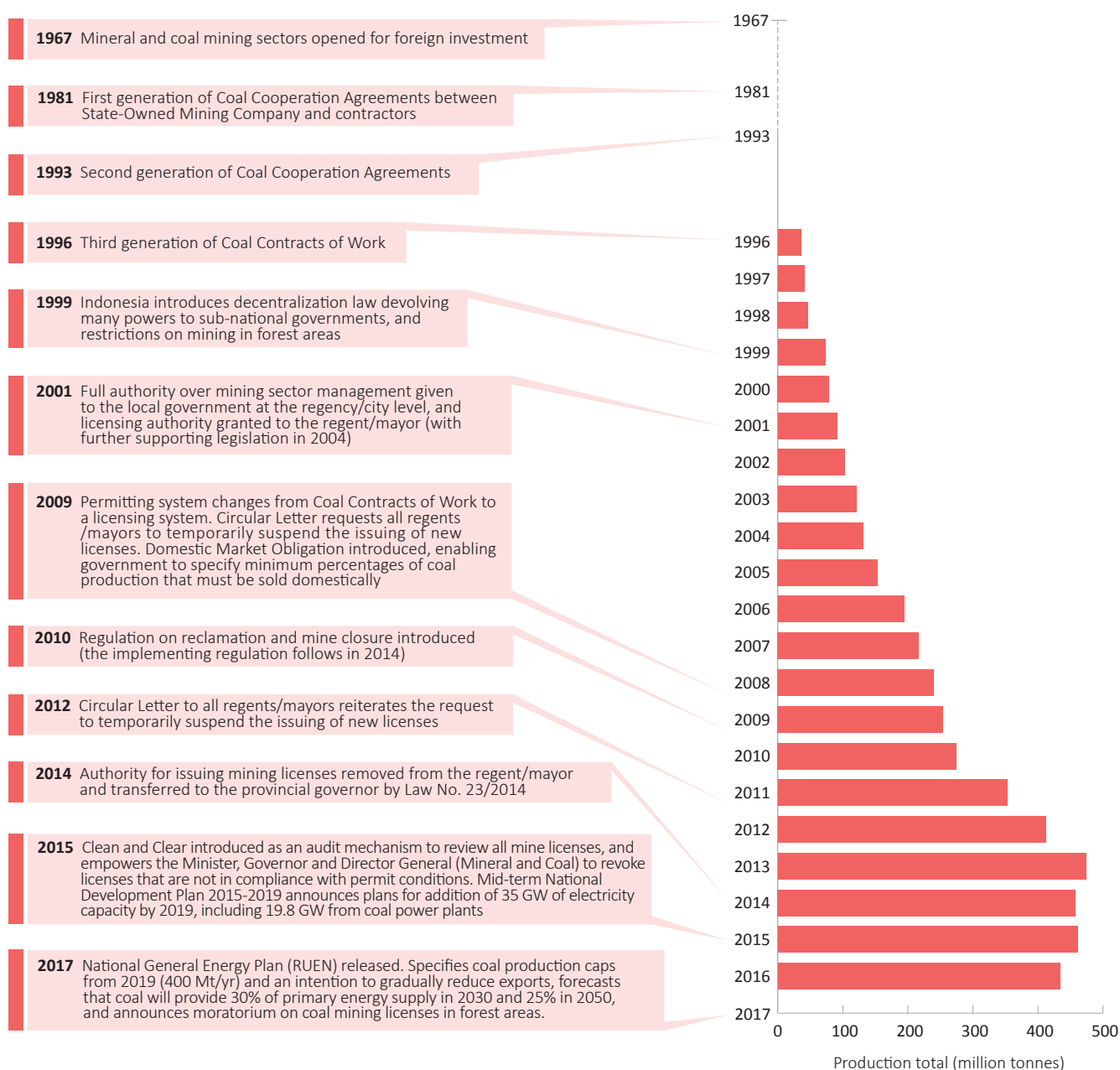
In April 2016, President Joko Widodo (or Jokowi) announced there would be a moratorium on issuing of new coal mine licenses (de Haan 2016; Otto 2016). A moratorium on new mining permits in forest areas was also included in RUEN 2017. This is not the first time a moratorium has been announced. In response to the introduction of the Mining Law 2009, the Director General of Mineral and Coal has issued two Circular Letters – first in 2009 (via Circular Letter No. 03/2009 on Mineral and Coal Mining Permit) and then again in 2012 (via Circular Letter No. 08/2012 on Suspension of Issuance of New IUP until the Stipulation of Mining Area) – requesting all governors and district heads to temporarily suspend the issuance of new licenses until the introduction of a government regulation. However, these instructions did not stop district heads from issuing licenses; the number of permits increased from 8,000 at the end of 2008 to 10,900 at the end of 2011, meaning nearly 3,000 licenses were issued in the two years after the 2009 moratorium. Publish What You Pay (2017) suggests that district officials also back-dated license decisions, to make it appear they were made prior to 2009.

There are different views on the government's primary motivation for announcing a moratorium. One of the most common is that the government wants to prevent fragmentation of coal deposits into small mining operations, which might reduce the economic viability of mining deeper reserves in future. The moratorium is thus a way to pause expansion of the sector while the Clean and Clear program is implemented. However, there are other plausible explanations too. The 2016 announcement came during a period when Indonesia was under pressure from its regional neighbours to address haze problems caused by peat fires (related to slash-and-burn land clearing practices); a move that in effect restricted new land clearing may have been in part a diplomatic response to smooth regional relations. The mining industry's large players welcomed the moratorium, suggesting it would assist the industry by limiting supply during a period of weak international commodity prices, and that it may reduce illegal mining if coupled with improved monitoring. In East Kalimantan, the Governor announced a moratorium on issuing new mining permits in 2013 and again in 2015 (Bell 2015). However, as of late 2017 neither the national nor provincial announcements had been codified into regulation. That indicates that, in practice, the latest moratorium announcements were not implemented.

There have also been some changes intended to address the administrative and governance weaknesses that contributed to such frenetic expansion of the mining sector. The government initiated a One Map Policy in 2014, to consolidate all spatial planning data across different sectors (not only mining) and create a single reference map for land-use planning. This policy attempts to fix the problem of overlapping maps for different commodities in the same area, as well as address some of the administrative difficulties that hamper oversight of the mining sector. Responding to concerns about corruption, the KPK now has a program specifically focused on mining and energy. With limited resources, it is unclear how deep or wide KPK's focus might extend, though it has already brought some corruption issues to light.

Figure 3 summarises some of the most relevant laws and regulations that have been introduced over time to govern the mining sector, including recent changes, and also shows how production volumes have changed since 1996.

Figure 3. History of laws and regulations related to the mining sector



In parallel with these changes to address the regulation of mining, the government has also been strengthening various elements of its energy policy agenda. In 2015, the Mid-term National Development Plan 2015-2019 flagged an annual coal production cap for 2015 to 2019. According to the plan, by 2019 total annual production will be a maximum of 400 Mt. The National General Plan of Energy (RUEN) 2017 also includes projections for the coal sector that cap total annual production at 400 Mt from 2019 to 2050, and which forecast a relatively rapid and continuous increase in the Domestic Market Obligation (DMO). Introduced by the Mining Law 2009 and implemented through MEMR Regulation No. 34/2009, the DMO requires a certain portion of total production to be sold on the domestic market.<sup>18</sup> As shown in Figure 4, the RUEN 2017 forecasts the DMO will rise quite quickly from around 21% in 2015 to 45% by 2020 and then 63% by 2030.

The exact policy measures which might be employed to implement annual coal production caps are unclear, though under the Mining Law 2009, the government sets maximum production quotas for mining activities in each Province. The Province then translates these into a maximum quota for individual companies from year to year. Distribution of the Provincial quota between different mining companies depends, at least formally, on their assessed performance in terms of factors such as their environmental and rehabilitation plans, safety, revenues, payment of royalties, and tax compliance.

Together, the production caps and rising domestic obligation imply a constant decline in exports from 2018 onwards, as shown in Figure 4. In 2012, the national government announced it intended to ban low-calorific coal exports. The Minister of Energy and Mineral Resources circulated a draft regulation under which coal with a calorific value of 5,700 kcal/kg or below would be banned from being exported starting in January 2014 (Nur Arifenie 2012). The Indonesian Coal Mining Association argued that banning low-calorific coal exports is not viable, and though the draft regulation was revised several times, it has not been introduced. In 2014, a new export permit regime was introduced. As a result, all miners need to obtain a “registered exporter” status (Eksportir Terdaftar Batubara) from the Ministry of Trade in order to legally export.<sup>19</sup> To obtain this, miners are first required to show that they have been issued a Clean and Clear certificate from the national government (Harris 2014).

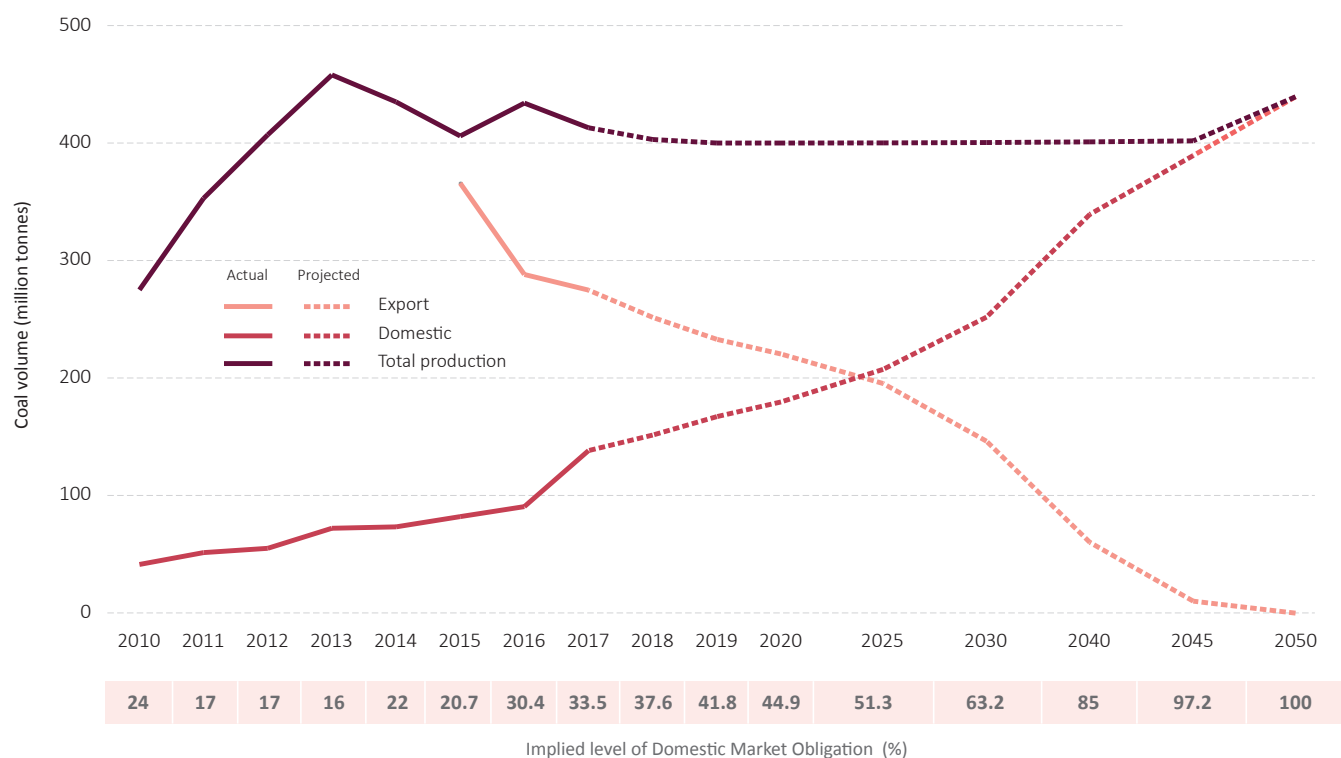
The issue of mining rents has also entered the political agenda. In 2015, the government proposed revising the 2012 regulation on mining tariffs to increase royalties for coal miners, although this was never carried out (Wulandari 2015). Around that time, various proposals were floated (one suggested total royalties of 7%, 9% and 13.5% for the low, medium and high-grade categories, respectively) (Wulandari 2015). There is already a problem with significant under-collection of revenues from the mining sector. Underpayment of royalties has been one key issue (Amelia 2017), while Publish What You Pay Indonesia estimates that the lost land rent from mining (not only coal) is about IDR 931 billion (USD 70 million) for the four-year period 2010-2013. About half of those losses are from mining activities in Kalimantan (PWYP Indonesia 2015). There are also ongoing disputes regarding non-payment of taxes, following attempts by the Ministry of Finance to alter VAT rules that particularly affect CCOW miners (Lingga 2016). The Ministry of Finance considers these outstanding payments as “debt”, while the Ministry of Energy refers to them as “disputed”.

Presidential Regulation No. 22/2017 requires the Ministry of Energy and Natural Resources to follow up on a number of these activities, including formalization of the coal production cap, the declining cap on coal exports, and the moratorium on coal licenses in primary natural forests and peat lands announced in RUEN 2017. However, these announcements have not yet been formally introduced by regulation. So while in theory they would presumably put the brakes on Indonesia’s aggregate rates of coal production, in practice these announcements are probably having little or no effect. There is no certainty that production caps, export caps, or a moratorium on new licenses will ever actually be implemented.

<sup>18</sup> Under Presidential Regulation No. 23/2010, the DMO level is determined each year by the Minister of Energy and Mineral Resources after considering the projected demand for coal (by sector). For 2017, the level of the coal DMO was 107 million tonnes. MEMR Regulation No. 34/2009 also introduced a cap-and-trade system allowing mining companies that exceed their minimum selling percentages to sell or transfer DMO credits to another mining company that is unable to meet its commitment.

<sup>19</sup> The restrictions and licensing requirements are contained in Minister of Trade Regulation No. 39/M-DAG/PER/7/2014, as amended by Minister of Trade Regulation No. 49/M-DAG/PER/8/2014

Figure 4. Planned coal production, domestic sales and exports 2015-2050 (Source: Authors' representation using data from RUEN 2017).



Note: Figures for 2010 to 2017 are taken from BAPPENAS (2016) and MEMR (2017), and figures for 2015 to 2016 do not match figures for these years included in RUEN 2017. Figures for 2015 to 2019 are also significantly different from projections included in the Mid-Term National Development Plan 2015-2019.

### 3.2 Changing economics of coal production

While the government remains enthusiastic about coal mining and domestic coal use, international market dynamics have also been changing, and this affects coal production scenarios. The coal market is inherently cyclical, so economic viability and profitability fluctuates over time. Naturally, various features of the coal market – including market prices both internationally and domestically, operational costs and logistical constraints, and the ability to raise finance for new coal mining – have an important influence over both the type of coal mining and production levels in Indonesia.

Changes in demand from Indonesia's main international buyers, particularly China and India, have a significant effect on production volumes and prices (Gloystein 2015). During recent periods, particularly from 2015 to 2016, Indonesia's coal companies experienced some of the lowest prices in a decade. In response, some small and medium mines either slowed production or collapsed altogether. Among the hardest hit were those in South Sumatra, where mines tend to have higher operating costs and longer-term contracts than those in Kalimantan. In August 2015, the Indonesian Coal Mining Association suggested that "almost 80 percent of Indonesian coal miners have temporarily ceased production as the production cost margin has turned negative" (Indonesia Investments 2015).

Globally, the International Energy Association expects coal demand to decline gradually, as it has during the past few years (IEA 2017). However, at the regional level, Asia is projected to experience significant rising demand. Chinese demand oscillates in response to the country's own economic growth rates and to regulations that limit the number of days Chinese miners can operate each year. The latest IEA forecasts suggest China's coal imports will continue to decline (IEA 2017). India is forecast to have the largest growth in demand, and it is already one of Indonesia's major coal trading partners. However, the Indian government is trying to curtail coal imports by meeting rising demand with domestic coal production; this has led to a significant downgrading in IEA forecasts of future Indian imports (IEA 2017). Several interviewees pointed out that Pakistan and Bangladesh are starting to discuss trade with Indonesian miners and potentially offer new demand markets. IEA has flagged both countries as centres of demand growth.

In early 2018, coal prices rose to more than USD 100/tonne, a more than 50% increase on the 2016 average. Some have suggested this is an effect of some Chinese mines shutting down and reduced output from Australia (GBG Indonesia 2017), as well as new coal plants coming on line in Asia (Indonesia Investments 2017).

In the domestic market, the coal reference price is stipulated by the national government and is partly linked to international prices. Under the Mining Law 2009, the Ministry of Mineral Resources sets a coal reference price annually through Ministerial Regulation, most recently MEMR Regulation 7/2017 on Benchmark Price on Metal Minerals and Coal. Since the Domestic Market Obligation requires a portion of coal produced to be sold in the domestic market, and is applied to all miners, the level of the domestic reference price obviously affects the viability of some operations, as does the various efforts by government to create domestic demand. At the same time, it is not straightforward for all suppliers to simply move between international and domestic markets, since some have long-term contracts with particular buyers. In early 2018, the domestic price was capped at USD 70/tonne, considerably less than the international market price of more than USD 100 (Fitch Ratings 2018).

Domestic electricity costs do not include the environmental or social costs of production, and therefore coal-fired electricity has been significantly less expensive than new and renewable sources. However, there are some signals that as renewable energy costs come down, the government is factoring this into its energy capacity expansion plans (Franki 2017). Natural gas is also becoming increasingly attractive. Gas-fired power plants offer the advantages of being smaller, cheaper, faster to build and easier to finance than coal plants, and their low operating costs make them less vulnerable to price fluctuations in global energy markets. Although gas has not traditionally been an important energy source in Indonesia, there have been major shifts towards gas in some other coal countries, notably the US. Indonesia's neighbour, Australia, also is the world's largest producer of liquefied natural gas (LNG) for export.

Beyond coal prices, other factors that affect mine profitability include the price of land acquisitions and diesel. Diesel is the largest operating expense; it can be so significant that even increases in coal prices may be offset if international oil prices also rise. The profitability of Indonesian coal mining is thus linked to the global oil market. Since this is true for all coal producers, the most important factor would be whether Indonesian mining is less or more diesel-intensive than it is in other exporting countries.

Transportation is another important variable. Some areas with coal reserves have poor, or non-existent, infrastructure to bring the coal to market. Companies have expressed difficulty hauling high-calorific coal from Central Kalimantan (palm oil from this region is currently transported by road). Coal from East Kalimantan is typically barged to ports by river, which helps lower diesel costs but introduces other logistical challenges. Some small companies that rely on river transport have access only to a small tributary, meaning barge capacity is small (e.g. 2000 tonnes) and transportation is limited to periods when water levels are high. In the dry season, these mines stockpile coal at the mine. It is difficult to say how much mining is affected in this way, though major companies have the capital to secure alternative transportation networks.

Port infrastructure is also cited by interviewees as a potential constraint (and some ports appear to be operating illegally to export coal). Some larger companies own or operate their own ports, while others either negotiate to use these or use barges to transfer coal directly to ships waiting offshore. In East Kalimantan, several district governments have indicated plans to build and operate new coal terminals, including at Samboja (recently established) and Marangkayu. This is a strategy aimed to boosting district revenue, whereby the district (or a district company) will finance, own and operate the terminal.



Coal mines in miniature, on display in local government offices in Samarinda, East Kalimantan. © AARON ATTERIDGE / SEI

Overall, the economics of coal production for Indonesian miners are uncertain, and likely to depend very much on the rate at which Asian coal demand increases. To some extent, uncertainty about the global market in the medium term is offset by the government promoting domestic demand, in the form of new coal-fired power generation. The government's coal reference price (HBA) has risen around 65% between 2016 and early 2018, to approximately USD 101/tonne (Das 2018). It would seem that Indonesian miners are not feeling trepidation about future demand; there could be 2,000 new mines ready to commence production in 2018 (Indonesia Investments 2018). Nonetheless, an international perspective on global coal markets seems to be impacting the financial landscape and may affect future capital allocation to coal mining.

### 3.3 A changing financial landscape

Coal mine development and production requires considerable equity and debt financing.<sup>20</sup> There are signals that international finance for coal mining may be drying up. In recent years, international commercial banks and some development banks have announced that they intend to shift away from financing coal projects and/or coal companies globally, while the major domestic banks in neighbouring Australia have turned away large new coal mines (Banktrack 2015; Leroux 2017; Robertson 2017). Without knowing the extent to which international finance has underpinned Indonesian mining to date, it is difficult to say what effect, if any, this trend might have going forward. However, it is a potential constraint, depending on how the economic picture discussed above unfolds.

Between 2010 and 2015, market capitalization of listed mining companies (not only coal) in Indonesia fell by around 75%, indicating that a negative price outlook for many commodities was weakening investor confidence. With the upturn in prices in 2016, investor sentiment also turned around, particularly related to coal mining companies; over the course of the year, market capitalisation of coal stocks increased 105% from IDR 90 trillion (USD 6.5 billion) to IDR 185 trillion (USD 13.4 billion). Despite this, there are concerns that the recent coal price upswing is not an indication that there will be sustained long-term demand for coal in the global market (PWC 2017).

At the same time, international public finance appears to continue to play a major role in financing new coal power plants in Indonesia, particularly export credit agencies in Japan, China and Korea, as these countries seek to expand demand for new plants across the region (Market Forces 2017). The role of Chinese finance was highlighted by several interviewees for this study; these can include the use of low-cost loans provided to Chinese state-owned corporations by the Chinese government with the encouragement to expand abroad.<sup>21</sup>

A perception of policy instability is a potential constraint on international financing of coal mines in Indonesia. The OECD classifies Indonesia as being in the bottom half of countries globally in terms of "ease of doing business" (OECD 2015). This situation may also restrict upstream investment in exploration, and if so will over time have an effect on reserves.

<sup>20</sup> During the exploration phase, mines typically depend upon equity investors, often venture capitalists, to develop the project so that it can attract bank lending. Junior miners and project developers usually handle exploration until financial closure, at which point there is a mix of equity and debt financing behind the project and a proven resource. For larger reserves, major coal miners (including international, diversified mining companies) will become involved and may take ownership stakes.

<sup>21</sup> Several examples are visible in data on Chinese financing abroad, provided by AidData: <http://china.aiddata.org/projects>

## 4. Future trajectories

Predicting future coal production or export trends in Indonesia is difficult. The global context is shifting quickly, and some expect the global coal market to be entering a period of sustained decline. Future coal demand differs regionally, and Indonesia is well placed geographically to benefit from the expectations, of the IEA and others, that Asian coal demand will continue to rise. This forecast depends, however, on the decisions that governments make in new demand centres like Pakistan, Bangladesh and across South East Asia, especially since recent projections suggest that Indonesia's main trading partners China and India may cut their demand for imported coal (IEA 2017). As renewable energy costs continue to fall rapidly, as financial institutions show less appetite to invest in coal plants, and as international action to curb climate change increases, the challenges and risks associated with building new coal plants seem likely to increase. This may temper expected coal demand growth across the region.

On the ground in Indonesia, these global market uncertainties coalesce with a continuously changing set of domestic policy signals. As discussed above, numerous policy changes over the past few years – including moratorium announcements, production caps and an increase to the Domestic Market Obligation – affect, at least superficially, the conditions for coal mining.

But many of these changes may never be formally implemented. The Indonesian government regularly backtracks on political announcements, or simply does not codify them into regulation, and plans are often not implemented in the way they are originally intended. A proposed export ban on low-quality coal was shelved not long after it was announced. Ministers have quoted coal production caps that contradict each other and the country's energy policy. The government extended the timeframe for building new energy infrastructure because of construction delays and weak electricity demand (Okezone News 2018; Meilanova 2018). Even the Clean and Clear program, which was implemented and has resulted in the cancellation of several thousand licenses, has not fully stopped mining by companies that do not have Clean and Clear certification. Illegal mining continues, as does mining in protected forests.

The fundamental structures of the system that triggered such rapid growth in coal production over the last decade remain relatively unchanged. Politicians retain financial interests in coal mining activities, corruption is endemic, management of mining is weak or lax, and the country's energy policy is founded on commitments to dramatically boost domestic coal demand. Licensing may have shifted to the Provincial level in an attempt to introduce more restraint to the permitting process, but the incentives to permit new mining remain. The 2012 creation of a new province, North Kalimantan, should sound alarm bells about the prospect of a rapid new expansion of the mining frontier into what has, until now, been the only area of Kalimantan left relatively untouched by mining and palm oil. Regulatory weaknesses and uncertainty are sometimes cited as barriers to private investment, but do not seem to have stifled investment in coal mining. If anything, this has arguably contributed to the rapid, ad hoc expansion of the sector. The significant costs and legacies of mining, especially social and environmental problems, do not appear to have dampened political support.

While climate policy is stimulating some market changes internationally, it has not been the catalyst for pursuing major transitions in Indonesia's approach to coal. Indonesia's Intended Nationally Determined Contribution (INDC) – submitted to the United Nations Framework Convention on Climate Change (Government of Indonesia 2015) – pledges a 29% to 41% reduction in emissions from energy, industry and land-use change by 2030, as compared to the "business as usual" scenario. The upper end of this range is contingent on receiving adequate international financial support. If this target is achieved, the country's greenhouse gas emissions in 2030 would remain at around current levels, leaving little room for emissions from new coal plants (Climate Action Tracker 2017). However, while the INDC focuses on tackling deforestation and promoting renewable energy, it does not mention the effect of coal mining on deforestation or how new coal plants could affect emissions in the "business as usual" scenario for the electricity sector.

A potential obstacle in coal's trajectory may come from the interaction between coal mining and palm oil production. As with coal mining, politicians and government officials have extensive interest and ownership in the palm oil sector, and it is slated for expansion by both provincial and national governments. Areas of mining and oil palm tend to overlap, and the potential for conflict exists. That is because land-use plans are





Open cut mining, Indonesia © MAY THAZIN AUNG / SEI

typically based on past licensing arrangements, rather than forward-looking decisions about which land is to be prioritised for which use. However, the palm oil sector seems unlikely to be a major impediment to coal mining, not least because it does not pay royalties to the government and is thus not as significant for public revenue as coal. Some mining companies like Berau Coal Energy are also big players in the palm oil business.

Overall, there are few, if any, domestic signals that coal production might decline. The main opponents of increased mining are affected communities and those interested in protecting Indonesia's forests and rare biodiversity – neither of which carries political influence. Beyond that, there are no real competing interests that might create political momentum for alternative socio-economic activities to coal mining.

However, the government has shown more interest in using renewable energy for domestic demand as costs have come down. Delays in building out new coal plants might therefore provide some opportunity for more of these plants to be substituted by cleaner alternatives. The proliferation in small-scale mining over the last decade also is likely to mean some deeper reserves become less economically viable over the longer term, particularly if commodity prices follow a downward trend in the future. Finally, there is increased public discussion about the enforcement of mine rehabilitation requirements; if this translates to the implementation of license requirements, it would raise mining costs and drive some mines out of production. However, some interviewees see government enforcement as unlikely, given political ownership interests in the sector.

When considering Indonesia's future in coal mining, uncertainties abound. Absent international dynamics, the country's coal sector would likely continue to grow, capitalizing on a political system that incentivises expanded mining. But Indonesia must also contend with the broader picture – where the international community increasingly emphasizes climate change, and the global demand for coal continues to decline.

## 5. Conclusions

The paper offers a glimpse into the political economy of coal in Indonesia. It highlights how coal production and exports fit into a very complex social, financial and political ecosystem. This system has allowed and encouraged a large, rapid expansion in coal production, and despite recent changes and announcements, there are no clear signs of this changing any time soon.

Reflecting on all of the above, it may seem premature to consider what will happen in Indonesia's coal mining regions if the coal sector enters structural decline. There is certainly no visible dialogue within Indonesia about the possibility of global demand falling away significantly, or of the resulting effect. Consequently, there are no alternative visions for socio-economic development that are gaining traction, and no futures imagined in which coal mining does not feature centrally. To the extent that there is any debate about coal, it revolves only around the balance between how much will be exported and how much will be consumed domestically. Here, there are different views on the preferred approach, even within government; while the Ministry of Energy promotes safeguarding of the coal reserves for the country's own use, the Ministry of Finance may be unenthusiastic about curbing exports because that would curtail foreign earnings and revenue from export duties.

Yet in the global context – as international climate policy ratchets up, cleaner energy becomes less expensive, more and more financial institutions divest from coal assets, and air pollution issues gain more attention in China and other Asian countries – it seems risky for countries like Indonesia not to at least discuss economic alternatives to the promotion of coal mining.

This situation is not unique to Indonesia. All coal producers face the prospect of falling global demand, and facing this challenge requires unique responses in different countries. But underpinning every response is early planning that involves a wide range of stakeholders and maps out possible future pathways for development. Numerous historical cases – including in regions of the UK, US and several European countries – provide a glimpse of the impacts of not being prepared when coal markets collapse. Among the key lessons is that the social, economic and environmental costs of not being prepared, of not planning ahead, are high and highly disruptive (Caldecott et al. 2017). Governments should plan ahead – before a decline in mining activity – to ensure that workers and local economies are prepared for change, and that there is financial support for a smooth future “transition” away from mining. Typically in Indonesia, it is also crucial to address the environmental legacies of mines now, while the sector is profitable, rather than after it becomes financially unviable.

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## Annex 1. Laws, policies, regulations and other relevant instruments related to coal mining

Year	Instrument	Features
1967	Law No. 1/1967 on Foreign Investment	Opens the mineral and coal mining sector for foreign investment
1967	Law No. 11/1967 on Mining	Provided the framework for all of Indonesia's mining concessions, which is the basis of the existing CoWs and CCoWs.
1980	General Policy on Energy	Intended to be the national policy, but was issued by the Minister unilaterally so did not have national policy status and was not binding
1981	Presidential Decree No. 49/1981	Regulated the first generation of Coal Co-operation Agreements (CCA), between PT Tambang Batubara Bukit Asam (now PT Bukit Asam (Persero) Tbk or "PTBA"), the state-owned mining company, and private contractor.
1993	Presidential Decree No. 21/1993	Replaced Presidential Decree No. 49/1981, regulated the second generation of CCA.
1996	Presidential Decree No. 75/1996	Replaced Presidential Decree No. 21/1993, regulated the third generation of Coal Contracts of Work (CCoW).
1999	Law No. 22/1999 on Local Government	Decentralisation law giving widespread powers to local governments.
1999	Law No. 41/1999 on Forestry, as amended by Law No. 19/2004	Specifies restrictions for mining activities in conservation forest and protected forest areas.
2001	Government Regulation No. 75/2001 on Delegation of Mining Concession to Local Government	The implementing regulation of Law Number 22/1999 on Local Government. Provides full authority over mining sector management to the Local Government at the Regency/City level (thus introducing inconsistency with Law Number 11/1967 on Mining).
2004	Law No. 32/2004 on Local Government	Grants licensing authority to the district level, bringing previous Government Regulation and Mining Law into harmony.
2004	Law No. 33/2004 on fiscal balance between central and regional governments (amending Law No. 25/1999)	Outlines distribution of state revenues from mining and other sectors.
2005	Government Regulation No. 55 /2005	Stipulates rent and royalty distribution from mining activities between levels of government.
2007	Law No. 30/2007 on Energy	Establishes National Energy Council, which guides preparation of National General Energy Plan (RUEN).
2009	Law No. 4/2009 on Mineral and Coal Mining	Discontinued contract/agreement scheme/model and changed to the Mining Business Permit (Izin Usaha Pertambangan/IUP) consisting of IUP for Exploration and IUP for Operation Production. National government determines the areas that can be mined and, except in certain exceptional circumstances, regional governments then have the authority to grant mining business licences within these pre-determined areas.
2009	MEMR Circular Letter No. 03/2009 on Mineral and Coal Mining Permit	Issued prior to the issuance of Government Regulation as the Implementation of Law Number 4/2009. Addressed to all Governors and Regents/Mayors requesting them to temporarily suspend the issuance of new IUP until the issuance of Government Regulation.
2009	MEMR Regulation 34/2009 on the Domestic Market Obligation	Established Domestic Market Obligation (the mechanism but not the specific requirement, which is set annually by MEMR). Also introduces a "cap and trade" system, whereby mining companies that exceed their DMO obligations may sell/transfer DMO credits to a mining company that is unable to meet its DMO commitment.
2010	Government Regulation No. 22/2010 on Mining Areas	Defines different types of mining areas and licensing processes.
2010	Government Regulation No. 23/2010 on Implementation of Mineral and Coal Mining Business Activities	Accelerates the alignment process of CCOWs into IUPs
2010	Government Regulation No. 55/2010 on Mineral and Coal Mining Direction and Supervision	Sets the authority of control and monitoring of mining activities.
2010	Government Regulation No. 78/2010 on Reclamation and Mine Closure	Sets the obligation of mining license holders and defines the process of mining reclamation and closure.
2012	MEMR Circular Letter No. 08/2012 on Suspension of Issuance of New IUP until the Stipulation of Mining Area (WP)	Confirms/reiterates the moratorium. Addressed to all Governors and Regents/Mayors in Indonesia requesting them to temporarily suspend the issuance of new IUP until the stipulation of mining area.
2012	Government Regulation No. 9/2012 on Types and Tariffs of Non-tax State Revenue Applicable in the Ministry of Energy and Mineral Resources.	GR 9/2012 was not issued specifically as an implementing regulation of the Mining Law, however it provides guidance on the rates of production royalty that an IUP/IUPK holder should pay.
2013	MEMR Regulation No. 37/2013 on Determination of Mining Areas	Sets technical criteria to determine mining area.

Year	Instrument	Features
2014	Law No. 23/2014 on Local Government	Withdraws the authority of the Regent/Mayor as the party granting licenses, transfers licensing authority to the provincial governor
2014	MEMR Regulation No. 7/2014 on Mine Reclamation & Closure	Implementing regulation for GR 78/2010
2014	Government Regulation No. 79/2014 on National Energy Policy	Among other things, instructs the National Energy Council to prepare the National General Energy Plan (Rencana Umum Energi Nasional, RUEN)
2014	Coordination and Supervision Mechanism for Mineral and Coal mining (Korsup Minerba) established	The Korsup for Natural Resources is part of the “prevention” aspect of KPK in its effort to eradicate corruption in Indonesia. Under this Korsup there are sectoral Korsup. Since mineral and coal mining are strategic resources to the national economy, special Korsup for mineral and coal mining (Korsup Minerba) was established.
2015	MEMR Regulation No. 25/2015 on Authority Delegation for Mining Licence Issuance	In line with government’s policy to streamline the investment licensing process, final formalization for mining license is delegated from the MEMR to Indonesian Investment Board under one-service gateway policy.
2015	Mid-term National Development Plan 2015-2019	Announces plans for addition of 35 GW of electricity capacity, including 19.8 GW from coal power plants
2015	Presidential Regulation No. 2/2015	Codifies the Mid-term National Development Plan 2014-2019
2015	MEMR Regulation No. 43/2015	Introduces Clean and Clear program for review of mining licenses, giving power to MEMR for revoking licenses that are not in compliance with permit conditions.
2017	Presidential Regulation (Perpres) No. 22/2017 on the General Plan for National Energy (Rencana Umum Energi Nasional/RUEN)	Codifies the 2017 RUEN. Mandates the Ministry of ESDM to follow up on a number of action plans to create a national policy with the following impacts on coal industry: (i) To control coal production to a maximum of 400 million tons starting in 2019; (ii) To gradually decrease coal exports and discontinue coal exports when domestic need reaches 300 million tons or 2046 – whichever comes first -- for the purpose of prioritizing domestic needs; (iii) To utilize coal domestically to a minimum level of 30% of primary energy supply in 2025 and a minimum of 25% in 2050; (iv) Moratorium on Mining Business Permit (Izin Usaha Pertambangan/IUP) and Special Mining Business Permit (Izin Usaha Pertambangan Khusus/IUPK) of coal in primary natural forest and peat land located in conservation forest, protected forest, production forest and other land use area (area penggunaan lain).
2017	MEMR Regulation No. 34/2017 on licensing process	Implements Law 23/2014. Reiterates that only national minister and provincial governor have authority to grant mining licenses.
2017	Government Regulation No. 1/2017 (the fourth amendment to Government Regulation No. 23/2010)	Allows mining companies to continue exporting processed products for a period of five years from 11 January 2017, provided certain conditions are met
2017	MEMR Regulation No. 12/2017 on Utilisation of Renewable Energy Resources for Provision of Electricity	Requires PLN to purchase all electricity made available by renewable IPPs on a ‘take or pay’ basis, establishes new feed-in tariffs for renewable supply, and effectively caps these costs for PLN so they do not exceed local generation costs
2017	MEMR Regulation No. 50/2017	Amends the above regulation, accelerating development of renewable energy through modification of purchasing mechanism and pricing.

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