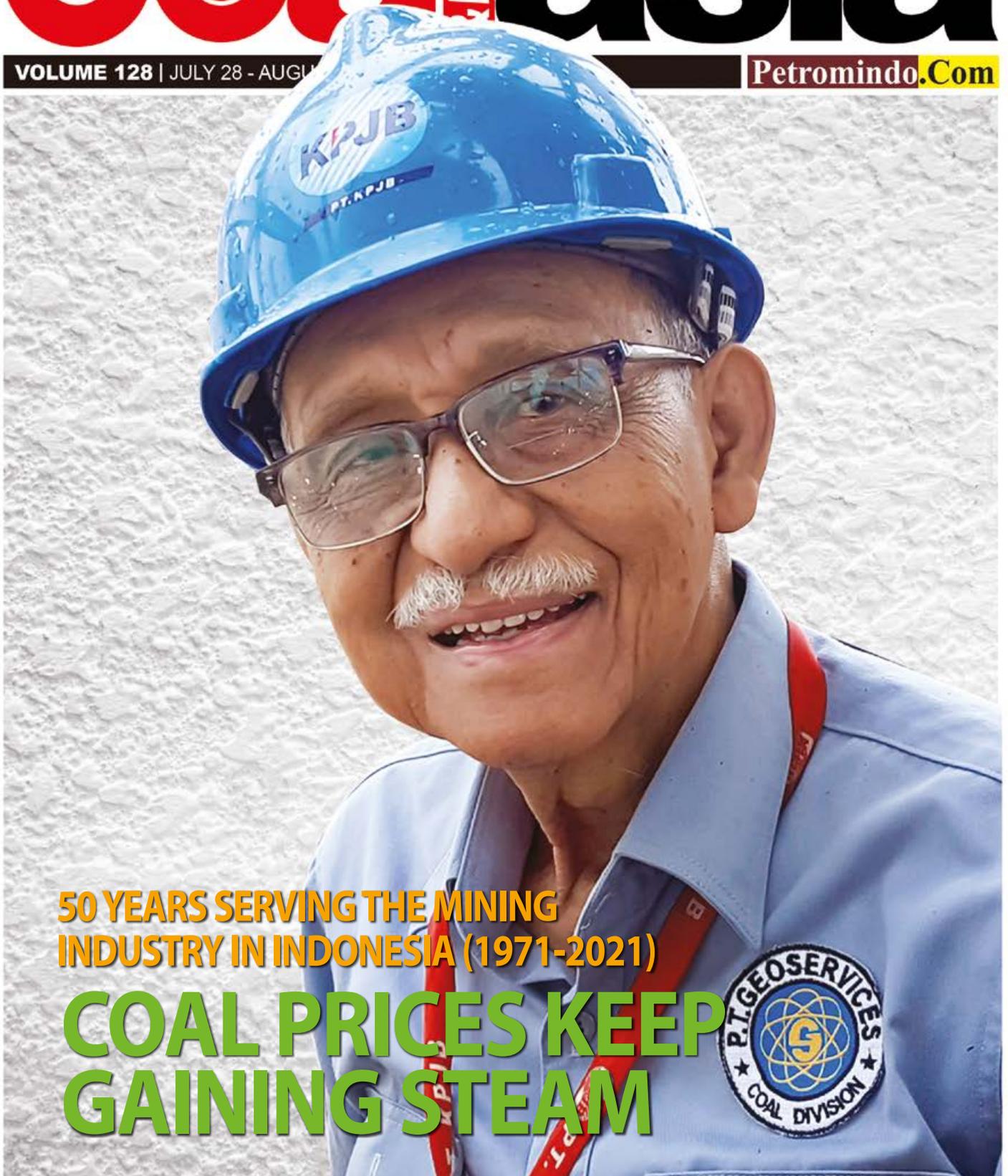


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Indonesia Nickel Map 2020

Nickel is a silvery-white metal that is used mainly to make stainless steel and other alloys stronger and better able to withstand extreme temperatures and corrosive environments. Nickel is also essential to many battery chemistries from nickel metal hydride to innovative.

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Sulawesi is home to the country's largest nickel producer, the nickel resources and reserves spread across the provinces of South Sulawesi, Central Sulawesi to Southeast Sulawesi, while in North Maluku province, the nickel deposit was found in Islands of Obi, Gebe and Halmahera.

The government has continued to push for the development of domestic processing and refining industry in a bid to generate greater value from the country's mineral resources, instead of merely exporting raw commodities. So far, only the nickel processing industry, which has shown encouraging development. As of the end of 2019, there were 72 nickel smelters plants/projects in Indonesia comprising of 25 smelters in operation, 35 in construction and 12 in planning stage.

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Map Features

- Nickel concessions (KKs and IUPs) in Sulawesi and North Maluku and their status of operation.
- Location of 72 nickel smelter projects/plants with their processing method, capacity, product, status and schedule of operation (COD)
- Existing/planned power projects/plants [PLN and IPPs]
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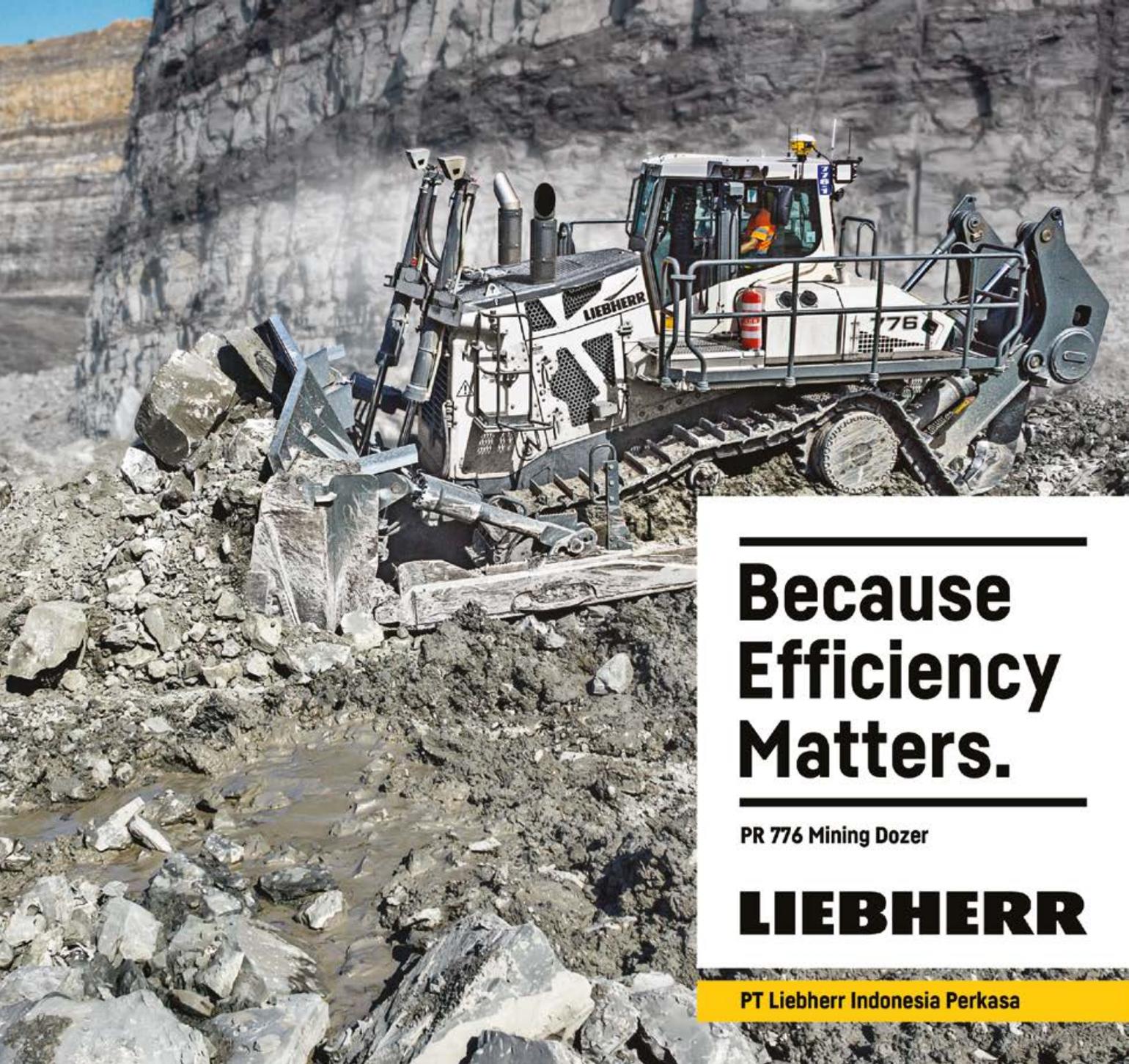
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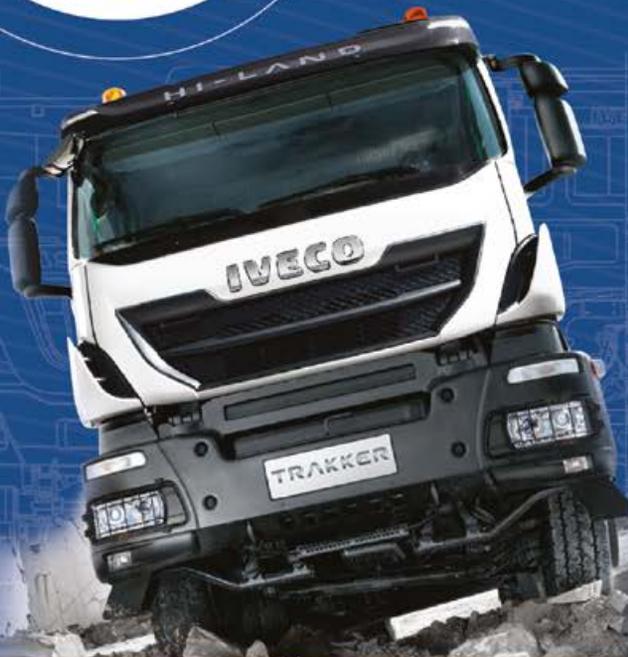
The Ministry of Finance is promoting the introduction of a carbon tax as a means of both facilitating a move away from Indonesia's over-reliance upon fossil fuels and raising much needed additional Government revenue.



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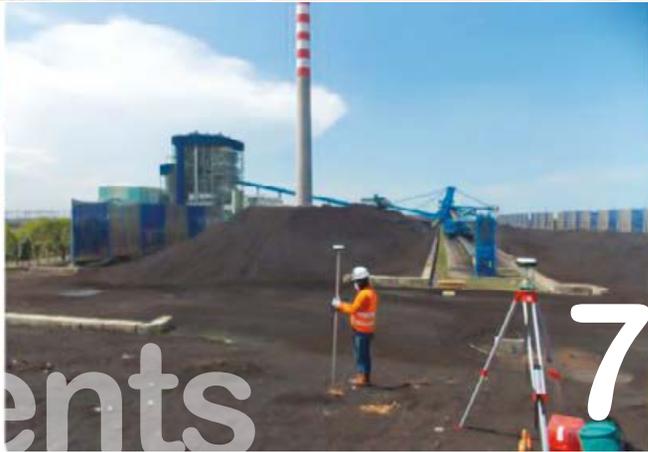


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Coal prices keep gaining steam
Since the end of 2020, coal prices have shown bullish trend after unprecedented drop in the first half of the year due to the Covid-19 pandemic across the globe during the year.

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[PUBLISHER'S LETTER]

New Record Coal Price

The government's coal reference price (or HBA) hit a new record of US\$115.35 per ton in July due to rising demand as key markets particularly China have started to recover from the impact of the pandemic. The July HBA is the highest price since December 2011 at \$112.67 per ton.

Coal miners and traders said that price of coal would remain strong in the second semester as the high demand is expected to continue from importing nations of China, India, Japan, South Korea, Taiwan and countries in Southeast Asia region.

Many Indian companies reportedly could no longer afford buying imported coal due to the soaring price although India's economy has started to recover after the recent Covid-19 lockdown.

Prashant K. Goyal, Executive Director of Bhadreshwar Vidyut Pvt. Ltd. told Petromindo.com that not only from Indonesia, coal prices from South Africa and Australia were also too high for the Indian market.

The Ministry of Energy and Mineral Resources (MEMR) recently stated that China's coal consumption surged while the country's domestic coal supply lagged behind, adding that Japan and South Korea have also recorded a similar growing coal demand trend.

Given the bullish trend, the government decided to revise up the country's coal output target in 2021 from the initial plan of 550 million tons to 625 million tons, of which of the extra output of 75 million tons will be entirely dedicated for the export market.

The country's coal production in the first six months ending June of this year reached 285.77 million tons, or representing 45.72 percent of the full-year target of 625 million tons, according to data from the Ministry of Energy and Mineral Resources.

Coal production in the first couple of months of this year was restrained by the heavy rain fall particularly in the Kalimantan region, but miners said they would ramp up production starting in the second quarter.

Export in the first half of this year totaled 138.37 million tons, or 28.38 percent of the full-year target of 487.50 million tons.

CoalAsia Magazine runs the coal outlook in the second semester as its mainstay to explore the trend of coal demand and also supply side from Indonesia.

We also publish analysis and opinion articles by noted experts in mining industry to enrich knowledge of the country's mining industry.

Happy reading

Adianto P. Simamora*Editor in Chief*

Indonesian Conventional Oil & Gas Map 2020

INDONESIAN CONVENTIONAL OIL & GAS MAP is a must-have for company / professionals who's involved / interested in Indonesian oil and gas related businesses. The map outlined at the scale of approximately 1:3,000,000 on a 1821 x 852 mm glossy paper (260 gr) and laminated for durability.

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- Key Upstream Oil & Gas statistics.
- The working areas are appeared in different colors so that you can find the ones easily.
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- Sumatra Conventional Oil & Gas Map
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Release	: November 2020
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OPINION

By **Bill Sullivan**

Christian Teo & Partners (in association with Stephenson Harwood LLP)

Carbon tax proposal – Possible solution to multiple problems?¹²³⁴

Introduction

The Ministry of Finance is promoting the introduction of a carbon tax as a means of both facilitating a move away from Indonesia's over-reliance upon fossil fuels and raising much needed additional Government revenue.

The proposed carbon tax is to be part of a larger group of amendments to the tax law intended to place the Government in a stronger financial position as it seeks to deal with the Covid-19 pandemic and the ongoing economic, medical and social crises for Indonesia.

Predictably, various industry groups have advocated delaying the introduction of a carbon tax for several years and until the Indonesian people are better placed to bear the increased costs that are claimed will inevitably flow from a carbon tax.

In this article, the writer will review the carbon tax proposal and its prospects for success against the backdrop of reduced living standards for many Indonesians and possible growing opposition to economic reform.

Background

In May 2021, the Fiscal Policy

Agency of the Ministry of Finance ("MoF") issued a document entitled "Macro Economics Framework and General Fiscal Policies for the Year 2022: Economic Recovery and Structural Reform" ("2022 Macro Economics Framework and General Fiscal Policies").

The 2022 Macro Economics Framework and General Fiscal Policies outlines, for discussion and planning purposes, various fiscal proposals advocated by MoF as a response to the Covid-19 pandemic. One of these fiscal proposals is that Indonesia introduces a "non-market based carbon pricing instrument in the form of a levy on carbon" ("Carbon Tax"). The proposal for a Carbon Tax is dealt with in Section VIII.3 of the 2022 Macro Economics Framework and General Fiscal Policies.

The 2022 Macro Economics Framework and General Fiscal Policies highlight that a Carbon Tax can be imposed on emissions produced by economic activities (i.e., supply-side approach) or on emission source objects/products (i.e., demand-side approach). Countries such as Japan, Singapore, France and Chile adopt the supply-side approach and impose a Carbon Tax on the emissions generated by the use

of fossil fuels, with the rate ranging from USD3 to USD49 per tonne of CO₂e. This supply-side approach to the imposition of a Carbon Tax typically has the greatest effect on heavy industry, power generation, transportation and buildings. Other countries impose a Carbon Tax on the use of fossil fuels being, primarily, coal, diesel and gasoline. This demand-side approach, to the imposition of a Carbon Tax, typically has the greatest effect on the buyers/users of products produced by carbon-intensive sectors such as the pulp and paper industry, cement industry, power generation and petrochemicals.

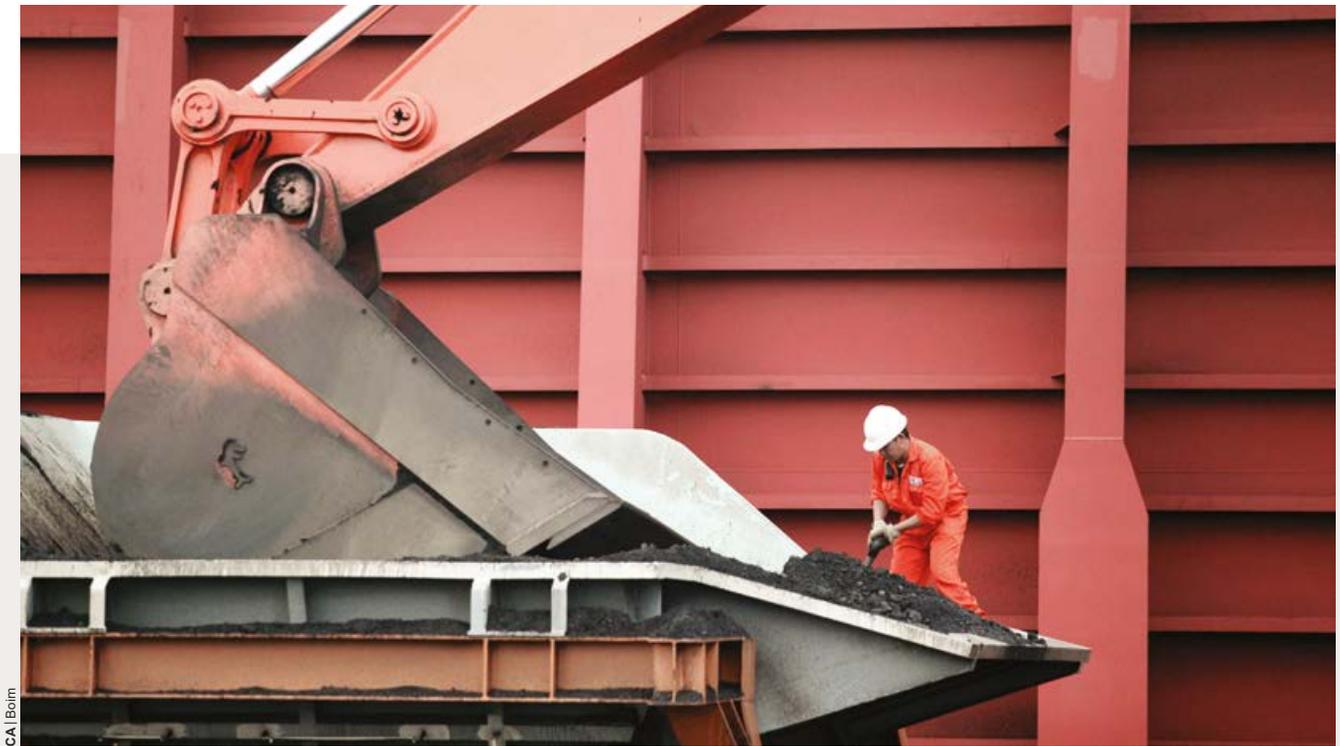
The 2022 Macro Economics Framework and General Fiscal Policies go on to outline two main claimed benefits, for Indonesia, from the introduction of a Carbon Tax. First, the reduction of greenhouse gas emissions through reduced or more efficient fossil fuel use. Second, the utilization of the revenue raised from a Carbon Tax to fund environmentally friendly investments and improve the welfare of Indonesia's poor and the vulnerable. MoF acknowledges that the introduction of a Carbon Tax will, directly or indirectly, result in additional costs for some parties. With this in mind,

1. Bill Sullivan, Senior Foreign Counsel with Christian Teo & Partners and Senior Adviser to Stephenson Harwood LLP.

2. Bill Sullivan is the author of "Mining Law & Regulatory Practice in Indonesia – A Primary Reference Source" (Wiley, New York & Singapore 2013), the first internationally published, comprehensive book on Indonesia's 2009 Mining Law and its implementing regulations.

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MoF suggests that any introduction of a Carbon Tax in Indonesia requires accompanying policies in the form of strengthening people’s purchasing power so as to reduce opposition to the Carbon Tax and deal with “unexpected impacts” of the Carbon Tax.

Finally, the 2022 Macro Economics Framework and General Fiscal Policies explain the two strategies available to Indonesia in introducing a Carbon Tax. The first alternative is to use existing tax instruments, at (i) the Central Government level such as excise tax, PPh, PPN, PPnBM or PNBp and/or (ii) at the Regional Government level such as motor vehicle tax and motor vehicle fuel tax, to incorporate a Carbon Tax element. The second alternative is to introduce a standalone and entirely new Carbon Tax instrument, which alternative would require the amendment of Law No. 6 of 1983 re on General Provisions and Procedures in respect of Tax (“1983 Tax Law”).

MoF favours the second alternative; namely, a standalone and entirely new

Carbon Tax instrument. The reasons for MoF’s preference are not made clear in the 2022 Macro Economics Framework and General Fiscal Policies.

It is important to understand that the Carbon Tax is only one of the fiscal proposals put forward by MoF that, if adopted, will involve amendments of the 1983 Tax Law. These proposed amendments have been included in a draft bill to amend the 1983 Tax Law (“Draft Tax Bill”) prepared jointly by the Government and the House of Representatives (“DPR”).

On 6 July 2021, the Draft Tax Bill was included in the Prioritized National Legislation Program and is currently being deliberated by the DPR.

Analysis and discussion

1. Treatment of Carbon Tax in Draft Tax Bill

1.1 Relevant Article: The Carbon Tax is dealt with in Article 44G of the Draft Tax Bill..

1.2 Approach Adopted: The Carbon Tax is to be imposed on any company,

individual or other legal entity which (a) buys goods/products containing carbon or (ii) engages in activities producing carbon emissions. In other words, it is presently envisaged that Indonesia will adopt both a demand-side approach and a supply-side approach to the introduction of a Carbon Tax.

1.3 Tax Rate: The Carbon Tax rate is presently set at Rp75,000 (i.e., US\$5) per kilogram of CO₂e.

1.4 Payment Point: The Carbon Tax is to be payable at (i) the time of purchasing goods/products containing carbon, (ii) at the end of a certain period of activity involving the production of carbon emissions or (iii) at other times.

1.5 Procedures for Calculation and Payment of Carbon Tax etc: The (a) procedures for the (i) determination of the applicable Carbon Tax rate, (ii) changing the applicable Carbon Tax rate, (iii) calculation of the Carbon Tax amount due and (iv) payment of the Carbon

Tax amount due and (b) intended allocation/utilization of Carbon Tax collections are to be dealt with in an implementing regulation to be issued by MoF following consultation/co-ordination with other relevant ministries/agencies.

1.6 Stated Purpose of Carbon Tax: The stated purpose of introducing the Carbon Tax is to:

“control greenhouse gas emissions to support the achievement of Indonesia’s Nationally Determined Contribution (“NDC”).”

The NDC is Indonesia’s commitment to helping manage global climate change in order to achieve the goals of the so-called “Paris Agreement re The United Nations Framework Convention on Climate Change”.

1.7 Intended Use of Carbon Tax

Collections: The intended use the Government will make of Carbon Tax collections is stated as being, at least in part, “climate change control”.

2. Opposition to Carbon Tax Now

2.1 Overview: Opposition to a Carbon Tax for Indonesia has quickly appeared from various sources. The opposition is not necessarily to a Carbon Tax per se but, rather, to the introduction of a Carbon Tax now and during the current economic crisis brought on by the Covid-19 pandemic.

2.2 Employers’ Association

(“APINDO”): The Chairman of the APINDO Tax Committee, Siddhi Widyaprathama, was recently quoted, in the 26 June 2021 edition of Tempo Magazine, as saying:

“After the economic recovery in the next 2-3 years, maybe we can talk about it again (carbon tax). We admit that this is a noble intention.”

APINDO’s stated concerns with MoF’s proposal for a Carbon Tax now are at least three in number. First, relevant industries need to be given time to accept the idea of a Carbon Tax. Second, a Carbon Tax would be inflationary. Third, the Government needs to provide industry with environmentally friendly renewable energy alternatives before it is fair to burden industries, reliant upon fossil fuels, with a Carbon Tax.

2.3 Cement Association (“ASI”):

According to ASI’s technical adviser, Lusy Widowati (also quoted in the 26 June 2021 edition of Tempo Magazine), a Carbon Tax is simply beyond the financial capacity of the local cement industry to bear at this time. This is because:

“The cement industry is oversupplied by 55 million tons, factory utilization is only around 62 percent on average, and new plants are even only 50 percent. This condition is exacerbated by the pandemic. So that cement growth in 2020 will be minus 10.4 percent.”

ASI’s technical adviser also suggested that MoF’s Carbon tax proposal is problematic for two other reasons. First, it would reduce the competitiveness of the local cement industry, in regional and global markets, because:

“In ASEAN we have big cement competitors, Thailand, Malaysia, Vietnam. They do not apply a carbon tax.”

Second and, perhaps most importantly, ASI’s technical adviser

suggests MoF’s Carbon Tax proposal would be a burden to the public, saying:

“So the community’s potential will decrease to build houses and infrastructure.”

2.4 Coal Mining Association (“APBI”):

APBI’s Executive Director, Hendra Sinadia, argues that the imposition of a Carbon Tax will have a significant impact on local industry and, so, MoF’s Carbon Tax proposal requires extensive discussion with relevant business actors before the Carbon Tax becomes a reality. Mr. Sinadia was quoted as having told Bisnis.com on 11 July that:

“The carbon tax will definitely have an impact, not only for the coal industry but also for [all] emitters such as cement, plastic, ceramics and so on. Moreover, the [impact on the] electricity sector is certain.”

3. Assessment of Carbon Tax Proposal

3.1 Need to Reduce Greenhouse Gas Emissions and Increase Government Revenue: Indonesia is (i) the 8th largest emitter of greenhouse gases, accounting for approximately 2% of the world’s greenhouse gases and (ii) the 4th largest coal producer in the world with budgeted 2021 coal production of 550 million tonnes. At the same time, (i) coal dominates the energy mix in Indonesia accounting for approximately 66.3 % of the total power generated in 2019 and (iii) renewable energy accounted for only 15.6% of Indonesia’s energy mix in 2019. According to the so-called “Energy Balance Report”, published by the Ministry of Energy & Mineral Resources, the contribution of renewable energy to Indonesian



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electricity generation, over the period 2015 to 2019, increased but less than the increase in the contribution of coal to Indonesian electricity generation over the same period.

In early June 2021, the Government announced its intention to revise the 2021 to 2030 National Electricity Supply plan or “RUPTL” so that the contribution of renewable energy to electricity generation would increase to 48% from 30% as provided for in the 2019 to 2021 RUPTL. Notwithstanding this ambitious goal, no one could seriously question that Indonesia needs to do a whole lot more to reduce its greenhouse gas emissions and increase the contribution of renewable energy to electricity generation.

Government revenue is under great pressure from several sources. First the Government is running a substantial fiscal deficit estimated to be 5.5% of GDP this year and which fiscal deficit it is required, by law, to cut back to not more than 3% of GDP by 2023. Second, tax revenues have declined significantly

as a result of the economic contraction since 2020. Finally, the Government’s costs in dealing with the Covid-19 pandemic keep growing alarmingly. Accordingly, it is hard to credibly dispute the Government’s need to find new and increased sources of revenue.

Given the above, it is not surprising that most opponents of MoF’s Carbon Tax proposal (including APINDO, ASI and APBI – see 2 above) have focused their criticism on the proposed timing of the introduction of a Carbon Tax in Indonesia and the financial capacity of various industries, as well the Indonesian people, to absorb a Carbon Tax at this time rather than disputing the inherent merits of Indonesia introducing a Carbon Tax at some time in the future.

3.2 Complexity of Carbon Tax Proposal: On 18 May 2021 and soon after the 2022 Macro Economics Framework and General Fiscal Policies were released, the Secretary General of the Organization for Economic Co-operation and Development was quoted as saying, in response to the

announcement of MoF’s Carbon Tax proposal, that:

“I hope they [i.e., the Indonesian Government] put a big fat price on carbon.”

This type of remark does not adequately address the difficulty facing Indonesia in getting the Carbon Tax right once it is introduced. The success or otherwise of MoF’s Carbon Tax proposal involves a great deal more than just putting “a big fat price on carbon”.

One may readily accept that, in theory, a Carbon Tax is the most cost effective way for Indonesia to encourage local industry and consumers to move away from activities and products that have a high carbon footprint. Whether or not, however, this is what happens, in practice, will depend upon how the Carbon Tax is designed and implemented. At the moment, we know very little about how MoF will seek to ensure that the design and implementation of the Carbon Tax realizes its intended benefits.

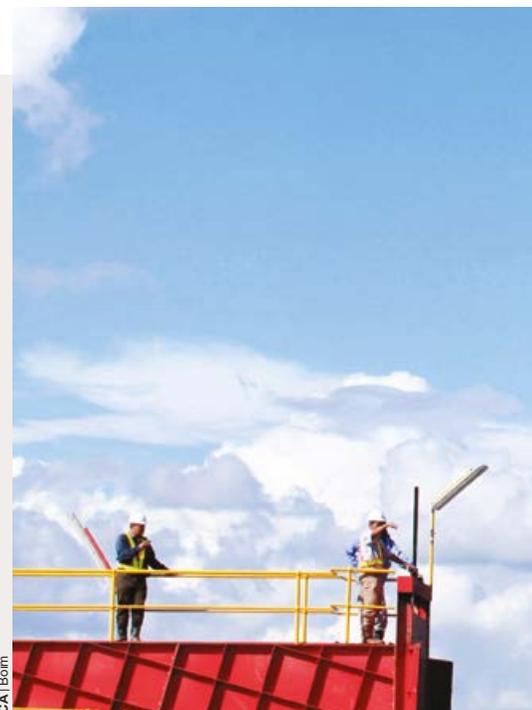
The Draft Tax Bill provides almost

no detail regarding the proposed Carbon Tax other than (i) the fact that the Carbon Tax will be directed at both the demand side and the supply side and (ii) the initial rate of the Carbon Tax will be set at Rp75,000 per kilogram of CO₂e. With virtually all the detail on the mechanics of the Carbon Tax to be dealt with in later implementing regulations, as is the custom in Indonesia, it is impossible to form a considered view on whether or not, if the Draft Tax Bill becomes law and still includes the Carbon Tax, the Carbon Tax (as implemented) will be a net positive development for Indonesia. This highlights one of the inherent weaknesses of the Indonesian approach to law making; namely, the need to accept that Indonesia’s bureaucrats will, somehow and despite numerous examples of this often not having happened in the past, get the implementing regulations right for what otherwise may seem like a promising legislative initiative such as the Carbon Tax.

Given the above, observers are surely correct to highlight the complexity of designing and implementing a successful Carbon Tax in Indonesia. As a consequence, the need to make very sure MoF has (i) correctly identified and properly quantified all of the cost and financial implications of a Carbon Tax for both industry and product users and (ii) prepared suitable policies to alleviate the impact of a Carbon Tax on financially vulnerable industry sectors and individuals becomes of paramount importance. This is something that requires time and careful consultation with all interested parties. Ideally, that should happen before the Carbon Tax becomes a reality, not after the event and as part of “rolling out” the

implementing regulations for the already introduced Carbon Tax.

Indonesia’s extremely poor handling of the implementation of the domestic processing and refining obligation in respect of metal minerals (“DP&R Obligation”), included by the DPR as part of the 2009 Minerals & Coal Mining Law, provides an excellent example of what can happen in Indonesia when a legislative initiative, which has the potential to change the structure of an entire industry (or, several industries in the case of the Carbon Tax), becomes law “because it seemed like a good idea at the time” and without any thorough analysis of its likely economic and other implications for all stakeholders or any carefully thought through plan for implementing the same. Successive Governments have now spent the last 12 years “playing catch-up” in terms of trying to make the DP&R Obligation work in practice and without totally alienating both domestic and foreign investors in the local mining industry. The seemingly endless revisions to the associated export ban on unprocessed metal minerals and the timetable for smelter construction have forever been “enshrined”, in Indonesian political jargon, as the “flip flop approach to policy making”. Many of the problems subsequently encountered with implementation of the DP&R Obligation could surely have been avoided if only a comprehensive study of the economics of domestic processing and refining of all metal minerals had been carried out by the then Government before the DP&R Obligation became law. Indeed, it may well be that the DP&R Obligation would never have become law at all if only such a comprehensive study of the economics of domestic



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processing and refining had been carried out at the right time. At the very least successive Governments would have avoided endless embarrassment and a huge loss of credibility with both domestic and foreign investors. The current Government needs to be very careful that the Carbon Tax and its implementation does not become a repeat of the DP&R Obligation and its shambolic implementation.

3.3 Likelihood of Achieving MoF’s Stated Objectives: It is way too early to tell whether or not, if it becomes law, MoF’s Carbon Tax proposal will realize either or both of the benefits of a Carbon Tax highlighted in the 2022 Macro Economics Framework and General Fiscal Policies; namely, (i) the reduction of greenhouse gas emissions through reduced or more efficient fossil fuel use and (ii) the generation of significant additional government revenue that can be used to fund environmentally friendly investments and improve



the welfare of Indonesia's poor and the vulnerable.

In the case of the first MoF highlighted benefit of reducing greenhouse gas emissions, the Institute for Essential Services Reform ("ESR") has argued that MoF's presently proposed Carbon Tax rate of Rp75,000 (i.e., US\$5) per kilogram of CO₂e is far too low to produce a material drop in the level of Indonesia's greenhouse gas emissions. ESR points out that the High-Level Commission on Carbon Prices has recommended a Carbon Tax rate of at least US\$40 per kilogram of CO₂e initially, increasing to US\$50 per kilogram of CO₂e by 2030. Likewise, the International Monetary Fund proposed that Indonesia set its Carbon Tax rate at US\$35 per kilogram of CO₂e if it wanted to ensure that it meets its Paris Agreement NDC of reducing the country's greenhouse gas emissions by 29% not later than 2030 and without any support from the international community or by as much as 41% by 2030 with support from the international

community. As quoted in The Jakarta Post on 16 June 2021, ESR's executive director said:

"so what is it [the Carbon Tax] for? We could go with [a Carbon Tax rate]US\$5 to US\$10 [per kilogram of CO₂e], but that would not be effective in forcing a transition for a high carbon to a low carbon economy."

In fairness to MoF, however, its proposed Carbon Tax rate of Rp75,000 (i.e., US\$5) per kilogram of CO₂e, as provided for in the Draft Tax Bill, will presumably only be the initial rate of the Carbon Tax if it becomes law. Indeed, Article 44G of the Draft Tax Bill expressly mentions that one of the things that will be dealt with in the implementing regulations is the procedure for changing the Carbon Tax rate. It is probably quite sensible for MoF to start with a very modest proposed Carbon Tax rate so as to both (i) maximize the chances of the DPR approving the Draft Tax Bill inclusive of the Carbon Tax proposal and (ii) minimize the immediate cost impact of the Carbon Tax on

apparently "struggling" industries such as the cement industry as well as on the Indonesian public which is unquestionably suffering financially during the ongoing Covid19 pandemic and resulting economic crisis. Once the Carbon Tax is introduced and it is accepted by industry and the public as a reasonable way to try to control Indonesia's greenhouse gas emissions, MoF will be much better placed to, over time, raise the Carbon Tax rate to a level at which it becomes an effective incentive to relevant parties to move away from high carbon footprint activities and products.

With regard to the second MoF highlighted benefit of generating more Government revenue, IMF modelling has previously indicated that a Carbon Tax rate of US\$35 per kilogram of CO₂e would generate additional revenue of about 1%. This being the case, clearly a Carbon Tax rate of only Rp75,000 (i.e., US\$5) per kilogram of CO₂e will generate additional government revenue that is hardly material at all in terms of the likely cost to Indonesia of alleviating

OPINION

the adverse effects of climate change.

Projections of additional Government revenue from a Carbon Tax also need take into account that some of Indonesia's very worst producers of greenhouse gas emissions are surely State Owned Enterprises ("SOEs"). As the owner/operator of numerous coal fired power plants, the State electricity company ("PLN") potentially faces a huge Carbon Tax liability. Given the Government is ultimately responsible for the losses of PLN and other SOEs, the Government will not generate any additional Carbon Tax revenue from SOEs, including PLN, no matter how much greenhouse gas emissions they are responsible for. This is one of the downsides, in the context of MoF's Carbon Tax proposal, for the Government when Indonesia has an economy where heavy industry, in particular, is dominated by SOEs.

Summary & conclusions

MoF's Carbon Tax proposal has generated considerable criticism from industry associations and other sources.

At least some of the industry associations' criticism must be regarded as nothing more than self-serving attempts to minimize the operating costs of their members and postpone the inevitably of some sort of Carbon Tax for as long as possible. Industry associations, however, are unquestionably right to highlight the need for the Government to move carefully in introducing a Carbon Tax because of the structural and procedural complexities of designing and implementing a Carbon Tax that actually delivers, for Indonesia, the claimed benefits of a Carbon Tax.

Assuming the Draft Tax Bill, inclusive of the Carbon Tax, becomes



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law, it may be a long time before either Indonesia's current level of greenhouse gas emissions is significantly reduced or the Government generates sufficient additional revenue from Carbon Tax collections to fund much in the way of amelioration of the adverse effects of climate change on Indonesia.

It should not be lost on any reader that there is considerable irony in the Government proposing a Carbon Tax to reduce greenhouse gas emissions when some of the largest emitters of greenhouse gasses in Indonesia are SOEs for which the Government is ultimately responsible.

The greatest obstacle to a Carbon Tax being implemented any time soon is probably the Government's inevitable concern that, during ongoing economic crisis in Indonesia, the cost impact of a Carbon Tax on vulnerable industries and individuals may make it politically unwise to pursue this initiative, at least until better economic times return. With the World Bank having recently downgraded Indonesia from an Upper Middle Income Economy to a Lower Middle Income Economy, it would perhaps be understandable if the Government's enthusiasm for economic reform is ebbing away. 

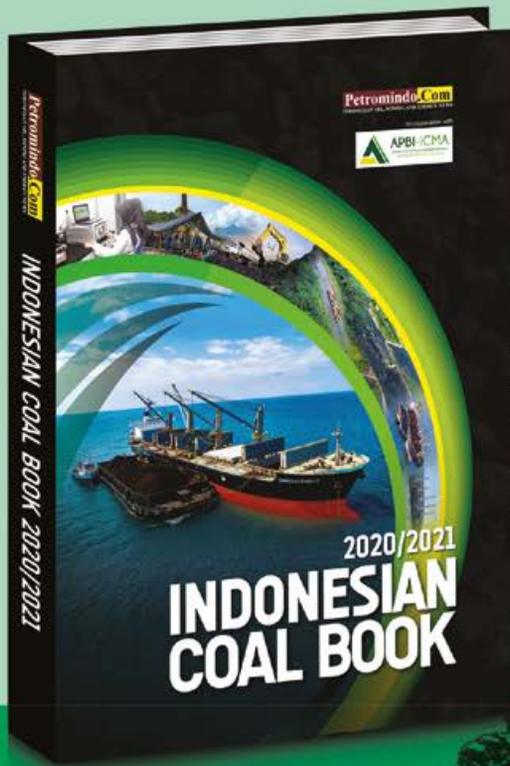
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This article was written by Bill Sullivan, Senior Foreign Counsel with Christian Teo & Partners and Senior Adviser to Stephenson Harwood LLP. Christian Teo & Partners is a Jakarta based, Indonesian law firm and a leader in Indonesian energy, infrastructure and mining law and regulatory practice. Christian Teo & Partners operates in close association with international law firm Stephenson Harwood LLP which has nine offices across Asia, Europe and the Middle East: Dubai, Hong Kong, London, Paris, Piraeus, Seoul, Shanghai, Singapore and Yangon.

9th

EDITION

INDONESIAN COAL BOOK 2020/2021



IN OUR STORES NOW

Description

"Indonesian Coal Book 2020/2021", which is the ninth edition of the Indonesian Coal Book series, is the most comprehensive source of information on coal mining industry in Indonesia. It is an invaluable source of information on more than 300 coal mining companies operating in Indonesia, including maps of their locations, mining methods, production activities and coal specification and business plans. It also contains information about the existing common-user coal terminals, statistical data on the sector and directories of industry and government contacts.

This full color book provides a comprehensive and easy-to-use reference containing detailed and up-to-date information on Indonesian coal industry. This edition is definitely a must-buy reference book for not only business executives, prospective coal investors, players, but also research centers and consultants.

Content

- Profiles of more than 300 coal mining companies
- Profiles of services companies, Government, Provincial and Organization contacts
- Indonesian coal statistics: Coal Resources/Reserves; Production; Domestic Sales; Export;
- Updated list of PKP2Bs; coal IUPs 'clean and clear' (concession holder, location, area, status)

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Cokal secures funding for met coal project

ASX-listed metallurgical coal miner Cokal Limited announced that its 60% owned subsidiary PT Bumi Barito Mineral (BBM), has executed two binding agreements, a Capital Participation Agreement and International Coal Marketing Agreement, to fund the development of the BBM Project in Central Kalimantan.

The binding Capital Participation Agreement is for the provision of US\$20m in funding and has been entered into with International Commodity Trade Pte Ltd (ICT). ICT is a company incorporated in Singapore whose main business is investment and trading in coal.

The binding International Coal Marketing Agreement also entered into with ICT will enable BBM to market its coal to the international market and will also assist BBM in financing its coal stockpile at the river jetty. In return, BBM agrees to provide international coal exclusive marketing rights to ICT for the marketing of BBM's coal for its overseas markets.

Minimum 8 million tons of coal is to be marketed by ICT over 8 years, with first delivery expected in early 2022. Prior to the beginning of each calendar year, the parties will agree the volume of coal to be marketed that year.

The Company's Chairman, Domenic Martino said "this is a very exciting time for Cokal, with the funding of the project and additional working capital support placing the Company in a tremendous position to commence mining and production at BBM. This funding fully funds the BBM Project and allows the Company to progress into production and generate cash flows from BBM."

Upon entering into the agreements with ICT, BBM has given a notice of immediate termination to China



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Railway 21st Bureau Group International engineering Co.,Ltd and Beijing Fidick International Trade Co.Ltd. in respect of a previous funding agreement.

BBM is Cokal's most advanced project – a high quality metallurgical coal project. Cokal is focused on the near-term development of BBM and the debt facility will provide the capital required for mine construction through to production.

BBM is located in the Central Kalimantan with an area of 14,980 ha. Delivering the BBM Coking Coal Project will allow Cokal to assess the next phase of its growth strategy with an aim to become a multi-project coal producer focussed on the Central Kalimantan region, the company said.

ICT is controlled by a party that also controls Aahana Mineral Resources Sdn Bhd, a substantial shareholder of Cokal holding 19.97% of the Company's shares, who has one representative on the Company's Board of Directors.

ICT is a company incorporated in Singapore whose main business is in investment and trading in coal. The largest shareholder of ICT is Eddie Chin Wai Fong, an ex-CEO and a founding member

of PT Bayan Resources Tbk, listed on the Indonesia Stock Exchange (IDX).

PKN to ramp up production in H2

North Kalimantan coal miner PT Pesona Kathulistiwa Nusantara (PKN) is seeking to accelerate production in the second half of this year to realize higher full-year output target of 3.7 million tons.

PKN is looking to produce 2 million tons of coal in the second half of this year. "As of the first semester, the company produced about 1.7 million tons," Tria Suprajani, business development director of PKN told *Petromindo.Com*.

Data from the company shows that of the 1.7 million tons output, about one million tons were exported, while the remainder was allocated for domestic market.

PKN initially planned coal production of 3.5 million tons this year from its Kelubir mine and Sekayan mine. The company then proposed to the Ministry of Energy and Mineral Resources to revise up the 2021 production target to 3.7 million tons amid rising trend in the price of the commodity. 

BMBDB to boost coal production in second half

Coal mining company PT Binuang Mitra Bersama Blok Dua (BMBDB) plans to produce up to eight million tons in the second semester, far higher compared to the realized 4.5 million tons in the first half.

An industry source said that the government has approved the revision of the company's 2021 work and budget plan (RKAB) with higher coal output target of 12 million tons compared to the initial plan of about 8 million tons.

"The company is now in recovery of coal production in the second half. As we know the company has slowed down production in the first semester due to (bad) weather condition,

including massive flood," the source told *Petromindo.Com* on Tuesday.

BMBDB, which is part of Mitra Cakrawala International group, operates a 2,280-hectare mine in Bungur District, South Kalimantan Province. The company produces coal with GAR of 4,200 – 4,000 kcal/kg.

The source said that the company exports coal to among others China, India, Korea and the Philippines. The company's website said that coal production reached 8.5 million tons in 2020, compared to 7.2 million tons in the previous year.

The company has also started supplying coal of GAR 4,200 kcal/kg to a coal-fired power plant belonging to a nickel smelting company located at the

Indonesia Morowali Industrial Park (IMIP) in Morowali, Central Sulawesi Province.

BMBDB plans to supply between 800,000 and 850,000 tons of coal until December.

"The first shipment will be made this month. It is expected to supply up to 850,000 tons of coal in the second semester," the source said.

PSG delivers higher OB removal, coal getting volume

Coal mining contractor PT Prima Sarana Gemilang (PSG), a unit of the diversified Indomobil Group, saw higher overburden (OB) removal and coal-getting volumes in the first half of 2021.

The company removed 6.19 million bank cubic meters (bcm) of OB in the first half of 2021 or about 25 percent higher than 4.89 million bcm in the same previous period.

"The coal-getting (volume) was 1.5 million tons in the first half of 2021 while the realization was 1.25 million tons in the first half of last year," Bambang Prijono, CEO of PSG said to *Petromindo.Com*.

PSG is expected to double its OB removal volume this year to 20 million bcm from 10 million bcm in 2020. The company has also set higher coal production volume target of 4 million tons in 2021, compared to 2.4 million tons in 2020.

PSG currently provides mining services for two coal miners namely PT Nusantara Berau Coal, a unit of Ithaca Resources Group, in East Kalimantan, and PT Pada Idi in Barito Utara Regency, Central Kalimantan Province.

Bambang mentioned that there is requirement from customers to increase the production volume in the second half of this year. "But the deployment of heavy equipment is expected to be late from the factory, so we will start increasing the production volume in September," he said. 





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Mifa Bersaudara's H1 coal sales increases 16 percent

PT Mifa Bersaudara, a coal mining company in Aceh Province, sold 3.97 million tons of coal in the first half of 2021, or 16 percent increase compared to the first half of 2020. The positive sales performance was supported by among others higher demand from domestic market.

"The coal sales in the first half was 3.97 million tons or 16 percent increase compared to the first half of 2020," Ricky Nelson, President Director of Mifa Bersaudara, said to *Petromindo.Com*.

Ricky mentioned that the weather condition in the first half of 2021 was a bit more extreme compared to the previous same period last year. However, he stated that the coal export, mainly to India, increased supported by more vessel arrivals.

In addition, Mifa Bersaudara, which an indirect subsidiary of IDX-listed mining company PT ABM Investama Tbk, also recorded higher domestic sales in the first half of 2021 with greater coal supply for Nagan Raya 1 and Nagan Raya 2 coal-fired power plants in the province.

"The demand from Nagan Raya 1 and 2 increased since coal supply from Kalimantan declined. We normally supplied about 5 percent of the total coal-fired power plant's demand. Last month, we supplied 50 percent of the total demand or about 30,000 tons," he said.

High coal price to remain firm in Q3

Coal miner and trader see that the current high price of coal would remain in place at least until August as demand would remain high following the economic recovery of coal main destination countries of China, Taiwan, Korea and also Japan.

"I predict the high price will stay stable until August," Ramli Ahmad, Director of trading company PT Virema Impex told *Petromindo.Com* in an interview. He said that despite the slight correction in some bid and offer activities of \$1 to \$2 per ton in recent days, there would be no major decrease in price in the third quarter.

He said that the main driver of coal demand and price would remain China – Indonesia's largest coal export market.

"If China stops buying coal, the price will drop severely. Otherwise, when China buys coal, the price will increase sharply," he said.

Indonesia's coal reference price (or HBA) increased to US\$115.35 per ton in July, compared to \$100.33 per ton in June, in line with rising trend in the price of the commodity in the global market. The July HBA is a new record, the highest since December 2011 at \$112.67 per ton.

The HBA is determined based on the average of four international coal price indexes, namely the Indonesia Coal Index (ICI), Newcastle Export Index (NEX), Globalcoal Newcastle Index (GCNC), and Platt's 5900 in the previous month.

Biju N. G., President Director of South Kalimantan miner NG Group said that coal price would remain at good level after October following the winter season in some countries including China and India.

"I see the high price could be until next year. After October, demand would also remain high due to the winter season where China and India would need more coal," he told *Petromindo.Com*. 



2nd **INDONESIAN MINERALS BOOK 2019/2020**

The mining industry has been one of the key sectors supporting Indonesia's economic growth for a number of years. The sector makes a significant contribution to Indonesian GDP, exports, government revenues, employment, and perhaps most importantly, the economic development of the remote regions where mining operations are located. The country has long been a major producer of minerals for international markets.

According to the Central Statistics Agency (BPS), the mining industry accounted for approximately 8% of Indonesia's Gross Domestic Product (GDP) in 2018 of Rp 14,837.4 trillion, with minerals and related products contributing 16.25% of the country's total exports of about US\$180.22 billion.

"Indonesian Minerals Book 2019/2020" is the most comprehensive source of information on minerals mining industry in Indonesia. It is an invaluable source of information on minerals mining companies operating in Indonesia, including maps of their locations, mining methods, production activities, product specification and business plans. It also contains information about regulatory frame work in the industry, statistical data, and directories of industry and government contacts.

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Indian firms could not afford buying coal at current price

Many Indian companies could no longer afford buying imported coal due to the soaring price although India's economy has started to recover after the recent Covid-19 lockdown.

"We've temporarily shut our power plant because it is very expensive to buy coal at this current price...It (coal price) is unaffordable," Prashant K. Goyal, Executive Director of Bhadreshwar Vidyut Pvt. Ltd. told *Petromindo.Com*.

He said that not only from Indonesia, coal prices from South Africa and Australia were also too high for the Indian market. "Now, in India, only people who really need it want to buy coal. No power plant can make money at the current price," he said.

Indonesia's coal reference price (or HBA) rose to US\$115.35 per ton in July, compared to \$100.33 per ton in June, in line with rising trend in the price of the commodity in the global market. The July HBA is a new record, the highest since December 2011 at \$112.67 per ton.

Ramli Ahmad, Director at trading company, PT Virema Impex concurred that the current coal price has hit a new high in the world's coal history. "We've never seen such a high price of coal. There is no history that buyers have to buy coal with calorific value of 4,200 kcal/kg at the price of higher than US\$60 per ton," he said.

"The big question now is how long buyers could survive with the current high price."

Ramli added that Indian coal buyers are known to be price sensitive. "India is very price sensitive. They calculate in very detail such as freight cost," he said.

He, however, said that Indonesian coal would still be needed in India since only Indonesia produces coal with CV of 4,200 kcal/kg aimed for coal-fired power plants requiring low sulphur and low ash content.

A previous monthly data from commodity trader IMAN Resources showed that India imported 7.30 million tons of thermal coal in May of this year, down 26.11 percent from 9.89 million tons in April among others due to the entering

of coal from Australia.

Jusnan Ruslan, Director of IDX-listed coal firm PT Indo Tambangraya Megah Tbk in a previous webinar organized by Petromindo and *CoalAsia Magazine* also raised concern of the price movement, saying that the current price is too high for consumers to purchase coal.

Batubara Mandiri supplies coal for domestic market

Coal trading and logistics company, PT Batubara Mandiri said that the company would trade coal between 1 million tons and 1.5 million tons this year mostly for domestic market.

Baharuddin, President Director of PT Batubara Mandiri told *Petromindo.Com* on Monday that as of the first semester, the company had secured contracts to supply about 500,000 tons of coal for domestic market. "We believe to meet the remaining volume target in the second semester," he said.

He said that the coal among others is supplied to PT PLN Batubara, the coal arm of state-owned electricity firm PT PLN. 

Government Regulation No. 81/2019 regarding the Types and Tariffs of the Non-Tax State Revenues (PNBP) applicable to the Ministry of Energy and Mineral Resources

Peraturan Pemerintah No. 81 Tahun 2019 tentang Jenis dan Tarif atas Jenis Penerimaan Negara Bukan Pajak yang Berlaku pada Kementerian Energi dan Sumber Daya Mineral

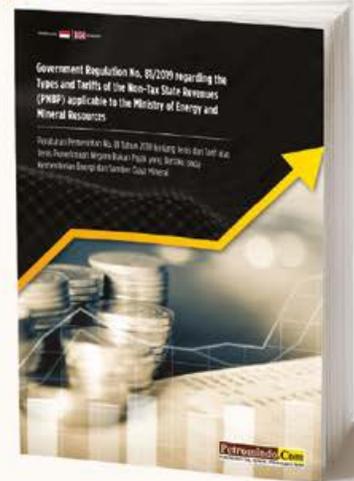
In order to implement the 2018 Law No. 9 on Non-Tax State Revenue (PNBP), the Government has recently issued Government Regulation No. 81/2019 (PP 81) regarding the types and tariffs of PNBP applicable to the Ministry of Energy and Mineral Resources (Oil & Gas, Mineral and Coal, Electricity, New and Renewable Energy, Geological Agency, Human Resource Development Agency (BPSDM), and Research & Development Agency). This new regulation replaces Government Regulation No. 9/2012.

PNBP are all Government receipts received in the form of revenues from natural resources, service provided by the relevant government divisions or agencies and revenues from Public Service Agency (BLU).

This publication is aimed at disseminating information regarding the new regulation to international community, who need to know them in English as well as for investors wishing to get involved in Indonesian energy and mining related industries. The narrative is presented in dual language with Bahasa Indonesia and English versions appearing side-by-side on each page.

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**New
Release**



Realized reclamation areas still far below target

Realized reclamation of ex-mining areas reached only 1,079 hectares in the first six months of this year, compared to overall target of 7,050 hectares in 2021, according to a senior official at the Ministry of Energy and Mineral Resources.

Director of Technical and Environment of Mineral and Coal at the ministry's Directorate General of Mineral and Coal, Lana Saria told *Petromindo.Com*, however, that this year's achievement was higher compared to 921 hectares of realized reclamation areas in the first semester in 2020 as the government has stepped up supervision for miners to comply the target.

"The priority in achieving the target of 7,050 hectares (in 2021) is by stepping up supervision and compliance of miners in reporting reclamation activities," she said.

She added that the office would also improve the use of digital application called Integrated Engineering and Environmental Reporting System (MINERS) to help ease miners in reporting the reclamation activities.

The government has repeatedly encouraged miners to develop ex-mining areas, such as voids, into productive areas such as for water tourism, fresh water resources and aquacultures. Mining companies may also utilize post-mining areas for renewable energy development, such as palm oil plantation, photovoltaic and biomass.

The government previously said that reclamation activities by mining companies may be included as one of considerations in the approval of the Budget and Work Plan (RKAB).

The Mining Law No 3/2020 Article 99 obliges mining permit holders to conduct proper balance between operating mining areas and reclamation areas. The law



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stipulates punishment for miners which are unable to comply with environmental regulations, including reclamation obligation, post-mining activities and payment of reclamation guarantee fund. These recalcitrant miners will be subject to criminal sentence of 5 years in jail and a fine of up to Rp100 billion.

Ministry strengthens mining supervision through use of technology

The Ministry of Energy and Mineral Resources (ESDM) continues to strengthen supervision of mineral and coal mining activities in Indonesia through the use of a combination of machine learning and artificial intelligence technologies in image processing and geo datasets.

"We will continue to carry out integrated supervision using a combination of digital media so that improvements can be made immediately," said Director of Coal Business Development at the ministry Sujatmiko in a statement.

He said the optimization of this technology is expected to be able to provide greater benefits to mining activities and increase the contribution of mineral and coal in advancing the national economy.

The country's coal resources and reserves which currently reach 143.7 billion tons and 38.8 billion tons are used by the government to respond to three key energy issues, namely energy security, energy affordability, and energy sustainability. "Although many say that coal is a dirty source of energy, in fact coal can be used as an energy source that is sufficient and affordable for the people and cares about the environment," said Sujatmiko.

The huge contribution of coal and mineral to the economy can be seen from its contribution to the 2020 Non-Tax State Revenue (or PNBP) of Rp 34.65 trillion and Rp 1.67 trillion. "Of course this is not a small amount of money for the national economy," said Sujatmiko.

In 2020, the country's coal production totaled 564 million tons, of which 138 million tons were used for domestic needs. "You can imagine that without coal, our electricity (tariff) would not be as cheap as it is today," said Sujatmiko.

In response to environmental issues, the government continues to encourage the application of technology through clean coal technology. "This certainly fulfills the mandate as a low carbon emission energy source," he said. ☐

BPAC plans flat monthly coal output

Coal miner PT Bima Putra Abadi Citranusa (BPAC), part of Bomba Group, is expected to produce about 200,000 tons per month in the second semester to meet full-year output target of 2.5 million tons from its mining site in Lahat Regency, South Sumatra Province.

The company started operation in November of last year.

“We expect coal production would be flat at about 200,000 tons per month in the second semester to meet the approved RKAB,” Baharuddin, one of the company’s shareholder told *Petromindo.Com* on Monday. He is referring to the company’s work plan and budget.

He said that the company’s concession covers about 300 hectares with coal resources of about 20 million tons. The coal has calorific value of 5,000 kcal/kg.

According to him, most of the company’s coal output is supplied to an international trading company. He did not elaborate.

NG Group confident of meeting 2021 coal output target

South Kalimantan coal miners PT Kalimantan Pacific Coal and PT Pacific Energy Lestari – both subsidiaries of Indian firm NG Group of Companies – expected to realize half of this year’s coal production target in the second semester.

NG has targeted each of the companies to have 1 million tons of coal production this year.

“We’d produced almost half of the production target in the first semester from each mine. I am confident to achieve the rest of the target by December,” Biju NG, President Director of NG Group, told *Petromindo.Com*.

He, however, warned that the worsening covid-19 pandemic in Indonesia

could pose problems in meeting the coal production target if the condition could not be resolved quickly.

Kalimantan Pacific’s coal mine in Kota Baru, South Kalimantan, produces coal with CV of 6,700 kcal/kg with high ash content, while Pacific Energy Lestari produces coal with CV of 6,000-7,500 Kcal/kg. Most of the production of the two companies are exported to India.

Meanwhile, NG Group has acquired a coal mining firm in Indonesia’s Bengkulu Province which currently has monthly production of about 80,000 tons of coal with calorific value of 4,200 kcal/kg.

“We’ve already taken over one coal mining company in Bengkulu. The company is already in the production phase. Our production is now almost 80,000 tons per month,” Bhe said.

He said that the coal would be exported to India after transporting the coal via a 200 kilometers hauling road from the mine site to the nearby seaport.

NG previously planned to acquire a

5,000-ha coal mine in Jambi Province.

Bumi confirms total \$365m payment of Tranche A principal, coupon

IDX-listed PT Bumi Resources Tbk, Indonesia’s largest coal miner by output, confirmed Friday of having paid the 14th installment of US\$23.3 million by the respective facility agents on 9 July 2021 representing principal of US\$15.9 million and interest of US\$7.4 million for Tranche A, a debt restructuring instrument.

“With this 14th quarterly payment today, the company has now paid a total US\$365.0 million in cash consisting of Tranche A principal US\$211.7 million and interest of US\$153.3 million including accrued and back interest,” Bumi said in a statement.

The next quarterly payment for Tranche A is due on October 2021.

PIK Coupons from 11 April 2018 till 9 July 2021 on Tranches B and C are also being capitalized, the company said. 



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RMK Energy to start operation of coal loading station in August

PT RMK Energy, a coal logistics provider in South Sumatra Province, is expected to start the operation of its Gunung Megang coal loading station in August this year. The coal loading station will help facilitate coal transport via railway for RMK Energy's coal mining subsidiary PT Truba Bara Banyu Enim (TBBE) in the province's Muara Enim Regency.

"Gunung Megang coal loading station is in the construction stage and the physical construction progress is about 80 percent. It is expected to start operation in the middle of August," Tony Saputra, President Director of PT RMK Energy, said to *Petromindo.Com*.

Gunung Megang coal loading station will facilitate the transport of 500,000 tons of coal from TBBE this year and Tony added that the facility will also provide logistics solution for other coal producers in Muara Enim Regency.

TBBE will transport its coal via railway to RMK Energy's coal port in Kramasan, Palembang City. TBBE had in August 2020 secured a five-year railway transportation contract

with state-owned railway firm PT KAI (Persero) with total capacity of 14 million tons.

"TBBE mine is at the stage of preparation for production operation while waiting for heavy equipment mobilization by end of July," Tony said. As previously reported, TBBE will sell its coal to domestic market.

PTBA, Arutmin raise coal production target

A number of coal miners in the country are expected to raise their coal production target this year amid continuing rally in the price of the commodity.

IDX-listed coal miner PT Bukit Asam Tbk (PTBA), for instance, plans to revise up its coal output target this year to 30.7 million tons from the initial plan of 29.5 million tons, according to Corporate Secretary Apollonius Andwie.

"As stated by the Ministry of Energy and Mineral Resources, PTBA is one of the 10 large coal producers positively impacted by the coal price hike," he said as quoted by news portal *katadata.co.id*.

Another large coal miner, PT Arutmin Indonesia, a subsidiary of IDX-listed coal firm PT Bumi Resources Tbk, plans to raise this year's coal output target by 5-6

million tons from the initial plan of 21-22 million tons, said Arutmin's General Manager for Legal and External Affairs Ezra Sibarani.

Coal price has been on a rising trend since the late last year amid strong demand particularly from China and supply constraints. The Ministry of Energy and Mineral Resources has set the coal reference price (or HBA) for July at US\$115.35 per ton, the highest in the past decade since November 2011.

ESA maintains flat coal trading volume this year

South Sumatra-based coal trading company, PT Etika Sumber Alam (ESA) is expected to trade between 150,000 tons and 200,000 tons per month in the second semester of this year.

Baharuddin, Director of Etika Sumber Alam told *Petromindo.Com* on Monday that the coal trading volume of this year is targeted at about 2 million tons, equal with last year's target.

"We supply all the of coal to an international trader, Liannex Corporation," he said, adding that the coal would be then shipped to power plants and cement industries in Cambodia, Malaysia, Vietnam and China. 

Banpu ends new coal development in green shift: CEO

Thailand's biggest coal producer, Banpu, will no longer start any new coal developments as the company pivots toward green energy, asia.nikkei.com reported on Wednesday.

"We will only produce from our organic reserve that we have," said Banpu CEO Somruedee Chaimongkol in an interview with the news portal. "We have no plan to invest more in the coal mine assets."

Banpu will instead shift resources toward natural gas and renewable energy. The plan is to have low-carbon green businesses contribute more than half of overall income by 2025.

The shift away from coal comes as the fossil fuel faces a global backlash from industry and investors seeking to cut carbon dioxide emissions. Coal is often cited as one of the world's worst polluters, with the U.N. saying its transportation, storage and usage accounts for about 40 percent of greenhouse gas emissions.

Banpu, which operates mines in Indonesia and Australia, sold 38.8 million tons of coal last year, making it one of the largest producers in Southeast Asia. But the volume is just a fraction of the global leader, Coal India, which provided 600 million tons a year.

Banpu runs its coal mining business in Indonesia through subsidiary IDX-listed PT Indo Tambangraya Megah Tbk (ITMG), which has five coal mine units including PT Indominco Mandiri, PT

Trubaindo Coal Mining, PT Bharinto Ekatama, PT Kitadin and PT Jorong Barutama Greston.

Of the US\$2.2 billion in revenue Banpu earned in 2020, the coal business accounted for about 80 percent. The company's capital spending totaled roughly \$2 billion between 2016 and 2020. Somruedee did not disclose how much Banpu will invest in natural gas and renewables over the next five years.

At the same time, Somruedee stressed that Banpu has no plans to completely exit coal due to the strong demand in the Asia Pacific region. "We don't exit because we have responsibilities to our customers," she said.

Banpu exports coal to other Asian countries as well. Because Banpu will only produce coal from existing reserves, which will deplete every year, Somruedee projects that the share of green businesses in the portfolio will steadily climb.

Based on a five-year plan crafted in March, Banpu plans to have green businesses make up more than 50 percent of total earnings before interest, taxes, depreciation, and amortization by 2025. Last year, coal made up 60 percent of the EBITDA while natural gas and renewable energy contributed to 35 percent combined.

By 2025, the share of coal will decline to about 40 percent of EBITDA, said Somruedee. Natural gas would meanwhile boost its share of the income to between 20 percent and 25 percent while

renewables would account for another 15 percent to 20 percent, she added.

Gas-fired power plants would contribute 10 percent while energy technology, a category that includes power-storage batteries, would be at 5 percent. Since gas-fired plants cause less greenhouse emissions than coal plants, that would square the 50 percent-plus goal for green businesses.

Banpu sees the U.S. natural gas business as a segment that can offset coal. Starting with a 2016 investment into a shale gas venture, the company has accumulated interests in natural gas projects to the tune of over \$1 billion.

Although natural gas accounted for only 5 percent of revenue in 2020, the segment contributed 10 percent to the EBITDA that year, demonstrating that gas has a higher profit margin than coal.

The private-sector corporation was founded in 1983 to carry out a coal mining operation at Banpu Mine in northern Thailand as a government contractor. Banpu has ceased mining for coal in Thailand after reserves ran dry. All coal mining is now done in Indonesia and Australia.

Banpu's renewable energy business mostly entails solar farms in China and Japan. The earnings from both countries' operations only amounted to around \$27 million last year. The company plans to accelerate its shift into this sector by purchasing more renewable power plants already in operation.

In June, Banpu spent about \$75 million acquiring an Australian solar farm, lifting the total output capacity of the renewables business to 1.07 GW. The company plans to raise the green energy electricity output -- which includes gas-powered power plants -- to 6.1 GW by 2025.

Somruedee said Banpu is looking at acquisitions in green energy "because we can invest and we can get cash flow immediately and a lot of opportunities are available." 



CA | Khalsa



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Coal and natural gas will remain dominant source of energy in 2030

Despite plans to accelerate the use of renewables in electricity generation, coal and natural gas will remain significant source of energy in Indonesia’s power generation in 2030, according to the latest draft of the new 2021-2030 electricity procurement business plan (RUPTL) of state electricity firm PT PLN.

PLN Director for Mega Project and Renewable Energy, Wiluyo Kusdiharto explained during a webinar on Tuesday about the planned posture of Indonesia’s electricity sector in 2030.

In Wiluyo’s presentation, coal and gas power plants are projected to account for 73.2 GW, or 74.6 percent of the total installed power plant capacity of 98.2 GW in 2030, comprising of 43.6 GW of coal power plants and 29.6 GW of gas power plants.

In the time frame of 2021-2030, Wiluyo reiterated that PLN will not build new coal power plant or sign new power purchase agreement (PPA) on coal power plant project with independent power producer (IPP), but will remain committed to projects that are already under construction or contracted.

Indexim starts supplying coal to nickel smelters

East Kalimantan coal mining company, PT Indexim Coalindo has started supplying coal to coal-fired power plants of nickel smelting companies in Sulawesi.

A source told *Petromindo.Com* that Indexim has shipped significant volumes of coal to power plants of nickel giant Tsingshan at Indonesia Morowali Industrial Park (IMIP) in Morowali, Central Sulawesi, and Virtue Dragon Nickel Industry (VDNI)

at the Konawe industrial zone in Southeast Sulawesi Province.

The source, however, declined to elaborate the total coal volume for the smelters, saying, “Indexim plans to sell about seven million tons for domestic markets this year of which three million tons would be for (state power firm) PLN and IPPs (independent power producers).”

“We see the market share of coal to smelters will continue to increase, especially for Tsingshan and Virtue Dragon... Each of them could absorb huge of low rank coal up to 20 million tons per year,” the source said.

Indexim operates coal mines in Kutai Timur Regency, East Kalimantan Province with combined area of 25,000-ha coal mines and producing coal with calorific value of 4,200 kcal per kg.

PT Indexim Coalindo plans to produce up to 10.3 million tons in the second semester, higher than in the first-six month of this year of 6.1 million tons.

A source told *Petromindo.Com* that the government has approved the upward revision of Indexim’s 2021 work and budget plan (or RKAB) with a revised production plan this year of 16.4 million tons, compared to the initial plan of 13 million tons.

“We are optimistic to meet the revised target of 16.4 million tons this year,” the source said.

The source admitted that coal production activities in the first fourth months of this year were hampered by heavy rains. “But in the second semester, we have additional heavy equipment so we can boost the production to meet the RKAB (production) target,” the source said.

Indexim’s coal output last year reached 12.4 million tons.

Indexim operates 25,000-ha coal mines in Kutai Timur Regency, East Kalimantan Province, producing coal with calorific value of 4,200 kcal per kg. ■

DEWA's Q1 revenue down 10 percent

DX-listed coal mining contractor PT Darma Henwa Tbk (DEWA) saw revenue in the first quarter of this year declined by 10 percent to US\$73.8 million from \$82 million in the corresponding quarter of last year.

DEWA, however, said in a statement that net profit in the March 2021 quarter increased by 26.9 percent to US\$0.88 million compared to 0.69 million in the same quarter of last year due to efficiency measures and increase in own-fleet production capacity.

DEWA said that the slight decline in revenue was attributed to the company's decision to discontinue the uneconomical contract of sub-contractor at the Bengalon coal project in mid-2020.

But the company said that this decision has improved margins. Operating EBITDA jumped 2.5x times to \$16.6 million (vs \$6.6 million in Q1'20), Operating EBITDA margins expanded to 22.5% (vs 8.0% in Q1'20), and gross profit jumped 102.5x times to \$8.1 million (vs \$0.08 million in Q1'20).

Although there was loss of \$1.5 million due to the rupiah appreciation (vs gain of \$9.4 million in Q1'20), DEWA said this is a notional non-cash loss resulting from currency translation from rupiah (the company's operating currency) to US dollar (its reporting currency). The loss on foreign exchange impacted the reported operating profit of \$3.9 million (vs \$6.65 million in Q1'20).

In terms of operating results, DEWA said total volume of material moved by the company using its own equipment increased by 26.4 percent to 16.3 million bank cubic meters (vs 12.9 million bcm in Q1'20).

Meanwhile, the volumes done by DEWA sub-contractor fell sharply to 11.0 million bcm (vs 22.7 million bcm in Q1'20).

DEWA said total material moved

volumes decreased by 23.3 percent to 27.3 million bcm (vs 35.6 million bcm).

"This was the consequence of a conscious decision from management to discontinue a subcontractor in mid-2020 at our Bengalon project, since the contract was not economical. This decision directly improved margins despite falling production volumes and revenue, which is reflected in our financial performance," the company said.

DEWA said it aims to continue this trend and aim to do 100 percent of its volume in-house using its own equipment, within a time span of 2 years. It plans a refurbishment program to put more equipment to use and aims to fund it through a mix of internal accruals and external borrowing.

This year, the company expanded its work volumes in South Kalimantan region which are expected to be a growth driver in the coming quarters. The company invested in procuring additional mining equipment to deliver the expected volumes at these projects and achieve better financial performance in the second half of 2021.

DEWA said it continues to invest heavily into its refurbishment program, mainly at Satui project in South Kalimantan. It expects to see an increase in volume from this project in H2 of 2021, as the wake-up program adds more fleet in Q2/Q3 of 2021.

"We expanded our own fleet capacity through a mix of new equipment, and rebuild of older fleets. We see ourselves differentiating from our market by extending the life of existing equipment through recycle, rebuild and reuse, which is environment friendly and helps in our goal of sustainable mining. Quite apart from additional fleet capacity, we continue to strive to improve productivity through higher utilization of our equipment resulting in increased effective working hours. Our combined strategy of rebuilding equipment (capital efficiency) and higher operational performance (operational efficiency), will ensure delivery of exceptional returns to our shareholder and stakeholders through sustainable transformation," explained Prabhakaran Balasubramanian, the company's Vice President Director and CEO. 



CA | Khalisa

PTBA increases coal railway transport volume to Kertapati

IDX-listed coal mining company PT Bukit Asam Tbk (PTBA) has recently increased coal transport capacity via railway from its Tanjung Enim mine to Kertapati Port in Palembang, South Sumatra Province.

PTBA increases the coal transport capacity from 5 million tons per year to 7 million tons per year.

“The (transport) volume has increased from Tanjung Enim to Kertapati port,” Apollonius Andwie C., Corporate Secretary of PTBA, said to *Petromindo.Com*.

PTBA had in the first quarter of last year increased the coal railway transport volume to Kertapati port from 3.7 million tons to 5 million tons. The company has achieved the indicated target to increase the coal railway transport capacity up to 7 million tons per year in the third quarter of 2021.

The company plans to keep increasing the coal railway transport both in the northern and southern corridors. In the northern corridor, PTBA and state-owned railway operator PT KAI (Persero) plan to develop Kramasan port with total capacity of 20 million tons per year and is expected

to start operation in 2024.

In the southern corridor, PTBA is seeking to expand the existing coal railway transport capacity to Tarahan Port, Lampung Province, to accommodate up to 25 million tons of coal per year. The company also plans to develop Tarahan-2 port to accommodate 20 million tons per year and is expected to start operation in 2025.

Buma secures \$350m loan

IDX-listed mining contractor PT Delta Dunia Makmur Tbk. Announced on Monday that its subsidiary, PT Bukit Makmur Mandiri Utama (BUMA), has signed a new bank loan facility with PT Bank Mandiri Tbk amounting to US\$350 million.

The loan maintains an interest rate of LIBOR + 3% p.a. The term of the loan is 4.75 years. Mandiri Facility will be utilized to support the organic and inorganic growth of BUMA, it said.

BUMA has recently signed a contract expansion with PT Indonesia Pratama, a subsidiary of IDX-listed coal miner PT Bayan Resources Tbk., commencing in 2022. BUMA has also signed a new contract with coal miner PT Adaro Indonesia, a

subsidiary of IDX-listed firm PT Adaro Energy Tbk. commencing this year.

The Mandiri Facility shall serve to support the successful execution of these significant new volumes, it said.

The Mandiri Facility also provides increased headroom and flexibility for BUMA to explore and seize growth opportunities in the market, it added.

Chinese firms to build \$830m coking plant in Indonesia

Chinese Integrated coke, coking chemicals and refined chemicals producer China Risun Group Limited announced on Friday the establishment of a joint venture to invest in and construct a coking project with an annual volume of 4.7 million tonnes in Central Sulawesi.

The Group is expanding its business overseas for the first time.

The company's wholly-owned subsidiary Risun Investments, entered into the Joint Venture agreement with Tianjin Xintiengang and Stephanie Development to jointly establish De Tian Coking, which will invest in the construction of a coking project in Indonesia Morowali Industrial Park (IMIP)

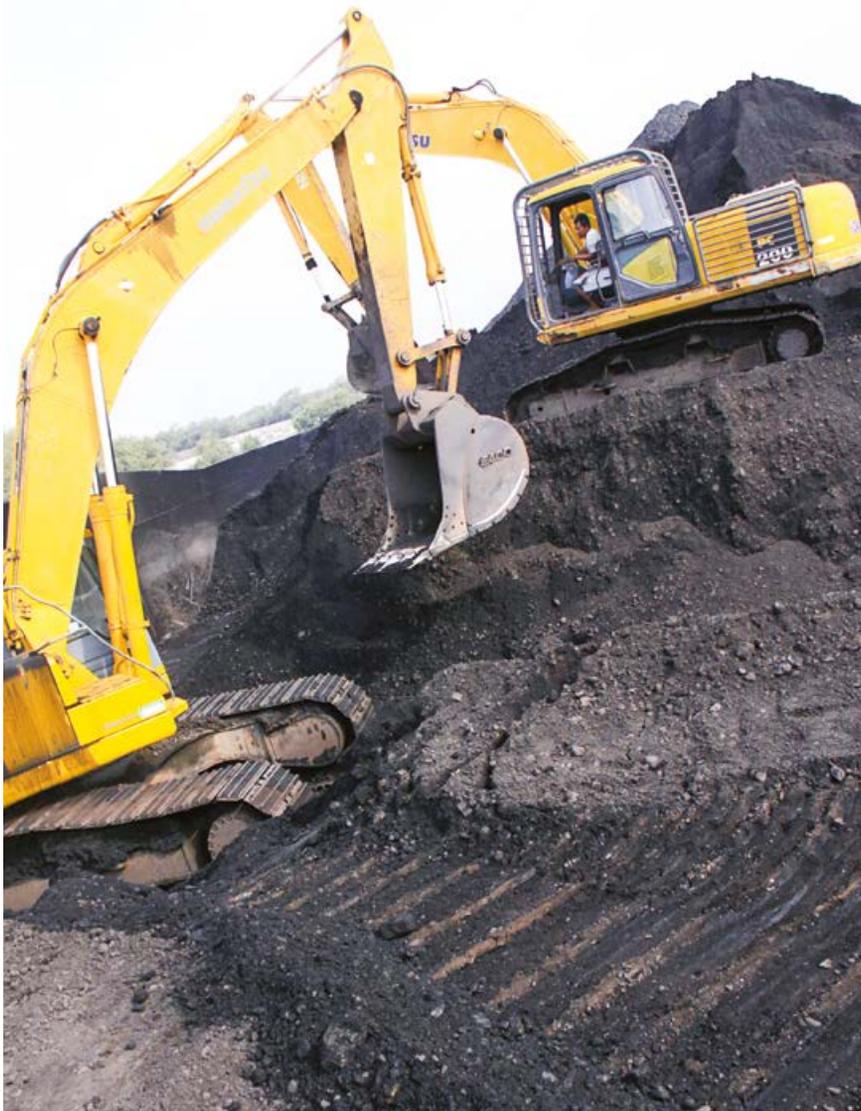
The project will have a total investment of approximately US\$830 million. Risun Investments will subscribe for \$59.52 million, representing 24% of the registered capital of the Joint Venture. In addition, Risun Investments may also provide shareholder loans in an amount up to \$285 million to De Tian Coking if it is not able to obtain external financing for the project.

According to the company, dozens of large-scale metal smelting enterprises have or will have business establishments in the park and it is expected that the demand for coke will be enormous in the future.

China Risun Group Limited is the world's largest independent producer and supplier of coke by volume in 2020, according to Frost & Sullivan. 



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Coal reference price surges to new record

The Ministry of Energy and Mineral Resources has set higher coal reference price (or HBA) for July at US\$115.35 per ton, compared to \$100.33 per ton in June, in line with rising trend in the price of the commodity in the global market.

The July HBA is a new record, the highest since December 2011 at \$112.67 per ton.

The HBA is determined based on the average of four international coal price indexes, namely the Indonesia Coal Index (ICI), Newcastle Export Index (NEX), Globalcoal Newcastle Index (GCNC), and Platt's 5900 in the

previous month.

Coal price has been on a rising trends since the start of this year, triggered by rising demand as key markets particularly China have started to recover from the impact of the pandemic.

Last week, the benchmark ICE Newcastle (Australia) was closed at \$134 per ton, providing a 5.45 percent weekly gain. The price has jumped by 22.78 percent in the past month.

After having been under pressure in most part of last year due to the Covid-19 pandemic, the HBA entered a rally period from October 2020 through February 2021, but weakened in March 2021, and resumed the rising trend since April.

Bumi president director passes away

President Director of IDX-listed coal miner PT Bumi Resources Tbk, Saptari Hoedaja, had passed away at the age of 62 in Jakarta on Sunday (July 4).

"All directors, commissioners, management and employees of PT Bumi Resources Tbk Group express deepest condolences on the passing of the President Director of Bumi, Saptari Hoedaja to Rahmatullah at the age of 62 on Sunday, July 04, 2021 at 08:41 WIB at MMC Hospital," Bumi said in a statement.

According to company website, Saptari assumed the top post at Bumi in 2001. He was also president director of Bumi's coal subsidiary PT Kaltim Prima Coal, president commissioner at IDX-listed upstream company PT Energi Mega Persada Tbk, and president commissioner of IDX-listed gold mining firm PT Bumi Resources Minerals Tbk.

RI's first-half coal output at 45.72% of full-year target

The country's coal production in the first six months ending June of this year reached 285.77 million tons, or representing 45.72 percent of the full-year target of 625 million tons, according to data from the Ministry of Energy and Mineral Resources.

Coal production in the first couple of months of this year was restrained by the heavy rain fall particularly in the Kalimantan region, but miners said they would ramp up starting in the second quarter.

Export in the first half of this year totaled 138.37 million tons, or 28.38 percent of the full-year target of 487.50 million tons.

Realized domestic market obligation (DMO) volume was 52.22 million tons, or 37.98 percent of the full-year target of 137.50 million tons. ■

Harum Energy estimates flat first-half coal output

IDX-listed mining company PT Harum Energy Tbk estimated that coal production in the first half of this year is estimated at 1.6 million tons, or flat compared to same period of last year.

“The production volume in the first half of 2021 is flat compared to first half of last year, but it increased compared to the second half of 2020,” Ray A. Gunara, President Director of Harum Energy, said to *Petromindo.Com* on Thursday. In the second half of 2020, Harum Energy produced 1.2 million tons of coal.

Harum plans to increase coal production this year by 25 percent to 3.5 million tons from 2.8 million tons produced last year. Ray said in June the company aims to increase export to China this year, to account for 50 percent of the company’s total sales volume, compared to 48 percent last year.

Harum Energy produces coal through its East Kalimantan subsidiaries, namely PT Mahakam Sumber Jaya (MSJ), PT Karya Usaha Pertiwi (KUP) and PT Santan Batubara (SB). The three adjacent concessions utilize the same facilities, including the Separi coal port that is located on the banks of the Mahakam River.

Harum Energy previously projected that KUP had a slow start to the year, but the outlook for Q2 was more promising. SB mine and PT Tambang Batubara Harum (TBH) projects remain in care and maintenance, with the latter remaining suspended.

Physical work of E. Kalimantan coal to methanol project starts

Physical work for the construction of an estimated US\$2 billion plant that will process coal into methanol in Bengalon, East Kalimantan Province, has started since late June.



CA | Boim

Rio Supin, GM for Business Development and Risk Management at coal miner PT Kaltim Prima Coal (KPC), which is part of the diversified Bakrie Group, said at a recent webinar that required equipment from US-based Air Products and Chemical Inc have arrived at the site of the project, which is targeted to start operation by end of 2024.

The coal to methanol (CTM) project is owned by a consortium comprising of PT Bakrie Capital Indonesia, PT Itacha Resources, and Air Products. The US firm will provide the required technology, and develop and operate the plant, while the Indonesian firms will provide the required coal and off-take the output.

Rio said that the methanol plant will have installed production capacity of 1.8 million tons of methanol per year, of which 1.2 million tons will be supplied to domestic market particularly to meet the requirement of fertilizer industry, and the remaining 0.6 million tons to be exported to Japan, China, and South Korea.

In addition to methanol, the plant will also produce 8,000 tons per annum of sulfur as side product.

The CTM project will require 6.5 million tons of coal per year, of which

4.47 million tons as feedstock, and another 2.03 million tons for power generation. The coal will be supplied by KPC and Itacha.

ITMG coal subsidiary to start production in 4Q

PT Graha Panca Karsa (GPK), an indirect coal mining subsidiary of IDX-listed PT Indo Tambangraya Megah Tbk (ITMG), plans to start production in the fourth quarter of this year.

The company will produce 250,000 tons of low rank coal with quality of 3,900 Kcal/kg (GAR) this year.

“GPK plans to start production in the fourth quarter 2021 and the production target in 2021 is 250,000 tons,” Yulius Gozali, ITMG’s Director of Corporate Communication and Investor Relations, said to *Petromindo.Com* on Thursday.

GPK, according to Yulius, will blend its coal production with ITMG’s coal products from other mining concessions. “The coal will be sold to both domestic and export markets,” he said.

GPK is an IUP license holder in East Kalimantan Province with 117 million tons of coal resources and located near ITMG’s Bunyut coal port. ☐

Bumi reports lower Q1 revenue

IDX-listed coal miner PT Bumi Resources Tbk reported lower revenue in the first quarter of this year due to declining production, but expects performance to improve this year on rising trend in the price of the commodity despite the lingering pandemic.

Bumi said that revenue in the March quarter of this year declined slightly by 3 percent to US\$1.04 billion from \$1.07 billion in the corresponding quarter of last year.

Coal production fell by 7 percent to 19.3 million tons in the first quarter of this year from 20.8 MT in the same period in 2020, but the average selling price increased by 8 percent from US\$49.0 per ton in Q1'2020 to \$53.1 per ton in Q1'2021, thus limiting the revenue decline.

This increase is in line with the recovery of global coal prices and the current bullish trend triggered by supply imbalances and has brought coal prices to a 10-year high, Bumi said.

“Bumi has tried its best to maintain

near normalcy of production according to the health and safety of all workers the highest priority amidst the Covid-19 pandemic,” the company said.

The higher average selling price coupled with a 12 percent drop in cost of revenue allowed the company to double operating income to \$145.5 million from \$72.3 million in Q1'2020 and operating margin to 14 percent compared to 6.7 percent in Q1'2020.

Net loss attributable to owners of parent entity in the first quarter of this year stood at \$11.7 million, shrinking from loss of \$23.4 million in the corresponding quarter of last year. The company said \$341.7 million of Tranche A principal and interest has been settled to date.

“With the improvement in the coal sector, and the upward trend of coal prices that still continue on the second quarter of 2021, the company hopes to significantly improve its performance in 2021, even though the Covid- 19 pandemic in Indonesia is still affecting economic recovery,” Bumi said.

The company has set 2021 production

guideline of 85-89 million tons, and average forecast price of \$53-\$56 per ton.

TBS Energi secures \$120m loan

IDX-listed energy firm PT TBS Energi Utama Tbk reported that it has signed a US\$120 million loan deal with PT Bank Mandiri Tbk as Mandated Lead Arranger, Escrow Agent, Facility Agent and Security Agent.

The company signed the loan agreement with its subsidiaries PT Indomining, PT Trisensa Mineral Utama, PT Toba Bumi Energi, PT Toba Bara Energi and PT Batu Hitam Perkasa.

The loan will have tenor of five years and the proceeds will be used for repayment of syndicated bank loans of the company, financing fees and general corporate purposes.

TBS operates three coal mines in Kalimantan and two coal-fired power plants in Sulawesi. The company also owns a 5 percent stake in Paiton Energy Company, the operator of Paiton 2,045 MW power plant in East Java. 





Buma secures mining contract from Adaro

IDX-listed mining contractor PT Delta Dunia Makmur Tbk. Announced on Wednesday that its subsidiary, PT Bukit Makmur Mandiri Utama (BUMA), has entered into an agreement for the provision of mining services contracts with PT Adaro Indonesia (Adaro), in relation to its Tutupan Mine operation.

The mining services contracts include services for overburden removal and coal extraction. Tutupan is a project located in Tabalong Districts, South Kalimantan and Barito Selatan Districts, Central Kalimantan.

The term of the contract is until December 2025 with a total contracted volume of over 234 million bcm of overburden removal and over 44 million tonnes of coal to be extracted. Average annual production is expected to be within the range of 30-70 million bcm of overburden removal and 5.0–12.0 million tonnes of coal. The company did not disclose the value of the contract.

“Adaro is a long time customer of BUMA. The new contract reflects continued trust and is expected to

further strengthen the relationship between the two parties going forward. BUMA continues to explore opportunities and pursue discussions with both existing and new potential customers for new contracts. BUMA remains committed to optimize the utilization of its assets and resources, prudently manage its working capital and investments, and maintain a sustainable debt structure, in order to deliver results to its stakeholders,” the company said.

Adaro Indonesia, which is one of the largest coal mines in Indonesia, is a unit of IDX-listed energy firm PT Adaro Energy Tbk.

Dian Swastatika inks new loan facility deal

IDX-listed energy and infrastructure company PT Dian Swastatika Sentosa Tbk (DSSA) said it has on June 29, 2021, signed a loan facility agreement with PT Bank Mandiri (Persero) Tbk with a limit up to US\$50 million.

The loan facility carries a tenor of 12 months. The loan facility is secured, among others, by the company’s assets, the company said in a statement.

It said the loan will be used to support

the company’s operational activities.

As a consequence of the new loan facility, the company’s debt-to-equity ratio increases by around 2.8 percent.

Dian Swastatika owns and operates a number of power plants, generated by coal and gas. It also owns coal mining firms through its subsidiaries.

BOSS scouting for partner to resume coal production

IDX-listed coal mining firm PT Borneo Olah Sarana Sukses Tbk (BOSS) is scouting for strategic partners that can provide funding to resume coal production at its two high CV mining concessions in East Kalimantan.

According to a presentation filed with the IDX, the company estimated capex of US\$ 7-9 million to produce coal from the two concessions. The company is open for equity or debt financing, it said without giving further detail about the planned production figure.

BOSS operates two mines with production status. PT Pratama Bersama is located in Muara Pahau, Kutai Barat regency. According to the company’s website, the mine can potentially produce 30,000-100,000 tonnes of coal with a CV of 6,400 kcal/kg GAR. The Supreme Court has earlier rejected a bankruptcy lawsuit filed by a creditor of Pratama Bersama, paving the way for BOSS to resume coal production from the mine. According to the company, the mine has proven reserves of 8.8 million tonnes.

The second mine PT Bangun Olah Sarana Sukses is also located in Kutai Barat regency, covering 1,125 hectares of concession with coal CV of 6,400 kcal/kg GAR. According to the company, the mine can produce up to 100,000 tonnes per month.

The company also said it will appoint mining contractors to conduct mining operations in the two sites. 

UNDANG-UNDANG NOMOR 3 TAHUN 2020 TENTANG PERUBAHAN ATAS UNDANG-UNDANG NOMOR 4 TAHUN 2009 TENTANG PERTAMBANGAN MINERAL DAN BATUBARA

LAW NO. 3 OF 2020 REGARDING AMENDMENT OF LAW NO. 4 OF 2009 REGARDING MINERAL AND COAL MINING

President Joko Widodo has recently enacted the long-awaited new mining law, which is an amendment to Law No. 4 of 2009 regarding Mineral and Coal Mining, introducing significant changes to the mining sector and how the players operate in Indonesia.

Key points in the new Law No. 3 of 2020 regarding Amendment of Law No. 4 of 2009 Regarding Mineral and Coal Mining include: centralizing permit issuance, nationalizing resources, profit sharing with local administrations, guarantee on continued operations of Coal Contract of Work/CPK2B, expanding mining reserves, and developing downstream industries. This new law has been in force since June 10, 2020.

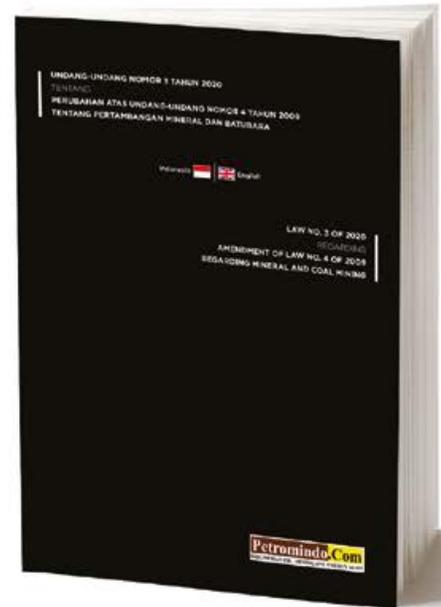
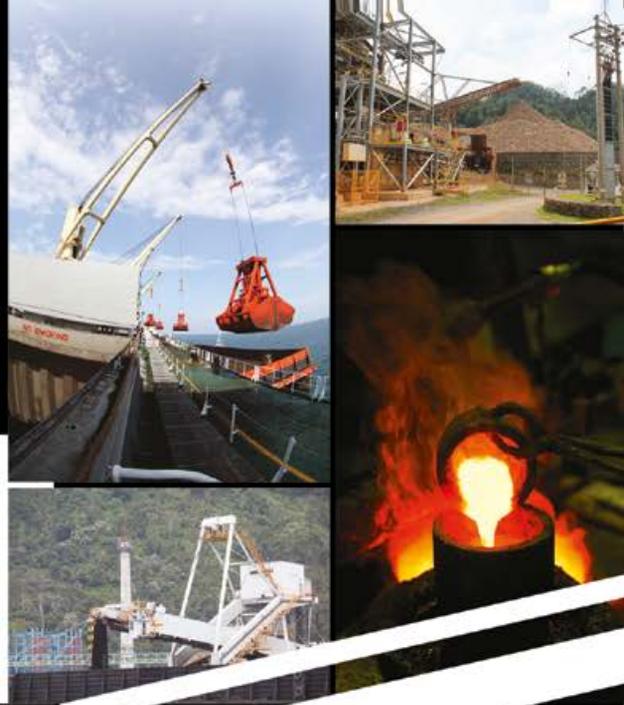
This publication is aimed at disseminating information regarding the new law to the international community, who needs to know them in English as well as for investors wishing to get involved in Indonesian energy and mining related industries. The narrative is presented in dual language with Bahasa Indonesia and English versions appearing side-by-side on each page.

Specifications : Law No. 3 Of 2020

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PUTTING A PRICE ON EMISSIONS:

Indonesian Government plans to impose carbon tax

Indonesia, together with other countries, has submitted to the United Nations Framework Convention on Climate Change (UNFCCC) its post-2020 climate pledges to reduce global emissions, known as intended nationally determined contributions. Indonesia has signed the Paris Agreement and ratified it through Law No. 16 of 2016. Following this action, Indonesia submitted its nationally determined contributions (NDC) in 2016, sealing its voluntary pledge to reduce emissions by 29% to 41% by 2030.

To help achieve this emissions reduction target, the Government of Indonesia (GOI) is in the process of drafting a more progressive emissions reduction scheme under a draft Presidential Regulation on Instruments of Carbon Economic Value for NDC (Carbon Economic Value Bill). The proposed scheme would regulate the carbon trade, provide payments based on performance in reducing greenhouse gas emissions, and impose a levy on carbon emissions. The Carbon Economic Value Bill is in the process of being finalized and is expected to be enacted this year.

The GOI also is pursuing an amendment of Law No. 6 of 1983 on the General Provisions and Taxation Procedures (Tax Law) that would include a new carbon tax scheme. This proposed amendment would be the fifth amendment to the Tax Law (Tax Bill). The Tax Bill is currently registered with the House of Representatives as one of the 33 bills included in the priority national legislation program. Once enacted, the Tax Bill would become the legal basis for the government to impose the levy on greenhouse gas emissions outlined in the Carbon Economic Value Bill.

Proposed Carbon Tax

The concept of a carbon tax is not new. Approximately 29 countries worldwide have adopted a carbon tax scheme, ranging from less than US\$1 per ton of carbon dioxide equivalent (tCO₂e) in Poland and Ukraine to US\$137 per tCO₂e in Sweden. Under Indonesia's Tax Bill (Article 44G), carbon emissions having a negative impact on the environment will be subject to a minimum carbon tax of IDR 75 per kilogram of CO₂e or other equivalent measurement unit (equivalent to around US\$5.2 per tCO₂e).

The proposed carbon tax would be imposed on individuals or entities purchasing goods containing carbon and/or conducting activities that generate carbon emissions. The Tax Bill contains general carbon tax provisions, which include catch-all provisions to tax any goods or activities that cause environmental externalities, such as depletion of natural resources, environmental pollution, or environmental damage.

Goods containing carbon include, but are not limited to, fossil fuels that cause carbon emissions. Regulated activities would include those activities that produce carbon emissions in the energy and transportation, agriculture, forestry and

peat lands, industry, and waste treatment sectors. Indonesia's NDC identified these sectors as the five main sectors in terms of greenhouse gas emission contributions.

Further Regulation

The scope of the carbon tax is yet to be determined by the GOI. Details on the type of goods and activities that will be taxed, the applicable tax rate, and the calculation, payment, and reporting of the tax are expected to be further regulated in a Government Regulation and Ministry of Finance Regulation.

Impact on Business

If all five targeted sectors are taxed without any exemption, many businesses will be affected and will have to recalculate their strategies in response to a carbon tax that directly puts a price on greenhouse gas emissions. Businesses in carbon-intensive sectors such as coal-fired power plants, oil and mining, pulp and paper, cement, plastic, petrochemicals, and palm oil plantations, among others, will be the most heavily affected.

Responding to the proposed carbon tax, business players, in particular those in the coal and cement industries, have voiced their concerns through business



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associations. They have expressed concern that the carbon tax would place too high a burden on businesses. Business players have also questioned the carbon tax rate calculation.

Incentive to Lower Emissions

While many brown energy companies are concerned about the imposition of Indonesia's carbon tax scheme, there will be incentives provided for taxpayers to lower their greenhouse gas emissions by switching to more sustainable practices and utilizing cleaner fuels.

The carbon tax may also help generate more investment in the renewable energy sector, which would support the GOI's plan to have renewable energy account for at least 23% of the country's total energy mix by 2025. At the moment that goal seems far off. With minimum facilities and support given to the renewable energy sector, as of mid-2020 the share of renewable energy was 10.9% and coal-fired plants continue to dominate the supply of power in Indonesia.

The GOI's putting a price on greenhouse gas emissions could give

business players the momentum to generate more revenue from their sustainable operations. MedcoEnergi, one of the largest oil and gas companies in Indonesia, has a liquefied petroleum gas sister company that captures and processes associated gas that would otherwise have been released and created more greenhouse gases. This gas recovery and utilization project has enabled MedcoEnergi to generate profit through the issuance of Verified Carbon Units (VCUs) and the sale of carbon credits on the international voluntary carbon market.

As the government moves toward the enactment of the Carbon Economic Value Bill, which will regulate the carbon trade and provide payments based on performance, industries can explore these types of schemes to generate additional revenue streams.

Revenue Generation

At this juncture, based on the current Tax Bill, the revenue generated from the carbon tax in Indonesia would be allocated solely for the country's climate change mitigation and adaptation activities. This

differs from other countries with a carbon tax that allocate generated revenue to the general spending budget and programs such as education and health and lowering income and property taxes. The additional income generated by Indonesia's carbon tax scheme will be managed by the Environmental Fund Management Agency (Badan Pengelola Dana Lingkungan Hidup or BPD LH), an independent management fund formed by the government and tasked with accumulating, managing, and distributing funds for mitigation and adaptation actions.

As the Tax Bill winds its way toward enactment, business actors have the opportunity to provide input to the government on the scope and rate of the proposed carbon tax. Likewise, brown energy players can offer feedback on proposed incentives for implementing cleaner energy operations, to ensure all sustainable actions are rewarded. 



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RI's coal power plant emissions expected to rise

ASEAN Center for Energy (ACE) said that carbon emission from coal-fired power plants (CFPP) operating in Indonesia is projected to continue to rise through to 2040 due to increasing demand for electricity.

According to a report "ASEAN CO₂ Emissions from Coal-Fired Power Plants: A Baseline Study" which was officially launched, the emission from coal-fired power plants would reach 8,623 million tons in 2040.

The report said that from 2018 to 2020, there was a sharp reduction in the overall CO₂ emission factors due to a shift towards the use of more efficient USC (ultra-supercritical) technology in coal plants. "Despite a reduction in the overall emission factor of all CFPPs, emissions from the CFPPs in Indonesia are projected to rise between 2017 and 2040, reaching an accumulative amount of 8,623 Mt from 2005 to 2040 due to increasing demand for electricity," the report said.

Indonesia has all four types of CFPP technologies from sub-critical (SubC) to supercritical (SC), ultra-supercritical (USC) and Fluidized bed (FB) technologies. Based on the reported coal use by type in each CFPP technology, the lowest CO₂ emission factor of Indonesia was 794 g-CO₂/kWh, which corresponds to USC technologies with sub-bituminous coal. "The SubC and FB technologies fueled by lignite had the highest emission factors," the report said.

Govt prepares strategy to realize 2060 net zero emission

The government is currently preparing strategies to realize its target for the country to reach net zero emission in 2060, according to a senior official at the Ministry of Energy and

Mineral Resources.

Director of Geothermal at the ministry, Harris Yahya said to help realize the goal, in the first period of 2021-2025, the government will still be focusing on achieving the target for renewables to account for 23 percent of the country's energy mix by 2025, as well as reaching electrification ratio of 100 percent. As part of this plan, all power plant projects under the government 35 GW power plant development program, and the fast track program (FTP 1) of 6-7 GW must have already be operational.

"It is ascertained that there will be no more new fossil-based plant projects except for those which have been contracted or under construction," he said at a webinar on Friday.

For the period of 2026-2030,

the development of solar PV will be massively encouraged. Then users of four-wheeled electric vehicles are targeted to reach 2 million while for two-wheelers as many as 13 million. "In addition, the use of electric stoves is also encouraged, the target is up to 10 million. We plan to stop imports of oil and gas during this period," said Harris.

Furthermore, for the reduction of fossil energy, the use of Carbon Capture and Storage (CCS) and Carbon Capture, Utilization, and Storage (CCUS) technologies for fossil power plants, both gas and coal, has started to be encouraged.

"Then during 2041-2050, there will be utilization and development of nuclear power plants. In addition, fossil power plants will also begin to be retired naturally," he concluded. 



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Investment for domestic EV battery industry estimated at \$15.3b

Total investment for the development of domestic integrated EV battery industry with capacity of 140 GWh is estimated at US\$15.3 billion.

“This is a challenge in itself to be able to build it. We are currently conducting a detailed feasibility study, (and discussed) financing (aspect with) the two main potential investors. In 2025, we will start having battery (industry) with large scale in Indonesia,” said Toto Nugroho, President Director of PT Industri Baterai Indonesia, or Indonesia Battery Corporation (IBC), a state-owned company assigned to spearhead the development of domestic EV battery industry.

Toto, who was speaking at a webinar on Wednesday, said that construction of the first phase battery cell factory with capacity of 10 GWh is expected to start

in 2022. “In 2022, there will be one 10 GWh plant which will be a breakthrough to get a quick solution for battery production in Indonesia,” he said.

Toto explained that the huge investment is required for the development of the entire value chain of the industry including mining, smelting/refining, battery chemicals plant, battery cell plant, and recycling plant.

IBC has signed agreements with South Korea’s LG Chem Ltd and China’s CATL to develop EV battery industry in Indonesia, which holds the world’s largest nickel reserves, a key raw material for battery production.

According to Toto’s presentation, the investment requirement to develop mines to produce limonite and saprolite with capacity of 16Mt per year is estimated at \$160 million. Investment for developing RKEF smelter to produce NiSO₄ with capacity of 100 kt of Ni per year is \$1.38 billion. Another \$1.30 billion is required

for the development of HPAL smelter with capacity of 50 kt Ni per year.

Furthermore, to develop battery chemicals (precursor) with capacity of 270 kt per year will require investment of \$1.8 billion. Investment to develop cathode plant with capacity of 270 kt per year is estimated at \$3.83 billion. All of these facilities are targeted to start operations in 2024.

Investment requirement for the development battery cell plant with capacity of 140 GWh is estimated at \$6.73 billion, and another \$30 million for the recycling plant with capacity of 10 kt per year. The battery cell plant is targeted to start operations in 2025.

To develop the energy storage system (ESS) with capacity of 1.2 GWh, investment requirement is estimated at \$40 million.

Pertamina to build battery swap stations to serve half million motorcycles

State-owned oil and gas company PT Pertamina plans to develop battery swap stations, aiming to serve 500,000 electric motorcycles in Indonesia next year.

The plan was shown in a presentation made by Dannif Danusaputro, Chief Executive Officer of Pertamina NRE, at recent webinar. In order to achieve the target, Pertamina divides the plan into three phases where the first phase is a small scale trial with 25 electric motorcycles which has been completed. The second phase is pilot commercial serving 5,000 electric motorcycles, targeted to be completed in the third quarter of 2021, and the third phase of commercialization with 500,000 electric motorcycles in 2022.

Pertamina is also said to have signed an MOU with one of the biggest online transportation operators in Indonesia to launch the program. 

Coal and natural gas will remain dominant source of energy in 2030

Despite plans to accelerate the use of renewables in electricity generation, coal and natural gas will remain significant source of energy in Indonesia's power generation in 2030, according to the latest draft of the new 2021-2030 electricity procurement business plan (RUPTL) of state electricity firm PT PLN.

PLN Director for Mega Project and Renewable Energy, Wiluyo Kusdiharto explained during a webinar on Tuesday about the planned posture of Indonesia's

electricity sector in 2030.

In Wiluyo's presentation, coal and gas power plants are projected to account for 73.2 GW, or 74.6 percent of the total installed power plant capacity of 98.2 GW in 2030, comprising of 43.6 GW of coal power plants and 29.6 GW of gas power plants.

In the time frame of 2021-2030, Wiluyo reiterated that PLN will not build new coal power plant or sign new power purchase agreement (PPA) on coal power plant project with independent power producer (IPP), but will remain committed to projects that are already

under construction or contracted.

PLN sees exponential increase in EV charging stations

State-owned electricity firm PT PLN expects exponential increase in the number of EV battery charging stations (or also known here as SPKLU) in the country over the next few years as electric vehicle use expands.

PLN projected the number of SPKLU to jump to 2,465 units by 2025, mostly to be developed by private firms.

"We project the number of SPKLU can increase exponentially in 2022-2025 under the scheme of Privately Owned and Privately Operated (POPO) and Company Owned and Company Operated (COCO). To achieve the target (of 2,465 SPKLUs in 2025) 40 percent of them will be built by PLN and 60 percent by private partners," Hot Martua Bakara, Executive Vice President of Corporate Planning at PLN (Persero), said during a recent webinar.

At the moment, PLN has 24 SPKLUs located in main cities and plans to have 168 SPKLUs in total this year.

The government has assigned PLN to spearhead the development of SPKLUs in the country to help support the development of domestic EV industry and market.

The Ministry of Energy and Mineral Resources' Director General of Electricity, Rida Mulyana said late last year that the number of SPKLU is projected to further increase to 7.146 units by 2030.

The government has also set target for the development of 10,000 units of EV battery swap station (or SPBKLUs) by 2025, and then to increase the number to 15,625 units by 2030.

He said that the presence of SPBKLUs will help EV owners to replace their batteries more efficiently. 



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PLN renegotiates PPAs with IPPs amid oversupply issue

State-owned electricity firm PT PLN said it is currently engaged in talks with a number of independent power producers (IPPs) to renegotiate the power purchase agreements (PPAs) amid power oversupply problem in Java and Sumatra.

PLN Director for Primary Energy and IPPs, Rudy Hendra said that the discussions with the IPPs are primarily focused on two issues, namely postponing the commercial operation date (COD) of their power plant projects and calculation of power supply availability.

“So far we’re still discussing it. The context of the discussion is consultation related to the shifting of the operation schedule of the power plant (projects) and the availability factor,” Hendra told *Petromindo.com*.

Director General of Electricity Rida Mulyana has earlier asked PLN to renegotiate the PPAs with IPPs amid the anticipated increase in power oversupply in Java and Sumatra as new large power plant projects are expected to come on-stream within the new few years, while power demand has been weak amid the

lingering pandemic situation.

He said that while PLN can’t cancel the PPAs, it can renegotiate certain areas including postponing the commercial operation date (COD) of the projects and the take or pay clause. “There’s room for discussions, to share the pain. That’s what we’re encouraging to do,” he said.

Meanwhile, Government and Public Relations Manager of state-owned geothermal power producer PT Pertamina Geothermal Energy (PGE), Sentot Yulianugroho confirmed that the company has been engaged in PPA renegotiation with PLN for a number of projects, one of which is the Lumut Balai geothermal power plant project in Muara Enim, South Sumatra Province.

But he said that the focus of the discussion was related to the power selling tariff, not the oversupply issue.

“One of the (points of the) discussions is regarding the renegotiation of the electricity tariff. Our agreement with PLN has been included in the HoA for the Lumut Balai project, later there will be a price adjustment after the exploration and development activities that we have carried out. So

it’s not because of the oversupply issue,” he told *Petromindo.Com*.

According to PLN data, a number of large scale power plant projects with combined capacity of 13 GW in Java are slated to start commercial operations in the period of 2021-2026.

A total of six power plant projects with a total capacity of 9.9 GW are owned by IPPs, namely PLTU Batang, Cirebon, Tanjung Jati A, Tanjung Jati B, Suralaya, and PLTGU Cilamaya. Meanwhile, PLN’s power plant projects total 3.1 GW including PLTA Jatigede, PLTA Upper Cisokan PS, PLTU Lontar-4, and PLTGU Java-Bali 1, Muara Karang, and Muara Tawar Add-on.

In the Sumatra system, large-scale power plant projects that will enter the system in 2021-2025 are recorded at 5.55 GW. Of this, power plant projects owned by IPPs total 4.9 GW, some of which are PLTU Sumsel-8 and Sumsel-1, as well as PLTP Lumut Balai, Sorik Marapi, Muara Labouh, Rantau Dedap, and Rajabasa. Then, 617 MW projects are owned by PLN including Riau Peaker, Hululais, Asahan III, Kumbih-3 and Peusangan 1-2. 

Ministry to allow carbon trading among power plants this year

Ministry of Energy and Mineral Resources plans to allow voluntary carbon trading among power plant operators in 2021, before putting carbon capping and trading as mandatory in 2024 and expanding to more sectors including oil and gas, industrial and trading.

The plan was disclosed by Saleh Abudarrahan, Expert Staff to the Minister of Energy and Mineral Resources in a webinar.

“In the spirit to accelerate the greenhouse gas reduction program, we will start voluntary carbon trading among power plants in 2021. Later on, in 2024 we plan to expand carbon capping and trading to other sectors including oil and gas, industrial and trading,” Saleh said.

Saleh explained that the ministry in the near future will start trial of carbon capping and trading involving 80 coal-fired power plants. “There are 80 coal power plants we plan to be included in the trial process of carbon trading. From the 80 coal power plants, 54 belong to PLN group and 26 belong to IPPs (independent power producers). And if we divide by technology, 49 are coal power plants that consume low calorific coal (<5000Kcal/Kg), 27 coal plants that consume medium calorie coal (5100-6100 Kcal/Kg), and 4 plant that consume high calorie coal (6100-7100 Kcal/Kg),” Saleh further elaborated.

Saleh said the ministry actually has calculated emissions from these 80 coal power plants and the calculation showed that there are 45 coal power plants sitting under the average line of emission cap where 14 of them belong to IPPs and 31 belong to PLN group.

The measurement will be accounted



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in an online system called Apple Gatrik system and integrated with MRV system (Measurement, Reporting and Verification).

Saleh also elaborated that the carbon trading mechanism between power plants will use price range that will be determined by the government. Currently the ministry has drafted price range of between US\$2/ton CO₂ and \$8.5/ton CO₂. Saleh also said that the process will be calculated on a yearly basis.

PLN develops new transmission line to serve smelters in SE Sulawesi

State-owned electricity firm PT PLN is developing a new 150 kV elevated high voltage transmission line (SUTT) in Southeast Sulawesi to increase power supply reliability for “large customers” particularly the smelter industry.

PLN said in a statement Tuesday that the new Kendari – Andoolo – Kasipute transmission line is targeted to be completed in the first half of 2022.

Construction progress currently stands at 82 percent. “If there are no obstacles, it can start operation in the first semester of 2022,” said General Manager of PLN’s Sulawesi Office, Defiar Anis in the statement.

The 264-km transmission line project, which links Kendari City, Konawe Selatan Regency, and Bombana Regency, comprises of 410 towers, and connects three substations including the GI 150 kV Kendari substation, the GI 150 kV Andolo, and the GI 150 kV Kasipute, the last two of which are still under construction. There will be an additional transformer at the substations of 60 MVA which is also under construction.

Potential large customers in Southeast Sulawesi is estimated to reach 3,223 MVA, representing 45 percent of the potential large customers on Sulawesi Island of 7,184 MVA, PLN said.

Southeast Sulawesi Vice Governor Lukman Abunawas welcomes the new transmission line project, saying it would support the development smelter industry in the province. 

Indonesia Regional Minerals Maps 2019

New Release

As of August 2019, there are a total of 1,438 registered minerals mining concessions (KKs and IUPs) throughout Indonesia, of which about 1,403 concessions are in production operation production stage, while the remaining 35 concessions are still in exploration stage, according to the Directorate General of Mineral and Coal at the Ministry of Energy and Mineral Resources.

Indonesian Regional and Provincial Minerals Maps are a must-have for company/professional who's involved/interested in minerals related businesses in Indonesia. These maps feature location of coal mining concessions which have been granted 'clean & clear' status; location of existing and proposed smelting plants. The concession areas are appeared in different colors according to deposit type so that you can find the ones easily.

This full-colored map outlined on a 1189 mm x 841 mm (A0) glossy paper (260 gr) and laminated for durability.

Map Features

- Location of 'clean & clear' minerals concessions (KKs and IUPs) and their status of operation.
- Location of existing/proposed Minerals Processing/Smelter Projects.
- Basic features: Name of Rivers, Bays, Capes, Provinces, Cities, Regencies, and Towns with administrative boundaries.

Also available Provincial Minerals Map: Aceh, Riau, Bangka Belitung, West Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, North Maluku, etc..

MAP SPECIFICATIONS : FORMAT : WALL MAP; LAMINATED
 SIZE : 1189 X 841MM (A0)
 PRINTING : FULL COLOR
 PACKAGING : ROLLED + DRAWING TUBE

PRICE : US\$500.00
 RELEASE : DECEMBER 2019
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Indonesia is well-placed to capture full advantage of EV boom

Indonesia, the world's largest producer of nickel, saw its first high pressure acid leach (HPAL) smelter started commercial operation on 23 June 2021. The HPAL smelter, owned by PT Halmahera Persada Lygend, processes and refines low grade nickel ores (limonite) into mixed hydroxide precipitate (MHP), a basic material for the production of EV battery.

Steven Brown, an independent nickel analyst said that this will provide Indonesian producers with great operational experience, and will set the country up for much more HPAL smelter development.

CoalAsia's **Adianto P. Simamora** talked with **Steven Brown** on the future of nickel industry and electric vehicle (EV) battery industry in Indonesia.

Below is excerpt of the interview.

How do you see the development of nickel industry in Indonesia today? What are the opportunities and challenges facing nickel and smelting industries in Indonesia?

Indonesia is the undisputed global leader in nickel production. It is the only country (where the nickel industry) is consistently growing, and this growth is occurring at a rate that has never been seen before in history. Most of Indonesia's production is for the stainless-steel sector, but there are enormous opportunities for Indonesia to capture the rapidly growing battery sector.

The biggest challenge for Indonesia is to ensure it keeps up with the increasing societal expectations on environmental

and social governance (ESG).

What are the challenges and opportunities in boosting production of ferronickel (FeNi) and nickel pig iron (NPI) in the future?

The FeNi and NPI market is now oversupplied, meaning that existing plants will need to focus on being more efficient to ensure they remain competitive. Indonesia's existing NPI hubs continue to grow at a high rate, and it is increasingly difficult for other newcomers to establish profitable operations.

NPI producers are also looking to develop the capacity to convert NPI to nickel matte. This is a hedge position, so that they can take advantage of short-term premiums for nickel matte, which can happen from time to time.

The biggest challenge for Indonesian FeNi and NPI producers is the carbon footprint of the operations. The FeNi and NPI smelters require high energy, and most are currently using coal-fired power, which has the highest carbon footprint. The Indonesian government is considering a carbon pollution tax, which would add to the cost of operations for all nickel activities. FeNi and NPI producers are urgently seeking

ways to reduce carbon emissions in anticipation of the regulatory changes.

What is the existing number of smelting facilities and RKEF lines operating in Indonesia? What is the installed capacity?

The number of RKEF lines is increasing each quarter. The total Indonesia nickel production should surpass 1 million tons of nickel units in 2021, compared to 706,000 tons of nickel last year. At this rate, Indonesia could reach over 2.5 million tons of nickel per year in the latter part of this decade, which would be more than total world production in 2020.

This is incredible growth, and would not have been imagined in 2014 when Indonesia enforced the ore export ban and was producing only 100,000 tons of nickel per year domestically.

How do you see the development of HPAL projects in Indonesia? What is the prospect for Indonesia in producing materials for EV battery?

Indonesia's first HPAL plant began commissioning earlier in 2021. The commissioning process for a HPAL plant takes a long time, often several years, so there is still a long way to



go for the process to be deemed a success. However, early signs are promising, and the next HPAL plant is due for commissioning by the end of 2021. These early plants will provide Indonesian producers with great operational experience, and will set the country up for much more HPAL development.

Initially, the HPAL plants will produce and export semi-finished products that can be further refined for producing EV battery chemicals. However, there is growing interest in going beyond this initial step, and developing a downstream industry within Indonesia. Indonesia's first nickel sulfate plant is already under

construction, and more are likely to follow.

There is also much interest in alternative technologies to challenge HPAL. Companies that have developed these technologies are already present in Indonesia and are working on various development projects. If successful, these technologies could prove even more viable than HPAL.

So Indonesia is well placed to capture full advantage from the boom in electric vehicles.

How do you see the potential of green energy development to support the nickel smelter industry?

Indonesia has excellent clean

energy potential, but there are only a few good sources located near the nickel producing regions. It is likely that Indonesian nickel producers will begin to build new facilities near to good sources of clean energy, such as geothermal energy site and hydroelectric power stations. Renewable power projects are difficult to develop, and so trying to pair one with a smelter is extremely challenging. There are legal barriers to this, due to the way Indonesia regulates power supply.

It would be useful for the government to evaluate ways that can adjust energy policy to support the nickel industry transition to renewable power.

How do you see the issue of ESG principle in Indonesian nickel industry so far? What are the challenges to comply with ESG in the nickel industry?

There are some very good examples of ESG performance in Indonesia's nickel industry. However, the performance is inconsistent across the industry, with some producers lagging behind. Increasing transparency of performance is the key as it will force companies to improve so that they do not lose market share.

There are some simple steps, such as requiring disclosure of carbon emissions from all smelters and producers of nickel, and disclosure of all mines that feed nickel ore. All mines should also disclose rehabilitation progress, and publish annual satellite images that delineate mining and rehabilitation progress.

These relatively simple steps can lead to rapid improvements in ESG performance throughout the nickel supply chain. 



OPINION

By **Hendra Sinadia** | Executive Director of APBI-ICMA

Executive director of Indonesian Coal Mining Association (APBI-ICMA), member of the Energy and Mineral Resources Committee of the Indonesian Employers Association (APINDO), vice chairman and co-founder of Indonesian Mining Association, member of the Board of PERHAPI. The opinions expressed are his personal view.

Industry associations say no to carbon tax

Carbon producing industry associations oppose the government plan to impose carbon tax which includes in the general tax provision bill (“RUU-KUP”). There are 18 associations that just set up an alliance/coalition under the coordination of APINDO (Indonesian employer association) to voice their concern over the carbon tax issue. APBI-ICMA one of the alliance members has expressed a softer stance in which the coal producer association demanded that carbon tax to be delisted from the tax bill and urged to discuss the provision comprehensively with stakeholders. Meanwhile, the parliament and the government have started to discuss the bill designed as part of further tax reform to deal with current economic crisis and commitment of the country to reduce green-house-gas (GHG) emissions.

Proposed carbon tax

The government in this case the Ministry of Finance has inserted a provision on carbon tax (Rp. 75 kg/ton CO₂-equivalent) in the RUU-KUP. The bill itself is designed as “an omnibus tax law” which would cover various broader tax matters such as value added tax, income tax, tax amnesty, and other tax provisions including new tax of carbon tax. The academic draft of the tax bill does not say much detail on the object and subject of the carbon tax apart of the purpose of the tax to increase state revenue and reducing GHG emission as part of the nation commitment under the Paris Agreement.

To accelerate this reduction in GHG emissions and to support the

achievement of Indonesia’s NDC according to the target agreed upon requires aggressive efforts from the regulatory side. The purpose of carbon tax or levy on carbon is reducing GHG emission, increase state revenues, support low carbon development, and improve efficiency of tax or levy system. As Indonesia’s commitment to climate change is by making efforts to change the behavior that result in negative externalities by providing levies on goods used for activities that produce GHG. Thus, the government hopes that with this levy (carbon tax) will be able to increase revenue and reduce the consumption of fossil fuels.

Total estimated GHG emissions are calculated in emission units. The carbon produced is in the form of carbon dioxide equivalent (CO₂e) or equivalent unit. Based on data from the results of GHG emissions in several industrial sectors, assuming a large amount of GHG emissions generated from the use of coal in the sector power generation and industry, use of diesel and gasoline in the transportation sector taken from data in 2020, the estimated number of GHG emissions is 425,524 kilotons of CO₂e. This is expected to be reduced gradually up to 29% of business as usual (BAU) conditions in 2030 according to the Paris Agreement and Indonesia’s Nationally Determined Contribution (NDC).

In the academic draft of RUU-KUP, the objects of carbon tax are emissions carbon that has a negative impact on the environment, for example carbon emissions from coal mining. Tariff of the carbon tax is calculated by multiplying the units carbon emissions are produced in the form of carbon

dioxide equivalent (CO₂e) or unit equivalent to the rate on the carbon tax. However, in the tax bill the detail object of carbon does not specified whether levy imposed on the upstream (activities that producing carbon) or on the downstream as well.

The government uses benchmark of imposition of carbon tax in some countries such as Japan, Singapore, Spain, France, and Chile. In those countries (non-coal producing countries) carbon tax is applied to all fossil fuels with some exceptions. In Japan for instance, power generation industry among industries that are exempt from carbon tax. Meanwhile in Australia, the world’s biggest coal exporting country by value, the carbon tax which was imposed on 2012 later repealed on 2014. On the other hand, China has not yet imposed carbon tax despite the country has openly expressed its commitment to achieve net-zero-emission by 2060. ASEAN member countries other than Singapore have yet to apply carbon tax as the vehicle to reduce their GHG emissions.

Industry’s standpoint

Hariyadi Sukamdani the Chairman of APINDO has publicly raised industry concern over the carbon tax which would impact the whole industry that are struggling due to the Pandemic covid-19. He flashed back on the plan of the government to impose a so-called “environmental tax” during the period of 2010-2012 of which the purpose of the environmental tax is similar to the carbon tax which is to reduce GHG emissions. APINDO urged the government to consider the plan as it will add more

burden to the industry. There are only few countries that impose the carbon tax. In general industry association proposes that the rules regarding the imposition of the Carbon Tax be removed from the RUU-KUP and postponed after a comprehensive study has been conducted on the potential impact on the domestic industry.

Industry also raised concern on the lack of clarity on the imposition of carbon in the tax bill. General guideline for calculating carbon footprints should be provided by the Government first, so that there is a uniform understanding of this before determining the amount of tax/kg CO₂-e. Fuel cost is among the biggest operating costs of a mining operation whereas the average is around 35-40% of the total cost. Therefore, the potential impact of carbon tax will be huge. Coal miners proposed that the range of carbon footprints that will be imposed also needs to be ensured only in areas that can be controlled, for example emissions from burning fossil fuels in production equipment (eg. heavy equipment in mines), not from emissions from processes that cannot be controlled, such as from stripping of soil and rock or what is known as fugitive emission.

Some other concerns from coal miners with regard to plan on the imposition of carbon tax are follow:

- It is necessary to clarify the standards for the amount of carbon emissions produced by burning biodiesel (at this moment B-30), which until now there is no conversion standard in place;
- The basis or reference used in determining the carbon emission tax of Rp. 75/kg CO₂-e. If this figure is applied to the coal mining sector, it will be very burdensome. A temporary internal study of APBI-ICMA estimates this could result in additional cost of US\$ 5,00/ton;
- The implementation of the Carbon Tax will also put burden on power generating companies including private power plants (IPP –

Independent Power Producer) so that IPP companies have the potential to experience default in the event that the carbon tax burden paid by IPP cannot be passed-through (charged) to PLN Persero.

- The implementation of a carbon tax has the potential to create a double tax burden that has been paid by APBI-ICMA members on various types of taxes/non-taxes which also aims to improve the environment and reduce carbon footprints, such as among others, payment of fuel tax, payment of non-tax state revenue (PNBP) on the use of areas for holders of Borrow to use forest area as regulated in GR No. 33 of 2014 concerning tariff and types of PNBP on the Utilization of Forest Areas for Non-Forestry Activities, etc.

Many mineral and coal miners in Indonesia have been doing their best efforts to reduce carbon footprints in their mining activities as part of the industry wide commitment to reduce GHG emissions. Efforts or program to reduce carbon footprint should also be considered to offset carbon tax. Some of the initiative of the mining industry to reduce GHG emissions are as follows:

- Utilization of fuel oil that has a lower carbon content, namely biodiesel B-30 which is mandatory under a presidential regulation and in the future the biofuel content will be increased in accordance to the Road Map prepared by the government;
- Installation of solar panels to support coal crushing and processing activities;
- The design of the mining process by considering the principle of energy efficiency;
- Implementation of ISO 50001 based energy management system;
- Implementation of the rehabilitation program for critical watersheds (DAS), which covers the area of a borrow-to-use area which is the

obligation of the PPKH holder under the guidance of the Ministry of Environment and Forestry;

- Implementation of reclamation activities in accordance with the reclamation plan after an area is decided not to be mined anymore.

Industry understands the necessity of the government to come up with a bold, an aggressive measure to meet the country's NDC as part of the Paris Agreement. However, such critical issue should be discussed comprehensively involving all stakeholders. There are concerns that other ministries/government institutions may not aware of this issue. According to unofficial sources the Ministry of Environment and Forestry was not consulted in the drafting of the carbon tax provision. Therefore, a comprehensive discussion is highly needed as this should be part of the integrated effort to reduce GHG emissions as outlined under the NDC, low-development carbon initiative, energy mix, etc. In addition, the imposition of carbon should in line with the mechanism of carbon pricing which is currently prepared by the Government in a draft of Presidential Regulation.

Time is essence on this matter especially given the urgency of the government to reform the tax policy amidst the Pandemic. As the government needs to expedite the discussion of the RUU-KUP with the parliament, provision of carbon tax should be dropped/taken out first from the bill. This action, however, needs majority support from factions in the parliament. Therefore, a thorough analysis on the cost and benefit of the imposition of carbon tax should be prepared. A bold decision needed from the parliament and the government to postpone elaboration of the carbon tax provision. Imposition of carbon tax will be seen as disincentive to the domestic industry and contra productive to the Job Creation Law. 

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With the increasing awareness of the global community on the importance of switching to cleaner energy, the electric car industry, which is considered an alternative to a more environmentally friendly mode of transportation, is one of the industries that is experiencing rapid development and is expected to replace the conventional car industry in the future. With the trend to promote low-emission electricity-based technology, there is also an increasing global demand for batteries, which are a crucial component in almost every electricity-based technology. In this case, nickel, which is one of the raw materials for batteries, will soon become a commodity with very high demand, and this demand is only expected to continue to increase.

Amid this phenomenon, Indonesia is said to be the country with the largest nickel reserves in the world, reaching up to 21 million tonnes. In response to this, the Government then issued

a downstream policy that prohibits the export of raw nickel and requires the processing of nickel first into ferronickel, stainless steel, slabs, steel sheets, and the main material for lithium batteries before being exported. This export ban policy was later sued by the European Union at the WTO, and the lawsuit is still ongoing today.

With the potential for development of the nickel industry, coupled with Indonesia's potential as the country with the largest nickel reserves in the world, there is a great opportunity for industry actors to explore the nickel industry in Indonesia. Therefore, it is very important to have a strong understanding of the various regulations that bind all parties in the nickel industry in Indonesia. On that basis, Petromindo in collaboration with ET-Asia, ADCO Law, and Coal & Mineral Asia Magazine, intends to hold a series of webinars to explore the legal framework of the nickel industry in Indonesia.

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Thursday, August, 12, 2021

A-Z Legal Requirement to Run Nickel Downstream Industry in Indonesia

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1. Environmental Permit of nickel based on the Job Creation Law
2. Permits required to build and operate a smelter
3. Permits required to sell nickel products
4. Regulations on Tailings and Waste Management
5. Green Nickel: Regulations and Challenges

Session 3

Wednesday, August, 18, 2021

Legal Overview Regarding Foreign Investment in the Nickel Industry in Indonesia

Discussion:

1. Relevant regulations on foreign investment in Indonesia
2. Risks and opportunities for foreign investment in the nickel industry in Indonesia

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Thursday, August, 19, 2021

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Discussion:

1. Important aspects of conducting legal due diligence around the Nickel Industry
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Speaker:

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18 Aug	Legal Overview Regarding Foreign Investment in the Nickel Industry in Indonesia <ul style="list-style-type: none">Relevant regulations on foreign investment in IndonesiaRisks and opportunities for foreign investment in the nickel industry in Indonesia
19 Aug	Due Diligence around Nickel Industry <ul style="list-style-type: none">Important aspects of conducting legal due diligence around the Nickel IndustryCase study



PYX reports strong H1 performance

National Stock Exchange of Australia-listed premium zircon producer PYX Resources Ltd reported on Thursday a strong first half 2021 performance due to a boost in premium zircon production, sales volume growth, and ongoing price increases.

During the first half of 2021, PYX sold 3,250 tonnes and produced 3,501 tonnes of premium zircon, resulting in a year-on-year production increase of 25%. Sales volume has shown a strong year-on-year growth of 14%, while maintaining a tight finished goods inventory.

Customer demand continues to increase and show particular interest in PYX's zircon due to its low aluminium oxide (Al₂O₃) of under 0.2%. In addition, the uranium + thorium content of PYX's zircon is less than 450ppm, making it ideal for producing fused zirconia, the unique end product, which can be used for a wide range of applications due to its very high

melting point, chemical stability at high temperature, hardness, corrosion resistance and high refractive index.

During H1 2021, the Company raised its premium zircon selling price three times, resulting in a US\$355 per tonne price increase during the first six months of the year.

According to the company, the price increases reflect the general lack of premium zircon supply globally due to continued supply issues in South Africa and low inventory levels in China, while reduced Australian sales of Heavy Mineral Concentrate (HMC) to China have created a further void of premium zircon in the market, leading to higher customer demand and, consequently, higher market prices. Indonesian zircon prices have now reached their highest price point since 2013.

In February 2021, the Company completed the acquisition of Tisma in Central Kalimantan, converting PYX into the second largest producing mineral sands company globally in terms of

JORC-compliant zircon resources.

In March 2021, the Company announced that it had entered into a 3,600 tonnes two-year binding Offtake Agreement with India-incorporated Microtech Zircon, a member of Delta Tiles, a group of companies which fall under the brand name Geo Gres.

On 25 May 2021, the Company announced that it would start to explore a dual listing of PYX's ordinary shares on the Standard Segment of the London Stock Exchange; this process continues and the Company looks forward to updating shareholders in due course.

PYX's flagship asset is the Mandiri mineral sands deposit, located in the alluvium sediment rich region of Central Kalimantan. Boasting the world's 5th largest producing deposit of zircon, PYX is a large-scale, near-surface open pit operation in production since 2015 and with exploration to date validating the presence of additional Valuable Heavy Minerals such as rutile, ilmenite among others within its mineral sands. 

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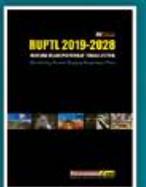
Compilation Of Indonesian Regulations on Electricity
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Antam reports second quarter exploration activities

IDX-listed mining firm PT Aneka Tambang Tbk (Antam) recently reported its exploration activities in the second quarter of 2021, which were focused on gold, nickel and bauxite commodities.

The company said in a statement that it also processed forest area permits in several gold prospective areas during the second quarter, with total unaudited preliminary cost of Rp 25.86 billion.

Antam said it conducted gold exploration activities in Pongkor, West Java Province. In Pongkor, Antam conducted subsurface geological mapping, geological modeling and drilling.

Nickel exploration activities in 2Q21 were conducted in Pomalaa and Tapunopaka, Southeast Sulawesi Province and also Buli, North Maluku Province. In Pomalaa and Tapunopaka, Antam conducted geological mapping, core sampling, core logging, grid measurement & re-measurement and single tube drilling.

Meanwhile in Buli, Antam conducted geological mapping, core sampling, core logging, surface sampling, path

measurement and single tube drilling.

Sihayo reports latest gold intercepts from drilling at Sihayo-2

IDX-listed gold mining firm Sihayo Gold Limited announced the latest “encouraging” gold intercepts from recent assay results received from exploration drilling in progress at Sihayo-2 located in the northern block of the PT Sorikmas Mining Contract of Work, North Sumatra.

Sihayo’s Executive Chairman, Colin Moorhead commented on the exploration results: “The results are in-line with our aims for the Sihayo-2 exploration program and support the presence of near surface mineralization located close to the existing Sihayo Starter Project Resource. Further investigations are underway to assess whether the occurrence is potentially economic as early mill feed.”

According to the company, the Sihayo-2 exploration program aims to provide additional shallow gold resources within trucking distance of the Sihayo-1 and Sambung gold deposits for which

a Definitive Feasibility Study (DFS) was completed in June 2020. The prime exploration targets occur within the Sihayo gold belt which is comprised of two sub-parallel mineralised trends encompassing Sihayo-1/2 – Sambung – Hutabargot Julu and Sihayo-3/4/5.

Drilling commenced at Sihayo-2 in mid-March 2021. The program comprises up to 3,000 m of diamond coring in 30 holes and is planned to test for additional gold resource and provide geotechnical data for mine planning.

A total of 1,883 m in 20 holes has been completed to date (SH2DD018 – SH2DD037). Twelve of these holes have been split and sampled for assaying.

Encouraging gold intercepts reported in this announcement were; 24.8 m @ 1.09 g/t Au from 52 m depth, and 8 m at 1.32 g/t Au from 96 m depth in SH2DD022 (Refer SIH:ASX announcement dated 19 May 2021), and 8.4 m at 2.56 g/t Au from 47 m depth, and 9.8 m at 1.77 g/t Au from 77 m depth in SH2DD024.

Assay results were recently received for the next 7 holes (SH2DD026 – SH2DD032). Significant gold intercepts are summarised below and reported in full in Appendix 1.

- 19.0 m @ 0.45 g/t Au from 54.0 m depth in SH2DD026
- 9.0 m @ 0.45 g/t Au from 4.0 m depth and 14.0 m at 0.56 g/t Au from 16.0 m depth in SH2DD028
- 3.0 m @ 0.79 g/t Au from 4.0 m depth; 4.0 m @ 0.76 g/t Au from 16 m depth; and 5.0 m @ 1.17 g/t Au from 25 m in SH2DD029.

Concurrent with the drilling program at Sihayo-2, a program of geotechnical and hydrogeological drilling is in progress to support the optimisation and design work for the Sihayo Starter Project. ☑

Nickel Mines unveils dividend policy



A SX-listed integrated nickel mining firm Nickel Mines Ltd unveiled Friday its dividend policy as its nickel smelter operations in Indonesia are in steady state operations, highly profitable and generate significant free cash flows, and it is lowly geared with modest debt outstanding.

The company said in a statement that its Hengjaya Nickel and Ranger Nickel RKEF smelters in Central Sulawesi Province have fully repaid the shareholder loans which funded the capital expenditure to construct those projects. Future repatriations of funds from those projects will be received by Nickel Mines as conduit foreign income which will not be subject to withholding tax deductions when distributed to foreign shareholders as dividends paid by Nickel Mines.

“On the basis of these factors, the Directors intend that a proportion of the profit and free cash flow generated by the Nickel Mine Group operations will continue to be returned to shareholders by way of regular dividends declared on an interim and final basis each financial

year,” Nikcel Mines said.

In addition to the Hengjaya Nickel and Ranger Nickel RKEF smelters, Nickel Mines also owns a 50 percent interest in the Angel Nickel smelter project in North Maluku Province, which is targeted to start NPI production in the third quarter of 2022. Nickel Mines has option to acquire an additional 30 percent stake in the project.

Nickel Mines said its commitment to future dividend payments and their quantum will be guided by the following considerations:

- Maintaining a satisfactory level of performance across the company’s operations measured by revenues, profitability and free cash flow generation. The company will take into consideration variables such as underlying economic conditions, the prevailing and future outlook for relevant commodity prices and the ongoing internal requirements of the business – namely any working and sustaining capital commitments and debt servicing obligations. These requirements will be necessarily

prioritized ahead of dividend distributions.

- Competition for capital. The company is in the fortunate position of having an operational footprint in two of the largest nickel production centers globally and a growing strategic partnership with the Tsingshan group. As such there is an expectation that future opportunities may be presented to the company for consideration that will require the company to make decisions whether available funds are best utilized for growth options or returned to shareholders as dividends.

“In noting the above considerations, the Directors will seek to achieve an appropriate balance of deployment of surplus cashflows between growth opportunities and dividend distributions to shareholders and, until otherwise advised, will maintain the company’s interim and final dividends to at least equal to the most recent interim and final dividends paid by the company,” Nickel Mines said. 

Archi starts paying debts from IPO proceed

IDX-listed gold miner PT Archi Indonesia Tbk reported that it has signed loan agreement deal to its two subsidiaries and PT Meares Sopotan Mining (MSM) and PT Tambang Tondano Nusajaya (TTN) worth Rp 250 billion (US\$ 17 million) and Rp 190 billion (\$13 million), respectively.

The company said in its filing with the IDX that the loan will be utilized by the two subsidiaries to pay part of their debts to the banks.

Archi raised more than US\$200 million from its recent IPO, part of which will be used to pay off debts.

Archi, through MSM and TTN, operates an open pit gold mine in North Sulawesi with current production capacity of 200,000 ounces per year.

PAM aims significant nickel ore sales increase

Newly-listed nickel miner PT PAM mineral Tbk targets to reach nickel ore sales of 1.30 million wmt in 2021, or 87 percent higher than last year's sales of

695,000 wmt.

The company, according to a media report, aims to produce 1.5 million wmt of nickel ore this year.

The company operates a 53-hectare concession in Morowali, Central Sulawesi and a 183-hectare concession in Konawe Utara, SE Sulawesi.

SMI is the Indonesian unit of Solway.

Privalov said that Solway is committed to utilize renewable energy sources for the project and has held talks with state electricity firm PT PLN (Persero).

"For the Morowali project, the primary source of energy will come from the PLN grid. As you may know, PLN is developing several renewable energy sources in the region and is considering providing an option to Solway to source power from solely renewable energy," he said.

"On top of that Solway is evaluating options to generate supplementary power from solar farms, which will be developed as part of the project. Other

multiple solutions are being investigated to achieve near-zero carbon emissions," he added.

Privalov said that Solway may pick JV partner to develop the project. "Multiple parties have expressed interest in participating. Solway is evaluating all proposals and is interested in potential partners who will contribute to the project and uphold Solways' standard for an environmentally friendly and socially responsible approach to the execution of the project," he said.

In its 2020 Full Year Financial Report released earlier this week Solway said it is planning to develop processing facilities for nickel intermediates such as nickel matte and mixed hydroxide precipitate (MHP) for the production of battery-grade nickel sulfate material as part of long-term strategy to capitalize on its nickel assets in Indonesia.

According to its website, Solway has several nickel-cobalt concessions in Central Sulawesi under the so-called Aquila Project, which includes Asera, Bahoomahi and Sorowalio mines.

Solway's clean nickel smelter to start ops in 2024

Switzerland-based mining and metal group Solway Investment Group plans to build a near-zero carbon emission nickel processing plant in Morowali, Central Sulawesi, which will be able to produce up to 20 000 tonnes of Ni in Ni equivalent in the first phase.

"Our target is to commence construction work late in 2021, with the first production 24 months away. This timeline, of course, is subject to the development of the pandemic situation globally, especially in Indonesia," Dmitry Privalov, President Director of PT Solway Management Indonesia (SMI) told *Petromindo.Com*. 



ESG issues can undermine Indonesia's EV industry

Nickel analyst warned that stakeholders in the country's nickel industry should seriously pay attention to global issues related to environmental, social and governance, better known as ESG principle, to ensure sustainable nickel supply chain and electric vehicle (EV) industry.

"ESG issues in supply chain can undermine the entire EV sales promotion," Steven Brown said to *Petromindo.Com*.

He said that nickel producers currently are very familiar with the term of carbon emission and waste management in the nickel supply chain.

"But looking below the surface, there are ESG risks that are not so well-known. Two key challenges (of ESG) are the impact to (marine) biodiversity and to the water," he said.

Indonesia is the world's largest nickel metal producer, supported by about 2,500 MW of coal-fired power plants to provide electricity for the nickel smelters

"All these (smelters) currently use coal-fired power plants and it has significant carbon footprint," he said.

He said that the waste management was another key issue facing the nickel industry in Indonesia due to expected huge volume of slag and tailing from HPAL smelters. "There are three ways to manage HPAL waste, namely tailing dam, deep sea tailing placement and dry stacking," he said.

The conventional approach by building tailing dam could pose significant risks since Indonesia has much higher rainfall than other nickel producing regions, in addition to Indonesia's position in the ring of fires which has high seismic risk.

In terms of deep-sea tailing placement, although it can be



an alternative from the technical perspective, there are strong objections from the public in Indonesia.

"It would be unlikely company like Tesla won't receive nickel (resulted) from this link of practices," he said.

"Dry staking is probably the best way to handle the tailing. There are however still challenges with dewatering process and some geotechnical risks," he said.

He said that the nickel industry needs to develop guidelines to address the specific ESG risk in nickel supply chain such as transparency of energy source and carbon emission, waste volume and disposal method, post mine rehabilitation, biodiversity impacts and water monitoring.

PLN to supply electricity to Silkroad Nickel's smelter

State-owned electricity firm PT PLN is expected to soon start power supply for a nickel smelter in Morowali, Central Sulawesi Province, owned by PT Anugerah Tambang Sejahtera (ATS), the local unit of SGX-listed Silkroad Nickel Ltd.

Leo Basuki Brahmana, a General Manager at PLN's Sulawesi regional office (Suluttenggo), said that the utility had on 1 July signed a HoA and non-disclose agreement in relation to the power supply for ATS, which is expanding the capacity of its nickel smelter.

The ATS nickel pig iron smelter applies the blast furnace and rotary kiln electric furnace technology, he said.

Leo said that in the first phase in August 2021, PLN will provide 5.54 MVA of power supply for ATS, increasing to 8.66 MVA in the second phase in February 2022, further increasing to 85 MVA in the third phase in August 2022, and finally reaching 170 MVA in the fourth phase in August 2023.

He added that ATS has agreed to take advantage of the renewable energy certificate provided by PLN. No further details about the smelter were provided.

In early March of this year, this portal reported, quoting a Silk Road financial report, that the company was scheduled to start operation of its nickel pig iron smelter in Central Sulawesi in the second quarter of 2021.

Silkroad also plans to team up with Chinese firm Shandong Xinhai Technology Co Ltd to invest US\$ 400 million to build a rotary kiln electric furnace (RKEF) smelter for the production of up to 350,000 metric tons of ferronickel per annum. The smelter is expected to be built and commissioned for operations in the second quarter of 2022.

Silkroad through another subsidiary PT Teknik Alum Service also operates a nickel mine in Morowali. 

Fortescue conducts studies on potential green projects in Kalimantan

Fortescue Future Industries Pty Ltd (FFI), a wholly owned subsidiary of Australia's iron ore company Fortescue Metals Group Ltd, said it is already conducting studies on potential green industrial projects in Indonesia's Kalimantan Island as the company seeks to tap into the country's huge renewables potential to produce green hydrogen.

"FFI is already conducting studies on potential projects in Kalimantan, and we look forward to continuing our positive engagement with local stakeholders," said FFI CEO Julie Shuttleworth to *Petromindo.Com* on Tuesday.

"Indonesia and its renewable energy resources offers an exciting opportunity for green hydrogen production," she said.

In September 2020 FFI pledged to the government of Indonesia to conduct scoping studies for projects aiming to utilize Indonesia's hydropower and geothermal resources to support green industrial operations for potential domestic supply and global export.

In May 2021, FFI also signed a Joint

Statement of intent with the government of Indonesia, to accelerate Indonesia's net zero emissions target.

"We are pleased the Government has announced a designated industrial estate that is specifically for green industries in North Kalimantan," Shuttleworth said, but did not provide further details.

Indonesia's Coordinating Minister for Maritime Affairs and Investment Luhut B. Panjaitan told a webinar on 26 June that President Joko Widodo was scheduled to lead a groundbreaking ceremony in September of this year of a "green" industrial park project for metal smelting in Tanah Kuning, North Kalimantan.

In his presentation, Luhut said that FFI will team up with China's Tsingshan Group to develop the Tanah Kuning industrial park to be located near a proposed giant hydro power plant.

Tiran Group to build RKEF smelter

Indonesian business group Tiran Group through its unit PT Andi Nurhadi Mandiri has signed an EPCC contract with Chinese firm Tonghua Jianxin Technology Co. Ltd to develop one line

of Rotary Kiln Electric Furnace (RKEF) nickel processing plant in Konawe Utara regency, SE Sulawesi.

According to local media reports, the contract was worth approximately US\$ 120 million. The facility, when fully developed, will operate four RKEF lines. The reports did not give detail about the planned ferronickel production or the planned production commencement. Tiran Group will invest \$ 330 million to fully develop the project.

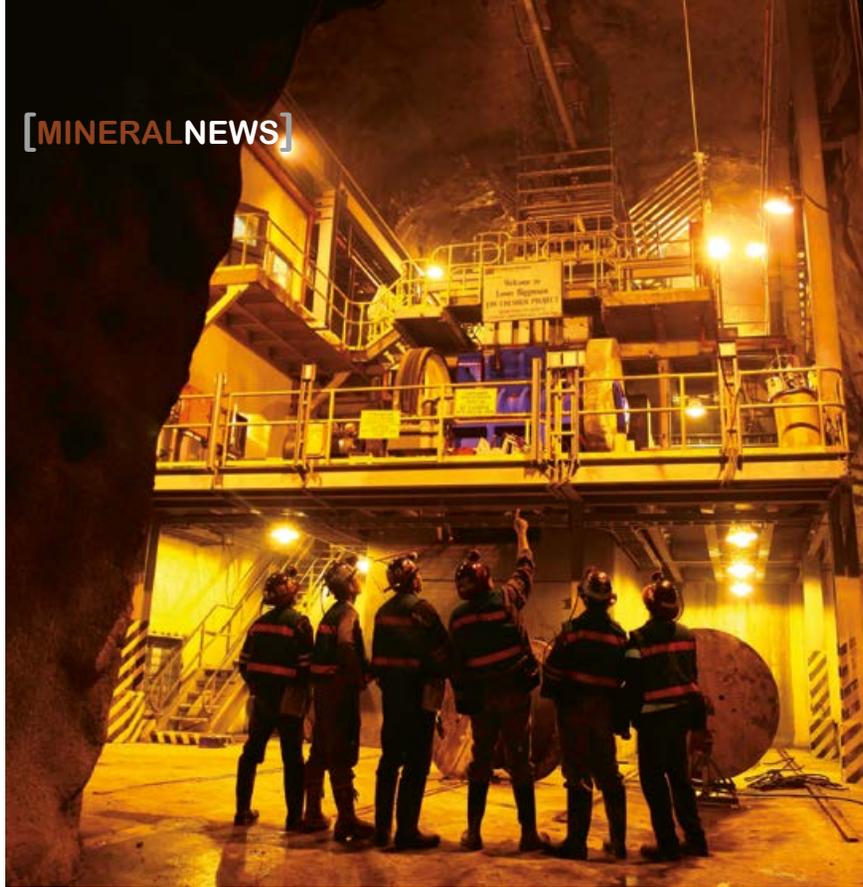
The company will build the facility in a 50-hectare land, which is a part of the planned 5,000-hectare smelter-based industrial zone also managed by the Group.

Ore for the smelter will be supplied from the Group's operating mine which is located around 30 kilometers from the smelter. Ore from the mine is sufficient to supply the smelter for 40 years, the reports said.

The Group has also signed a deal with state electricity firm PT PLN (Persero) for the supply of 50 MW of electricity to the proposed smelter.

Tiran Group is controlled by former Agriculture Minister Andi Amran Sulaiman. 





July HPE of most commodities increases

The Ministry of Trade has set higher export reference price (or better known as HPE) for most of the country's mineral commodities, which are subject to export tax, for July 2021 period compared to June.

The ministry said in a statement Thursday that the higher July HPE was in line with rising price of the commodities in the international market due to increasing demand.

Mining products with higher July HPE compared to June are copper concentrate (Cu 15%) with a price of US\$3,527.04 /wmt or an increase of 0.33 percent; iron concentrates (hematite, magnetite) (Fe 62% and 1% TiO₂) with a price of \$194.26/wmt or an increase of 8.13 percent; laterite iron concentrates (gutite, hematite, magnetite) with purity of (Fe 50% and (Al₂O₃ + SiO₂) 10%) at \$99.27/wmt or an increase of 8.13 percent; and lead concentrate (Pb 56%) with at \$894.34 /wmt or an increase of 2.12 percent.

Furthermore, zinc concentrate (Zn

51%) at \$869.58 /wmt or an increase of 6.24 percent; iron sand concentrate (lamella magnetite-ilmenite) (Fe 56%) at \$115.99 /wmt or an increase of 8.13 percent; ilmenite concentrate (TiO₂ 45%) at \$473.52/wmt or an increase of 2.74 percent; and rutile concentrate (TiO₂ 90%) at \$1,245.53/wmt or an increase of 3.93 percent.

Commodities with lower July HPE are manganese concentrate (Mn 49%) at \$213.63/wmt or a decrease of 1.65 percent, and washed bauxite (Al₂O₃ 42%) at \$32.65/wmt or a decrease of 0.64 percent.

Meanwhile, the HPE of iron sand concentrate pellets (lamella magnetite-ilmenite) (Fe 54) is unchanged at \$117.98/wmt.

First-half NPI sales volume at less than 5% of full-year target

The country's nickel pig iron (NPI) production in the first half of this year stood at 381,155.51 tons, representing 42.30 percent of the government's full-

year target of 901,080 tons, according to data from the Ministry of Energy and Mineral Resources.

Realized NPI sales volume, however, was only 40,739.98 tons, or only 4.52 percent of the full-year target of 901,080 tons. Ferronickel production in the January-June period reached 684,582.66 tons, or representing 32.49 percent of the full-year target of 2,107,071 tons.

Realized sales volume of ferronickel was 495,232.49 tons, or 23.50 percent of the full-year target of 2,107,071 tons.

Meanwhile, realized nickel in matte output was 36,440.68 tons, or 46.72 percent of the full-year target of 78,000 tons. Realized sales volume was 26,110.07 tons, or 33.47 percent of the full-year target of 78,000 tons.

Kapuas Prima secures \$110m loan

IDX-listed miner PT Kapuas Prima Coal reported on Tuesday that it has secured a US\$96 million term loan and \$14 million of non-cash loan from Bank Mandiri. The loan agreement was signed on June 28, 2021.

The term loan will be utilized to refinance debts (\$23.450 million), working capital (\$10.9 million), capital expenditure (\$36.650 million) and for the completion of the company's smelter project.

The company is constructing a lead smelter in West Kalimantan, which is slated to start production in the third quarter of 2021. The smelter will have capacity to produce 20,000 tons of 99.50 percent lead bullion per annum.

The company is also developing a zinc smelter, which will start production in the first quarter of 2023. The smelter will have a capacity to process 6,8000 tons per annum of zinc concentrate to produce 30,000 tons of 99.99 percent zinc ingot annually. ■

Waseco hopes to reactivate Kalimantan gold project

Canadian junior mining firm Waseco Resources reported that it has held discussions with a dredging company in Indonesia to capitalize on its technical database on its former alluvial gold project in Kalimantan.

The company first started exploring for gold in Indonesia in the mid-1990's. Its flagship project was the Tewah Alluvial Gold Deposit in Central Kalimantan. Millions of dollars were invested delineating a gold resource, securing the requisite permits, and completing engineering studies, all as part of a Final Feasibility Report. The then current gold price and the perceived country risk precluded management from securing the requisite financing to go into production.

The company said it has established the location of alluvial gold ore in the river gravels and the river terraces, and have selected the best available engineering methods for recovery and processing.

"This is proprietary Waseco information, which continues to

have value. While the Company has abandoned its interest in the Contract of Work, through its investment, knowledge and data, it continues to hold potential value should funding be made available to advance the project to production," the company said.

"Management has since closely monitored the situation over the years; it now believes that the business climate has improved, the investor perception has improved as have the price paid for gold and for zircon sands (a significant mineral credit). Management believes that this project is now viable and has returned to Indonesia to reassemble a significant portion of the land position with a view to eventual production," the company added.

According to the company's website, the Tewah concession has 750,000 ounces of gold resources with 17 years plus of mine life.

BRMS plans right issue to develop Gorontalo mine

IDX-listed metal mining firm PT Bumi Resources Minerals (BRMS) announced that it planned to raise funds

through right issue to construct a gold ore processing plant and to develop its copper & gold mine project in Gorontalo province.

According to the company, the fund raised from the proposed right issue will be used to construct a gold ore processing plant with capacity of 2,000 tons of ores per day, to construct supporting facilities to drill gold prospects to increase the ore reserves in the Motomboto gold mine site, to construct a 30-km hauling road infrastructure, to build the Tailing Management Facility, to purchase mine heavy equipment and tools and to fund working capital requirements.

The company did not give further detail about the value of the fund it intended to raise. The company did not provide details about production estimate, mine life and production start of the mine.

BRMS operates the Gorontalo mine through its subsidiary PT Gorontalo Minerals.

In April 2021, BRMS had just completed its first Rights Issue transaction. The roughly US\$106 million proceeds is currently being used mostly to develop the company's gold mine project in Palu, Central Sulawesi with an ore processing capacity of 4,000 tons of ore per day.

"With the available new gold ore processing plant in Gorontalo, the company hopes to generate revenues and profits from both its Palu and Gorontalo projects in the near future.

More detail information about the Rights Issue plan, including other terms and conditions will be disclosed in the Prospectus which will be issued after BRMS' shareholders approve the Rights Issue plan in the Extraordinary General Meeting of Shareholders (EGM) to be held on Friday, 6 August 2021," the company said. 



PT IWIP confident of sustainable nickel ore supply

PT Indonesia Weda Bay Industrial Park (IWIP) is confident on sustainable supply of nickel ores for over 40 years to support smelting firms operating at its industrial estate in Halmahera Tengah, North Maluku Province.

“I am not worried about the resources of nickel ore supply,” Scott Ye, Director of External Relations at PT IWIP told a webinar on June 29, arguing that the supply would be enough for more than 40 years.

He said that smelting companies at IWIP would also utilize the country’s abundant supply of limonite in the future. “In the future, we are going to utilize limonite,” he said.

Most of the existing nickel smelting firms consume saprolite as raw material to produce ferronickel (FeNi) and nickel pig iron (NPI). Scott earlier said that PT IWIP has started construction of a

smelter that will produce raw materials for the production of EV battery.

The government reportedly plans to restrict the construction of new NPI and FeNi smelters in a bid to optimize the country’s nickel resources for higher value products such as materials for EV battery. Indonesia holds the world’s largest nickel reserves.

APNI supports plan to restrict new nickel smelter projects, export

The Indonesia Nickel Miners Association (or APNI) supports the government’s plan to restrict the construction of new nickel pig iron (NPI) and ferronickel (FeNi) smelters in a bid to optimize the country’s limited nickel resources for higher value products.

APNI said in a statement that based on its data, there are currently already 25 pyrometallurgy and hydrometallurgy nickel smelters operating in the country,

with another 41 under construction, and 32 other projects in the process of securing permit.

These smelters will require nickel ore supply of 255 million tons per year. Considering the country’s measured nickel reserves of only 4.6 billion tons, the domestic nickel downstream industry can only survive for up to 8 years, assuming that high grade nickel ore reserves (above 1.6%) is only 1.7 billion tons. If the pyrometallurgy smelters only consume high grade nickels, the operating life of these smelters is only seven years.

“So with APNI supports the government to limit the class 2 smelters (NPI/FeNi), but still invites investors to invest in (higher value) nickel end products such as stainless steel, batteries and electric vehicles,” the grouping said in the statement.

APNI also recommended the government to limit the export of NPI and FeNi at 30-50 percent of total production, allocating part of it for domestic steel industry players such as state-controlled PT Krakatau Steel Tbk to competitively produce stainless steel or other products.

Restricting construction of new smelters is deemed necessary because of limited reserves of saprolite nickel ore,

Director General of Mineral and Coal at the Ministry of Energy and Mineral Resources, Ridwan Djamiluddin, told Reuters that the government had discussed the plan with a parliamentary committee to restrict the construction of new NPI and FeNi smelters.

“Based on the input capacity of existing and under construction pyrometallurgical plants, assuming there is no further exploration, if constructions are not limited this high grade nickel ore reserve will only last for less than 20 years,” he said. 





Govt expects iron, steel export to nearly double this year

The government expects the country's export of iron and steel this year to nearly double amid expansion of domestic nickel smelter industry.

"This (the expansion of domestic nickel downstream industry) has already boosted the country's iron and steel export from 2017 to 2020. Iron and steel export is now the third largest after mineral and fuel (US\$25 billion), and animal/ vegetable fat (CPO – US\$ 20.7 billion)," said Coordinating Minister for Maritime Affairs and Investment Luhut B. Pandjaitan at a 26 June webinar.

The realization of Indonesia's iron and steel exports was \$10.8 billion last year, higher than the 2019 realization of \$7.4 billion and is targeted to increase this year. "As per May 2021 it has reached \$6.8 billion. So this year we will be able to export iron and steel of approximately close to \$20 billion. We

think it (iron and steel) could become the second largest (export) this year after coal. And I think in 2023 it will already be the number one," he added.

Luhut said that the development of domestic nickel downstream industry is now focused on stainless steel production to later move toward production of materials for production of EV battery.

One of the centers for domestic nickel downstream industry is the Morowali integrated industrial area, where nickel ores are processed into various downstream products mostly using the rotary kiln electric furnace (RKEF) refining method.

From this area, the government targets the production of nickel pig iron of 3.5 million tons per year, pig iron 3.12 million tons per year, stainless steel slab 4.83 million tons per year, stainless steel HRC 2 million tons per year, stainless steel CRC 700,000 tons per year, steel plate 1 million tons per year, steel bar

1.75 million tons per year, steel wire 500,000 tons per year, nickel cobalt 120,000 tons per year and FeCr (Ferrochrome) 600,000 tons per year.

Kingsrose appoints Baker Managing Director

ASX-listed gold mining firm Kingsrose Mining Limited announced that CEO Fabian Baker has been appointed Managing Director, effective immediately.

Baker, a highly experienced geologist was appointed CEO in February this year. Since then, he has overseen a comprehensive and systematic review of the Company and its activities which has resulted in the evolution of a new exploration focussed strategy.

Kingsrose Chairman Michael Andrews said Baker's appointment to the Board was part of the Company's strategy to ensure it has the appropriate blend of strategic, commercial and technical experience as it embarks on its next chapter of growth aimed at maximising value for all stakeholders.

"The Board has worked alongside Fabian over the last four months in his role as CEO and believes Fabian's appointment to the Board is a natural evolution in light of his performance to date in leading the Company as it transitions from gold producer to an exploration company. We look forward to working with and supporting Fabian as he refines and develops the Company's exploration strategy at Way Linggo in Indonesia as well as assessing other project acquisition opportunities."

Kingsrose's main asset is the Way Linggo gold project in Lampung province. The mine ceased production in 2020 and is stepping up exploration programs to recommence gold production. 



President to break ground of N. Kalimantan industrial park project

President Joko Widodo is expected to lead a groundbreaking ceremony of an industrial park project for metal smelting in Tanah Kuning, North Kalimantan Province, in September of this year, according to a senior government official.

“If all plans run well, President Joko Widodo will lead the groundbreaking of the Tanah Kuning industrial park (project),” Coordinating Minister of Maritime Affairs and Investment Luhut B. Pandjaitan told a webinar.

In his presentation, Luhut said that Australia’s Fortescue Future Industries Pty Ltd (FFI) will team up with China’s Tsingshan Group to develop the Tanah Kuning industrial park that is expected to house metal smelters to support the government’s domestic EV industry plan.

In the initial phase, FFI and Tsingshan will each invest US\$12 billion and \$30 billion to develop a 12,500-ha industrial park. Total investment is projected to ramp up to \$60-\$80 billion

over the next seven years to develop a total of 35,000-ha industrial estate, which will be located near a proposed giant hydro power plant project with total capacity of up to 9,000 MW. “This will be one of the world’s largest green industrial estates,” Luhut said.

Construction of the Kayan hydro power plant, which will be developed by Power Construction Corp of China (PowerChina) and Indonesia’s Kayan Hydro Energy, should begin this year with completion of the first phase (900 MW) projected by 2025, according to local media reports.

PLN develops new transmission line to serve smelters in SE Sulawesi

State-owned electricity firm PT PLN is developing a new 150 kV elevated high voltage transmission line (SUTT) in Southeast Sulawesi to increase power supply reliability for “large customers” particularly the smelter industry.

PLN said in a statement that the new Kendari – Andoolo – Kasipute transmission line is targeted to be

completed in the first half of 2022.

Construction progress currently stands at 82 percent. “If there are no obstacles, it can start operation in the first semester of 2022,” said General Manager of PLN’s Sulawesi Office, Defiar Anis in the statement.

The 264-km transmission line project, which links Kendari City, Konawe Selatan Regency, and Bombana Regency, comprises of 410 towers, and connects three substations including the GI 150 kV Kendari substation, the GI 150 kV Andolo, and the GI 150 kV Kasipute, the last two of which are still under construction. There will be an additional transformer at the substations of 60 MVA which is also under construction.

Potential large customers in Southeast Sulawesi is estimated to reach 3,223 MVA, representing 45 percent of the potential large customers on Sulawesi Island of 7,184 MVA, PLN said.

Southeast Sulawesi Vice Governor Lukman Abunawas welcomes the new transmission line project, saying it would support the development smelter industry in the province.

Nusantara reports Awak Mas proved ore reserve

A SX-listed gold mining firm Nusantara Resources Limited reported an updated JORC Compliant Ore Reserves Estimate of 33 million tons at 1.37 gram per ton gold for 1.45 million ounces contained gold from its Awak Mas gold project in South Sulawesi.

The company said the calculation was derived using:

- Updated MRE, which includes the recently completed close-spaced drilling targeting the IMA;
- A gold price of US\$1,400 per ounce;
- Cost inputs from the Front-End-Engineering-Design study results received to date (FEED); and
- Applying a cut-off grade of 0.5g/t.

The company said that production strategy will be to deliver high grade material to the process plant while stockpiling lower grade material to be treated later in the mine life.

The company said that gold processed over the first five years at full

	Classification	Tonnes (Mt)	Au Grade (g/t)	Contained Gold (Moz)
Awak Mas (Main)	Proved	2.5	1.38	0.11
	Probable	28.5	1.33	1.22
	Sub-total	31.0	1.33	1.33
Salu Bulu	Proved	0.6	1.92	0.04
	Probable	1.4	1.93	0.09
	Sub-total	2.0	1.93	0.13
Total	Proved	3.1	1.48	0.15
	Probable	29.9	1.36	1.31
	Total	33.0	1.37	1.45

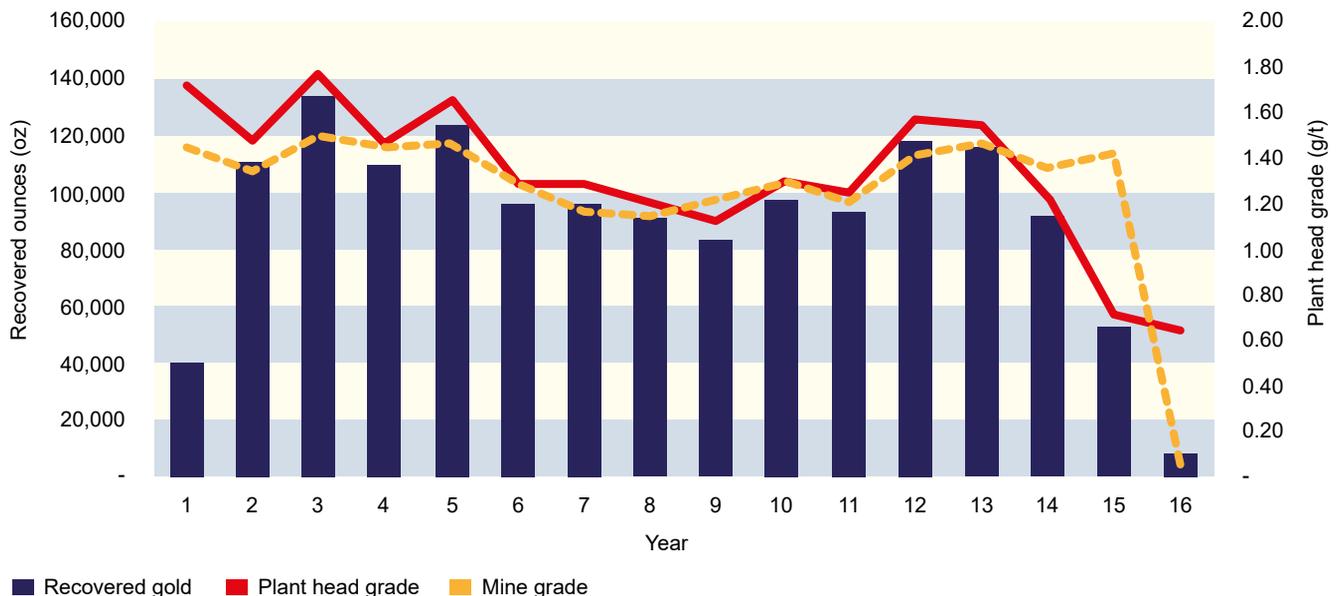
production at a plant throughput rate of 2.5 Mt per annum is maintained at >100,000 ounces per annum (and up to >135,000 ounces per annum, producing an average of 115,400 recovered ounces per annum.

The Awak Mas Gold Project is held under a 7th generation Contract of Work (CoW) signed in 1998. The

CoW covers an area of 14,390 hectares and is held by Nusantara's 100 percent owned local subsidiary company, PT Masmino Dwi Area.

IDX-listed firm PT. Indika Energy is Nusantara Resources' largest shareholder with 28 percent shares and is currently in the process of acquiring the entire shares of Nusantara. 

Plant head grade and recovered gold (oz)





RI to have six HPAL smelters to support battery industry

By Lambok Dominikus

Indonesia is expected to have at least six hydrometallurgy smelters, or also known as high pressure acid leach (HPAL) smelters, most of which expected to be completed this year, to support the development of domestic EV battery industry.

Sugeng Mujianto, Director of Mineral Development and Management at the Ministry of Energy and Mineral Resources, said at a webinar that the smelters are currently under construction.

The HPAL smelters will process low grade nickel ores (limonite) into mixed hydroxide precipitate (MHP), which can be further processed into nickel sulfate and cobalt sulfate, key materials for the production of EV battery.

Sugeng said that the total input capacity of the six HPAL smelters is 29.2 million tons per year that will produce nickel sulfate, cobalt sulfate and scandium.

PT Halmahera Persada Lygend (HPL) started last week commercial operation of its HPAL smelter on Obi Island, South Halmahera, North Maluku Province. This is the first HPAL smelter to operate in Indonesia.

HPL is a joint venture between

Indonesia's Harita Group and China's Ningbo Lygend. Harita said in a statement that the HPAL smelter, which started construction in 2018, has production capacity 365,000 tons of MHP per year. The company is developing production facility to further process the MHP into nickel sulfate and cobalt sulfate.

Sugeng said that PT Huayue Bahadopi is developing an HPAL smelter at the Indonesia Morowali industrial park in Central Sulawesi with input capacity of 11 million tons of ore per year, and annual output capacity of 60,000 of nickel equivalent, 7,800 tons of cobalt equivalent, and 440 tons of scandium oxide (Sc₂O₃). Total investment is US\$1.28 billion, with completion schedule this year.

PT QMB Bahodopi, also located at the Morowali park, will have input capacity of 5 million tons of ore per year, will have annual output capacity of 50,000 tons of nickel equivalent, 4,000 tons of cobalt equivalent, and 200 tons of Sc₂O₃. Total investment is \$998.47 million with completion schedule mid this year.

According to Sugeng, the HPL smelter in South Halmahera, has input capacity of 5.2 million tons per year, and

annual output capacity of 55,000 tons of nickel equivalent, 6,500 tons of cobalt equivalent, and 332 tons of Sc₂O₃, with total investment of \$684 million.

PT Smelter Nikel Indonesia, located in Banten province, will have input capacity of 2.4 million tons per year, with annual output capacity of

30,400 tons of nickel equivalent, 3,060 tons of cobalt equivalent (assuming cobalt content of 4% in MHP), and 96 tons of Sc₂O₃, with total investment of \$35.77 million, and expected to be completed in July 2021.

PT Adhikara Cipta Mulia, in Konawe Utara, will have input capacity of 2.4 million tons per year, with annual output capacity of 30,400 tons of nickel equivalent, 3,060 tons of cobalt equivalent (assuming 4% cobalt content in MHP), and 96 tons of Sc₂O₃, with total investment of \$35.77 million, and expected to be completed in July 2021.

PT Vale Indonesia will have input capacity of 3.2 million tons per year, with annual output capacity of 40,000 tons of nickel equivalent, 6,000 tons of cobalt equivalent, and 160 tons of Sc₂O₃, with planned investment of \$2.17 million, and targeted for completion in 2025. 



OPINION

By *Praniti Putri Mirza* | Associate at ADCO Law



Government's plan to retire coal-fired power plants and to utilize new and renewable energy, and the impact to coal production and price

Old and inefficient coal-fired power plants - or also known here as Pembangkit Listrik Tenaga Uap ("PLTU") - will "naturally" stop operating according to the technical age and economic life of each PLTU. In other words, PLTU will not be operated but still maintained (mothballed).

PLTU retirement is one of the government's efforts to achieve the net zero-emission or carbon-neutral target by 2060.

This is in line with the direction of the National Energy Policy - or Kebijakan Energi Nasional ("KEN"), which is based on the principles of justice, sustainability, and environmental friendliness in order to create energy independence and national energy security as proclaimed through Government Regulation No. 79 of 2014 concerning National Energy Policy.

1. Gas rumah kaca - Greenhouse gas ("GHG") emission

The power plant sector is projected to be the largest emitter of greenhouse gas emissions, followed by the industrial sector and the transportation sector. The GHG emission is projected to reach 893 million tons CO₂eq in 2025 and 1,950 million tons CO₂eq in 2050. The achievement of the KEN target will have a significant impact on reducing GHG emissions when compared to Business

as Usual (BAU) scenario. The GHG emission reduction is projected to reach 34.8% in 2025 and 58.3% in 2050.

GHG emission reduction can be successfully carried out through the following four (4) strategies:

1. Energy diversification, by increasing the portion of renewable energy and reducing the portion of fossil energy;
2. Utilization of clean coal technology for power generation;
3. Substitution of energy use from fuel oil to natural gas; and
4. Implementation of energy conservation programs.

With the promulgation of Law No. 16 of 2016 concerning the Ratification of the Paris Agreement, the government seeks to fulfill its commitment to reduce GHG emissions by 29% by 2030 with PT Perusahaan Listrik Negara (Persero) ("PLN") as part of this national commitment.

In accordance with PLN's mission of "Running Environmentally Friendly Business Activities", PLN has a GHG emission reduction policy in the following ways:

1. Prioritizing the development of New and Renewable Energy - Energi Baru Terbarukan ("NRE")

PLN prioritizes the use of NRE power plants in a bid to reduce GHG emissions and utilizes the potential of

using incentives from carbon finance. PLN also uses electricity from industrial exhaust gas with a Heat Recovery Steam Gas (HRSG) system, for example in Kalimantan.

2. Fuel switching

To reduce the use of fuel oil, PLN plans to divert the use of fuel oil to gas at Gas Power Plants - Pembangkit Listrik Tenaga Gas (PLTG), Gas and Steam Power Plants - Pembangkit Listrik Tenaga Gas dan Uap (PLTGU) and Gas Engine Power Plants - Pembangkit Listrik Tenaga Mesin (PLTMG) as well as the use of biofuel mixtures in Diesel Power Plants - Pembangkit Listrik Tenaga Diesel. Direct fuel-switching measures will also reduce GHG emissions because the gas emission factor is lower than the fuel oil emission factor. Fuel switching is also applied to PLTU considering that the energy mix target in coal-fired power plants is set at around 50% by 2025 in accordance with the draft of the 2015-2034 National Electricity General Plan, thus reducing coal consumption and increasing gas consumption have been considered.

3. Using low-carbon and efficient technology

PLN's electricity supply until 2026 will still be dominated by fossil fuel

plants, especially coal. PLN realizes that burning coal produces relatively large GHG emissions, so efforts are needed to reduce GHG emissions from PLTU. PLN’s policy regarding this matter is that PLN will only use supercritical, ultra-supercritical boilers for coal-fired power plants. PLN also intends to utilize Coal Bed Methane (CBM) if this non-conventional gas is available in sufficient quantities and at an economical price, and will consider the use of Integrated Gasification Combined Cycle (IGCC) and Carbon Capture and Storage (CCS) technologies to reduce GHG emissions significantly. However, the implementation is still waiting until the technology is commercially mature.

2. Prioritizing the development of new and renewable energy

The development of renewable energy projects such as geothermal, wind, solar, biomass, waste and hydropower is in line with the policy to develop and utilize more renewable energy.

The government targets the development of NRE power generation capacity to reach around 45.2 GW by 2025 and around 167.7 GW by 2050, consisting of:

1. Geothermal Power Plants of 7.2 GW in 2025 and 17.6 GW in 2050 or 59% of the country’s geothermal potential of 29.5 GW.
2. Hydro Power Plants of 18.0 GW in 2025 and 38 GW in 2050 or about 51% of the hydropower potential of 75 GW.
3. Mini-hydro and Micro-hydro Power Plants of 3 GW in 2025 and 7 GW in 2050 or 37% of the mini-hydro and micro-hydro potential of 19 GW.

4. Bioenergy Power Plants of 5.5 GW in 2025 and 26.0 GW in 2050 or 80% of the bioenergy potential of 32.7 GW.
5. Solar Power Plants of 6.5 GW in 2025 and 45 GW in 2050 or 22% of the solar potential of 207.9 GW.
6. Wind Power Plants of 1.8 GW in 2025 and 28.0 GW in 2050 or 46% of the wind potential of 60.6 GW.
7. Other NRE Power Plants of 3.1 GW in 2025 and 6.1 GW in 2050. Other NRE Power Plants include Diesel Power Plants with a mixture of bioenergy, ocean wave power plants, and ocean thermal energy power plants.

This is an opportunity for the private sector to develop the potential of NRE.

3. Clean coal technology is a real game changer

In connection with the “natural retirement” of PLTU, the government has made several policies in the coal sector, as follows:

1. Limiting annual coal production to a maximum of 400 million tons starting in 2019;
2. Gradually reducing the portion of coal exports and stop coal exports no later than 2046 in order to prioritize domestic needs;
3. Implementing moratorium on the granting of new Mining Business Permits-Izin Usaha Pertambangan (IUP) - and Special Mining Business Permits - Izin Usaha Pertambangan Khusus (IUPK)- for coal in primary natural forests and peatlands located in conservation forests, protected forests, production forests, and other use areas; and
4. Requiring the use of coal energy technology that is environmentally friendly (clean coal technology) and

high-efficiency (ultra-supercritical in stages).

Nevertheless, through Presidential Regulation Number 22 of 2017 concerning the General National Energy Plan, the government has launched a program to use coal as the mainstay of the national energy supply, and to use clean technology by utilizing coal as a mainstay to balance primary energy supply with a minimum of 30% by 2025 and a minimum of 25% by 2050.

PLN has planned a 1,000 MW coal-fired power plant with ultra-supercritical technology, namely coal power plant technology that operates at temperatures and pressures above the water critical point, which is a type of High-Efficiency, Low-Emission (HELE) technology or better known as Clean Coal Technology (CCT), which has matured commercially for better efficiency and lower CO2 emissions.

With the establishment of coal as the primary energy supply and the introduction of many technologies in the utilization and use of new coal, the government coal reference price is observed to have increased in the last six (6) months:

1. January 2021 USD 75.00/ton
2. February 2021 USD 90.00/ton
3. March 2021 USD 85.00/ton
4. April 2021 USD 87.00/ton
5. May 2021 USD 90.00/ton
6. June 2021 USD 100.00/ton
7. July 2021 USD 115.00/ton

4. New Policy, New Business Opportunity

Based on Decree of the Minister of Energy and Mineral Resources Number 1567 K/21/MEM2018 concerning the Ratification of the Electricity Supply Business Plan of PT Perusahaan Listrik Negara (Persero)



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from 2018 to 2027, the development of power generation projects planned in the Electricity Supply Business Plan-Rencana Usaha Penyediaan Tenaga Listrik (“RUPTL”)- is adjusted to the funding capacity of PLN.

Given the enormous investment needs of the electricity sector, PLN cannot solely build all the new power plant projects. Thus, some power projects will be carried out by private power companies as Independent Power Producers (“IPP”). The following are PLN’s policies in allocating ownership of power projects:

A power plant project is planned as a PLN project if it has received an indication of funding from APLN or lenders, has an Engineering Procurement and Construction (EPC) contract/appointment from an Engineering Procurement and Construction (EPC) auction winner, or is assigned by the government to carry out a power plant project.

A power plant project is planned

as an IPP project if PLN has signed a Power Purchase Agreement (PPA)/ Letter of Intent, PLN has submitted a proposal to the government so that the project can be carried out by an IPP, or a private developer has obtained an Electricity Supply Business Permit-Izin Usaha Penyediaan Tenaga Listrik (IUPTL) from the government.

New project plans that have not yet been determined by potential developers or sources of funding can be built by PLN or IPP, or in the form of special cooperation where PLN is not a full off-taker, including in the “unallocated” project group.

Law Number 30 of 2009 concerning Electricity states that State-Owned Enterprises-Badan Usaha Milik Negara (BUMN)-are given the first priority to carry out electricity supply business for the public interest, but opportunities are also open for Regional-Owned Enterprises-Badan Usaha Milik Daerah (BUMD)-, private business entities or cooperatives to develop unallocated

projects. In the event that there is no BUMD, private business entity or cooperative that can develop unallocated projects, the government is obligated to assign BUMN to implement it.

For Geothermal Power Plants-Pembangkit Listrik Panas Bumi (“PLTP”)- in accordance with the laws and regulations in the geothermal sector, PLTP development is generally encouraged to be developed by the private sector by winning the Geothermal Working Area-Wilayah Kerja Panas Bumi (“WKP”)- through tender as a total project. Meanwhile, for geothermal potential in WKPs owned by Pertamina, based on previous regulations, Pertamina and PLN can work together to develop PLTP. Several WKPs in Eastern Indonesia owned by PLN will be fully developed as PLN projects. In addition, the development of new geothermal power plants by both PLN and IPP must not sacrifice the steam supply for the existing or running geothermal power plants. 



ANALYSIS

By **Simon Nicholas**

Energy Finance Analyst at Institute for Energy Economics and Financial Analysis (IEEFA)

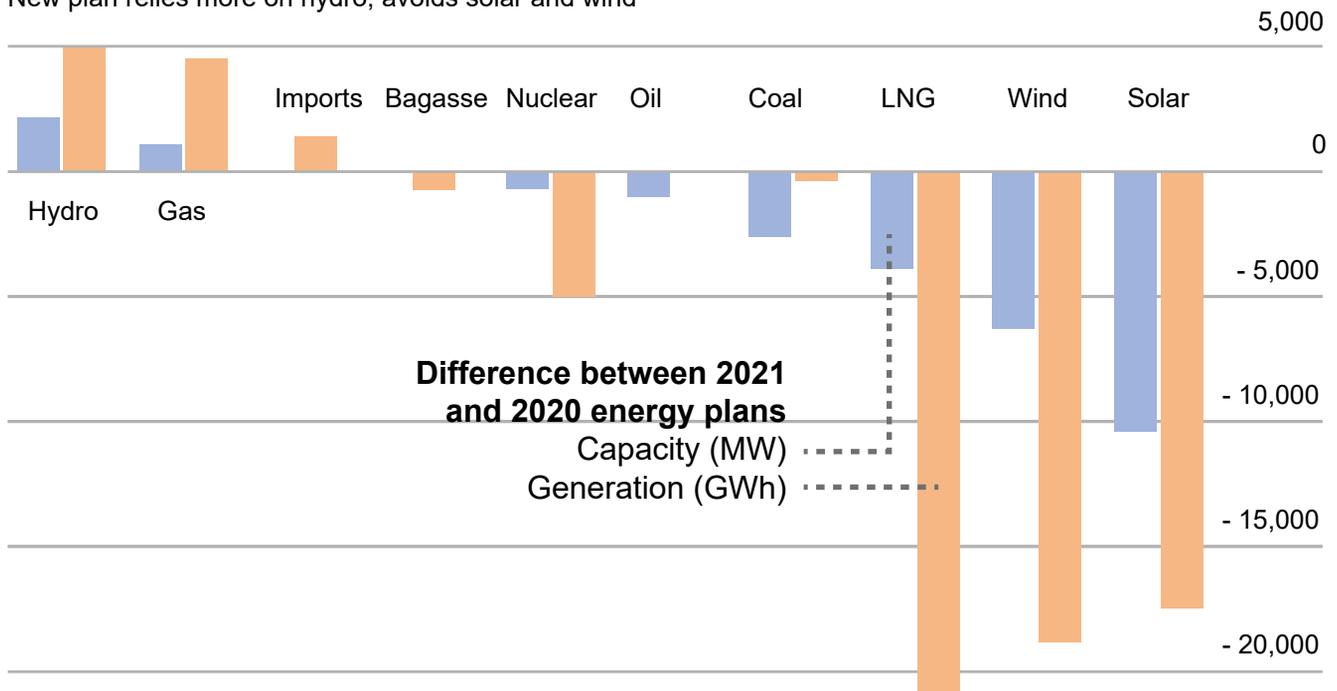
IEEFA: Pakistan's new long-term power plan – one step forward, two steps back



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Pakistan's 2021 energy plan differs from 2020

New plan relies more on hydro, avoids solar and wind



Sources: IGCEP 2020, IGCEP 2021

IEEFA

Pakistan has released a new version of its long term power plan – the Indicative Generation Capacity Expansion Plan (IGCEP) for 2021. IEEFA highlighted some issues with the 2020 version in September last year.

The new iteration of the IGCEP – prepared by the National Transmission and Despatch Company (NTDC) – states on page 1 that “The goal of this plan is to improve decision-making under different long-term uncertainties while assuring a robust generation expansion plan with least cost and minimum risk”.

The 2021 IGCEP does not appear to achieve this goal. In fact, although there has been some improvement in the plan, there are also a number of significant backward steps since the 2020 version.

On the positive side, the power

demand forecasts for all three scenarios in the new IGCEP (low, medium and high economic growth) have been reduced. The new forecasts look more realistic than the IGCEP 2020 forecasts and are closer to IEEFA’s own high-level forecast of power demand at 2030 (Figure 1).

Excessive power demand forecasting is often the root of the costly overcapacity that is a growing issue in developing countries around the world including Pakistan.

The reduced demand forecast in IGCEP 2021 is mirrored by reduced 2030 power capacity compared to last year’s plan, meaning that some of the overcapacity baked into the 2020 version is now avoided. Overall planned 2030 thermal power capacity has been cut back by around 7,000 megawatts

(MW) relative to the 2020 version. Almost 3,000MW of this is reduced coal-fired power.

However, although planned LNG-fired power capacity has been reduced, the 6,800MW of remaining planned capacity will be completely unused by 2030 according to the new IGCEP – highlighting that overcapacity has not been completely eradicated from the new plan.

In addition, planned wind and solar capacity to 2030 has been slashed by an astonishing 17,000MW under the new version of the IGCEP. The 2020 IGCEP was compliant with Pakistan’s renewable energy target of reaching 30% renewable energy capacity by 2030 but the new IGCEP has abandoned this and now only reaches 12% by 2030 (Figure 2).

ANALYSIS

The IGCEP makes clear on page 22 that “Renewable energy, including wind and solar, are quickly becoming cheapest forms of new electricity generation across the globe” and that the “trend of cost reduction for the renewable technology is set to continue in the future and will inevitably reduce the cost burdens, reliance on increasingly expensive fuels and hence lowering the overall generation cost”.

By significantly slashing wind and solar capacities – the cheapest sources of new power generation in Pakistan – the new version of the IGCEP cannot be considered a least-cost plan as promised.

Given Pakistan’s critical power system circular debt and the pressure from the IMF to address the crisis with significant power tariff increases,

it would make sense to have more commitment to the cheapest sources of new power generation in Pakistan, not less. This new plan has Pakistan going in the opposite direction to the rest of the world where solar and wind installations are accelerating.

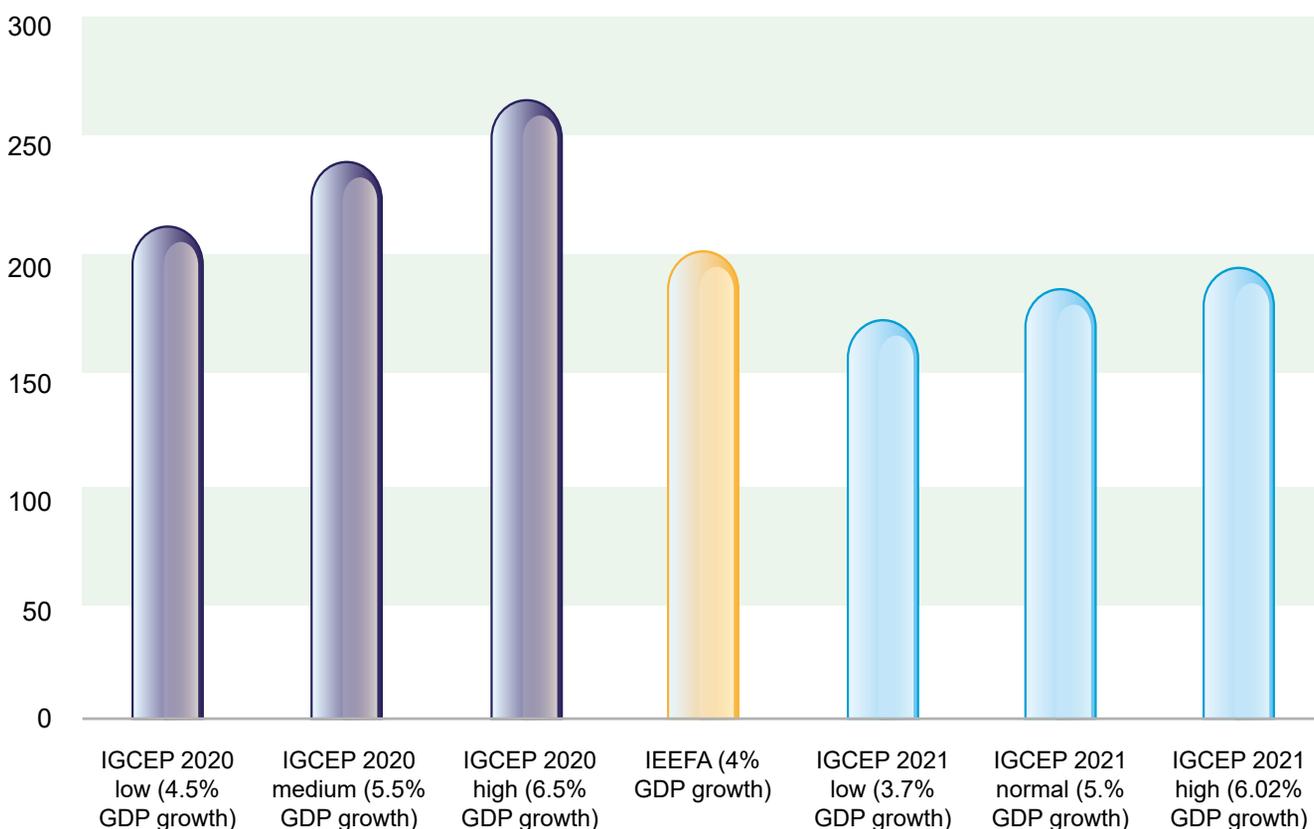
Instead, increased emphasis is placed on hydro power. The new version of the IGCEP considers hydro to be “renewable” and plans for 61% of generation to come from wind, solar, bagasse and hydro by 2030 (Figure 2), in line with the Prime Minister’s statement at the December 2020 Climate Ambition Summit that Pakistan was aiming for 60% power generation from “renewables” (including hydro).

Pakistan’s Alternative and Renewable Energy Policy 2019

(ARE 2019) set a target to reach 20% renewables capacity by 2025 and 30% by 2030. This policy represented a major step forward for Pakistan and included various renewable technologies in the target including wind and solar but not hydro. If hydro is now to be considered “renewable” then the 30% by 2030 target has already been surpassed given existing hydro capacity in Pakistan and the policy is made completely redundant.

Given Pakistan’s track record of major hydro project delays, the decision to reduce the outlook of the new IGCEP to 2030 is highly questionable. The 2020 version included a 2030 and a 2047 time horizon but the latter has now been dropped – the outlook is now only 9 years. There is a significant likelihood

Figure 1: projected 2030 power demand according to IGCEP 2020, IGCEP 2021 and IEEFA estimate (TWh)



Source: IGCEP 2020, IGCEP 2021, IEEFA calculations

Figure 2: IGCEP 2021 planned capacity and generation at 2030 (base case)

	Base case capacity 2030 (MW)	Base case generation (MW)	Base case utilisation (MW)
Imported coal	4,920	18,007	41,8%
Domestic coal	3,630	19,985	62,8%
LNG	6,786	36	0,1%
Gas	2,582	5,278	23,3%
NIKlear	3,635	24,912	78,2%
Bagasse	749	3,380	51,5%
Sdar	1,964	3,478	20,2%
Hydro	23,035	91,866	45,5%
Imports	1,000	3,443	39,3%
Wind	3,795	14,514	43,7%
Oil	1,220	-	0,0
Total	53,316	184,99	
RenewaHe %	12%	12%	
RulewaHe & Hydro %	55%	61%	

Source: IGCEP 2021

that proposed hydro projects won't be finished within this timeframe.

The proposed 4,500MW Diامر-Bhasha dam has an expected commissioning date of February 2029 according to the new IGCEP making it seem at great risk of not being completed within the IGCEP's timeframe. The huge project, which has been on the drawing board for many years, still faces many challenges and in addition to likely running over schedule, the US\$14 billion suggested cost is likely to prove to be a significant underestimate.

Wind and solar have very short construction periods that give more certainty to power development planners

In contrast, wind and solar have very short construction periods that give

more certainty to power development planners.

Much is made of the increased energy security provided by hydro power but increased energy security could have been achieved at lower cost through more emphasis on wind and solar.

In fact, there remains some question over dams' ability to reliably supply power for Pakistan. A recent heatwave of the type likely to occur more often as the climate continues to change has led to blackouts, as the power system was unable to meet increased demand. The fact that the large Tarbela dam was only operating at 25% of capacity due to water shortages contributed to the power cuts.

The Pakistan government insists that

reliable and affordable power is one of its top priorities.

However, the policy change to include hydro within the renewable energy category, combined with a target of 60% clean energy by 2030 that heavily relies on hydro and slashes wind and solar, means that there is significant risk locked into the new IGCEP. There is a high likelihood that major hydro projects will be delayed and the 60% by 2030 target will be missed.

The positive impact of the declining cost of solar and wind is also largely foregone in the new plan which is instead exposed to the risk of major cost over-runs for the large dam projects.

The new IGCEP cannot be considered to be a "least cost and minimum risk" plan. 

50 years serving Indonesian mining industry (1971-2021)

By: **Durban L. Ardjo**



PT. GEOSERVICES came into being as a limited liability company during the beginning of the revival of mining industry in Indonesia in the 70's. Bandung Institute of Technology (ITB), as a higher science and technology learning school in Indonesia, was the cradle of education in geology and mining in this country, where both of the founders, a geologist cum geochemist and a mining and metallurgical engineer were lecturing after their return from Colorado School of Mines, United States of America, in the 60's.

It was then understandable, that the head office took place in the beautiful city of Bandung, a city of about 700 metres above sea level in West Java. From small work and assignments, done between lectures and classrooms, sometimes using chemical laboratory at the school, the lecturers have made the company grew into the size of today with a number of divisions manned by more than two thousand strong workforce plus about several hundred casual or daily laborers. The rarity of people with the educational background in earth sciences in those times have given way to the rapid progress of the company. It was the name of the two

learning schools at ITB, the Geology and the Mining Engineering that made people aware of the existence of the service company. Aneka Tambang and Pertamina, both were government owned companies, where graduates of the Bandung Institute of Technology held key positions, were the early major clients in the 70's. Some foreign exploration teams like Utah Minerals and BHP, that later became government mining permit holders like Adaro, and Arutmin were also became our clients for some time.

The various services needed by the clients, from mapping survey, geology, geophysics, core drilling, chemical assays of field samples, and all relevant and supporting data collection, have made the company move into the idea of "one stop services" to the industry. If the company was lacking in the expertise of personnel and experience, or lacking in equipment and the use of equipment, the company entered into technical agreements, cooperation, collaboration or joint ventures with individuals or companies offshore, mostly from Australia, the closest and most developed country in the field of mining development.

Sending people to different

countries, such as Australia, Japan, and the US and now to China, to learn and to purchase equipment for the different laboratories and the divisions such as the geophysics, core drilling and other field work services, had become part of the company's investment for the future. It was not only in minerals, but later on in the field of energy resources such as geothermal and oil and gas, that the company move into.

The first laboratory that was established was mineral laboratory in the 70's, to complement for base metals exploration. That was the time when nickel and copper were highly explored. Later on gold and silver after their prices were dictated by market value, the mineral laboratory was expanded to include fire assay work. Cooperation with Sheen Laboratories and Analabs of Australia were entered in the 70's and 80's. But now the Mineral Laboratory in Cikarang, Bekasi, has become an outstanding laboratory not only in analytical assays, but also in metallurgical investigation. A water and steam laboratory was established in mid 70's to support the geothermal field work. In the beginning of the 80's when the company saw the surge of exploration in coal, a technical



agreement with the Australian Coal Industrial Research Laboratories, was made. A coal laboratory was first established in Bandung, which later was followed over the years by establishment of more than 20 laboratories in Kalimantan and Sumatera to cater for the need of coal mines in assessing resources, in controlling production and in stockpiling.

The growth of the number of coal laboratories to now close to 50 was also enhanced by the additional line of business. Coal cargo inspection for quality and quantity since the late 80's have raised the need of establishing coal laboratories not only at barge and vessel loading ports in Sumatera and Kalimantan, but also at unloading ports in Java and Sulawesi to assist coal users in controlling quality and quantity of coal delivered. The certificates bearing the logo of the company have been well accepted by coal mining companies, traders/sellers, local and overseas buyers, banks, financial institutions and coal users such as power plants, cement industries and pulp and paper industries. Nominations by coal buyers



and coal users, both domestic and a lot from overseas, for the shippers to use Geoservices as the third party inspection company has become a common thing, proving that the work performed by the Geoservices laboratories and marine surveyors are to be trusted. A lot of receivers at the other end of coal

delivery line also assign other inspection companies or their own laboratories to re-check for the split samples to assess the quality of the coal cargoes, and after 50 years, almost none come out with challenges or objections. Geoservices will soon expand the capability to do nickel cargo inspection by establishing more nickel laboratories in view of the surge of nickel ore trading in Eastern Indonesia.

Expanding to cater for the need of analysis and quality assessment of coking coal, mainly from the mining tenements in Central Kalimantan was a good move. The need is shown by the spike of interest by some of the coal miners in exploiting coking coal. The ability to respond well to that have been shown by coal laboratories in Balikpapan and the relatively new laboratories in Central Kalimantan. Properties tested for coking coal compared to that of steam coal require a special mastery of laboratory procedures.



Thousands of certificates are being issued every month for coal cargo loaded or unloaded to/from barges or vessels for coal export and domestic use. Geoservices is one of the few superintending companies appointed by the Indonesian Government to verify coal exports and coal domestic use under Domestic Market Obligation as required by Ministry of Trade and Ministry of Energy and Mineral Resources decrees. Reliability and trustworthiness in laboratory results, in draft readings of vessels, and in promptness of certificates delivery, are the keys to the Geoservices widely accepted performance.

A laboratory for drill core in Oil and Gas have also been established in Jakarta in the 70's to cater for the oil exploration. This laboratory is still now operating under the supervision of formerly an expatriate and now by an in-house trained local manager outlasting some other bigger overseas oil laboratories in the country. More capability in core analysis is being added with the purchase of state of the



art instrument from overseas recently. The geophysics division has been used by oil companies in Indonesia and at one time used by a client to do work in Africa. Through some subsidiaries, Geoservices have been involved in other side-line businesses in oil such as offshore structure refurbishing, off-shore rig supply support, seismic tape copying, and data storage and management.

Second generation leadership of the company is now coming into being. With the span of services, more

professionals in the different fields of expertise with the marketing and commercial acumen have to be there to sustain not only the life of company, but also the growth to new heights. It is the responsibility of the two founders to make that a reality. For its achievement so far, PT. Geoservices was awarded the recognition as the Best Exploration Service Company in Coal and Mineral during the 60th Anniversary Celebrations of IAGI (The Indonesian Association of Geologists) last year. 



FOCUS





COAL PRICES KEEP GAINING STEAM

Since the end of 2020, coal prices have shown bullish trend after unprecedented drop in the first half of the year due to the Covid-19 pandemic across the globe during the year. Since early this year, coal prices have continued such bullish trend. As shown by the data of the Ministry of Energy and Mineral Resources, the coal reference price (HBA) in July 2021 surged to US\$115.35 per ton, the highest level over the past ten years, driven by strong demand from East Asia countries. The July HBA was \$15.02 higher compared to the June price of \$100.33 per ton.





By **Tri Subhki R.**

Given the bullish trend, the government of Indonesia decided to revise up the domestic coal output in 2021 by 75 million tons from initial target at 550 million tons to 625 million tons which mainly dedicated for export markets.

The coal price hike in recent months was mainly due to a stronger demand from China as its strong economic recovery triggered a higher demand for coal to fuel its economic growth.

The Ministry of Energy and Mineral Resources (MEMR) recently stated that China’s coal consumption surges while the country’s domestic coal supply lags behind the demand.

“China deals with domestic coal supply shortage due to technical issues, such as mining incidents and extreme weather,” Agung Pribadi, the Head of Communication, Public Services and Cooperation Bureau at MEMR, said. In addition, Agung said Japan and South Korea have also recorded a similar growing coal demand trend.

Based on the data of the China National Bureau of Statistics in April 2021, the China’s economic growth surged 18.3 percent in the first quarter

of 2021 compared to the same period in 2020. The GDP in the second quarter is expected to grow by 8.2 percent.

“The coal prices hike was mainly driven by the strong economic growth in China. Stronger economic growth requires more energy supply,” Jimmy Deng, General Manager of Indonesia Branch of Century Commodities Solutions, said recently in a webinar hosted by *CoalAsia* and *Petromindo.Com* recently.

Deng explained that the China’s total power generation in the first five months of 2021 grew by 16.3 percent compared to the same period last year and produced 31,714 TWh of electricity. Its coal-fired power plants generated 23,336 TWh of electricity in the same period this year or grew by 16 percent from last year.

“The peak season for coal-fired power plants in China has not coming yet, since the peak season is around July and August,” Deng said.

China’s coal output in the first five months this year was 1.61 billion tons or 10.8 percent higher from last year. Due to stringent security check at its mining sites, Deng said China’s coal production has slowed down but the production is

HBA in 2021

Month	Price (US\$/ton)
July	115.35
June	100.33
May	89.74
April	86.68
March	84.47
February	87.79
January	75.84
December 2020	59.65
November 2020	55.71
October 2020	51

Source: MEMR

Indonesian coal sales shift to ASEAN

Indonesia coal company sales and breakdown (million tonnes, %)

Coal exports	Unit	2019	2020	IQ 2021
Adaro coal sales	m tonnes	59.2	54.1	12.6
China	%	12	13	15
India	%	15	13	10
North Asia	%	42	49	22
ASEAN (plus Indonesia)	%	19	24	51
Bayan coal sales	m tonnes	29.2	36.3	10.6
China	%	11	14	22
India	%	25	13	8
North Asia	%	12	14	17
ASEAN (plus Indonesia)	%	44	50	43
Indika coal sales	m tonnes	34.9	33.0	9.2
China	%	35	37	35
India	%	10	10	9
North Asia	%	15	4	10
ASEAN (plus Indonesia)	%	38	48	45
ITMG coal sales	m tonnes	25.3	21.2	4.1
China	%	29	22	19
India	%	6	4	5
North Asia	%	25	29	29
ASEAN (plus Indonesia)	%	30	35	37
Total	m tonnes	148.6	144.6	36.5

estimated to catch up with the relaxation on the security check after July.

In term of coal imports, China recorded 111.1 million tons of coal imports in the first five months of this year or 25.2 percent lower from the same period last year due to the import ban on all Australian coal. For electricity industry, China is projected to consume about 2.2 billion tons of coal this year or 3 percent higher compared to last year. Coal-fired power generation contributes 56 percent of China's total installed power generation.

Lars Schernikau of HMS Bergbau AG recently confirmed that China's coal import this year may not be as high as the imports in the previous years, particularly in the first five months period. He highlighted the declining trend of China's coal import in recent years. However, he sees that Indonesia may benefit from China-Australia tension. "The share of Indonesia's coal in China's coal import grows while Australia has gone to zero," he said.

Nevertheless, China remains the

main driver of global coal market with estimated total coal import of 230 million tons in 2021. India is also predicted to import more coal this year at around 170 million tons as the domestic coal output is estimated to be below the total domestic demand.

"The India's coal import dropped last year due to COVID-19, but India's coal import will grow slightly every year until 2025. This is good news for Indonesia coal producers," he said.

Shifting markets

In the meantime, Australian coal keeps finding ways to enter markets outside China as the China-Australia tension lingers. As mentioned above, there were no Australian coal cargoes that have entered China since early of this year.

Ghee Peh of the Institute for Energy Economics and Financial Analysis (IEEFA), figured out that Australia has exported more coal to India and Southeast Asia market, particularly Vietnam, in the aftermath of China's

ban. In January 2021, India imported 6.7 million tons coal from Australia, including coking coal, and 5.4 million tons from Indonesia.

"India is a tough market for Indonesian coal producers since there is a pandemic risk and at the same time Australia keeps selling more coal to India," Peh said recently.

Given the current situation, Peh also found that a number of Indonesia's major coal producers has been shifting their export market away from India and going to Southeast Asia countries. "Indonesia has close proximity with Southeast Asia market," he said.

However, Australia also keeps pushing their way to the same markets in the region, particularly Vietnam, where the coal import demand showed an increasing trend in recent years. In 2020, Vietnam imported 54.8 million tons of coal or rose by 25 percent year-on-year.

In the first five months of this year, Vietnam's coal import fell by 34 percent year-on-year to 16.4 million tons, where Australian coal constituted

41.1 percent of the country's total coal import and Indonesia's coal share was 38.9 percent.

Peh suggested that Vietnam's coal import in the second half of this year might be challenging in the wake of growing power capacity from renewable and hydropower energy in the country.

"But the good news is Vietnam is going to add 7.3 GW coal-fired power capacity by 2024 which could add approximately 18.3 million tons of coal demand," Peh said.

Supply shortfall

From the supply perspective, Indonesia as the world's largest thermal coal exporters, is unlikely to achieve the additional 75 million tons coal supply for the export markets. The supply shortfall coupled with the shrinking coal inventory of end-users are expected to sustain the coal prices in the second half of this year.

"I think the government's target of

additional 75 million tons output this year may not be achieved since the approval for the miners was given just recently in June. It may only be achieved around 40 million or 50 million at the maximum," Jusnan Ruslan, Director of PT Indo Tambangraya Megah Tbk, said.

Patricia Lumbangaol, Market Research Manager of Adaro Coaltrade Services International, shared the same views with Jusnan and estimated that only 50 percent of 75 million tons additional output will be achievable

given the very short window of time to ramp up the volume.

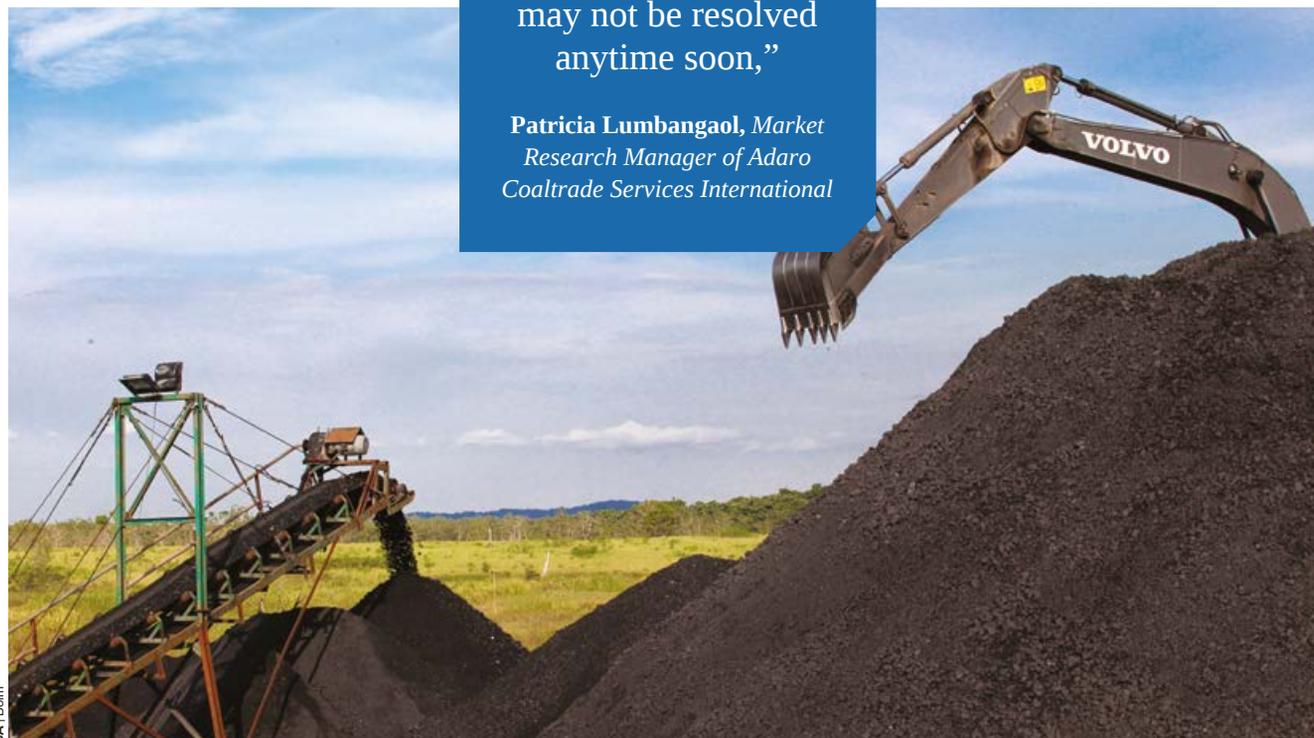
"The supply response from Indonesia might be not that high since there are limited resources, including the availability of heavy equipment, which may not be resolved anytime soon," she said.

These ongoing conditions, according to Patricia, will further support the coal prices and she has not yet seen any big factor which may drive down the prices in the near future.

Schernikau, Jusnan and Patricia are all agree that the current bullish price trend would be short-lived since the industry players believe that the ICE Newcastle in July which reached at around \$120 per ton is not a healthy price level. Schernikau views that the relatively healthy coal price is ranging from \$70 to \$90 per ton which is acceptable by both coal producers and buyers. "This price level is well above the production costs," he said. 

"The supply response from Indonesia might be not that high since there are limited resources, including the availability of heavy equipment, which may not be resolved anytime soon,"

Patricia Lumbangaol, Market Research Manager of Adaro Coaltrade Services International



CA | Boim

By Ian Wollff

The author is an expatriate principal geologist of about 30 years' experience in the Indonesian exploration and mining industry. The authors' web site is www.ianwollff.com



Delayed implementing regulations. An opportunity for better rules?

The Ministry of Mines & Energy, along with various industry associations, have been most generous in their time and effort over the past Covid19 year to present, and participate, in a variety of webinars and public discussion forums.

On the 16th June 2021, Tambang magazine and Armilla & Rako law firm held a face-to-face focus group discussion in Jakarta on “Satu Tahun Minerba; RPP Minerba dan kepastian berusaha Pertambangan” [One-year Minerba; Minerba RPP and certainty in mining business]. Dir Jen Minerba (Ridwan Djamiluddin) and 7 speakers from mining industry associations talked about the path ahead to improve the Indonesian mining industry. Eva Armilla Djauhari of Armilla & Rako Law acted as host and moderator.

The Dir Jen addressed the key point on the development of the implementing regulations, and went on to briefly outline other Mines Department concerns about attracting investors. The presentations from the industry associations outlined a number of points

where clarification and discussion could lead to a better outcome for private participation in the exploration and mining industry.

Some underlying themes of this discussion group was 1) the need to improve certainty for investors, 2) the growing difficulty in accessing land, and 3) the ever more complex bureaucracy the Mines Department is facing in getting consensus for developing implementing regulations.

The speakers presented a vast amount of information, wherein this article includes a selective summary of points. It should be noted that this type of forum represents outlooks that may change over time, as the industry, and awareness of the industry, evolves. The discussion was undertaken mostly in Indonesian, and not all speakers presented accompanying slides. I apologize for any omissions or errors.

Director Jenderal Mineba, [Ridwan Djamiluddin] mentioned that the revised mining law 3/2020 required implementing regulations to be issued within one year (June 2021). The Mines Department is developing one

presidential regulation on the delegation of business licenses in the mining and coal sector, plus 3 RPP's on; -

- Implementation of mineral and coal mining business activities,
- Mining area,
- Guidance and supervision as well as reclamation and post-mining in the management of mineral and coal mining business.

The development of these regulations requires harmonization with other ministries and socialization with numerous government agencies, each with their own complexities. The expected earliest issuance of these regulations is December 2021. None of the industry associations have seen a draft of these proposed implementing regulations. It is widely recognized that many investors in the mining industry are waiting for the issuance of these implementing regulations as the next major step to encourage investment.

Association of Indonesian Geologists Professionals [Ikatan Ahli Geologi Indonesia IAGI] chairman Muhammad Burhannudinnur delivered



a well-prepared presentation on “Where is the implementing regulations on Law 3/2020 going?”. Some of these points are summarized as; -

1. Urge the ministry to discuss the draft of the implementing regulations with industry associations and other stakeholders, with sufficient time and opportunity to affect positive feedback.
2. Encourage exploration through improved guarantee of investment in exploration, coordination with investment strategy and ease to undertake exploration activities.
3. The auction system for new tenements to encourage greenfields, change the “right to match” criteria to give more certainty to the original investor, reduce the data & information compensation fee, and adjust other counter-productive elements.
4. Reporting of exploration data to be undertaken by a recognized Competent Person using internationally recognized terminology. Permits to extend the exploration license maybe linked to past exploration performance, and to source of future exploration funds.
5. Further transparency sought on the Ministries process of issuing Operational Production license after completion of exploration permit.
6. Investors may favour minerals that are easy to comply with down stream requirements, and avoid other minerals that are less attractive, thereby leaving much on Indonesia’s potential resources under explored. Options over structure of investment may be reconsidered.
7. Permits for overlapping commodities have a number of scenarios that are in question.
8. The operation of the proposed Mineral Resilience Fund is as yet very unclear.
9. Further clarity sought on what happens to the data handed to the ministry upon the termination of a tenement.

Association of Indonesian Mining Professionals [Perhimpunan Ahli Pertambangan Indonesia PERHAPI] chairman Rizal Kasli, delivered a well-prepared presentation titled, “Business Assurance in Mining”. Rizal started out by identifying a number of areas where law 3/ 2020 has brought improvements to the mining industry, particularly

ANALYSIS

in the areas of mining governance, alignment of national interests, legal certainty, ease of investment and environmental management. Rizal went on to provide a number of recommendations to improve the private sectors involvement in exploration, mining and commodity inventories:

1. Geology & Exploration; - Develop a better divestment obligation policy, recognize alternative investment options for junior miners, and review the Mining Data & Information Centre operations.
2. Land & Permit Conflict; - strengthen the One Map Policy and integrate with an updated land surveying system, along with preparation of a standardized land acquisition system.
3. Mineral & Coal Downstream; - Regular review and update the grand strategy for the management of the nations mineral and coal industries, along with stronger and more transparent monitoring reports.
4. Artisanal & Small-Scale Mining (IPR); - Support improvements in small scale mining through various local and national assistance programs, and to strengthen the penalties for poor mining practices and law enforcement for non-licensed miners (PETI).
5. Mining Business Supervision; - Improve the monitoring conditions through engaging more trained mines inspectors, closer collaboration between government bodies, integrated data bases and the ongoing development of operational standards.

Other concerns that bring uncertainty to the mining industry are; -

- a) The transfer of authority from provinces to central, and delegation of some functions back to the

provinces has not been fully implemented, and is unresolved in special administrative districts such as Aceh province where a double tax payment system operates under local law (PERDA) for mining minerals and coal.

- b) Socialization of the revised law 3/2020 is not yet complete in many parts of Indonesia.

Indonesian Mining Institute (IMI) chairman Irwandy Arif spoke on the development of governance in the mining industry. Some key discussion points include; -

1. The urgency of developing implementing regulations in support of law 3/2020 to improve governance, align national interests, provide legal certainty for investors and encouraging environmental management. The implementing regulations must be systematic, simplifying regulations and in line with other regulations.
2. Crucial issues include strategic objectives and strengthening rules of value-adding, share divestment, land rights, continued operations, increase exploration etc.
3. Challenges facing the mining sector include supporting sustainable economic growth, building a resilient society, establishing good governance etc.
4. Improvements to national mining governance include; - strengthen the legal framework for mining and improve the mining management planning. Also, to increase exploration through research, encourage junior explorers, obliging producers to explore more, and development of a Mineral & Coal Resilience Fund (DKC). Improvements are seen in delegating



certain licensing responsibility to local governments (principally in the non-metallic rocks and peoples mining areas and IUP sales for all commodities).

5. Suggestions for improving national mining governance include emphasizing sustainability and transparency in mining (emphases on markets and reserves).

The role of industry associations

This focus group discussion is one



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significant way in which people can have some direct input to the Ministry for the ongoing improvement of the industry, and the well-being of the miners and investors. I encourage individual professionals, and companies, to join such associations to better liaise and influence policy and regulation.

Join an association and have your voice heard.

Bad times can hope for good policies

The exploration, production and

refining of the Indonesian oil & gas industry has been in decline for some years. Many of the long term committed international companies have gradually left Indonesia, as the business environment is seen to be less favourable, despite the relatively high geological and human capital potential of Indonesia. Senior Indonesian old hands that helped build this industry say it is past the time for incremental changes, and Indonesia is now in desperate need for a “significant

breakthrough” in policy for the industry to begin to recover.

Similarly, it is well recognized that the greenfields exploration of minerals and coal has faltered badly. The current policy of incremental steps to encourage the mineral and coal exploration industry have not been sufficient to stimulate the broader mineral and coal industry. The recent Law 3/ 2020, Omnibus law and some others close to the Mines Department seem to favour this incremental policy, despite there being no marked improvement in greenfield exploration activity.

The suggestions brought forward by the various industry associations in this Focused Group Discussion have identified some of the areas to improve upon. The old saying “good times yield poor policies, while bad times can yield good policies”. Indonesia’s slow emergence from the global covid19 pandemic financial disruption appears to present “bad times”. We may hope the delay in issuing the new implementing policies will see some breakthrough good policies to meaningfully stimulate the mineral and coal exploration and mining industry. In the past, the Mines Department has tried to issue a handful of new tenements through the auction system. It is well recognized that the success ratio is about 1 : 100 for developing a new mine from a greenfield exploration, and the time between issuance of new tenement to start mining can take 5 to 25 years. A “meaningful” stimulation of the mining industry needs at least a hundred new tenements to be issued across all of Indonesia every year, and continued issuance over many years. Every province seeks new investment in exploration and mining. 

● **Highlight**

Nickel Environment
Thousands of Slag “Hills”

● **Nickel Price**

May’s Roller Coaster &
Commodity Super Cycle

● **Production**

Investigation into ESDM
Southeast Sulawesi office

● **Nickel Export**

Potential Market of IE-CEPA

● **Infrastructure**

Power Deficit in Morowali

PROVIDED BY IKI - COALASIA





INDONESIAN NICKEL REPORT

Nickel Environment

Thousands of Slag “Hills”

◆ Nickel Industry

In last month’s report, PT Indeks Komoditas Indonesia (IKI) had given information about the future of Indonesian nickel industry whereas ESDM said there will be 30 nickel smelters, excluding IUI, will operate by 2024 with total production capacity of 5.87 Mt per annum, including the HPAL plants, while BKPM mentioned a bigger number of more than 50 nickel smelters will operate in the future. But IKI notices none of the government institutions, especially ESDM had ever discussed about the potential wastes “*produced*” from the smelters along with the effect to the environment especially to the Sulawesi and Maluku regions, and the effect of these wastes to the local people livelihood. In IKI’s research we found two major waste products are generated from nickel processing plant, namely slurry waste or also known as tailing which comes out mostly from nickel ore treatment and also in the processing plant, and the solid waste which mostly comes out in the final stage of metal production or also known as slag. In this report, IKI will discuss about the slag in the nickel industry and its usage.

In March 2021 the Indonesia government issued government regulation no 22/2021 (PP 22/2021) regarding the implementation of environmental management and protection, allowing the government to drop slag, resulting from metal production including steel slag, nickel slag and mills scales, from the category of hazardous and toxic wastes (B3) as the government **believes** major elements in metal slag are silicate and iron oxides which have the same characteristics as natural aggregate. The government also **believes** that slag’s toxicity characteristic leaching procedure (TCLP) is lower than the limit set by the government,

which means that the heavy metal in slag will not release easily to the environment, and the government also **believes** that the slag is harmless to the environment as its LD 50 (lethal dose) is more than 5,000 mg/kg as stipulated in the government regulation. The government hopes the issuance of PP 22/2021 can reduce cost for waste management, and the waste can be also re-used by the company/other parties to produce other valuable products. The Indonesia Iron and Steel Industry Association (IISA) said that this government regulation is one of the government’s true supports to the development of national iron and steel industry, and its investigation also shows that steel slag when used as mixture to asphalt and cement will not make negative effect to environment. PT Krakatau Steel said the government’s policy of removing metal slag from the list dangerous and hazardous materials will create more income for metal companies from slag sales, estimated to reach around 3% - 9% of the total incomes, and this is because slag can be used as raw materials to produce premium quality cement, and it can be used also to produce high quality asphalt.

The Director General for Highways at the Ministry of Public Works said nickel slag has similar chemical composition with natural aggregates used for material construction and the removal of nickel slag from the B3 list can have effect to reduce natural resources exploitation which is needed by the construction sector. Meanwhile, the association of Indonesia processing and refining companies (AP3I) said nickel slag can be classified as olivine minerals or non-metallic minerals as it has the same classification with sand and rock in the mining industry (class C mining materials). AP3I explained that nickel slag can be used to make bricks, precast concretes, road-base and yard-base, as agent for soil improvement, fertilizer or media growth, mortars, cement slag, cement Portland composite, and also cement geo-polymers. In IKI’s research we were only able to find two nickel companies in Indonesia which have done research about their slag and its usage as IKI compiled below.

◆ The Antam Report

According to Antam, slag is solid waste produced from refining process in metal, but it is also one of the indicators to determine the metal quality as the slag physical properties such as viscosity, melting point, conductivity and many more can be used as basis to control the metal composition and grade. Antam claims of producing around 1.2 Mt of nickel slag per year which comes from its three smelters at Pomalaa of Southeast Sulawesi. Antam, in its report said the company currently produces three different slags, and with slags from 2nd plant and 3rd plant have bigger size and have similar characteristic with natural gravels, while slag from FeNi IV has fine size and has the same characteristic with natural sands as shown in the below picture

Picture 1 Antam slag



Source : Antam

Antam explains its slag has the same physical properties with natural aggregates like sands and gravel/split stocks especially in specific gravity, absorption rate, abrasion resistance, and soundness test, but its adhesiveness to asphalt is less than 95% or below the specification of the Ministry of Public Works of minimum 95% which means that its slag is not suitable **to be used in asphalt mixture due to its low water resistance.**

Antam also said its slag has the sand equivalent value of 76.4% which is higher than the maximum requirement made by the Ministry of Public Works of 60% which also means that its slag is not good for asphalt concrete. Antam also said that currently most of its slags are used as substitute of raw material needed to make paving blocks, bricks, and concretes, and currently the company has two lines of machine to produce paving blocks and bricks with total capacity of 2.6 million pieces paving block per years or to produce 1.3 million of bricks per annum which consumes almost 9.0 Kt of nickel slag per year. The products of paving blocks and bricks are then used by Antam for building construction materials such as for building offices, houses, gymnasiums, and many more. Antam also said that it's developed two types of concretes, with the brand name of Poton, which are pre-cast concretes and cash in-situ concretes used for civil works, and both concretes are also used for internal construction such as to build drainages, warehouses, sport facilities, driving ranges, jogging tracks, and many more.

Antam also said it slag can be used to substitute coarse aggregates like stones and gravels for the construction of yard-base and road-base, and its investigation about material composition for yard base construction shows that the maximum result for CBR (California bearing ratio) and also the plasticity index are obtained in the ratio between slag and sand/stone of 90%:10%. Antam also explained that best composition for construction road-base is 50% slag and 50% of sand and stone, but due to the low CBR of < 90% then the mixture **can be only used for the pavement between surface layers and base soil** (B grade road base). Antam also said nickel slag has abrasive value of 42.01% or about the same with natural aggregate and therefore it can be used to replace silicate in sand blasting process for removing rust and corrosive layers, paints, salts, lubricants, and many more.

Antam claims currently it's doing study on the use of the nickel slag as raw material in cement production as it found that combining slag and fly ash into the cement mix can increase the concrete's compressive strength as the higher silicate content in slag can strengthen the cement layer and also reduce micro-hydration heat in mortars and concretes. Antam also said that nickel slag has used for making cement for the construction of power plants in Korea and used for raw materials to produce Portland cement for road construction in China. The Chinese's investigation shows that the optimum Portland cement specification for road construction can be achieved with the composition of nickel slag, limestone, fly ash, steel slag, gypsum, and calcium fluoride respectively of 14%, 74%, 4%, 7%, 0.6%, and 0.8%. China also claimed that increasing nickel slag in cement mix will be able to create dense and uniform granulate in the clinker by reducing the f-CaO composition in the clinker as the effect of using gypsum for desulfurization.

Picture 2 Slag in the stockpiles



Source : Antam

But the major problem for Antam to develop slag usage in cement production will be in the segregation of the slag size as currently the coarse slags from the second and third plants are mixed with the fine slag produced from the fourth plant as shown in picture 2 above, and therefore it is planning to do resizing process to create more homogenous and finest size distribution and it plans to also separate the piles based on the dimension in the future.

◆ The Vale Slage

PT Vale Indonesia said its nickel matte furnaces also “produce” slag of around 4.6 Mt per annum or can be said that to produce 1 ton of nickel matte then Vale also produces 50 tons of solid waste, which consists of furnace slag and converter slag with quantity respectively 4.1 Mt and 0.5 Mt, and these slags are placed in the waste storage area. Several mineralogy tests concluded that major minerals in Vale’s slags are found in the form of fayalite (Fe_2SiO_4), magnetite (Fe_3O_4), and cristobalite (SiO_2) with irregular polygon-shaped morphology and with smooth and solid surface, and with the biggest metal contents in Vale’s slag are iron, nickel and cobalt as shown in the table below.

Table 1 HPAL projects

Metal content	Units	Gbor (2000)	Perederiy (2011)	Huang (2015)	Ettler (2016)	Undip 2020
Arsen (Ar)	mg/kg	-	-	-	26.2 ± 0	<0.1
Cadmium (Cd)	mg/kg	-	-	-	4.58 ± 0.23	6.79
Chromium (Cr)	mg/kg	-	20	-	7580 ± 150	361
Cobalt (Co)	mg/kg	1222	630	587	73.3 ± 1.1	3610
Copper (Cu)	mg/kg	120	690	659	<5	843
Iron (Fe)	mg/kg	337,780	528,000	480,600	95400 ± 4600	370,000
Lead (Pb)	mg/kg	-	40		-	15.9
Nickel (Ni)	mg/kg	2960	1050	1485	779 ± 22	4790
Zinc (Zn)	mg/kg	190	160		98.6 ± 0.9	110

Source: BPPT, Vale, 2020

Researchers from BPPT said they have done several leaching tests to Vale’s slag with acid sulphate, and with acid concentrate of 0.2 mol/l, 0.25 mol/l, 0.3 mol/l and 0.35 mol/L to 500 gram of slag with the time retention of five days then the process can dissolve iron oxide in the slag respectively 2,790 mg/L, 1,940 mg/L, 4,180 mg/L and 5,160 mg/L, which means that residual mineral metals in the slag can be recovered and the researchers expect, based on a statement to IKI, more metals can be recovered from the slag by reducing its size. In IKI’s research we also found other investigations which claimed that Vale’s coarse and fine size slags can be used to replace sand in construction work which will not only reduce cost but also increase the concrete’s comprehensive strength as the *pozzolanic’s* reaction between SiO_2 from nickel slag and with Ca(OH)_2 from cement hydration will produce more C-S-H gel including gel produced from cement paste hydration, and the higher gel will improve the concrete’s interface. The research also said using nickel slag will also improve concrete workability and its long-tem performance both in normal situation and also in sea environment due to its high resistance to the sulphate attack and salt penetration. However, despite of the claims above, IKI found Vale’s statement which said that at this moment majority of its slag are used for raw material in construction of the mine’s hauling road and used also **for top layer in the company’s special road.**

◆ THE TCLP

IKI was unable to find any government data about the TCLP in nickel which has been used to support government’s policy of removing nickel slag from the B3 materials. However, IKI found research works made by several universities in Indonesia about TCLP in nickel slag as IKI compiled on table 2.

Table 2 TCLP analysis (ppm)

Metal	Ferronickel	Nickel matte	NPI	PP 21/2021	
				TCLP A	TCLP B
Arsen	< 0.003	NA	NA	0.3	0.5
Silver	< 0.03	NA	NA	40	5
Boron	1.1	NA	NA	150	25
Cadmium	< 0.004	< 0.003	< 0.003	0.9	0.15
Chrom Hexavalent	< 0.031	0.041	0.012	15	2.5
Copper	0.054	0.0168	0.01	60	10
Mercury	< 0.001	NA	NA	0.3	0.05
Lead	< 0.030	< 0.002	0.1162	60	10
Zinc	0.098	< 0.002	< 0.002	300	50
Nickel	< 0.07	< 0.07	< 0.07	21	3.5

Source: multiple sources, compiled by IKI

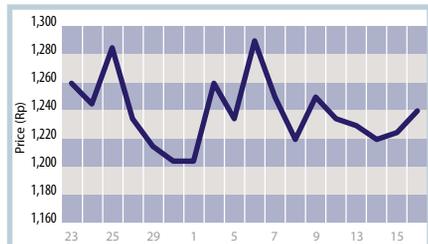
The table above shows nickel slag TCLP analysis from ferronickel, nickel matte and NPI showing that heavy metal concentrates are lower than the limit stipulated in government regulation, which means the metal remains in the slag will not be easily released to the environment. However, IKI notices that the lead contents in NPI are above the standard made by the Ministry of Environment and Forestry regulation about the water quality of nickel waste. Unlike Antam, IKI was unable to find enough information about Vale’s program, policy and activities relating to its nickel slag which IKI finds very interesting. IKI also thinks there are huge differences about the metal content in Vale’s slag in table 1 and also metal content indicated by table 2, and IKI had tried to ask one of the researchers which made the report about our though that metal content in this slag could be above the provision stipulated by the government on non-B3 materials? And the researcher replied that currently the test about B3 characteristic does not require total concentration test, moreover nickel slag has been categorized as non-B3 waste by the government in PP 22/2021.

SHARESPERFORMANCE

IDX-Listed coal miners shares performance

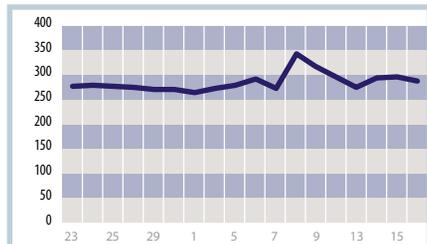
No	Company	JUNE 2021			JULY 2021					
		23	25	29	1	5	7	9	13	15
1	ADARO ENERGY Tbk (ADRO)	1,260	1,285	1,215	1,205	1,235	1,250	1,250	1,230	1,225
2	ATLAS RESOURCES Tbk (ARII)	282	282	276	270	284	278	322	280	300
3	BAYAN RESOURCES Tbk (BYAN)	14,100	13,825	13,650	13,600	13,600	13,800	13,775	13,575	13,525
4	BORNEO LUMBUNG ENERGI & METAL Tbk (BORN)									
5	BUMI RESOURCES Tbk (BUMI)	60	59	59	60	60	59	60	58	57
6	GOLEN ENERGY MINES Tbk (GEMS)	3,600	3,630	3,610	3,630	3,540	3,720	3,710	3,850	3,860
7	HARUM ENERGY Tbk (HRUM)	5,050	5,175	5,100	5,025	5,050	5,200	5,150	5,150	5,325
8	INDIKA ENERGY Tbk (INDY)	1,315	1,335	1,275	1,290	1,305	1,325	1,300	1,265	1,275
9	INDO TAMBANGRAYA MEGAH Tbk (ITMG)	14,375	14,600	13,800	13,975	14,000	15,125	14,850	14,350	15,050
10	RESOURCES ALAM INDONESIA Tbk (KGI)									
11	TAMBANG BATUBARA BUKIT ASAM (Persero) Tbk (PTBA)	2,050	2,030	2,000	2,010	2,060	2,100	2,130	2,080	2,100
12	ALFA ENERGI INVESTAMA TBK (FIRE)	480	484	474	468	468	472	472	468	468

ADARO ENERGY Tbk (ADRO)



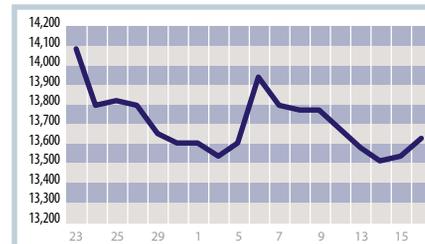
Date (JUNE - JULY 21) — ADARO ENERGY Tbk (ADRO)

ATLAS RESOURCES Tbk (ARII)



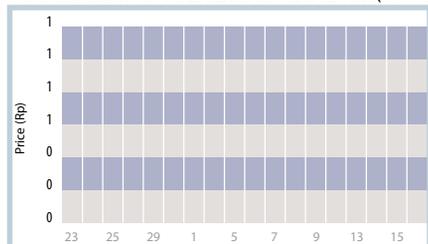
Date (JUNE - JULY 21) — ATLAS RESOURCES Tbk (ARII)

BAYAN RESOURCES Tbk (BYAN)



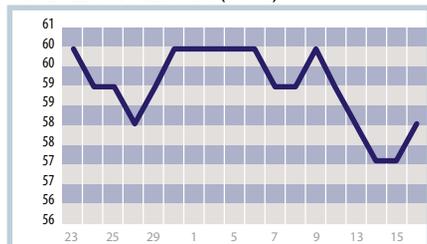
Date (JUNE - JULY 21) — BAYAN RESOURCES Tbk (BYAN)

BORNEO LUMBUNG ENERGI & METAL Tbk (BORN)



Date (JUNE - JULY 21) — BORNEO LUMBUNG ENERGI & METAL Tbk (BORN)

BUMI RESOURCES Tbk (BUMI)



Date (JUNE - JULY 21) — BUMI RESOURCES Tbk (BUMI)

GOLEN ENERGY MINES Tbk (GEMS)



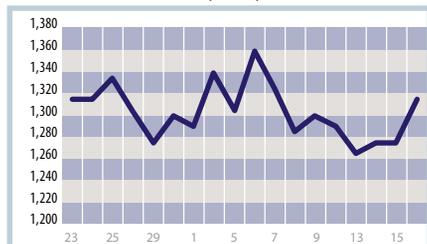
Date (JUNE - JULY 21) — GOLDEN ENERGY MINES Tbk (GEMS)

HARUM ENERGY Tbk (HRUM)



Date (JUNE - JULY 21) — HARUM ENERGY Tbk (HRUM)

INDIKA ENERGY Tbk (INDY)



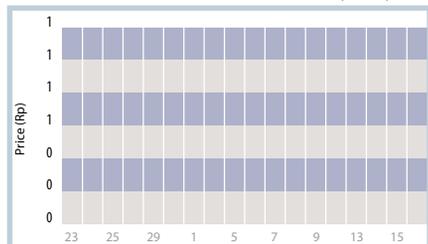
Date (JUNE - JULY 21) — INDIKA ENERGY Tbk (INDY)

INDO TAMBANGRAYA MEGAH Tbk (ITMG)



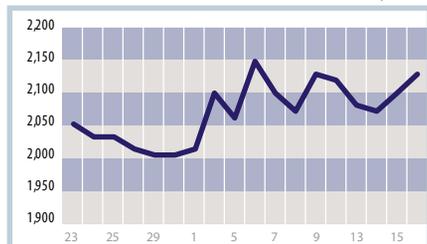
Date (JUNE - JULY 21) — INDO TAMBANGRAYA MEGAH Tbk (ITMG)

RESOURCES ALAM INDONESIA Tbk (KGI)



Date (JUNE - JULY 21) — RESOURCES ALAM INDONESIA Tbk (KGI)

TAMBANG BATUBARA BUKIT ASAM Tbk (PTBA)



Date (JUNE - JULY 21) — TAMBANG BATUBARA BUKIT ASAM Tbk (PTBA)

ALFA ENERGI INVESTAMA TBK (FIRE)



Date (JUNE - JULY 21) — ALFA ENERGI INVESTAMA TBK (FIRE)

NEW RELEASE INDONESIAN GEOTHERMAL MAP 2021

Indonesia has the largest geothermal potentials in the world with reserves of about 17,435 MWe and resources of around 28,508 MWe. In 2020, the utilization of geothermal reached 2,131 MW and put the country in second place in the world after the United States (3,639 MW) in utilizing geothermal power.

The installed capacity of the geothermal power generation capacity in Indonesia, however, is expected to increase by around 150 MW in the near future with addition comes from the 2x50 MW PLTP Rantau Dedap, the #2 unit (45 MW) of PLTP Sorik Marapi and the #1 unit of PLTP Sokoria (5 MW). Furthermore, the total capacity of geothermal power plants is targeted to reach around 8 GW by 2030, according to the 2020-2030 geothermal development roadmap.

The development of geothermal energy, which is a clean and renewable resource, is important to Indonesia as the country has pledged its commitment to an unconditional emissions reduction of 29 percent by 2030 relative to its business-as-usual (BAU) case and up to a 41 percent reduction with international assistance.

Indonesian Geothermal Map 2021 is a must-have for companies/professionals who's involved/interested in geothermal related businesses in Indonesia. The map features the location of geothermal potential areas (354 locations identified by the Government), 64 Working Areas (Production/Exploitation = 16; Exploration - Development = 30; Open Area = 18), 14 WPSPE areas and 9 WPSP areas, existing/proposed Geothermal Power Plants (PLTPs), Transmission and Distribution Networks, and Station and Substations (GI or Gardu Induk).



Map Specification

Format : Wall map; laminated
 Size : 1811 mm x 841 mm (A0)
 Printing : Full color
 Packaging : Rolled + Drawing Tube

Price : US\$200.00
 Release : February 2021
 Code : IGM05L

This full-colored map outlined at a large-scale on a heavy paper stock and laminated for durability.

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Indonesian Geothermal Map 2021

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