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# DELAYERING THE REFERENCE COAL PRICE TO MAXIMIZE COAL NON-TAX STATE REVENUE

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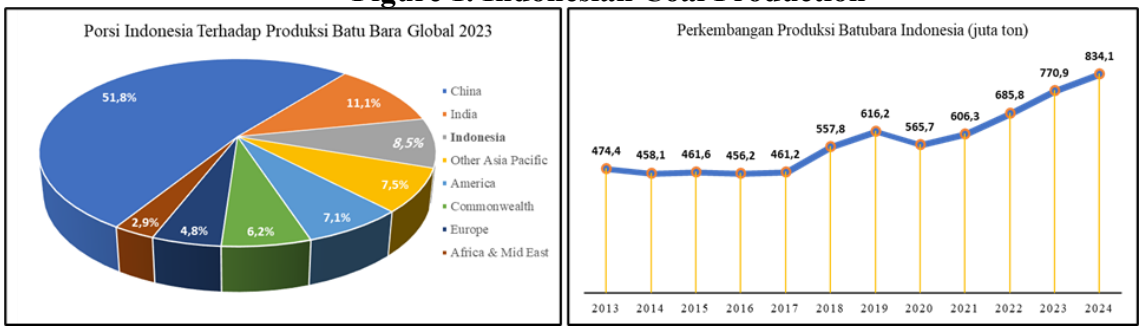
**Abstract**
Indonesia is the third largest coal producing country in the world. National coal production has experienced an increasing trend with a growth rate of 5.1% in the last 10 years. Article 33 paragraph (3) of the 1945 Constitution mandates the state to control its natural resources (SDA) and use them to achieve people's prosperity. One of the efforts to embody the mandate of the Constitution is in the form of implementing Non-Tax State Revenue (PNBP). PNBP in the coal sector plays an important role in state revenue. PNBP in the coal sector experienced a significant increase in 2022 but then decreased in recent times, especially after the implementation of the Reference Coal Price (HBA) layering for coal royalty PNBP. The HBA layering policy was identified as causing a PNBP loss of around 18% or IDR 15.56 trillion in 2023. This study concludes that it is necessary to simplify coal royalties in the form of returning the HBA to 1 layer/delayering. This is projected to increase PNBP royalties by 7.62% or around Rp 5.87 trillion. This policy still allows companies to obtain positive NPM. This policy is also able to play a major role in accelerating social welfare through funding various development programs such as making the National Health Insurance (JKN) program free for 9.32 million residents and the Free Nutritious Meal (MBG) program for 546 thousand students.
**Keywords**: Coal; HBA; PNBP; Royalty

## INTRODUCTION

Indonesia plays a crucial role in the global coal commodity market. It is the world's third-largest coal producer. By 2023, Indonesia accounted for 8.5% of total global coal production. Indonesian coal production has been trending upward, with an average annual growth rate of 5.1% over the past ten years (International Energy Institute (IEI), 2023). Apart from that, Indonesia is also one of the countries with the largest coal reserves in the world (Statista, 2024). This shows that Indonesian coal commodities have quite promising potential and share both nationally and globally.

**Figure 1. Indonesian Coal Production**



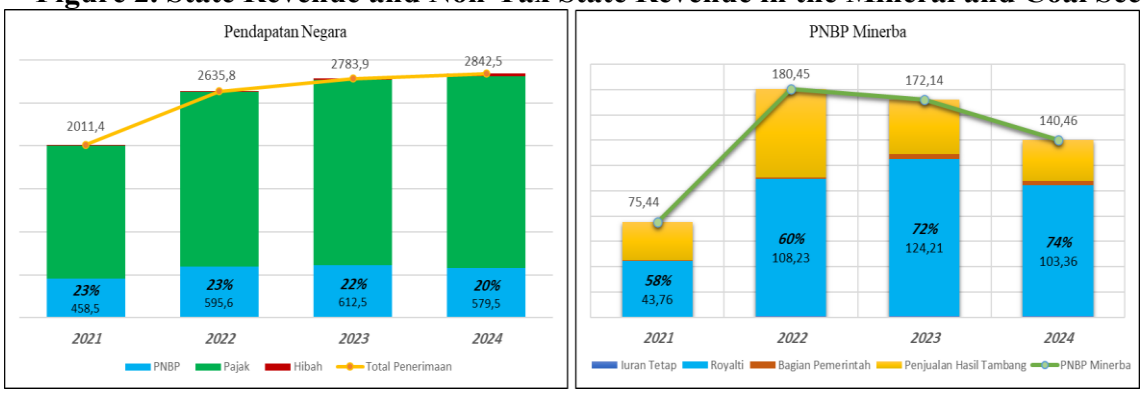

Source: International Energy Institute, processed (2025)

Article 33 paragraph (3) of the 1945 Constitution of Indonesia states, "The land and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people." One of the government's efforts to achieve the people's prosperity through natural resources (SDA) is by collecting PNBP from the SDA sector, including coal. The definition of PNBP according to Article 1 of Law No. 9 of 2018 concerning Non-Tax State Revenue is a levy paid by individuals or bodies by obtaining direct or indirect benefits from services or utilization of resources and rights obtained by the state, based on statutory regulations, which become central government revenue outside of tax and grant revenue and are managed within the state revenue and expenditure budget mechanism. In this

case, the government has the right to collect PNBP as compensation for the utilization of coal resources.

From 2021 to 2023, Non-Tax State Revenue (PNBP) contributed approximately 22% to 23% of total state revenue, with a steadily increasing revenue. In 2024, the share of PNBP in state revenue decreased to 20.4%, with a lower revenue compared to 2022 and 2023. Natural resources (SDA) PNBP contributed approximately 41% of total PNBP in 2024. In general, the mineral and coal sector contributed approximately 30% of total natural resources (SDA) PNBP. The coal sector accounted for 85% of total PNBP. This demonstrates the coal sector's crucial role in state revenues, contributing to the prosperity of the people. Figure 2 shows that the majority of PNBP in the coal mineral (Minerba) sector is dominated by production fees/royalties, accounting for between 58% and 74% of total PNBP. PNBP from Minerba experienced a significant increase in 2022, but has tended to decline in recent years. This condition shows symptoms that need to be addressed immediately before state revenues decline further, which could impact the implementation of state goals in general.

**Figure 2. State Revenue and Non-Tax State Revenue in the Mineral and Coal Sector**




Source: Ministry of Finance of Indonesia, processed (2025)

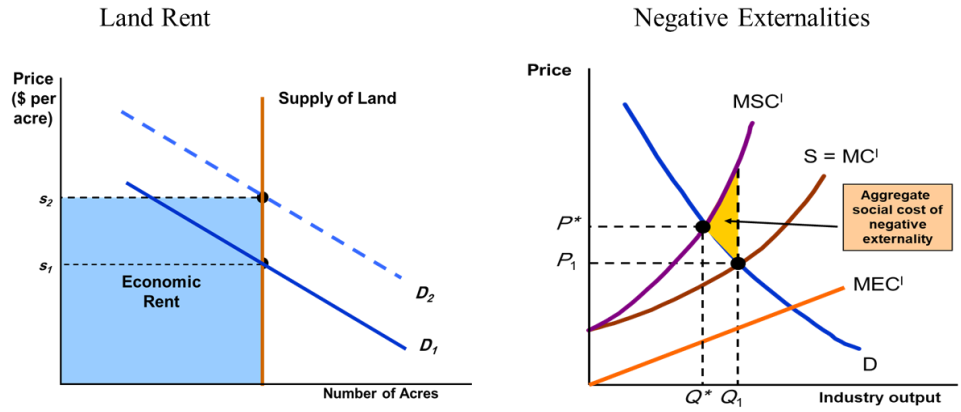
On the other hand, the need to meet state spending continues to increase. The theme of fiscal policy for 2025 is Accelerating Inclusive and Sustainable Economic Growth. To meet state spending needs for development, state revenue optimization is necessary, including through Non-Tax State Revenue (PNBP). Efforts to optimize PNBP, particularly through the coal sector, face various challenges such as exchange rate fluctuations, price moderation, and various other factors, the cumulative impact of which is evident in the downward trend in PNBP in the coal sector. Based on this, an immediate evaluation of the decline in PNBP, particularly in the coal sector, which is dominated by royalty revenues, is necessary. Then, a method will be formulated to optimize Indonesia's coal natural resource potential to achieve maximum PNBP revenue to fund development.

## LITERATURE REVIEW

### Theoretical Basis

Typical levies in the mining industry are generally called royalties. Mining royalties are sums of money paid to the government as compensation for permits to extract non-renewable natural resources (Mullins & Burns, 2018). Many countries define specific fiscal terms related to royalties in their laws. Essentially, royalties should compensate a country for the loss of non-renewable resources (Otto et al., 2006).

**Figure 1. Illustration of Economic Theory related to Royalties**




Source: Pindyck & Rubinfeld, (2018)

Economist David Ricardo likened royalties to rental fees for the use of mining land/economic rent, where miners can utilize additional land as their primary production factor. However, mining land is slightly different from agricultural land. Mining land contains non-renewable natural resources, so its economic rent value will be zero in the long run. Therefore, another economist, Alfred Marshall, argued that royalties are user costs as compensation for the reduction/loss of natural resources in the future. Therefore, the government needs to formulate royalty regulations that encourage companies to carry out extraction so that the marginal net benefit can continue to grow while still contributing to the country (Hein & Cecot, 2017).

Natural resource extraction activities also generate negative externalities in environmental and social aspects. Theoretically, royalties are also an instrument to compensate for these negative externalities (Hein & Cecot, 2017). Royalties are considered as a socio-economic instrument and are a relatively flexible fiscal policy tool that can be distributed simply to parties affected by mining activities (Otto et al., 2006).

Royalty payments can usually be based on a percentage of the value of the resource extracted (ad valorem) or on a per unit (specific) basis of the resource extracted (Oana & Puyo, 2016). In addition to value-based and unit-based royalties, the World Bank also introduced a third royalty-based system, profit-based or income-based. Royalty rates can also be differentiated based on the location of the mine, with more profitable locations (greater and easier production or lower costs) subject to higher rates. For example, royalties are higher on land with thicker sediment layers, larger areas, and closer to the surface, or land located near industrial centers (Hein & Cecot, 2017).

**Empirical Review**

Royalty revenues are attractive to governments for several reasons: they provide upfront revenue from the start of production, are relatively easy to administer, and offer fewer opportunities for evasion than other government revenue instruments. The downside is that royalties generally don't take extraction costs into account, thus increasing the marginal cost of production. This, in turn, can distort companies' investment and production decisions (IMF, 2024).

Among the countries studied, most use a value-based royalty system, such as Australia (Queensland), Brazil (Minas Gerais), China, the Democratic Republic of the Congo, Jamaica, Japan, Papua New Guinea, the Philippines, Russia, South Africa, and Indonesia. Royalty rates vary between these countries, ranging from 1% to 20%. Canada, Chile, and Peru use profit-based royalties. Canada's royalty rate ranges from 5% to 10% depending on the mine location. Chile's royalty rate varies from 0.5% to 14% depending on the weight of the product produced.

Peru uses two types of royalties, one based on operating margin and the other on profit margin, with combined rates ranging from 3% to 19.9% (International Seabed Authority, 2020).

Unit-based and value-based royalties have different impacts on firm behavior. With unit-based royalties, firms tend to reduce production levels during periods of low prices. With value-based royalties, firms tend to reduce production during periods of high prices when prices are expected to fall in the following period (International Council on Mining and Metals (ICMM), 2009).

Royalties also increase mining costs for companies and increase government revenue. Compared to mining costs, Queensland recorded the highest royalties in the past three years, reaching 22%-28% of total mining costs. Queensland implements a progressive royalty scheme, and in May 2024, the Queensland government also passed the Progressive Coal Royalty Protection Act to prevent future governments from lowering coal royalty rates. Royalties from coal exports have a significant impact on government revenue, particularly in Australia and Indonesia. Total royalty revenue from coal exports in Australia tripled in 2022 and remained consistently around twice as high in 2024 compared to 2021. Indonesia also experienced an increase in royalty revenue. Meanwhile, royalty increases in other countries remained lower than in Australia and Indonesia (IEA, 2024).

## METHODS

The research was conducted in two main stages: an analysis of the causes of the decline in Non-Tax State Revenue (PNBP) and an analysis of efforts to increase it. The analysis of the causes of the decline in Non-Tax State Revenue (PNBP) was conducted using three approaches: statistical regression, mathematical simulation, and regulatory/legal approaches. The analysis of efforts to increase Non-Tax State Revenue (PNBP) consisted of supply-demand analysis, financial impact analysis, business impact analysis, and social impact analysis.

The regression analysis was conducted by examining Non-Tax State Revenue (PNBP) transaction data from 2021 to 2024. This period was selected considering that it encompassed the initial normal price period (2021), the price surge period (2022), the fluctuation period towards a new equilibrium (2023), and the new stable price period (2024), thus achieving a normal data distribution. The analysis of the impact of efforts to increase Non-Tax State Revenue (PNBP) was conducted based on the baseline and assumptions of 2024 data, considering relatively identical market conditions and national production volumes.

## RESULT AND DISCUSSION

### Analysis of the Causes of the Decline in PNBP

#### *Analysis Statistical Regression*

Government Regulation No. 26 of 2022 classifies coal based on calorie levels (high, medium, and low). This classification is modified from the US System (ASSTM D388-99) and the International System (UN-ECE), taking into account the moisture, sulfur, and ash content of the coal (Kementerian ESDM, 2024). PNBP rates are set progressively, taking into account the calorie class and the reference coal price range (HBA). The higher the calorie class and the higher the price, the higher the PNBP rate, and vice versa.

The division of PNBP rates based on calorie class has been in place for a long time. Government Regulation No. 45 of 2003 concerning Tariffs for Types of Non-Tax State Revenue Applicable to the Ministry of Energy and Mineral Resources also groups PNBP royalty rates based on calorie class, so this calorie class classification is not suspected to be the cause of the decline in PNBP revenue in recent years. Through Government Regulation No. 26 of 2022, it can be concluded that several components are determinants of coal PNBP revenue, particularly royalties. These determinants are then used as variables in a regression to determine

the magnitude of each variable's influence. Statistical regression was conducted on coal royalty PNBP payment data for 2021-2024, using the following model:

$$ln\_Royalti = \beta_0 + \beta_1 ln\_HPB + \beta_2 ln\_Tonase + \beta_3 ln\_Kurs + \beta_4 Tarif + \epsilon_i$$

The explanation of the above model is as follows:

$ln\_Royalti$ = ln Nominal amount of royalties paid
$ln\_HPB$ = ln Coal Benchmark Price
$ln\_Tonase$ = ln Number of tons (volume) of coal produced
$ln\_Kurs$ = ln Rupiah exchange rate against US dollar
$Tarif$ = royalty rate percentage

Table 1 shows the results of the regression analysis using the OLS method. Regression was performed by adding each variable in stages. Regression (1) was performed between HBA and Royalty revenue. Regression (2) was performed by adding the Tonnage (Production Volume) variable. Regression (3) was performed by adding the Exchange Rate variable. Regression (4) was performed by adding the PNBP royalty rate variable. Classical assumption test on the regression model.

**Table 1. OLS Estimation Analysis Results**

| VARIABLES | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| LNhpb | 1.416*** | 1.124*** | 1.236*** | 0.972*** |
| | (0.00591) | (0.00283) | (0.00236) | (0.00160) |
| LNton | | 1.035*** | 1.007*** | 1.005*** |
| | | (0.00272) | (0.00239) | (0.00210) |
| LNkurs | | | 9.434*** | 1.028*** |
| | | | (0.0239) | (0.0220) |
| Tarif | | | | 0.162*** |
| | | | | (0.000379) |
| Constant | 14.16*** | 5.954*** | -85.03*** | -4.160*** |
| | (0.0233) | (0.0216) | (0.226) | (0.216) |
| Observations | 158,228 | 158,228 | 158,226 | 158,226 |
| R-squared | 0.316 | 0.857 | 0.923 | 0.971 |

*Robust Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

Regression (4) is considered the best model due to its increasing R-squared value, reaching 0.971, indicating that the model can explain the relationship between the determinant variables and PNBP royalty revenue by 97.1%. Furthermore, the error values for all variables are generally decreasing, with relatively stable coefficient values and significance levels. Based on the estimation results of regression (4), it can be concluded that all determinant variables have a significant positive effect on PNBP royalty revenue at the 1% significance level. The magnitude of each variable's influence, in order of greatest magnitude, is Exchange Rate (1.028), Tonnage (1.005), Price (0.972), and Tariff (0.162). Generally, a 1% increase in a variable will result in an increase in PNBP royalty revenue according to its respective percentage impact.

Coal production volume (tonnage) is generally more of a company decision. The HBA policy is the government's authority, and in this regard, there was a policy change, particularly

in 2023, which opened lower HBA layers, resulting in lower PNBP revenue. The rupiah exchange rate against the dollar is relatively stable and cannot be significantly influenced by non-tax state revenue (PNBP) regulations. The royalty rate is also under the government's jurisdiction, and there was indeed an increase in the royalty rate in 2022.

In this case, the variables that can be intervened by the government are the HBA (Highest Value Added Tax) and tariffs. The variables that significantly influence PNBP royalty revenue are tonnage and HBA. Therefore, policies that require further evaluation are pricing policy, as a 1% increase in price results in a 0.972% increase in PNBP royalties, and tariff policy, as a 1% increase in tariff results in a 0.162% increase in PNBP royalties.

**Table 2. Elasticity of Variables and Projected Changes in Royalties**

| Variable | Baseline 2024 | Elasticity to Royalties | Nominal Intervention | Percentage Increase | Royalty Increase Projection (Rp) |
|---|---|---|---|---|---|
| Production Volume (million tons) | 834 | 1.005% | 1.0 | 0.12% | 92,787,769,784 |
| Benchmark Price (USD) | 74.84 | 0.972% | 1.0 | 1.34% | 1,000,053,447,354 |
| Kurs (Rp) | Rp15,000 | 1.028% | Rp500 | 3.33% | 2,638,533,333,333 |
| Tarif (%) | 13.50 | 0.162% | 1.0 | 7.41% | 924,000,000,000 |

Source: Author's Processed Results (2025)

If using 2024 data as the basic assumption, then the elasticity/sensitivity can be predicted with the projection that an increase of 1 million tons of production volume will increase royalties by IDR 92.78 billion, an increase of 1 USD in the average price will increase royalties by IDR 1 trillion, an increase of IDR 500 in the exchange rate will increase royalties by IDR 2.63 trillion, a 1% increase in tariffs will increase royalties by IDR 924 billion.

***Mathematical Simulation Analysis***

Indonesia's coal resources as of December 2023 were 97,297.12 million tons, with a composition of 68% low-calorie, 16% medium-calorie, and 16% high-calorie. Of these resources, Indonesia's coal reserves amounted to 31,713.54 million tons, with a composition of 74% low-calorie, 15% medium-calorie, and 11% high-calorie (Kementerian ESDM, 2024). These reserves are estimated to be sufficient for up to 41.32 years (RPJMN, 2025). Based on Table 3, it can be seen that half of 2023 coal production was contributed by the IUP group (52.58%), while PKP2B and IUPK contributed nearly the same portion. Based on sales destination, the majority (74.68%) of coal was sold for export. Based on calorie class, the majority (52.48%) of coal was classified as low-calorie, and only a small amount was classified as high-calorie (14.61%).

In addition to calorie class, Government Regulation No. 26 of 2022 also stipulates progressive PNBP rates according to the HBA range. Coal prices are regulated in Article 5 Paragraph (3) of Law 3/2020 concerning Mineral and Coal Mining, which states that further provisions regarding coal pricing are regulated by or based on the Government Regulation. Furthermore, Government Regulation 96/2021 concerning the Implementation of Mineral and Coal Mining Business Activities, Article 159, stipulates: Paragraph (2): The benchmark price is determined by the Minister based on: (a) market mechanisms; or (b) in accordance with generally applicable prices in the international market. Article (3): Further provisions regarding the procedures for determining the benchmark price for coal are regulated in the Ministerial Regulation.

**Table 3. Distribution of Coal Sales Volume (Portion) in 2023**

| Portion Volume | Low | Medium | High | Total |
|---|---|---|---|---|
| IUP | 33.96% | 14.44% | 4.17% | 52.58% |
| Exports | 24.41% | 9.31% | 3.68% | 37.4% |
| Local PLTU | 3.43% | 3.83% | 0.15% | 7.42% |
| Local Non PLTU | 6.12% | 1.3% | 0.34% | 7.76% |
| PKP2B | 12.4% | 6.19% | 7.35% | 25.94% |
| Exports | 10.11% | 4.84% | 6.55% | 21.5% |
| Local PLTU | 1.8% | 1.24% | 0.66% | 3.7% |
| Local Non PLTU | 0.49% | 0.11% | 0.13% | 0.74% |
| IUPK | 5.12% | 13.28% | 3.09% | 21.49% |
| Exsports | 3.4% | 9.76% | 2.63% | 15.78% |
| Local PLTU | 1.65% | 3.39% | 0.45% | 5.49% |
| Local Non PLTU | 0.08% | 0.12% | 0.01% | 0.21% |
| Total | 51.48% | 33.91% | 14.61% | 100% |

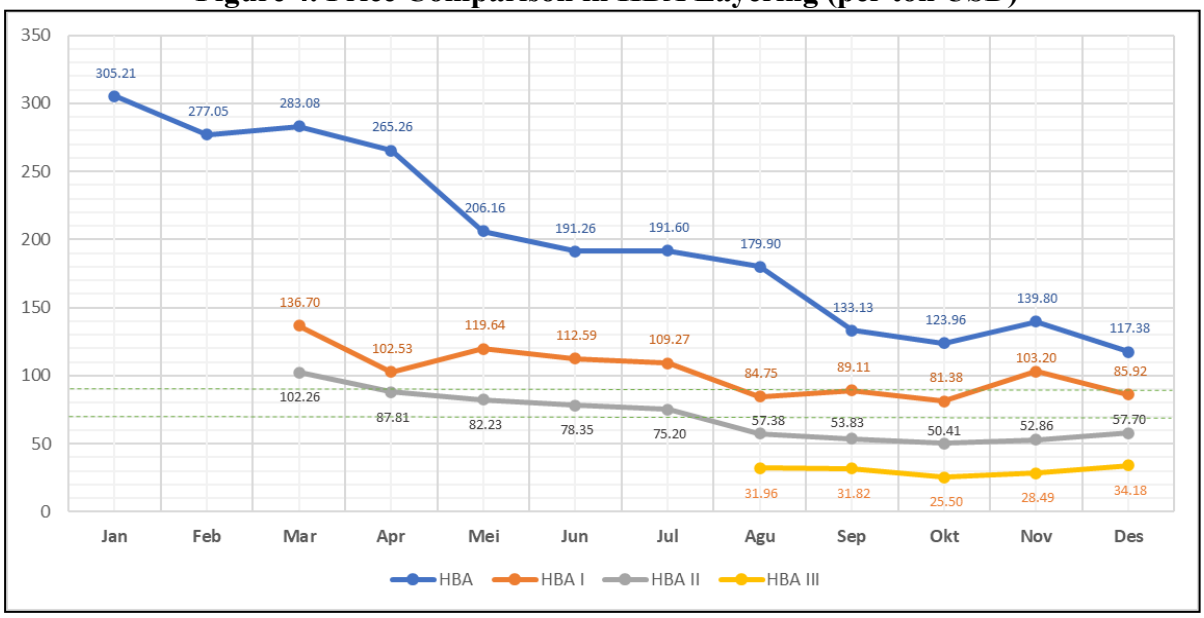
Source: Ministry of Finance, processed (2025)

Regulations regarding coal prices are regulated in the Minister of Energy and Mineral Resources Regulation No. 11/2020 concerning the Third Amendment to the Minister of Energy and Mineral Resources Regulation 7/2017 concerning Procedures for Determining the Benchmark Price for Mineral and Coal Sales (Mineral Energy and Mineral Resources Regulation 11/2020) stipulates that: The Coal Benchmark Price (HPB) must be referred to/used as a guideline in coal sales; HPB is determined by the Minister of Energy and Mineral Resources based on market mechanisms or in accordance with prices generally applicable in the international market; HPB is the lower limit in calculating production contribution payment obligations; HBA is determined by referring to the coal price index issued, including by: Indonesia Coal Index (ICI), Platts, New Castle Export Index (NEX), and New Castle Global Coal Index (GC) with quality equalized at 6322 kcal/kg GAR. This regulation remains the reference for determining the HBA until February 2023.

In March 2023, the Ministry of Energy and Mineral Resources issued Ministerial Decree 41/2023 concerning Guidelines for Determining Benchmark Prices for Coal Commodity Sales. In Ministerial Decree 41/2023, the HBA is calculated using the formula 0.7 x the average selling price of the previous month + 0.3 x the average selling price of the previous two months up to the first week of the previous month. The HBA is grouped into three layers by adding HBA I with a caloric equivalent of 5,200 kcal/kg GAR, and HBA II with a caloric equivalent of 4,200 kcal/kg GAR.

In August 2023, the Ministry of Energy and Mineral Resources issued Ministerial Decree 227/2023 concerning Guidelines for Determining Benchmark Prices for Coal Commodity Sales. The HBA calculation formula is 0.7 x the weighted average volume of selling prices in the second week to the third week of the previous month + 0.3 x the weighted average volume of selling prices in the fourth week of the previous two months to the first week of the previous month. HBA is grouped into 4 layers, namely HBA in calorie equivalent of 6,322 kcal/kg GAR, HBA I in calorie equivalent of 5,300 kcal/kg GAR, HBA II in calorie equivalent of 4,100 kcal/kg GAR, HBA III in calorie equivalent of 3,400 kcal/kg GAR. At the end of February 2025, ESDM Ministerial Decree 72/2025 was issued which revoked Ministerial Decree 227/2023 where HBA is determined twice a month every 1st and 15th using a formula similar to Ministerial Decree 227/20203.

**Figure 4. Price Comparison in HBA Layering (per ton USD)**

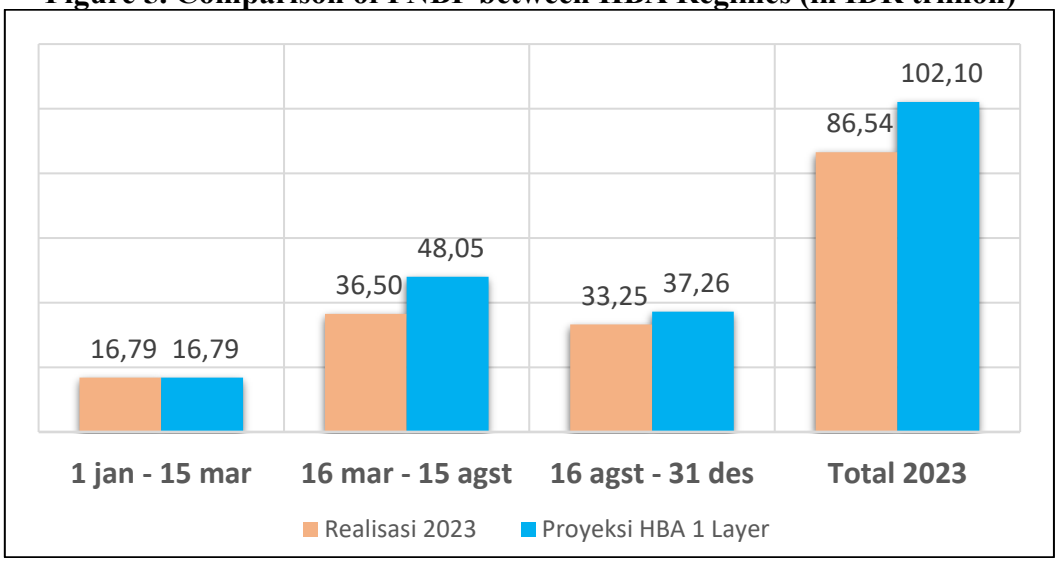



Source: Ministry of ESDM, processed (2025)

In 2023, three HBA regimes were implemented as the basis for coal PNBP levies: a single-layer HBA in accordance with Ministerial Regulation 11/2020 until mid-March, a three-layer HBA in accordance with Ministerial Decree 41/2023 until mid-August, and a four-layer HBA in accordance with Ministerial Decree 227/2023. Figure 4 shows the development of HBAs within this layering scheme. Generally, prices are trending downward. PP 26 of 2022 imposes progressive tariffs on three HBA layers (<70, 70-90, and >90). The highest HBA category is always subject to the highest layer tariff, and HBA III is always subject to the lowest layer tariff. Therefore, layering tariffs per HBA is deemed ineffective, and layering tariffs per calorie is sufficient.

Figure 5 compares actual PNBP revenues in 2023 with the projected PNBP realization if the single-layer HBA were maintained. It appears that PNBP revenue has been lower since the HBA layering was implemented compared to if Ministerial Regulation 11/2020 had continued with only one HBA layer. This demonstrates the potential loss of state revenue as a consequence of the HBA layering policy. The 3-layer HBA policy was implemented for 5 months (March-August) with a potential PNBP loss of 31.65%, equivalent to IDR 11.55 trillion. The 4-layer HBA policy was implemented for approximately 4 months (August-December) with a potential PNBP loss of 12.05%, equivalent to IDR 4.01 trillion. Cumulatively, over approximately 9 months (March-December) in 2023, there is a potential PNBP loss of 17.98%, equivalent to IDR 15.56 trillion.

**Figure 5. Comparison of PNBP between HBA Regimes (in IDR trillion)**




Source: Ministry of Finance, processed (2025)

***Regulatory/Legal Analysis***

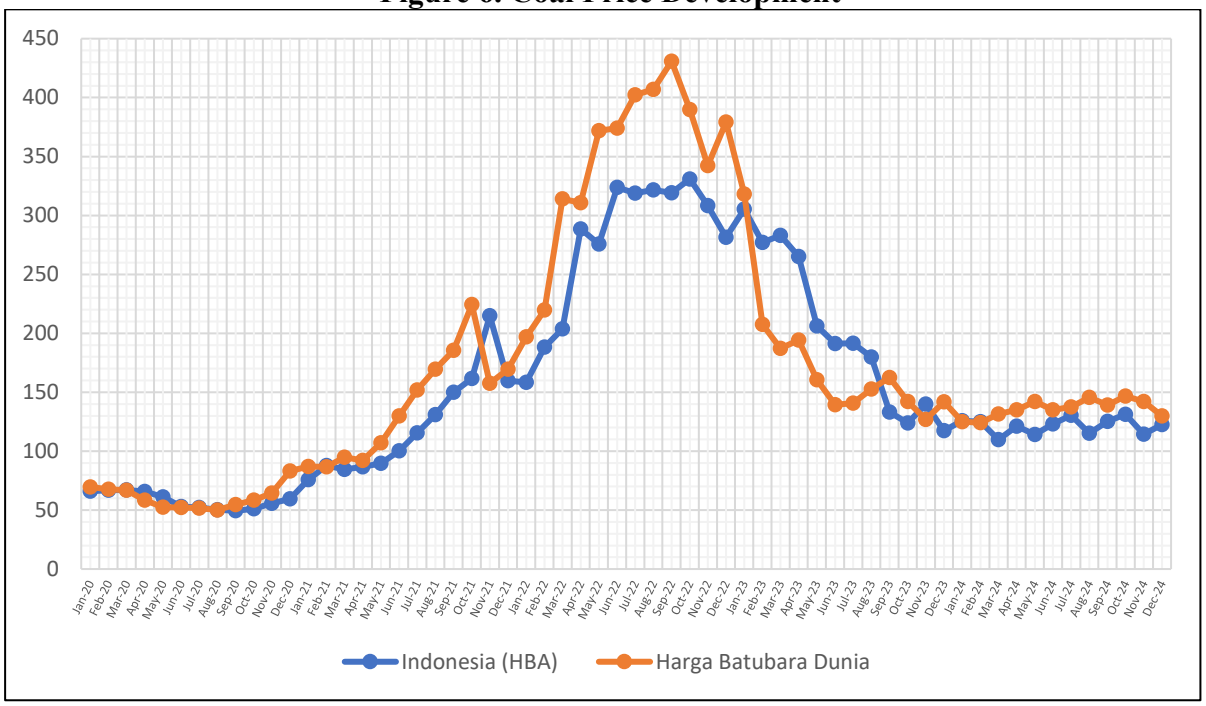
Materially, the pricing formulation regulated in both Ministerial Decree 41/2023 and Ministerial Decree 227/2023, using the weighted selling price formula, is inconsistent with the HBA calculation provisions in Government Regulation 96/2021 and Ministerial Regulation 11/2020, which utilizes the average market price or index formula generally accepted in international markets. This inconsistency violates one of the legal principles, lex superior derogat legi inferior, which states that lower-level laws and regulations must not conflict with higher-level laws. Therefore, the HBA formulation in the Ministerial Decree concerning Guidelines for Determining Benchmark Prices for the Sale of Coal Commodities is at risk of being deemed invalid.

In addition to being materially inconsistent, the price regulation in the form of a Ministerial Decree also risks formal problems. Jimly Asshiddiqie in his book on Legal Testing Procedure explains that decisions (*beschikking*) are individual and concrete, while regulations (*regeling*) are always general and abstract, meaning that the validity of regulations is directed to anyone who is subject to the formulation of general rules. Marina Farida Indarti S in her book on Legal Science (1) (Types, Functions, Materials, Contents) explains that regulations (*regeling*) are always valid continuously (*dauerhafting*), while decisions (*beschikking*) are one-off (*enmahlig*) (Bawono, 2012).

In this case, formal provisions regarding coal prices must be regulated at least in the form of a regulatory document due to its regulatory (regeling), general (general), and continuous (dauerhafting) nature. Furthermore, based on the mandate of a higher regulation, PP 96/2021 Article 159 Paragraph (3), further provisions regarding the procedures for determining coal benchmark prices are regulated in a Ministerial Regulation. Therefore, the ESDM Ministerial Decree concerning Guidelines for Determining Benchmark Prices for the Sale of Coal Commodities is at risk of being legally flawed.

This regulatory analysis yields two main conclusions regarding the HBA regulation. First, formally, the HBA layering regulation through a Ministerial Decree risks legal inadequacy because it is inconsistent with the legal status of the product and contradicts the mandate of higher-level regulations. Second, materially, the substance of the HBA layering regulation formulation is inconsistent with higher-level regulations, thus risking the HBA formulation outlined in the Ministerial Decree being deemed invalid.

**Figure 6. Coal Price Development**




Source: Ministry of ESDM and World Bank, processed (2025)

One of the variables influencing coal non-tax revenue (PNBP) is the price of the commodity. During 2020, the highest coal price reached only USD 67.08/ton with an average price of USD 58.17/ton. After 2020, coal prices experienced a significant spike, reaching a peak of USD 330.97/ton in October 2022. Coal prices appeared to stabilize from September 2023 to December 2024 with an average price of USD 123.25/ton. In general, the national coal price trend appears to be in line with global coal prices. Global coal prices reached their highest point in September 2022 at USD 430.81/ton. Since October 2023, coal prices have consistently been below USD 150/ton, with a downward trend and an average price of USD 136.30/ton (World Bank, 2025).

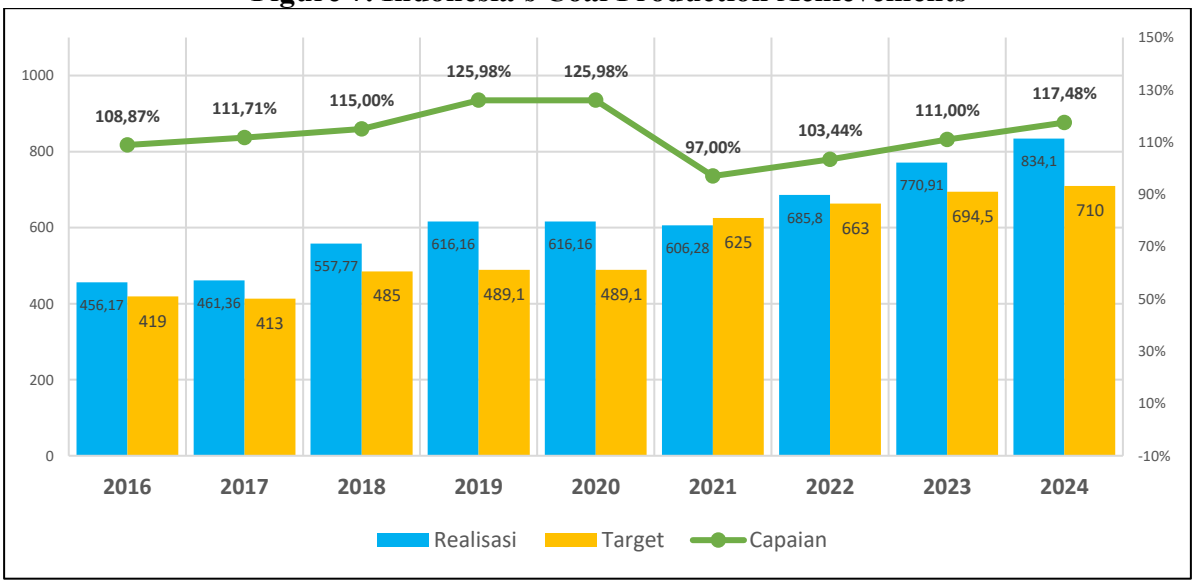
Prices are shaped by the interaction between coal supply and demand. Coal prices are projected to remain stagnant in 2025, with a relatively balanced risk outlook. This is in line with declining coal demand in the US and the EU as a result of the energy transition. However, China's coal consumption is expected to continue to increase in 2025 as a result of extreme weather events, such as heat waves or droughts, which could increase demand and trigger price increases. Another factor that could trigger price declines is lower-than-expected economic growth in China and India, even though these two countries account for more than two-thirds of global coal consumption (World Bank, 2024). In aggregate, coal demand is expected to stagnate or move within a relatively small range.

On the supply side, global coal production will still increase slightly in 2024, despite a 15% decline in US and EU production, reflecting a long-term trend of coal's declining role in power generation. China is also reducing production due to stricter regulations to reduce mining accidents. However, China is utilizing imports to meet its needs and is maintaining coal stocks (buffering stock) at various facilities to mitigate price fluctuations. Conversely, Indonesian coal production is increasing in line with rising domestic demand and exports. India is the last bastion of global supply growth, with its production increasing significantly. Coal production

in India is expected to increase as a result of import restriction policies and a focus on meeting domestic demand, particularly for power generation (IEA, 2024).

Global coal production/supply is expected to decline slightly through 2027. This is in line with expectations of weakening global coal demand. In aggregate, global production is expected to decline, primarily driven by the global energy transition, which is encouraging various countries to reduce their coal production (World Bank, 2024). India's coal supply is expected to continue growing, but this projection is not large enough to offset the risk of a global supply shortfall (IEA, 2024).

**Figure 7. Indonesia's Coal Production Achievements**




Source: Ministry of ESDM, processed (2025)

Indonesia's coal production in 2025 is targeted at 735 million tons (APBI-ICMA, 2025) Taking into account 30% for domestic demand and also considering export needs. The 2025 production target is 12% lower than the 2024 realization of 834.1 million tons, but 3.4% higher than the 2024 target of 710 million tons. Production volume, based on the 2025 Work Plan and Budget (RKAB), is approximately 900 million tons.

Over the past ten years, Indonesian coal production has almost consistently exceeded targets. Only in 2021 (due to the pandemic) did coal production fall short of its target, achieving 97%. The average coal production target for Indonesia over the past ten years was 113% (Kementerian ESDM, 2025). With this trend, coal production in 2025 is estimated to reach 830 million tons (almost the same as the 2024 realization) or a maximum volume of 900 million tons (according to the RKAB).

***Financial Impact Analysis***

The results of the supply-demand analysis indicate that coal market conditions in the next few years will be identical to those in 2024. National policy direction also supports controlled coal production. The revision of the Mineral and Coal Mining Law, which expands access to coal business permits, will safeguard the supply side. The RPJMN project, which involves downstreaming coal gasification with guaranteed funding from a state-owned enterprise superholding, will safeguard the demand side. With these considerations in mind, 2024 data will serve as the basis for calculating the impacts of various policy alternatives in this study.

**Table 4. Distribution of Coal Sales Volume (Portion) in 2024**

| Volume | Low | Medium | High | Total |
|---|---|---|---|---|
| IUP | 35,10% | 13,81% | 4,10% | 53,01% |

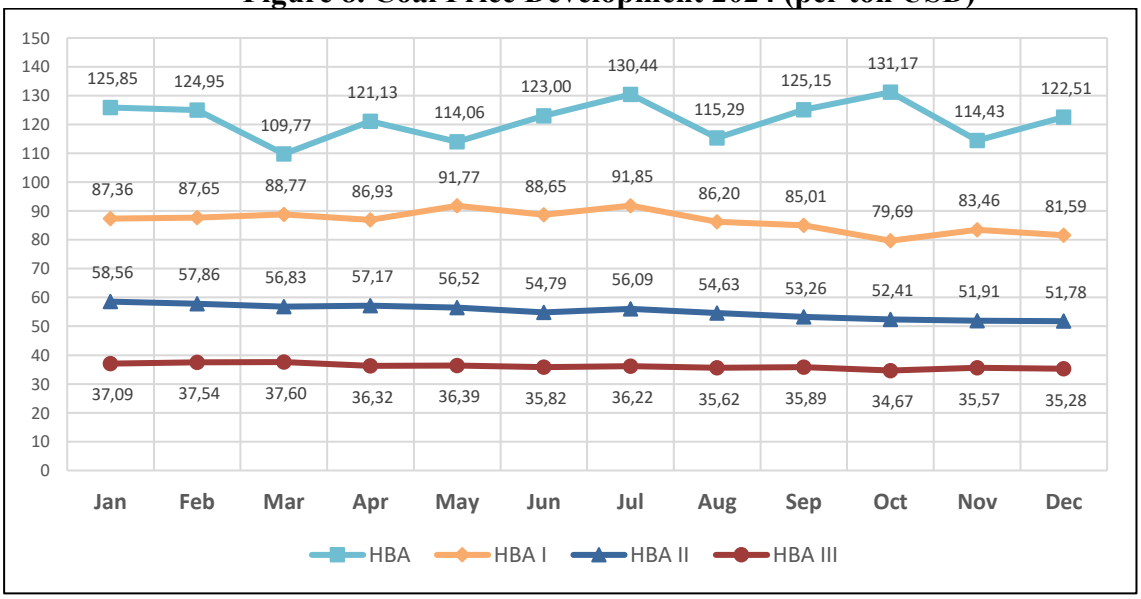
| | | | | |
|---|---|---|---|---|
| Exports | 27,78% | 9,35% | 3,78% | 40,91% |
| Local PLTU | 3,77% | 3,47% | 0,17% | 7,41% |
| Local Non PLTU | 3,56% | 0,98% | 0,14% | 4,68% |
| PKP2B | 13,48% | 6,44% | 7,24% | 27,16% |
| Exports | 11,17% | 5,06% | 6,51% | 22,74% |
| Local PLTU | 1,90% | 1,28% | 0,63% | 3,81% |
| Local Non PLTU | 0,42% | 0,10% | 0,09% | 0,61% |
| IUPK | 4,09% | 12,3% | 3,44% | 19,83% |
| Exports | 2,69% | 8,72% | 2,91% | 14,32% |
| Local PLTU | 1,15% | 3,44% | 0,51% | 5,09% |
| Local Non PLTU | 0,25% | 0,14% | 0,02% | 0,42% |
| Total | 52,68% | 32,55% | 14,78% | 100% |

Source: Ministry of Finance, processed (2025)

Coal production volume in 2024 was still dominated by Mining Business Licenses (IUP) (53.01%), followed by Coal Mining Business Licenses (PKP2B) (27.16%), and Special Mining Business Licenses (IUPK) (19.83%). Export sales were also still predominant (77.98%), followed by local coal-fired power plants (16.31%) and local non-coal-fired power plants (5.71%). Based on calorie class, coal production was dominated by low-calorie coal (52.68%), followed by medium-calorie coal (32.55%), and high-calorie coal (14.78%).

Coal prices in 2024 for the HBA category fluctuated monthly, averaging USD 121.48 per ton. HBA I, HBA II, and HBA III categories tended to be stable with a slight downward trend. The average price for HBA I was USD 86.58 per ton. The average price for HBA II was USD 55.15 per ton. The average price for HBA III was USD 36.17 per ton. In general, the average price for all HBA groups in 2024 is USD 74.84 per ton.

**Figure 8. Coal Price Development 2024 (per ton USD)**

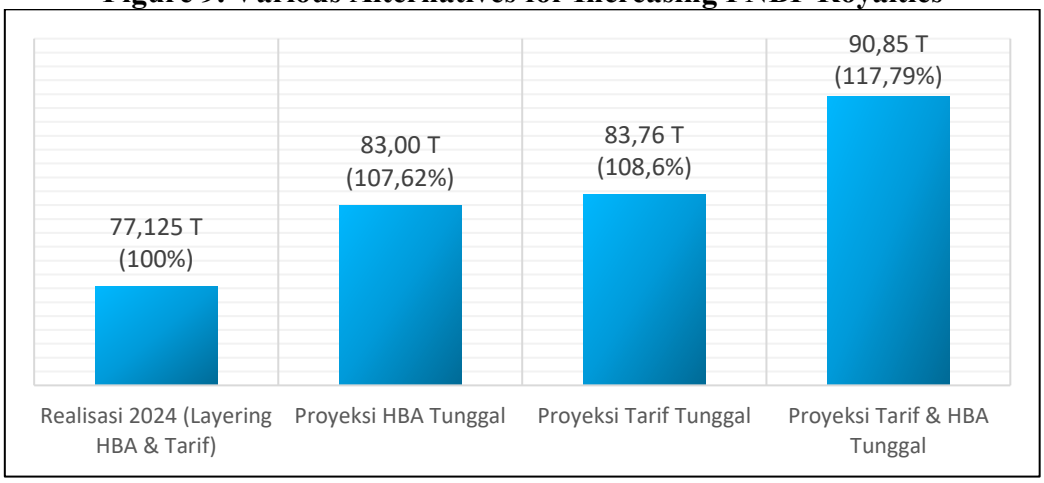



Source: Ministry of Finance, processed (2025)

Based on Presidential Decree No. 201 of 2024 concerning the Details of the 2025 State Budget, the 2025 Production Fee/Coal Mining Royalty Revenue is planned at IDR 70.7 trillion. This target is down 8.97% compared to the 2024 realization of IDR 77.125 trillion. As an effort to increase PNBP, the government can adjust the basic PNBP collection policy with several alternative policies, namely in the form of returning the HBA to 1 layer, implementing 1 layer

of tariffs (maximum tariffs for each calorie group) based on calories (no further layering based on HBA), or a combination of using 1 layer of HBA and tariffs simultaneously.

**Figure 9. Various Alternatives for Increasing PNBP Royalties**




Source: Author's Processed Results (2025)

The financial impact of the royalty policy adjustment is an increase in PNBP. Through the first alternative, the return of a single/1-layer HBA (currently layered up to 4 layers in the ESDM Ministerial Decree) is estimated to have a financial impact in the form of an increase in PNBP of 7.62% or approximately IDR 5.87 trillion. Through the second alternative, in the form of implementing a single tariff per calorie class using a maximum tariff for each group without further layering based on HBA (currently layering based on calories and HBA in the tariff PP) is estimated to have a financial impact in the form of an increase in PNBP of 8.6% or approximately IDR 6.63 trillion. Through the third alternative, in the form of a combination of the return of a single HBA and the implementation of a single tariff per calorie class is estimated to have a financial impact in the form of an increase in PNBP of 17.79% or approximately IDR 13.72 trillion.

***Business Impact Analysis***

An increase in non-tax state revenues (PNBP) for the government will undoubtedly be accompanied by an increase in the burden on the company, which can also impact the company's overall profitability. The company impact analysis was conducted assuming the percentage increase in non-tax state revenues (PNBP) royalties would be proportional to the increase in the company's royalty payment burden. The sample companies were selected IUPK companies whose financial reports were accessible.

**Table 5. Comparison of Company Financial Conditions from Various Scenarios**

| Company | Financial Ratio | Initial Financial Report | Single HBA | 1 Layer Rate (max) | HBA & Single Rate |
|---|---|---|---|---|---|
| PT A | Royalti to Total Cost | 25,50% | 26,60% | 27,10% | 28,73% |
| | Net Profit Margin | 37,67% | 36,92% | 36,57% | 35,40% |
| | | | | | |
| PT B | Royalti to Total Cost | 17,89% | 18,74% | 19,13% | 20,42% |
| | Net Profit Margin | 21,14% | 20,31% | 19,93% | 18,63% |
| | | | | | |
| PT C | Royalti to Total Cost | 33,44% | 34,72% | 35,30% | 37,18% |
| | Net Profit Margin | 11,86% | 9,32% | 9,32% | 6,61% |

| | | | | | |
|---|---|---|---|---|---|
| PT D | Royalti to Total Cost | 26,56% | 27,68% | 28,20% | 29,87% |
| | Net Profit Margin | 1,60% | 0,07% | -0,65% | -3,05% |

Source: Author's Processed Results (2025)

The financial reports used as the basis were the most recent publicly accessible financial reports. Table 5 shows the changes in the royalty-to-total-expense ratio and net profit margin (NPM) ratio for each company, comparing the initial conditions (according to the latest financial report) and after the intervention (for each alternative). In alternative 1, all companies still achieved a positive NPM. In the second and third alternatives, one company achieved a negative NPM, while three companies still achieved a positive NPM. Considering the impact on the companies, alternative 1 is the most feasible scenario.

***Social Impact Analysis***

Article 116 of Law No. 1 of 2022 concerning Financial Relations between the Central Government and Regional Governments (Law 1/2022) mandates that the allocation of Revenue Sharing Funds (DBH) from Mineral and Coal Natural Resources (SDA) derived from production fees/royalties is 80% for regional governments. In other words, the central government can utilize 20% of the PNBP (Non-Tax State Revenue) from royalties. The scenario of increasing PNBP royalties would generate an additional 7.625%, or approximately IDR 5.87 trillion. Of this amount, the central government would receive at least 20%, or approximately IDR 1.175 trillion, and regional governments would receive 80%, or approximately IDR 4.7 trillion.

Article 1 of Law 1/2022 explains that one of the considerations for distributing DBH to regional governments is to mitigate the negative externalities of natural resource extraction activities. In this case, regional governments can use a portion of the increased royalty revenue for social activities such as health assistance in the form of regional BPJS subsidies and nature conservation programs. Minister of Finance Regulation 51 of 2024 concerning the Implementation of Contribution Assistance Payments stipulates that the contribution assistance for PBI BPJS/JKN participants is IDR 42,000 per person per month. In this case, IDR 4.7 trillion, as part of the regional government's share of the increase in PNBP royalties, can be allocated to waive BPJS contributions for 9.32 million residents from the regional budget (APBD).

The central government is projected to receive at least IDR 1.175 trillion, which can be allocated to fund various programs in health, education, energy, and others. The Free Nutritious Meal Program (MBG) provides lunch during school days (assuming 215 school days per year) with a budget of IDR 10,000 per portion (BGN, 2025) It is projected to support 546,000 children annually. The 2024 energy subsidy budget for LPG reaches Rp80.21 trillion, with an estimated output of 7.9 million metric tons, while the electricity subsidy budget reaches Rp75.8 trillion, with an estimated output of 68.5 terrawatt hours (DJA, 2025). This is estimated to cover electricity subsidies of 1,062 terrawatt hours and LPG subsidies of 114,740 metric tons.

The Smart Indonesia Program (PIP) provides living expenses assistance of Rp 450,000 per student per year (Kemendikdasmen, 2025) It is projected to support more than 2 million children per year. The Family Hope Program (PKH) provides assistance of IDR 3 million per year (Kemensos, 2022) It is projected to finance 391,710 families per year. In 2024, the Ministry of Energy and Mineral Resources (ESDM) will have a New, Renewable Energy Infrastructure Planning, Development, and Supervision Program and Energy Conservation, which will involve the construction of 11 solar power plants (PLTS), 1 micro-hydro power plant (PLTM), and 5 micro-hydro power plants (PLTMMH) with a total budget of IDR 242.6 billion. (KemenESDM, 2024) This is estimated to finance the construction of 82 hydropower, mini-hydro, and micro-hydro power plants, especially for the 3T regions. Alternative calculations

for the use of funds to increase the central government's share of PNBP royalties are presented in Table 6.

**Table 6. Alternative Use of PNBP Increase Funds by the Central Government**

| Programs | Unit Price | Amount Benefited |
|---|---|---|
| Free Nutritious Meals (MBG) | 2.150.000 | 546.584 students per year |
| Electricity Subsidies | 1.106 | 1,062 terawatt hour |
| LPG Subsidies | 10.153 | 115,74 ribu metric ton |
| Family Hope Program (PKH) | 3.000.000 | 391,71 ribu families per year |
| Smart Indonesia Program (PIP) | 450.000 | 2,089 juta students |
| EBTK-Based Power Plants | 14,27 M | 82 unit PLTS/PLTM/PLTMS |

Source: Author's Processed Results (2025)

The New and Renewable Energy (NRE) program will accelerate the energy transition, thereby further controlling the exploitation of non-renewable natural resources. The energy transition program will also indirectly impact the environmental ecosystem. Health programs such as the Social Security Agency (BPJS) and the Energy and Mineral Resources (MBG) can indirectly compensate for the health externalities of mining activities. Energy subsidy programs will compensate for coal's role as an energy source. Education and social programs will support equity. Overall, increased non-tax state revenue (PNBP) from royalties will provide additional state financial capacity to fund various development programs. The provision of these programs in aggregate will have an impact on improving social welfare in general.

## CONCLUSION

One of the causes of the decline in non-tax state revenue (PNBP) in the coal sector, particularly from production fees/royalties, is the HBA layering policy. Price is the primary determinant of non-tax state revenue (PNBP) royalties, with a 1% increase in price resulting in a 0.972% increase in royalty revenue at a 1% significance level.

Several findings related to the HBA layering policy include:

a. Nominally, the HBA layering policy results in a potential loss of non-tax state revenue. The potential loss of non-tax state revenue in 2023 during the nine months (March-December) of the HBA layering implementation is 17.98%, equivalent to IDR 15.56 trillion.
b. Formally, the regulation of HBA layering through a Ministerial Decree risks legal flaws because it does not align with the legal status of the product and conflicts with the mandate of higher-level regulations.
c. Materially, the formulation of the HBA layering regulations is inconsistent with the regulations above. Therefore, the HBA formulation in the Ministerial Decree concerning Guidelines for Determining Benchmark Prices for Coal Commodity Sales is at risk of being deemed invalid.

Efforts to increase PNBP royalties can be implemented through several alternatives, each with a financial impact in the form of increased state revenue, as follows:

a. Alternative 1: The return of a single/single-layer HBA will have a financial impact of increasing PNBP by 7.62%, or approximately IDR 5.87 trillion.
b. Alternative 2: The implementation of a single tariff per calorie class using a maximum tariff for each group without further layering based on the HBA will have a financial impact of increasing PNBP by 8.6%, or approximately IDR 6.63 trillion.

c. Alternative 3: The combination of the return of a single HBA and the implementation of a single tariff per calorie class will have a financial impact of increasing PNBP by 17.79%, or approximately IDR 13.72 trillion.

Companies will experience increased costs and a decrease in Net Profit Margin. Scenario 1 still generates a positive NPM. In scenarios 2 and 3, some companies experience a negative NPM.

The regional government's share of the coal natural resource revenue sharing (DBH) is projected to be at least IDR 4.7 trillion, which could have a social impact, such as making the National Health Insurance Program free for 9.32 million residents per year.

The central government's share of the increase in coal royalty PNBP is projected at IDR 1.175 trillion which can be allocated to various programs such as education (PIP for 2.089 million students), health (MBG for 546 thousand students), energy (LPG subsidy of 115.74 thousand metric tons, electricity subsidy of 1.062 terawatt hours), social (PKH for 391.71 thousand families), or the construction of 82 EBTK-based power plants, especially for the 3T regions.

**Policy Recommendation**

In line with the discussion regarding issues and efforts to increase coal royalty non-tax revenue (PNBP), the government needs to simplify the pricing formulation by eliminating the HBA layering. HBA delaying has the potential to increase royalty PNBP by 7.62%, or approximately IDR 5.87 trillion. This policy still allows companies to achieve a positive NPM. This policy can also play a significant role in accelerating social welfare by funding various development programs.

Furthermore, regulations regarding reference prices should be outlined in a Ministerial Regulation to align with the mandate of higher-level regulations and better align with the legal status of the product. Regulations on price formulation should also be aligned with the mandate of Government Regulation 96/2021 to avoid conflicting legal principles.

In the regulations regarding Mineral and Coal Non-Tax Revenue (PNBP), the government also needs to include a clause requiring the involvement of the Ministry of Finance in drafting regulations that impact state finances, including determining the HBA formulation. This is done to mitigate the risk of a long-term decline in state revenue. Natural resource management policies, in this case coal royalties, will undoubtedly be linked to state revenue. This policy needs to be formulated carefully so that the constitutional mandate to manage natural resources for the greatest prosperity of the people can be realized.

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