

# Chapter 1 Introduction

## 1.1 Background

PT Bukit Asam Tbk (PTBA) is an Indonesia-based company primarily engaged in coal mining industry. The business activities include conducting coal mining operation, including research, exploration, exploitation, processing, purifying, transporting and trading; managing and operating ports and jetties for coal, either for internal or external use; managing and operating thermal power plants, either for internal or external use, and providing coal mining and production related consultation and engineering services. The Company has coal mining concessions in several areas in Indonesia, including Tanjung Enim, Peranap, Palaran and Ombilin. It is also engaged in briquette manufacturing. Its briquette manufacturing plants are located in Tanjung Enim, Indonesia, which produces carbonated briquettes, and Natar and Gresik, Indonesia, which produce non-carbonated briquettes (Reuters, 2018).

PTBA is a financially stable company. Stated in PTBA 2017 annual company report, the operating profit to revenues in 2017 is 30.29%, having a growth of 68% from 2016. Whereas from operating profit to total assets, PTBA reached ratio of 26.83%, growing 97% from 2016 (PT Bukit Asam, 2018).

### Chart of Financial Ratio

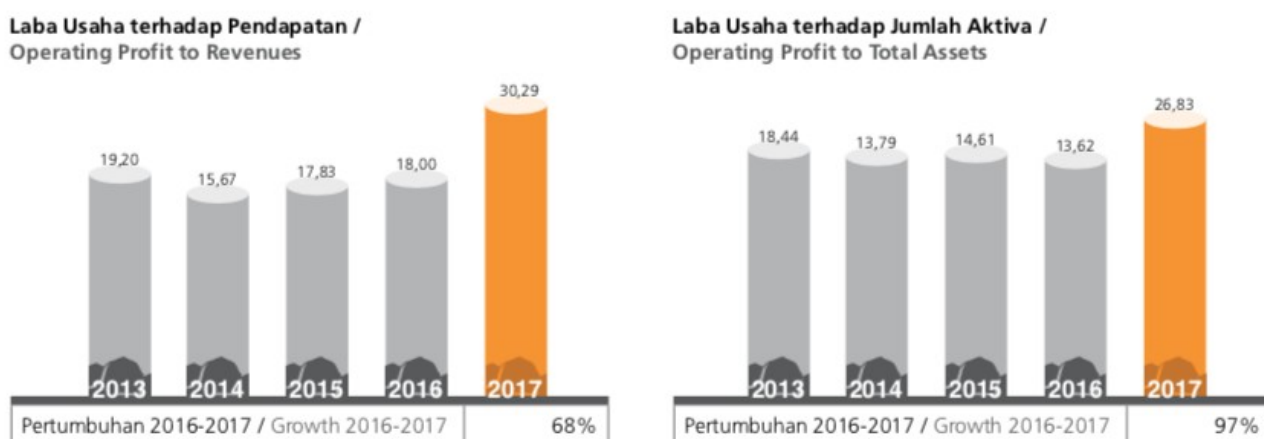


Figure 1.1 Financial Ratio of PTBA (PTBA 2017 Annual Report, 2018)  
 the end of 2013, PTBA revised their vision. As approved by the Board of Directors and the Board of Commissioners, concerning revision of Vision and Mission on December 30, 2013 pursuant to Joint Decision No.15/SK/PTBA-KOM/XII/2013 and No. 336/KEP/Int-0100/

PW/2013, their vision was to become a leading coal-based company in Indonesia that cares about the environment. In December 30<sup>th</sup> 2013, PTBA changed their vision to become a world-class energy company that cares about its environment. Following with this revised switch, the business process of PTBA widened, from only coal mining operation to exploring possibilities of coal in energy industry.

PTBA is revising their vision due to excessive amount of coal resources. In fact, PTBA recorded as number one coal-based company in Indonesia, in terms of amount of reserves possessed. PTBA has approximately 3.3 billion tons of mineable reserves. The huge amount of reserves is seen as an opportunity by PTBA to expand their business activities and increase their productivity. The figure below illustrates total coal resources and coal mineable reserves that PTBA possess.

## PT BUKIT ASAM RESOURCES AND RESERVES

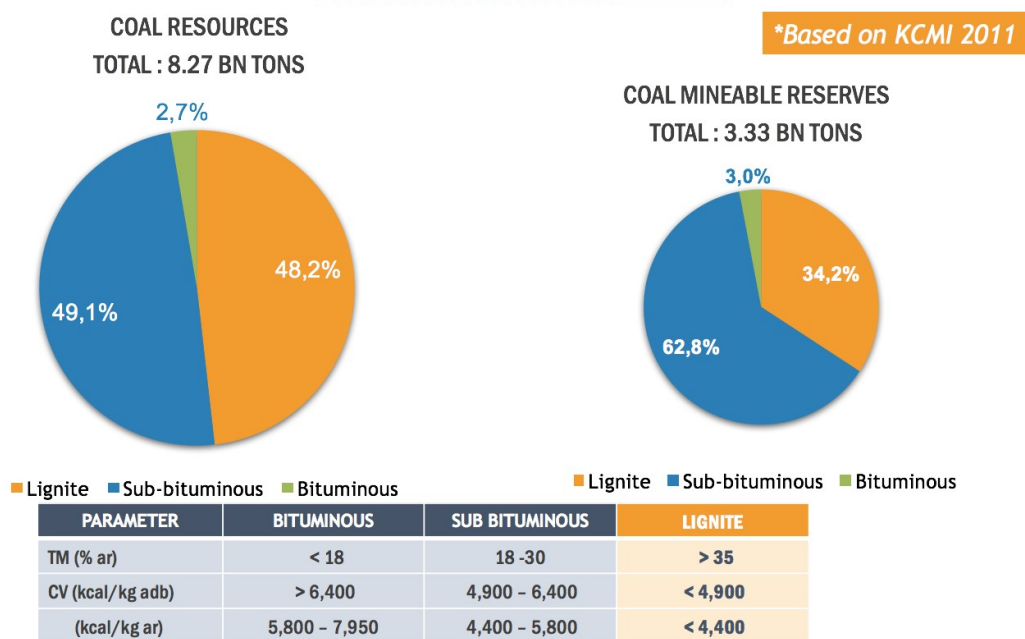


Figure 1.2 PTBA Resources and Reserves (KCMI, 2011)

Despite the amount of reserves possessed, PTBA is ranked fourth in terms of amount of coal production. PTBA produced less than 20 million tons of coal in the last 5 years, whereas its competitors are capable of producing more than 20 million tons of coal annually, despite having lower amount of reserves compared to PTBA.

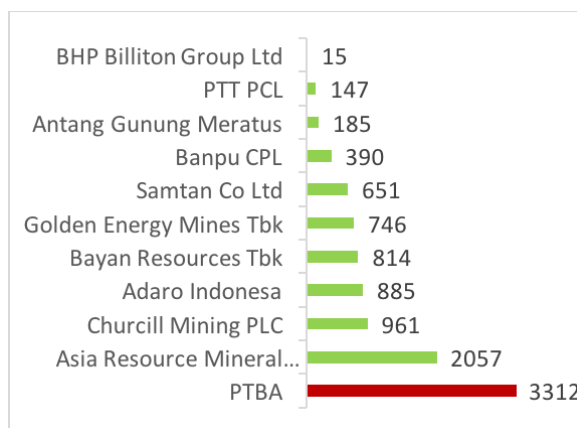


Figure 1.3 Indonesia Coal Company Reserves 2016 (in Million Tons) (Bloomberg, 2016)

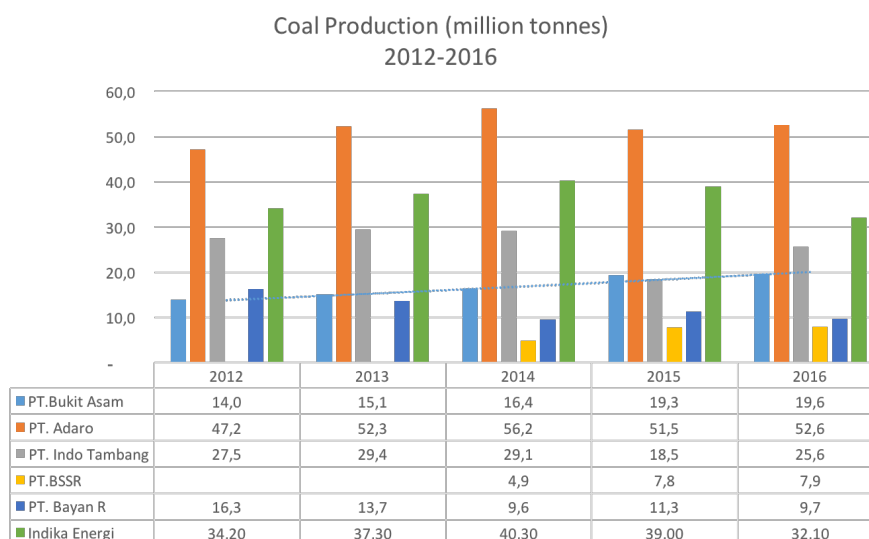


Figure 1.4 Indonesia Coal Company Annual Production (KPKU PTBA, 2017)

The reason behind the existence of gap between amount of reserves possessed and amount of production is concluded through two premises. The first is because the limited capacity of the train operated by PT Kereta Api Indonesia (PTKAI). PTBA is having an agreement with PTKAI to use their facilities to transport the coal from its mine to ports that loads the coal to ships that will distribute the coal. The capacity is limited because the railway used to transport the coal is not exclusively used for coal transport. The railway is also used for commercial purposes for PTKAI, and also used by several companies such as PT Pertamina, PT Semen Baturaja, PT Tanjung Enim Lestari. As a result, PTBA need to adjust their production with the transport capacity. If the carrying production of PTBA exceeds the transport capacity, PTBA will bear inventory cost for coal mined that cannot be transported.

The second is the quality of coal that PTBA hold. As shown in figure 1.2 that illustrates the proportion of coal in terms of quality, lignite, which is the lowest quality coal compared in PTBA's resources, hold a significant amount of 48.2% of all the coal resources, equal to 3.986 billion tons out of 8.27 billion tons' available resources.

Lignite coal is not favorable for PTBA to mine, as it is challenging to generate profit. The cost of producing low quality coal is higher than the selling price of low quality coal by Indonesia Coal Index (ICI).

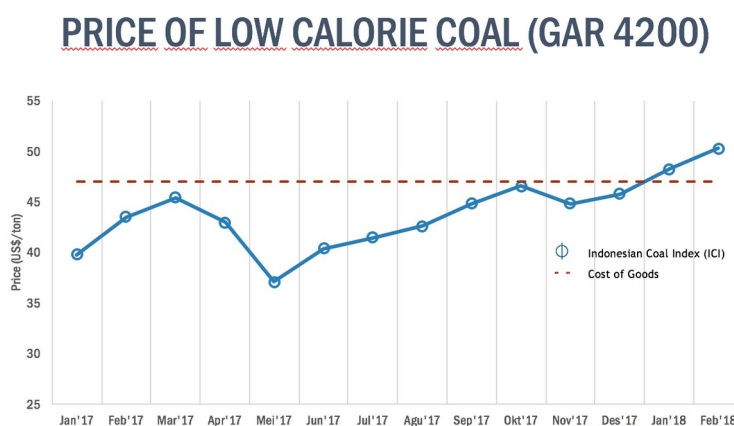


Figure 1.5 Low-Calorie GAR 4200 Coal Price (Indonesian Coal Index, 2018)

Although it is shown that the price of low quality coal by ICI will possibly increase and higher than cost of goods, Ministry of Energy and Mineral Resources of Indonesia has released Regulation No. 19/2018 on the Procedures for Determining Benchmark Prices of Metal and Coal Sales. Under the Domestic Market Obligation (DMO), coal with a specification below 4,500 kcal/kg AR can be purchased for an estimated USD \$37 per metric ton. Selling the coal with this price will generate loss for PTBA.

To overcome the challenge, PTBA has found a way to utilize their coal without being concerned about transport capacity and low quality coal. One realized process that has been conducted by PTBA is to transform coal into value added product in mine mouth. The low-calorie coal is transformed by gasification process that will convert coal into syngas. Syngas is a raw material that will be processed further to be DME, Polypropylene, and Urea that has higher selling price. This process is called downstream processing.

The new initiated procedure has been executed as PTBA has signed a Head of Agreement with its strategic partners, to build gasification coal processing plants in Bukit Asam Coal Based Industrial Estate (BACBIE) located in Tanjung Enim mine mouth, South Sumatera. The illustration of the process is shown below.

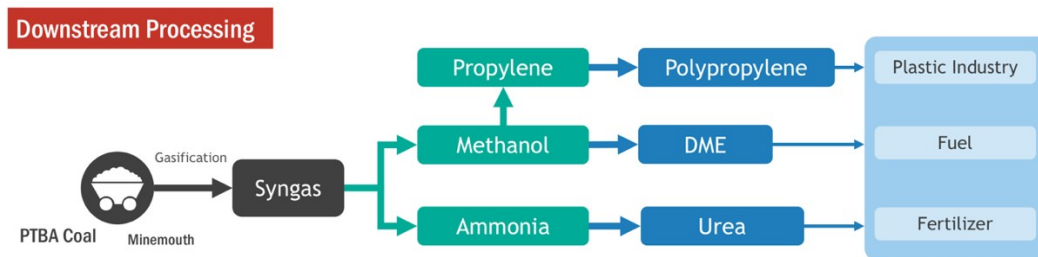


Figure 1.6 Gasification Process Illustration in Tanjung Enim

PTBA will secure the supply of coal in this project, whereas the other parties will take part as an off-taker companies, securing the sales of end-product produced in this project. This agreement is proven to benefit all parties. PTBA will generate profit through the sales of the converted low quality coal, while its strategic partners will secure amount of its product supply from this project.

Driven from executed strategy in Tanjung Enim to avoid loss in low-calorie coal productivity and dependency from transport capacity, PTBA can also implement the business strategy to other mines that possess low quality coal. One example of such mine is in Peranap, Riau Province. Despite having around 290 million tons of reserves, Peranap mine has been under explored due to several facts.

The quality of coal in Peranap is significantly low. Based on a previous study by PTBA, the calorific value of Peranap coal is around 2,500 kcal/kg AR. It also contains a significant amount of moisture content. Furthermore, the current condition of infrastructure in or around Peranap also need to have further development for coal transportations. If PTBA insists on activating business activities in Peranap, PTBA might not generate profit from it, even worse generate loss. The corporate image could also be damaged from it.

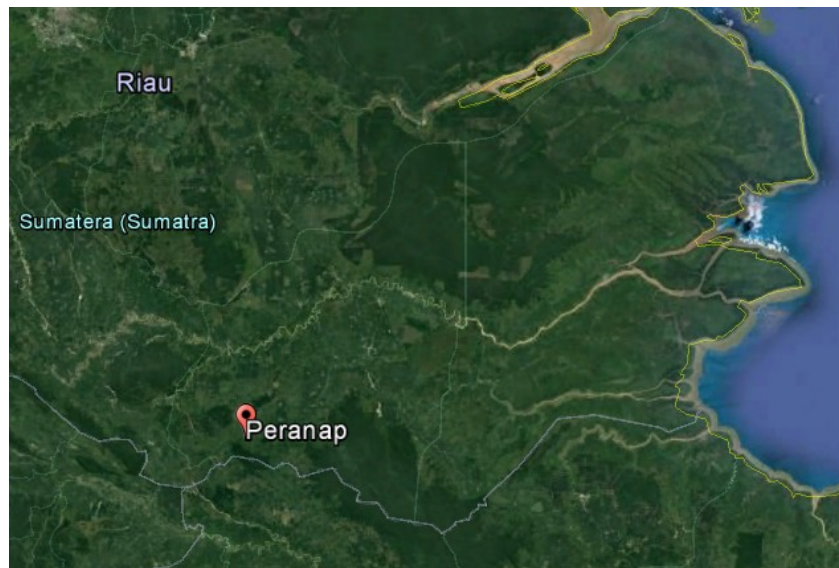


Figure 1.7 Peranap Location (Google Maps)

To implement the strategy of downstream processing in Peranap, the business model in Peranap must be revised. Therefore, the current business model must be analyzed to construct the improved business model. Weaknesses found in the current business model must be solved, and the improved business model must overcome the challenges in Peranap that the current business model cannot. It also needs to support the revised vision from a coal based company into energy company.

Furthermore, after the improved business model has been created, further study is needed to identify whether the improved business model could be made to work in Peranap. One method to identify its success criteria is to see its feasibility (Johnson, Scholes, & Whittington, 2005). Therefore, a feasibility study of the improved business model should be initiated to see whether the newly improved strategy is feasible.

In addition, if PTBA aimed to implement such similar strategy as what is being executed in Tanjung Enim, PTBA need to identify strategic partner(s) that is appropriate to this project, even more as off-taker that secure the sales of end-product produced from the project.

This study is conducted to create an improved business model in Peranap, and to see the feasibility of the improved business model. It is also intended to identify strategic partner(s) that supports the improved business model.

## 1.2 Problem Statement

PTBA has showed its good performance in coal-based industry. PTBA ranked fourth in terms of amount of production. However, looking at its rank in relation with amount of reserves possessed, which is first, there is a possibility for PTBA to increase their productivity by maximizing the use of its resources. The possible outcome made PTBA to start expanding their businesses, one of it is by creating a coal-based industrial estate near the mine mouths.

Other than in Tanjung Enim as PTBA created an industrial estate that based on downstream processing of coal to syngas, another mine owned by PTBA that has potential to be developed using downstream process of coal is in Peranap, Riau. The coal resources found in the mine consists of coal that can be classified as Lignite coal. If PTBA sells the lignite coal as a raw coal, it is challenging to have positive profit margin. The low profit gained by selling raw low quality coal in Peranap creates innovative way to optimize Peranap mine by creating a downstream processing for its low-calorie coal in Peranap.

To create a downstream process in Peranap, its business model must be developed and improved, strategic partner(s) need to be identified and found, and the improved business model need to be feasible to be implemented. Therefore, the problem statement is “Finding an improved business model that helps to identify strategic partner and is proven to be feasible in Peranap”.

## 1.3 Research Objectives

The objective of this research is to answer the problems that is fundamental for this research, such as:

1. To create an improved business model for Peranap mine that solve the problems in Peranap and overcome the weaknesses of current business model.
2. To identify the feasibility of the founded improved business model.
3. To identify strategic partner(s) that support the improved business model.

## 1.4 Research Questions

1. What is the business model that solve the problems in peranap and overcome the weaknesses of current business model?
2. Is the improved business model created is feasible to implement in Peranap?
3. Who is the strategic partner(s) that support the improved business model?

## 1.5 Research Scope and Limitation

To limit this research, several bounds are made such as follows:

1. The research conducted only for Peranap mine.
2. The feasibility study will only assess three aspects:
  - Strategic,
  - Financial,
  - Environmental issue.
3. The research will not discuss and compare technology selections for gasification process in Peranap mine.
4. The financial evaluation will refer to PTBA 2017 annual report in relation with general coal-mining practice. To support this Final Project, micro-financial-analysis will be focus on:
  - Expected Rate of Return in Investment, compare to Weighted Average Cost of Capital
  - Positive Net Present Value
  - All in relation with and in range of “Market Acceptance Price”
5. From sustainability point of view, the research will assess the feasibility of gasification for 25 years, assuming the coal-based industry will be initiated in 2019 and is expected to begin operation in 2022.