

## Saving the Use of Elpigi Gas in the Oven Machine (Calcination) Using the Energy Saving Mode Method at PT. ABC

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**ABSTRACT:** Energy has become a basic need and as one of the main components in the industry, one of which is the ABC factory, one of the efforts to reduce production costs without affecting the results or quality of production is by means of safe energy modes PT. ABC is a manufacturing company engaged in the machinery industry which produces catalyst products for two-wheeled vehicles and four-wheeled vehicles. Broadly speaking, there are several stages of the catalyst manufacturing process, namely the Slury material preparation stage, the process of inserting material into the catalyst on the Cyzec machine, the material gluing process on the Calcination Oven machine, the OK product stamp process, the Final Inspection process. This research was conducted on the Drying oven machine, the line that uses elpigi gas. Based on the period January - June there has been an increase in the amount of gas bills used, After using the Energy Safe Method the amount of gas used decreased by 1 cubic every day and saved expenses in the period January - April.

**KEYWORDS:** Safe Energy Mode, Drying Oven Machine.

### 1. INTRODUCTION

Energy has become a fundamental need and as one of the cost components in the industry, one of which is the ABC plant, energy has become a fundamental need and as one of the cost components in the industry, one of which is an integrated steel plant. One of the efforts to reduce production costs without affecting the results or quality of production is the result or quality of production is by means of Safe Energy Mode, PT. ABC is a company engaged in the manufacture of Catalyst two-wheeled vehicles and four-wheeled vehicles. There are several processes in the manufacture of Catalyst vehicles, namely the Slury Preparation Process, the Coating Process on the Cyzec Machine, the Calcination Oven Process, the Final Inspection Process. In the process of gluing the material carried out on the Drying oven machine, there has been a considerable swelling of the bill due to the uncontrolled use of elpigi gas.

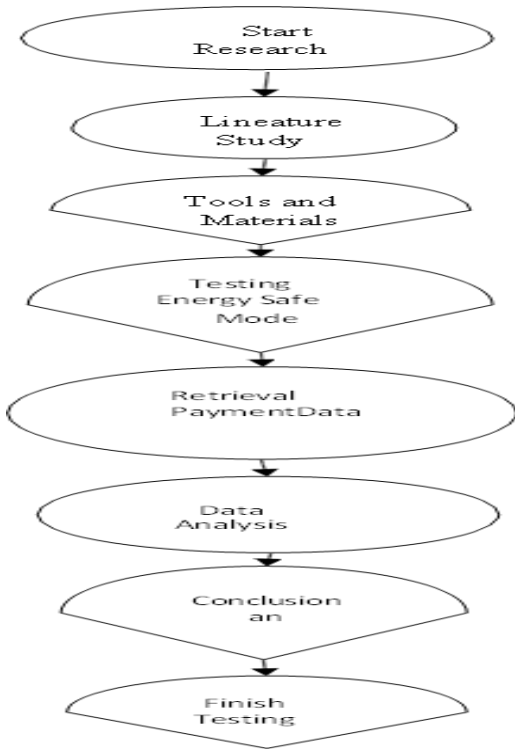
PT ABC has a policy on Safe energy to reduce the amount of costs of using epigi gas and electricity for the sustainability of the factory so that there is no cost overrun every month.

Based on the research that has been done, the Safe Energy Mode method is then carried out to reduce the amount of uncontrolled use of elpigi gas, by using the Safe Energy Mode method the amount of elpigi gas usage per month is more controlled and manages to save more than 1 cubic per day and save costs per month.

### 2. METHODOLOGY

The method used is literature study, data collection - data covering the theoretical basis, quantitative research methods emphasize aspects of objective measurement and data directly in the field, namely by carrying out direct observations measuring and collecting data on gas usage per day. Then the results of the gas collection data will be compared with the data after the Energy Safe Method is

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## 3. RESULTS AND DISCUSSION

### 3.1 COST SAVING DATA

During 1st (45 minutes) & 2nd (40 minutes) shift breaks, the dryer remains active even though the machine is not operating. During that time the machine was still consume gas & electricity.

Of course this is an energy loss. So there needs to be improvements to save energy on during break time. "ENERGY SAVING MODE" can be applied for 35 minutes for 1st & 2nd shift. 2without causingproblems quality & equipment.



Figure 2 Safe mode button Energy saving perweek:

- Total cost savings: per month: Rp 1.249.376,00
- Total cost savings: per year: Rp 14.992.512,00

### 3.1. Temperature data.

#### A. TEMPERATURE CONTROL MACHINE.

NORMAL MODE	SAVE MODE

Figure 3 Temperature Comparison Test

Normal mode, the temperature reaches 200.

The lower temperature will reduce the daily expenditure generated by the use of elpigi gas for the oven process on the calcination machine.

#### B. LPG automatic valve

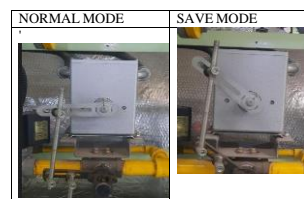


Figure 4 Position of the Elpigi Gas Automatic Valve

Valve position in Normal position and Valveposition in Energy Saving Mode position.

#### C. Combustion Process in Drying Oven.

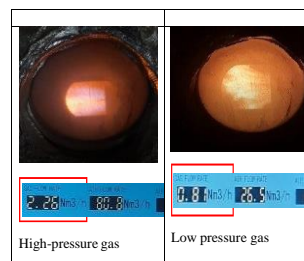


Figure 5 Oven Flame Comparison Test

The combustion process with low-pressure gas will save more gas expenditure, thereby saving costs incurred by the company every month.

## 4. CONCLUSIONS

In the research that has been done, it is concluded that energy has become a basic need and as one of the main components in the industry. PT. ABC is a manufacturing company engaged in the machinery industry that produces catalyst products for two-wheeled vehicles and four-wheeled vehicles, in its production PT ABC found a problem in the cost of spending too much Elpigi gas every month, the purpose of this study is to reduce the deficit of Elpigi gas spending costs with ENERGY SAFE METHODS proven to be able to reduce large costs..

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