ANALYSIS OF ENVIRONMENTAL IMPACT (AMDAL) IN GENSET WASTE MANAGEMENT

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Abstract

CV. Boma Teknik Semarang is a business engaged in generator maintenance. In gene rator maintenance activities produce gas waste and sound and vibration waste. The waste m anagement is guided by government regulation no. 17 of 2001 concerning Types of Business or Activities that must be accompanied by an Environmental Impact Analysis on generator w aste management, including procedures for managing and managing waste products, so as n ot to pollute and damage the environment and endanger the environment, health, human sur vival and other living things. Environmental Impact Analysis (AMDAL) is a study of the maj or and significant impacts of a planned business or activity on the environment. The impact t hat occurs on the environment is caused by the activity of a business, namely CV Boma Tekn ik Semarang so that it can pollute the surrounding environment and cause negative impacts t hat are harmful to humans. The purpose of the AMDAL is to maintain the quality of the envi ronment so that it is not damaged due to the activities of a business or industry.

Keywords: purpose of amdal and waste management

1. Introduction

AMDAL in national laws and regulations is regulated in the Law of the Republic of Indonesia Number 32 of 2009 concerning Environmental Protection and Management (UUPPLH) and Government Regulation Number 27 of 1999 concerning Environmental Impact Analysis (AMDAL), where in article 1 Figures that Environmental Impact Analy sis (AMDAL) is a study of the major and significant impacts of a planned business and/ or activity on the environment which is required for the decision-making process regardi ng the operation of a business or activity.

As administrative law with its instrumental nature, the prominent function in admin istrative environmental law is preventive in nature in the form of prevention of pollution or environmental damage (Yakin, Sumadi Kamarol, 2017). In Article 13 paragraph 1 of Law Number 32 of 2009 concerning Environmental Protection and Management (UUPP LH) it is stated that the control of environmental pollution and/or damage is carried out i n the context of preserving environmental functions (Yakin, S.K, 2017).

The purpose of environmental management is to prevent negative impacts, overcom e and control negative impacts that arise and increase positive impacts so that these imp

acts provide great benefits (Muhammad Abdun Nasir, 2019). Law Number 23 of 1997 c oncerning Environmental Management states that environmental management is an inte grated effort in the utilization, arrangement, maintenance, supervision, control and devel opment of the environment (Eka Hadiyanta, 2017).

CV Boma Teknik is a business engaged in generator maintenance domiciled in the city of Semarang, this business is located in the area around community settlements, the waste produced consists of two types, namely: gas waste and sound and vibration waste. Generator gas waste is in the form of smoke from the generator, while sound and vibrati on waste is in the form of sound and vibration from the generator engine.

The waste produced by this generator engine is not good enough to cause damage t o the environmental ecosystem or air pollution resulting in respiratory problems that can harm the people who live around it. generator maintenance. The impact on the environm ent is the effect of changes in the environment caused by a business and/or activity (Siti Sundari Rangkuti, 2019).

2. Material and Methods

The research method used in writing this thesis is a qualitative research method (Ob servation and distributing questionnaires) with a case study approach. According to Ash shofa, qualitative research methods focus on the general principles that underlie the man ifestation of units of symptoms that exist in human life, or patterns that are analyzed by socio-cultural phenomena using the culture of the community concerned to assist in rese arch.

Qualitative research methods are used because “first, completing qualitative method s will be easier when dealing with reality; second, this method uses directly the nature of the relationship between the researcher and the respondent; and third, this method is mor e sensitive and more self-sufficient with a lot of sharpening of mutual influence and on t he patterns of values encountered”.

Meanwhile, the case study approach proposed by Creswell is a type of approach use d to investigate and understand an event or problem that has occurred by collecting vari ous kinds of information which is then processed to obtain a solution so that the problem s revealed can be resolved.

3. Result and Discussion

The results obtained from researchers distributing questionnaires to respondents (local residents)

From the results of the research questionnaire distributed to the respondents, namely lo cal residents on March 28, 2022. The researcher gave a questionnaire containing questions that must be filled out by the respondent, after the answers from the respondents had been c ollected and checked, the next step was to recapitulate the data. The total distribution of the questionnaires is 12 questionnaires distributed to respondents, which were received back a

mounted to 9 questionnaires. 3 respondents did not give an answer with the reason being b usy.

a. Data Reca pitulation by Age

Demographic data of respondents based on age, respondents must fill in their age on th e questionnaire that has been given by the researcher. The following output is obtained:

Table 3.1 Composition of Respondents by Age

No.	Age and frequency frequency	Percentage
1	Age is 28 and the frequency is 1 respondent	11,1%
2	Age is 29 and the frequency is 1 respondent	11,1%
3	Age is 30 and the frequency is 2 respondent	22,2%
4	Age is 32 and the frequency is 3 respondent	33,3%
5	Age is 33 and the frequency is 1 respondent	11,1%
6	Age is 34 and the frequency is 1 respondent	11,1%

Source: processed data questionnaire (2022)

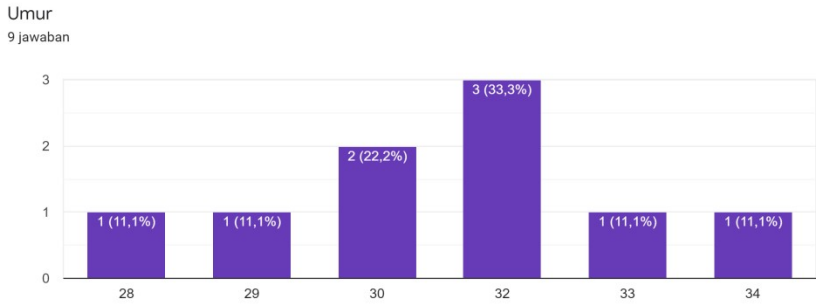

Figure 3.1**.** Percentage of Respondent Data by Age

In the age category can be analyzed, for the average respondent aged 20 and over, respond ents aged 28 years as many as 1 person (11.1%), respondents age 29 years as many as 1 p erson (11.1%), respondents age 30 years as many as 2 people (22.2%), respondents age 32 years as many as 3 people (33.3%), respondents age 33 years as many as 1 person (11.1%) and respondents age 34 years as many as 1 person (11.1%).

b. Data Recapitulation by Gender

For data based on gender, the choice items given are male or female. It aims to find out how many male or female respondents filled out the scattered questionnaires. The output results are as follows:

Table 3.2. Composition of Respondents by Gender

No.	Gender	Percentage
1	There are 6 respondents male gender	66,7%
2	There are 3 respondents female gender	33,3%

Source: Questionnaire processed data (2022)

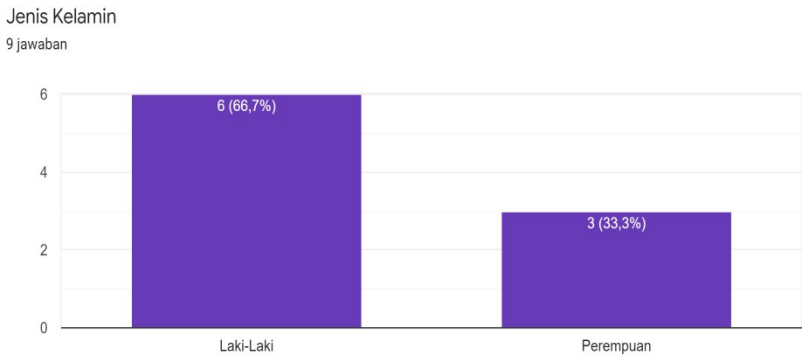

Figure 3.2. Percentage of Respondent Data by Gender

From the output results in table 3.2 and figure 3.2, it can be analyzed that there are 6 male respondents (66.7%), while 3 female respondents (33.3%). filling out the questionnaire was dominated by male respondents.

Discussion on research as follows:

Measures for managing and tackling generator engine waste

Genset Gas Waste Management

1. Installing an air filter, by installing an air filter on the chimney of the generator engine, it aims to filter out particles mixed with smoke so that they do not fly freely outside.
2. Installing a Wet Filter, by installing a wet filter on the chimney of the generator engine, it aims to clean dirty air or dust when it comes out by spraying water on the top and bottom of the tool.
3. Installing electrostatic precipitators, electrostatic precipitators are used to clean dirty air in relatively large amounts (volume) and the air pollutant is aerosol or water vapor.

Generator Sound and Vibration Waste Management

1. Make a double-walled room (double cover) and perform regular machine maintenance.
2. Installing sound dampening devices such as: Glasswool, Vibration Damper, and egg foa m.
3. The machine can be placed on a floor that has been concreted and reinforced (locked bet ween the machine and the floor).

Genset Gas Waste Management

1. Control exhaust emissions
2. Removing particulate matter from exhaust air (chimney)
3. Growing green plants

Genset Sound and Vibration Waste Management

1. Using a silencer
2. Adding or upgrading the exhaust generator
3. Adding a vibration damper generator

What are the impacts on living things and the environment due to the waste generated by th e generator engine?

The impact of gas engine generator

1. Disrupts the respiratory system in humans

The impact of air pollution from the exhaust gas produced by the generator engine can trigger respiratory problems, such as asthma, ARI, and lung cancer. In addition, air pollutio n can also end in reduced oxygen levels in the human body.

2. Land quality is getting worse due to frequent occurrence of acid rain

The burning of fuel by production and industrial companies releases toxic gases into th e air when burning fuel combines with oxygen to form sulfur dioxide (SO2). this will bring acid rain water into the soil, then it can cause difficulty in root development and plant grow th will be disrupted.

Impact due to waste sound and vibration of the generator engine

1. Hearing becomes impaired

The noise generated by the generator engine can interfere with the human sense of hearing such as physiological disorders and psychological disorders. Physiological dist urbances, in general, high-pitched noise can cause increased blood pressure, increased pulse, can cause pallor and sensory disturbances in humans.

2. Difficulty understanding speech and communication disorders

Communication disorders are usually caused by a masking effect (sounds that cov er hearing that are less clear). conversational communication must be done by shoutin g.

3. Acknowledgement

There are several conclusions and suggestions

Conclusion:

1. Environmental Impact Analysis (AMDAL) is carried out to maintain the quality of the e nvironment so that it is not damaged due to the activities of a business or industry. Envir

onmental Impact Analysis (AMDAL) is a study of the major and significant impacts of a planned business or activity on the environment.

2. From the results of research conducted, the exhaust gas produced by the generato r contains the most dangerous substances, namely Sulfur dioxide (SO2), Nitrogen dioxide (NO2), Carbon monoxide (CO) and Hydrocarbons (HC). Of the 4 substances that are categ orized as hazardous substances, CV Boma Teknik must manage gas waste so that it does n ot cause negative impacts on living things and the surrounding environment.

Suggestion:

1. It is hoped that the CV Boma Teknik Semarang business party will carry out waste mana gement in a good way so that a harmonious relationship with the community can be creat ed and business responsibilities can also be seen with good waste management.
2. Generator business owners should comply with the provisions in Government Regulatio n No. 27 Tahun 1999 concerning Environmental Impact Analysis (AMDAL) is a study o f the major and significant impacts of a planned business or activity on the environment t hat is required for the decision-making process regarding the operation of a business or a ctivities and Law Number 23 of 1997 concerning Environmental Management states that environmental management Life is an integrated effort in the utilization, arrangement, m aintenance, supervision, control and development of the environment.

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