

Questionnaire Number:

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Research Instrument
Analyzing PET-Bottle Waste Technology Using Analytic
Hierarchy Process Method

Warm Greeting,

We invite you as a recognized expert in the field to help us to understand the impact that the introduction of poly(ethylene terephthalate) bottle waste (PET-BW) technology in Indonesia could have on society and environment. The aim of this research is to evaluate possible alternative routes for the treatment of PET-BW using the Analytical Hierarchy Process (AHP). Therefore, we would be glad if you could share your opinion about five aspects (environment, resource consumption, economy, society, policy, and technical applicability) concerning the utilization of PET-BW.

Your participation in this research is voluntary and without coercion. It will require about 30 minutes to fill the questionnaire. For assurance and professional courtesy, it should also be clarified that data collected for this work will only be used for the purpose of this study and research analysis within the academic realm of the conducted research. It will not be used for any commercial or other purpose unrelated to the academic field as it is stated in this questionnaire.

This research is conducted by

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PROFILE

Name :

How many years of experience have you had in this research field ?

Answer :

(Option)

- | |
|--|
| <ol style="list-style-type: none">1. Less than 5 year2. More than 5 year3. More than 10 year4. More than 20 year5. More than 30 year |
|--|

GENERAL INFORMATION

As an expert in the field, I would appreciate your assistance in carrying out a pair-wise comparison of criteria and sub-criteria used in our AHP approach by filling the following tables with the numbers from the importance scale in Table 1.

Table 1. Scale for pair-wise comparison (Saaty, 1980)

Importance Scale	Definition of the Importance scale
1	Equal importance of the row criterion over the column criterion
2	Between equal and weak importance of the row criterion over the column criterion
3	Weak importance of the row criterion over the column criterion
4	Between weak and strong importance of the row criterion over the column criterion
5	Strong importance of the row criterion over the column criterion
6	Between strong and demonstrated importance of the row criterion over the column criterion
7	Demonstrated importance of the row criterion over the column criterion
8	Between demonstrated and absolute importance of the row criterion over the column criterion
9	Absolute importance of the row criterion over the column criterion

The PET bottle waste technology alternatives considered are as follows:

Table 1. Definitions of technology alternatives under consideration.

Technology Alternatives	Definition
Open Landfill	Waste final disposal on separated or excavated land to accommodate various types of waste
Sanitary Landfill	Waste final disposal on excavated land for various types of waste covered by soil to reduce the negative impact; possibility of energy production from exhaust gases
Incineration with energy recovery	Converting waste into energy (electricity and heat)
Pelletizing Plastic Bottle Waste	Remelting and extrusion of PET to be used as raw material
Hydrolysis	Conversion of PET by water at high temperatures and pressures to produce terephthalic acid (TPA) and EG.
Glycolysis	Conversion of PET by ethylene glycol (EG) to produce bis(hydroxyethyl)terephthalate (BHET)

The above technology options will be subjected to pair-wise comparisons based on the following criteria and sub-criteria:

Table 2. Criteria and Sub-Criteria

Criteria	Sub-Criteria
Environment	Air Pollution
	Soil Pollution
	Water Pollution
	Biodiversity
	Climate Change
	Land Use
Resources Consumption	Energy Consumption
	Avoided Chemical Production
Society	Public Acceptance
	Job Creation
	Public Participation
	Human Health
	Waste Prevention Behavior
Economy	Initial Investment Cost
	Operation and Management Cost
	Gate Fee
Policy	Regulation
	Administrative Incentive
	Public Organization
Technical applicability	Maturity
	Feasibility
	Capacity
	Product Value

Technology Alternative Comparison with Sub-Criteria

In this part, technology alternatives are compared depending on each sub-criterion.

ENVIRONMENTAL SUB-CRITERIA

Table 1. Which alternative is the best to avoid **AIR POLLUTION**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 2. Which alternative is the best to avoid **SOIL POLLUTION**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 3. Which alternative is the best to avoid **WATER POLLUTION**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 4. Which alternative is the best to maintain **BIODIVERSITY**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 5. Which alternative is the best to avoid **CLIMATE CHANGE**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 6. Which alternative is the best to reduce **LAND USE**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

RESOURCE CONSUMPTION

SUB-CRITERIA

Table 7. Which alternative is the best to reduce **ENERGY CONSUMPTION**?
Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 8. Which alternative is the best to reduce **AVOIDED CHEMICAL PRODUCTION**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

SOCIETY SUB-CRITERIA

Table 9. Which alternative is the best to obtain **PUBLIC ACCEPTANCE**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 10. Which alternative is the best to improve **JOB CREATION**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 11. Which alternative is the best to improve **PUBLIC PARTICIPATION**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 12. Which alternative is the best to maintain **HUMAN HEALTH**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 13. Which alternative is the best to support **WASTE PREVENTION BEHAVIOR?**

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

ECONOMY SUB-CRITERIA

Table 14. Which alternative has the affordable **INITIAL INVESTMENT COST**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 15. Which alternative has the lowest **OPERATION ANDA MANAGEMENT COST**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 16. Which alternative has the lowest **GATE FEE**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

POLICY SUB-CRITERIA

Table 17. Which alternative requires the smallest number of **REGULATIONS**?
Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 18. Which alternative requires the least **ADMINISTRATIVE INCENTIVE**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 19. Which alternative is most probable operated by PUBLIC ORGANIZATIONS?

Put the importance number to the side of the alternative with the highest probability.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

TECHNICAL APPLICABILITY

SUB-CRITERIA

Table 20. Which alternative has the proven in **MATURITY?**

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 21. Which alternative has the best **FEASIBILITY**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 22. Which alternative can treat the highest **CAPACITY**?

Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Table 23. Which alternative provides the highest best **PRODUCT VALUE**?
Put the importance number to the side of the alternative with the best performance.

TECHNOLOGY ALTERNATIVE			
	Open Landfill	Sanitary Landfill	
	Open Landfill	Incineration with energy recovery	
	Open Landfill	Pelletizing Plastic Bottle Waste	
	Open Landfill	Hydrolysis	
	Open Landfill	Glycolysis	
	Sanitary Landfill	Incineration with energy recovery	
	Sanitary Landfill	Pelletizing Plastic Bottle Waste	
	Sanitary Landfill	Hydrolysis	
	Sanitary Landfill	Glycolysis	
	Incineration with energy recovery	Pelletizing Plastic Bottle Waste	
	Incineration with energy recovery	Hydrolysis	
	Incineration with energy recovery	Glycolysis	
	Pelletizing Plastic Bottle Waste	Hydrolysis	
	Pelletizing Plastic Bottle Waste	Glycolysis	
	Hydrolysis	Glycolysis	

Questionnaire Suggestion and Question

Before ending the questionnaire, please, add your opinion on the last three questions.

1. Did you understand the meaning of criteria, sub-criteria, and alternatives?

Yes ☐

No ☐

1.1.If you answer was NO, please, state the criteria, sub-criteria, alternatives that were unclear.

2. Do you have any concerns or questions about the research?

3. Do you have any suggestions for this research?

Thank you for giving your valuable time to complete this questionnaire.

We genuinely value the information you have provided.

Your responses will contribute to our analyses of the data.

If you have any comments on the survey or the project, please leave a comment below.

Many thanks,

Akhmad Amirudin