

# STUDENT WORKSHEET

## RENEWABLE ENERGY



GROUP NAME :

.....

.....

.....

.....

# ACTIVITY 1

NAME : .....

CLASS : .....

## STUDY GUIDE



1. Understand information about renewable energy in the Info at a Glance section.
2. Read the article and observe the pictures
3. Answer the questions

## DISCUSSION



Read the article and observe the following images

**SCAN  
ME!**



# ACTIVITY 1

NAME : .....



CLASS : .....



Question :

1

Why do fossil fuels still dominate energy use in Indonesia even though their negative impact on the environment is increasing?

2

How can renewable energy be a solution to improve the welfare of small-scale fishermen, and why is this transition difficult?

3

How can the use of renewable energy by small-scale fishermen impact Indonesia's efforts to achieve carbon emission reduction targets?





## Question :

4

Discuss the advantages and disadvantages of using fossil fuels for small fishermen and their impact on the marine environment and natural resources.



5

In your opinion, what strategies need to be implemented to make the use of renewable energy more attractive than fossil fuels among the general public?



# ACTIVITY 2

NAME : .....

CLASS : .....

## STUDY GUIDE



1. Learn renewable energy material.
2. Watch the video for a deeper understanding.
3. Discuss the problems and answer the questions in groups.

Record the results of the discussion.

## LEARNING OBJECTIVES



After learning activities, students are expected to be able to:

1. Explain and differentiate the concepts of renewable energy.
2. Identifying the benefits and challenges of renewable energy.
3. Analyze the problems and impacts of renewable energy on the environment and society.
4. Developing creative solutions to increase the use of renewable energy.

## NEWS FLASH

Renewable energy is energy that comes from natural sources that can be renewed and will not run out in the near future, for example solar, wind, water and geothermal energy.



Commonly used types of renewable energy: Solar Energy, Wind Energy, Hydro Energy, Geothermal Energy, Biomass Energy.

Renewable energy can maintain energy sustainability for future generations because its sources will not run out. However, there are challenges in its implementation, such as high investment costs and the need for sophisticated storage technology. For example, solar and wind energy are weather-dependent, so they require batteries or storage technology to store energy when the weather is not favorable.

## DISCUSSION



### The problem

1. Fossil fuels, such as coal and oil, are still the world's main energy sources. These energy sources cause pollution, climate change, and have the potential to run out in the future. However, although renewable energy is considered a solution, its application is still limited due to cost, technology, and infrastructure.



Watch the following video:

SCAN ME





## Question :

1

Why is renewable energy considered a solution to overcome the problem of fossil fuels?



2

Identify how renewable energy can reduce pollution and maintain people's quality of life.



3

What are the challenges faced in developing renewable energy, especially in developing countries?





### Question :

4

Provide examples of community behavior or initiatives that can increase the adoption of renewable energy in the surrounding environment.



5

Discuss innovative ideas that can be implemented to increase the use of renewable energy.



# ACTIVITY 3

## MAKING SIMPLE BIOGAS

NAME : .....

CLASS : .....

### JOB INDICATORS



1. Understand and pay attention to the work steps
2. Document every activity

### WORK STEPS



1. A. Prepare the ingredients to be used

2. 1 medium or large used bottle

- 1 balloon
- chopped organic material
- lem
- hose
- air tap
- microbe starter (leaves under large trees) or EM4
- Air
- syringe

B. Steps

Make a hole in the top right corner of the used bottle.

1. Install the air tap on the bottle that has been perforated then add glue to prevent leaks.



- 1.3. Put the chopped organic waste into the bottle.
4. Dissolve the microbe starter with water then put it in the bottle.
5. cover the bottle with a balloon
6. Attach the hose and syringe to the air valve.
7. Leave it for 2 days
8. After 2 days the balloon will expand which indicates the presence of gas.

## DOCUMENTATION

