Build a Biogas Generator

Re-Energy
Activity
Grade Level 7-12

Main Objective

In this construction activity, learners will build a model of a simple biogas generator. Learners will also test their biogas system design and answer questions about renewable energy.

Learning Outcomes

By the end of this activity, learners will:

- Describe how flowing water can be converted into electricity
- Describe the benefits of waterpower as a renewable energy source and compare it to non-renewable energy sources
- List the co-benefits and tradeoffs of micro hydro power vs. large hydro power systems

Length of Activity: 2 hours (Two Class Periods)

Step 1: Introduction to biomass
Step 2+3: Build a biomass generator

Materials List

- Internet-enabled device
- Biomass Energy Backgrounder
- Materials and tools to build the biogas generator as outlined in the Construction Plan

Activity

Step 1: Read the Backgrounder

Distribute the Biomass Energy Backgrounder and have the learners read the information. As a class brainstorm answers to the questions in the backgrounder.

Step 2: Watch a "How To" Video

Set up stations of complete materials to build a biogas generator. Set up enough stations to accommodate all learners. Then watch the following video:

How to Make a Biogas Generator? (7:14 minutes)

Step 3: Build It!

1. Review the Biomass Generator Construction Plan as a class.
2. Then, build it! Please ensure you follow all safety precautions outlined in the Construction Plan and that you pay close attention to the steps on pages 2-5.

Discussion Questions

1. Why is biogas considered a source of renewable energy?
2. In what appliances or to what uses could biogas be applied?
3. What are some of the practical limitations to use biogas as an energy source on a large-scale?
4. Where in Canada would biogas be a viable alternative to fossil fuels?
5. Why do you not want photosynthetic algae growing in your "digester"?