The Mighty Whale Puts Waves to Work

The Mighty Whale's Big Job

In 1998 Japan launched a large platform into the ocean. Painted with a large mouth and beady eyes, it is called the Mighty Whale. Japanese researchers anchored the Mighty Whale to the bottom of the sea at the mouth of Gokasho Bay. This faces the Pacific Ocean. The Mighty Whale wasn't put out to sea as a decoration. It is an alternative source of energy. Its job is to use the power of the waves to make energy. It uses the moving water to drive air **turbines**. These air turbines drive **generators**. Electricity is made.

Researchers are studying the Mighty Whale to see how using wave energy can be helpful. Besides making electricity for use on the shore, the Mighty Whale has a number of other uses. Because it takes the energy from the waves, there is calm water behind it. People can use this calm water for fishing or to enjoy water sports. The platform of the Mighty Whale can be used to tie small boats to or to observe weather. Researchers in Japan hope the Mighty Whale will show people that wave power can be used as a
renewable resource.

Big Clams Make Power, Too

What do you think about when you hear the words Loch Ness? Do you picture a giant sea monster? This mysterious creature is what most people think about when they hear Loch Ness. Look out at the water today around Loch Ness, Scotland. You just might see something strange and monstrous in the water. But it won't be that sea monster of the legends! Researchers in Loch Ness have been experimenting with floating bags called **clams** to provide power for nearby homes.

It might sound like something from a legend, but clams can really make electricity! Waves pound against these big bags and air is squeezed into a chamber. The air spins a **turbine** and electricity is made. Right now, these clams are expensive, but they are another form of **renewable energy**.

Wanted, Big Waves!

As you can imagine, wave power experiments need to be done where there are normally big waves. Because of this, there is a lot of interest in wave energy in the United Kingdom, Japan, Norway, and Denmark. These are countries where there is easy access to long, deep water ocean waves. There are also open, windy spaces of water. These are important conditions for using wave energy successfully.

What Can Be Gained By Wave Power?

Let's take a look at the good things that using wave energy can do for our planet. We already know that using **fossil fuels** for energy can contribute to the **greenhouse effect**. They can also put harmful **particulates** into the air we breathe. Wave power systems do not pollute and are a renewable resource. Unlike dams, these water power stations do not harm migrating fish. They can help communities along the shoreline that are not already served by electricity. Waves can store energy over long distances, and they are a regular source of power. They also have the benefit of protecting the coast in areas where they are placed. There are many benefits to wave power systems, but this form of energy is still being studied by scientists.

You're an Expert!

1. Sketch the way you think the Mighty Whale or clam might work. Label the parts.

2. Use a shoebox to make a diorama of the Gokasho Bay with the Mighty Whale in it. Show homes along the shoreline using power from the waves!

3. Use reference materials to find other global locations that would be good spots for wave power. Make a world map showing these locations.

Taking Action...

With the help of a teacher or parent, look up wave power on the Internet. Find a group that is researching this. Write them a letter requesting information. Share this information with classmates by making a poster or giving a short speech.