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Hydroelectric (Water) Energy Production



Renewable Energy Sources:

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Hydroelectric Energy:

Hydroelectric energy is electricity (electric) that is produced by water (hydro). Humans have always used water as a form of energy. The first of human use was found in China during 202 BC and 9 AD.

Water has been used in the production of electricity since the invention of **turbines**. The modern turbine was invented in 1849 and is still used today. James Francis, who was a British-American engineer, invented them.



*Sir Adam Beck Generating Station –
Photo Credit: Ontario Power Generation*

The first hydroelectric plant was developed in 1878, Northumberland England. It was a great success. Countries from all over the globe started using hydroelectric plants for producing energy. In 1893, the world's largest hydroelectric plant was built at Niagara Falls. It was named the Edward Dean Adams Power Plant (IHA, 2016).

Renewable energy - Energy that we can be used over and over again.

Hydroelectric energy – Electricity that is made by moving water.

How they work:

Hydroelectric power uses the energy of moving water. Placing a **turbine** in the way of the water flow can capture this energy. The turbines are attached to generators. When the water hits the turbines, they spin. Spinning turbines cause the generators to create electricity. Power plants use many turbines and generators to create the most electricity possible.

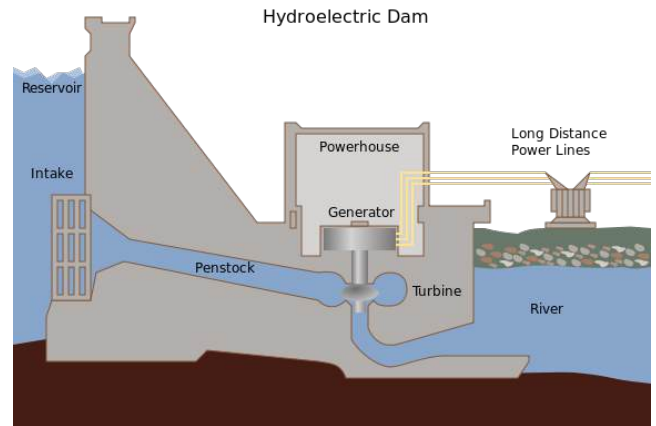


Photo by - Tomia

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Present Day:



Hoover Dam, Nevada, U.S.A.

The Hoover Dam

Located just outside of Las Vegas Nevada, the Hoover dam produces enough to serve 8 million people.

The Good and the Bad:

Hydroelectric power does not have many disadvantages. However, building **dams** to store water changes where the water flows. This can affect nearby towns, villages and wildlife habitats. Also, if the dam were to break, the nearby area would be flooded.

However, the overall impact of hydroelectric power on the environment is positive. It has helped decrease our use of fossil fuels for generating electricity. The important upside is that water is limitless. More than 70 percent of Earth's surface is covered in water and it can be used to generate enough electricity for everyone.

Turbines – A machine used to produce power through movement.

Dams – A barrier that stops or slows the flow of water.

Reading Comprehension Questions

1. What are
2. Who were the first humans to use the power of water and when did this occur?
3. What
4. When and where was the first hydroelectric plant built?
5. What is
6. How can

Extension Questions

For the next two questions, please go to the following site using the provided URL or the QR code.



<http://goo.gl/5hWlF>

7. Why are dams used?
8. What
9. Do you think hydroelectric power is the energy producing technology of the future? Why or why not?
10. Research
11. The power of

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