

Film Title and Release Date: *Energy – Understanding Hydroelectric Power (2005)*

Length of Film in Minutes: 17 minutes

Film Genre: Non-fiction

Reviewer Name and Grade: Daniel L., 8th grade

Date Reviewed: March 31, 2021

In the documentary “Energy – Understanding Hydroelectric Power”, it begins by telling what hydroelectric power is. Hydroelectric power uses water to create electricity or drive machinery. Hydroelectric power uses moving water to generate electricity. Hydroelectric power is the most abundant renewable energy in the United States. The documentary then goes on to explain the pros of hydroelectric power. One advantage of hydroelectric power is that you do not need fuel, and thus you do not need to pay for fuel. Hydroelectric power is also clean and environmental-friendly. After that, it explains what the Run-Of-The-River method is. Pipes divert some of the water flow, drops it down a path, through a turbine to make electricity, and finally returns to the original river or stream. Also, the documentary explains how hydroelectric dams work. Moving water has kinetic energy which is propelled by gravity as it goes through the pen stock, which is usually a pipe that leads down to a turbine. There is a formula for calculating power produced at a hydroelectric plant: Power in Watts = Density of water ($\sim 1000 \text{ kg/m}^3$) * height in meters * flow rate in cubic meters per second * acceleration due to gravity (9.8 m/s^2) * coefficient of efficiency ranging from 0 to 1. Hydroelectric power is not limited to dams and falling water, but there are newer technologies that utilize wave, current, tidal, and ocean thermal energy. Next, it explains that scientists are studying the energy potential at the gulf stream current. The current is located along the eastern coast of the U.S., and is intense and very fast with peak velocity of 2.5 meters per second. The documentary goes on to talk about reverse-osmosis, which is a process of turning saltwater into freshwater. The demand for hydroelectric power is increasing as it is a clean and effective renewable source.

How did you find the film on Kanopy (by title search, subject search, casual browsing, etc.)?

I found the film on Kanopy through subject search.

Did the plot (for fictional movie) or presentation of information (for documentary) keep you interested?

The presentation of information kept me interested. One part of the documentary showed a diagram of the parts of a hydraulic dam, which was very helpful, as it helped me find out where the pen stock was located in a hydraulic dam. The narrator spoke very clearly and was very informative, as he gave lots of information on hydraulic dams.

Was the pace of the film too fast, too slow, or just right?

The pace of the film was just right. I could understand what he was saying quite well.

What grade level(s) is this film appropriate for?

I think this film is appropriate for 5th graders because there are some physics formulas like the formula for calculating power produced at a hydroelectric plant which grade levels lower than 5th grade might not understand.

Rating: 5

I really liked this film. It was really informative and I learned a lot about hydroelectric power. I learned lots of new facts, including the formula for calculating power produced at a hydroelectric plant as well as what the Run-Of-The-River method is.