WATER POWER - CONTINUATIVE EXPERIMENTS

AES 4.1.1

Experiment 1:

How powerful is our turbine?
To determine this parameter, we measure the voltage derived by the turbine with generator

Action:

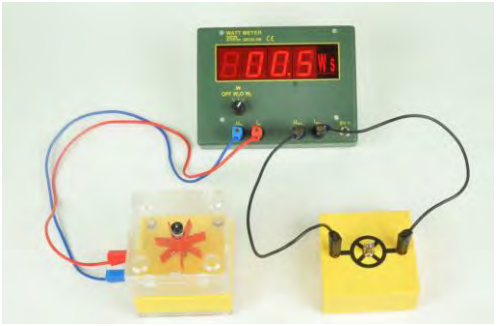
- Fix the turbine on the generator (see previous experiment)
- Set a measuring range of 10V (DC) on the meter
- Connect the brick with the meter
- Place the turbine under a water tap
- Turn on the water tap
- Read off the voltage

Attention:
The use of long cables is recommended to avoid the contact of water with the meter.

Advice:
Through the use of a water actuator, the conducted power is not performing constantly. Therefore it is recommended to use an analog meter.

Experiment 2:

How can the generated power get measured?



Action:

We use the "inno - Wattmeter for this experiment. The energy input gets done by the propeller with generator. The lamp 1.5V in the brick is the consumer.

Advice:
As the supplied power is not performing constantly in this experiment, it is very difficult to measure exact values of the performance without the help of a wattmeter.
The "inno - Wattmeter" directly displays the performance (in W). Also, the performance in a certain time (Ws) can be displayed.

Cross-reference to practise:

Try to describe a water power plant schematically.

You can find different types of turbines in your physics book. Which kind of turbine is built-in in the brick?
Pelton-turbines are used in storage power plants.
Francis – or Kaplan–turbines are used in diverted flow power stations on rivers or in tidal power plants on the sea.

Additional interdisciplinary tasks:

Which percentage of the the domestic energy is covered by hydropower?
Determine the ressources of hydropower in your own country.

Name advantages and disadvantages of water power plants.

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