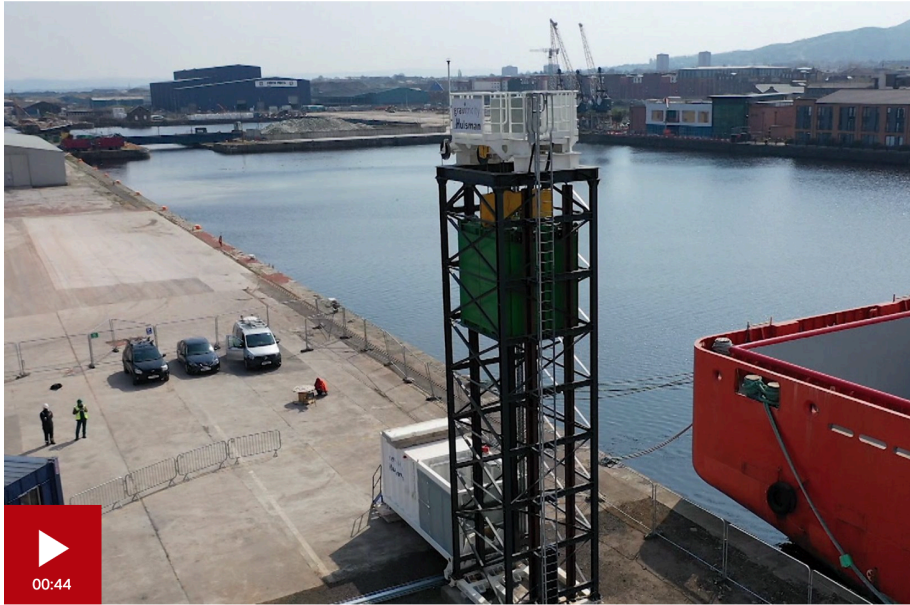


Title: Gravity Battery

Name _____



'Gravity battery' generates power for first time in Edinburgh

A project to create electricity using gravity has generated power for the first time at a demonstrator site in Edinburgh.

The 15m (49ft) high demonstrator is housed in a tower on the quayside at Leith docks.

The Gravitricity system works by using excess power to raise heavy weights which keep that energy "stored" until it is needed - electricity is generated when the weights are dropped.

It has been designed to be housed in old mine shafts rather than towers, and in the UK could go to depths of 750m (2,461ft) - twice the height of the Eiffel Tower in Paris.

In African countries, where it could be placed in holes specifically built for the job, the depth could exceed 2km (1.2 miles).

🕒 21 April 2021 · BBC News · Scotland

What questions do you have about the production of electricity in a gravity battery?

1.

2.

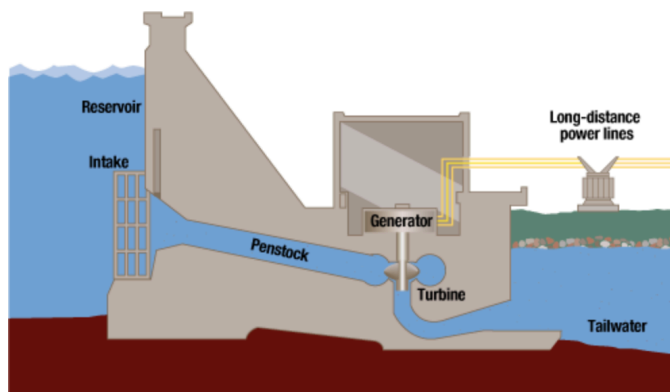
Materials: electric motors, alligator clips, ring stand and ring, weights, multimeter, rubber bands, string/fishing line, pulleys, glue guns.

Procedures:

1. Assemble your battery to capture energy as it is raised (by your hand, the “alternative energy”) and release energy through the motor as it is lowered. Draw your model here:
2. Experiment with different techniques and designs for your model. Record the amount of electrical energy released through the motor on your voltmeter.

Analysis

1. Label the energy transfers in your model. Remember that the energy provided by your hand as you lifted the sand is our “alternative energy” source, perhaps wind or solar power.
2. How is the gravity battery similar to a hydroelectric dam? Match and label the parts of your model to this diagram:



3. What advantages does a gravity battery have over a hydroelectric dam?

Disadvantages?
4. What advantages does gravity power have over chemical batteries?