


Closed-loop hydroelectric generator

 Low-tech with Refugees - Low-tech & Réfugiés



https://wiki.lowtechlab.org/wiki/G%C3%A9n%C3%A9rateur_d%27%C3%A9lectricit%C3%A9_hydrolique_%C3%A0_boucle_ferm%C3%A9

Dernière modification le 17/08/2024

 Difficulté Moyen

 Durée 3 jour(s)

 Coût 10 EUR (€)

Description

The aim of this prototype is to generate electricity from water. The system operates in a closed loop, meaning that no water is lost and that it can be reused.

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Introduction

Using physics, we are planning to make an automatic pump. The principle is simple: a canister with a hole in the bottom empties water into a basin. A pipe runs up from this basin to the top of the canister. The rest of the canister is hermetically sealed. The vacuum created by the waterfall allows the water to be pumped back into the drum. The aim is to create a cycle that lasts forever.

Matériaux

Canister
Bicycle wheel
Steal spoon
Wood
Breeze block
Pipe

Outils

Column drill
Screwdriver
Hand Screwdriver

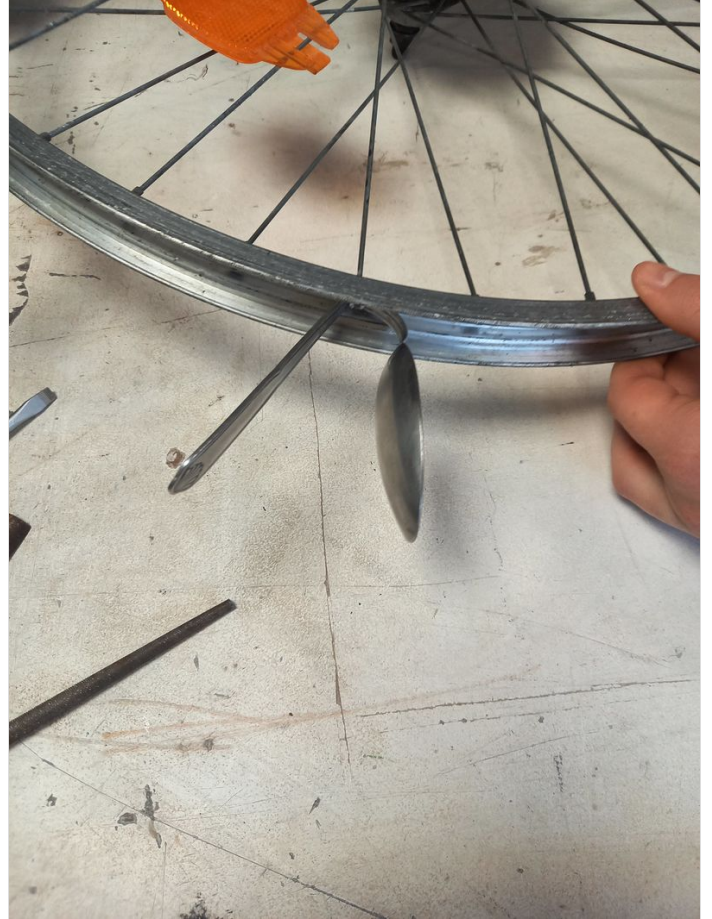
Étape 1 - Making the wheel and its base

For this step, we started by taking a bicycle wheel and removing the tyre from it. The spokes are screwed to the wheel and we had the option of unscrewing them to insert metal spoons that we had previously drilled with a drill press, and then screwing them back in. We bent them so that we didn't have to cut off their tails.

For the base, we took a plank of wood, cut it and screwed it together as shown in the photo.







Étape 2 - Making the canister base

We started by taking a pallet and boning it with a crowbar. We then made a triangular base. Then we used breeze blocks to make the height.



Étape 3 - Canister modification

We got hold of a can which we carefully cleaned. We started by fitting a valve to the pre-existing hole at the top of the can. Then we drilled another hole in the bottom of the can to insert a grommet. In order to screw it in on both sides, we had to grind off part of the bottom of the can.



Étape 4 - Pooling of the elements

For the final step, we used an inflatable swimming pool as a basin. We screwed the pipes to the drum, installed the breeze blocks, the drum and the wheel. The pool isn't at all suitable - a second barrel cut off at the top would be better!



