## STEM Education for Sustainable Development



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## My Doubly Ecological Wind Turbine

The reasons that lead us to make this project are:

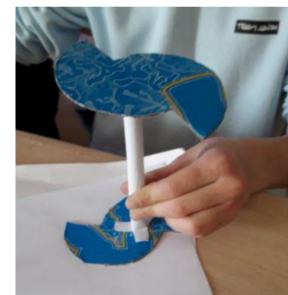
- The war in Ukraine caused a huge energy problem in Europe.
- The Risk of power cut during winter.
- The price of electricity rose sharply.
- The global warming and the need of producing energy using natural renewable resources.

We have decided then to make a <u>cheap</u> wind turbine.

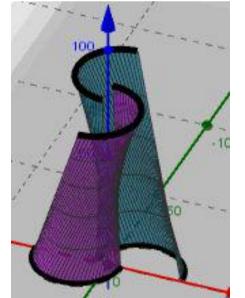
We have begun with paper models

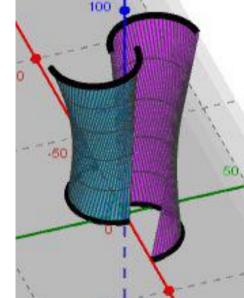


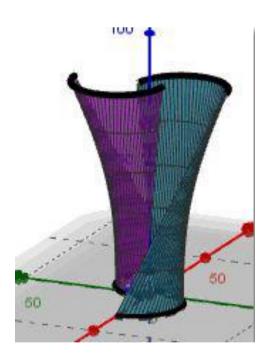


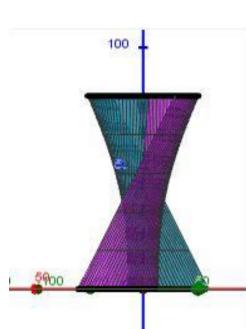


We have modelized then the turbine on the computer using Geogebra software:

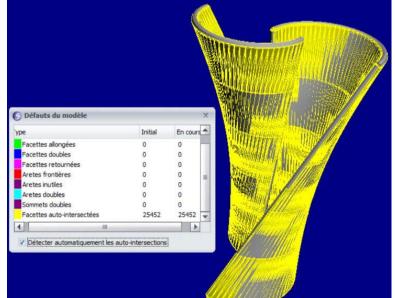


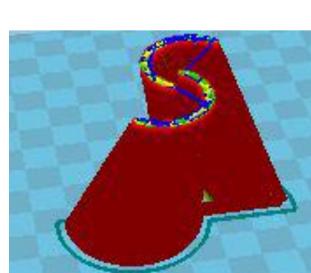


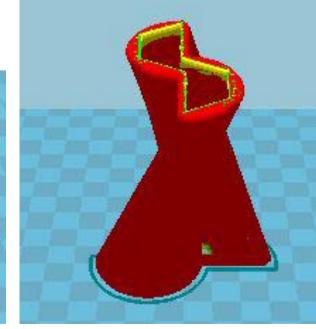




After that we have made this model with a 3D printer:







We made rotation tests using a hair dryer:







Then we have proceeded to the construction of a real model:











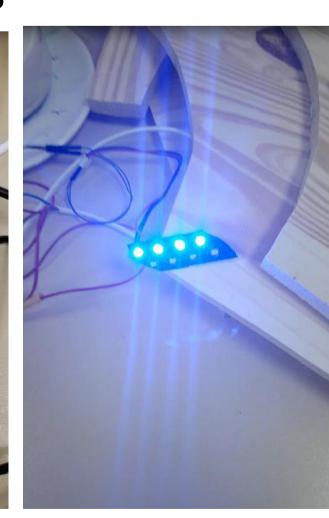




We finished the construction and proceeded to electricity production tests







Conclusion: We are proud for having constructed our first wind turbine. Our model can also work as a tidal turbine in watercourses and it is made from recycled material.

Our project got the 1<sup>st</sup> Award of "Académie des Sciences" in France and has been selected to be presented at "Future League Final" at Berlin in October 2023.

Our project focuses on





