A Sailor's Type of Turbine

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I have been sailing for the past 2 years. Most sailboats these days run on diesel engines, while the fuel used for them is generally more sustainable than standard diesel, I wanted to find out if a sailboat’s propeller could be turned into a turbine (to convert the kinetic energy of a water current into electricity), which would cut down on costs and CO2 emissions, being more sustainable for sailors and their environment. To test this, I created a model turbine. The model was constructed by placing two disks and a propeller on a metal shaft, epoxy and hot glue was used for assembly, and a PVC pipe was cut to create a stand for the turbine. The model was tested in water using an artificial current created by a bucket, a snapshot of the voltage was taken using an oscilloscope and read to be 517 millivolts. The turbine worked exactly as assumed, when used in water, it spun with little resistance from the magnets or weight. On the final oscilloscope reading the voltage measured to 517 millivolts, which before, when spun by hand, produced only 348 millivolts. Meaning the force of the water elevated the amount of volts produced. This model shows that it is in the realm of possibility to turn a ship’s propeller into a turbine, simply by implementing a generator into its design, turning the propeller into a turbine. The increased amount of force from the water test also demonstrates that with the force of a current, a sailboat’s engine could be fully or semi powered by electricity.

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