Dual-Purpose Highway Turbine

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Now-a-days water scarcity is a crucial global issue, it is also known that accident rates on highways in many countries are at an all-time high due to improper lighting at night. First one is not only causing human suffering but also making the earth deforested, causing global warming, while producing light for the later purpose contributes to saving lives. The Dual Purpose Highway Turbine is a vertical axis wind turbine that serves two purposes by utilizing the wind produced by the movement of vehicles, that is, ‘Impact Wind Energy’ on the highway as well as natural winds. The speeding vehicles on a highway can provide enough wind for these turbines to work all day and night without stopping. The energy generated can be used for two purposes; to extract water from underground around highways; and to power the lights on the highway attached to the turbine. For this purpose, a water pump was connected mechanically to the turbine that extracts water from underground, which could be used for irrigation in remote areas., while LED lights were connected in a simple circuit that light up, with the power being produced by the wind turbine. The output from the turbine are follows; 1) Extracted underground highway waters to fulfill plantation needs for a greener world which will not only increase rain but also help improve environment. 2) Clean Power produced to light up the highways to save lives. The net positive effects of this dual purpose wind turbine on the environment are far more than other mechanisms experimented separately for irrigation and power generation as the concept of extracting water from highways has not been introduced earlier.

Awards Won:

Arizona State University: Arizona State University Intel ISEF Scholarship