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*The Effect of Vane Pitch on Turbine Efficiency*

In 2017, 5.5 % of the United States of America's electricity was generated by wind power and by 2030 it will be over 20%. New technologies such as wind energy help us reduce reliance on fossil fuels and reduce carbon emissions. This experiment investigated the effect of vane pitch on rotational energy recovered by a turbine. A turbine was created and placed in front of a fan in order to measure the rotational energy extracted. The pitch of the turbine vanes (independent variable) were changed and the rotational energy (dependent variable) was measured. The hypothesis that the 45° angle would extract the most energy was disproven. The experiment proved that the 22.5° angle recovered the most energy. This research can help scientists and engineers design more efficient turbines to harness the most power from the wind