# Colorado Science and Engineering Fair

# 2024 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: Blade Type and Quantity vs Blade Efficiency for Wind Turbines

Finalist's Name: Andrew Kohler

School and City: Blessed Sacrament - Denver

Sponsor's Name: Sarah Kohler

Category: Environmental Engineering (ENEV)

Division: Junior (6th - 8th grades)

Abstract (250 words or less):

In a world that relies so heavily on electricity, it is important to increase energy production. If I increase turbine productivity by 1%, we could save 210 terawatt hours. If you used the savings from all the wind turbines in the world, we could power 76% of the UK. My project is to see how the shape and number of turbine blades affects how much energy is generated. I attached the different shapes and number of blades in front of a fan to spin a motor. I measured the energy produced with a voltmeter. Four supercritical blades worked the best producing 2.21 times more volts than the average configuration of 3 small blades.

*I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.*

Finalist's Signature: Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES o all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.