Sustainable Energy: Can This Be Accomplished with a Permanent Magnet Generator?

Darling, Haylee (School: Saint John Lutheran High School)

This project is an investigation to determine if a Permanent Magnet Generator (PMG) can generate excess electrical energy ("Sustainable Energy"); thereby powering itself and an external load. PMGs are energy converters that convert magnetic field energy into electrical energy via Lorentz's Law: F=qE+ qv x B. A recently developed PMG system claims to be capable of producing "Sustainable Energy." However, no independent testing is available that substantiates this claim. My objective is to verify or disprove this claim. The commercially available PMG used in this experiment had a rotor with neodymium magnets ands a stator with insulated copper wire coils. When connected to an externally powered DC power supply (BK Precision or battery), it was possible to power two distinct AC electrical circuits. Yet, when attempts were made at transitioning the system to a secondary DC power supply, powered by PMG output, the system did not transition to a "Sustainable Energy" mode. Testing involved the addition of a fly-wheel to the original PMG/ Direct Drive 100-Volt motor and increasing PMG rotational speed (760 RPM) by increasing power input. Both processes increased the rotational inertia (energy) of the PMG. Data is presented which shows this increase. Step-down transformers had to be placed in the system to change 440-plus volts AC to 120 volts AC power. A capacitor bank was also installed which provided minimal increase in time to stop. Within the scope of these tests, "Sustainable Energy" has not been produced, making the original claim appear to be false.

Awards Won: