



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

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Project Title Rotoverter	
Objectives/Goals The objective of our project is to see if electricity can be generated more efficiently than conventional methods. We hypothesize that using two three-phase motors, in a setup a "Rotoverter" electric energy can be generated more efficiently than conventional methods.	
Abstract	
Methods/Materials Materials: A steel U beams, copper wire, capacitors, switches, power meters, two AC three phase squirrel cage motors, Plexiglas, transformers, full wave bridge rectifiers, an inverter, and epoxy are used in our experiment. Methods: To build our setup; weld the steel U beam in a rectangular configuration; open the electric motors, and clean the bearings of grease; reverse the casing of one of the two electric motors, and assemble them back together; wire the motors so that one is an alternator and the other a motor; wire the switches in series to the capacitors, which are parallel to each other; and wire the capacitor banks to motor and alternator.	
Results We successfully found an alternative way to generate electric energy more efficiently than conventional means. In the process of doing this, we generated more reactive power than is consumed. Reactive power can be described as energy that does net value of no work. Achieving a greater amount of reactive power than true power is not a new concept and is accomplished very easily. What's different about the Rotoverter is that we can extract some of this power which is considered imposible by definition. We are not sure how the Rotoverter works, but only that it does produce large amounts of reactive energy that can be extracted on a small scale. There are two probable solutions around this; either get a resistive load to match our resonating output, which in our case would be a 4.5kw light bulb; or get an inductive load such as a transformer, that does not break the resonance of the alternator.	
Conclusions/Discussion As of this moment, we have only produced reactive power, but at a much greater amount than real power consumed. We have not yet experimented with the two possible solutions mentioned before because of the lack of materials. Further experimentation may reveal that the reactive power can be extracted.	
Summary Statement An alternative means to generate electric energy.	
Help Received Advice from Hector Torres	