Biochar Technology: A Carbon-Negative Energy System

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Research Question: Can mankind not manipulate bionergy to create a carbon negative instead of carbon-neutral energy production system as a means of reversing the harmful effects of climate change? Purpose : To create a carbon-sinking system that produces bio energy and biochar(an organic fertiliser) as a byproduct . Problem Statement 1. Inadequate supply of energy, particularly in rural areas where electrification has since been promised but never delivered. 2.Climate change as a result of excessive fossil use,particularly coal, leading to changes in agricultural seasons,global warming and death by drought and floods. 3. Lack of a domestically produced fertiliser in Zimbabwe increasing dependency on imports which are you expensive for the ordinary subsistence farmer. Procedure I came up with a pyrolysis chamber prototype design then fed biomass into the chamber under anaerobic conditions and 400 to 500 degrees Celsius temperature. I collected the products obtained for result analysis.

Awards Won:

Fourth Award of $500

Arizona Public Service Company: Third Award of $1,000