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Renewable Energy Remote Power Station

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Sustainable Technologies
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Our product is an Energy Accumulator, Storage and Rapid Transfer System (ET) that conserves natural resources and improves quality of life. It is an efficient system, proven feasible under a DOE grant with The Florida Solar Energy Center. It sources wind, solar, fuel cell and/or grid energy and is an Uninterruptible Power Supply (UPS).

Utilizing multiple energy sources in combination we provide 24/7 Microgrid power distribution. Electricity is generated, stored and utilized on-site, rather than requiring connection to a Macrogrid, though we can funnel excess power into the grid.

Our design solves the problems of high-polluting power plants and reduces the length of transmission lines and energy losses. The novel ideas to source locally harvested renewables, incorporate patent-pending designs, and use advanced storage mediums that allow rapid recharging differentiates our system from others.

ET's applications include recharging Electric Vehicles, trains and equipment, and electrification of homes, businesses and areas off the grid.

Potential benefits include cleaner air and a reduction of fossil fuel usage. The units can supply emergency backup electricity or be mounted on trucks for rapid deployment. Local facilities will mass produce ET stations to keep production costs low. It is a pioneering energy system that will create green jobs and increase U.S. manufacturing.

Clean energy is the fastest growing segment of the \$6 trillion global energy market. Renewable consumption rose 5% and its market share was 8% of the total U.S. consumption in 2009. Renewables also supplied roughly 10% of the electricity used. The expanding market offers a promising growth opportunity for our ET to be a new clean energy export product. Being well advanced over existing systems and a stand-alone unit improves its marketability, especially in countries with an inadequate grid network.

Our design incorporates the latest technology in energy generation, electronic circuitry, processors, and programmable controllers coupled with advanced storage mediums (Ultracapacitors (Ucaps) and batteries) to accumulate power from multiple sources. The potential power availability when marrying multiple Ucaps with batteries will adequately satisfy the needs of multiple users.

The Automated Intelligent System uses a Transverter to measure and record input, output and usage data and has low internal resistance for an almost lossless energy exchange. It is monitored and controlled off-site and is self-correcting to supply extremely reliable power. To increase power transfer between Ucaps we use an Insulated-Gate Bipolar Transistor (IGBT) in place of a transformer, rectifier and other components.

An ET can accommodate both AC and DC input or outputs and converts it depending on the desired usage. It also has two types of output; constant and high pulse, and it can charge multiple devices at once.

The ET improves public health and safety because the power supply is sheltered from weather or vandalism in a protective module, power generating equipment is mounted above ground, and it has zero carbon footprint.

Through ongoing innovative research we continually provide sustainable energy solutions.

Voting is closed!

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ABOUT THE ENTRANT

Name: Karl Guenther

Type of entry: team

Team members:

Sky Train Corporation

Karl Guenther

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Kim Wood

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Hector Guevara, PhD/NuEnergy Technologies Corp.

Bill Young Florida Solar Energy Center at the University of

Central Florida FSEC/UCF

William Wilson /UCF/FSEC

Heart Akerson/Heart Transverter

Profession: Business Owner/Manager

Number of times previously entering contest: 2

Karl's favorite design and analysis tools:

We currently use AutoCAD & BobCAD design software. We

have been working with universities, specially with The University of Central Florida's Florida Solar Energy Center and utilizing data logger and other instrumentation for analysis.

For managing CAD data Karl's company uses:

None

Karl's hobbies and activities:

Inventing transit sys, energy & wind turbines, R&D

Karl belongs to these online communities:

LinkedIn, Drop Box, Skype, FaceBook

Karl is inspired by:

I have a personal joy and commitment to improving options for public transportation, reducing carbon fuel usage and creating efficient electric transit systems. Also, to developing renewable energy technologies to provide advanced storage and transfer capabilities. Technology sharing with universities, like USF, UCF/FSEC, FIT & IIT and partner companies continuously spurs creative new ideas. For more information see Websites www.STC-in.com and www.SkyTrainCorp.com

Software used for this entry:

AutoCAD, PowerPoint

Patent status: pending

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