



## Renewable Energy Powers Soldiers

By Matthew Hickman (OCPA, ARNews)

WASHINGTON (Army News Service) -- Renewable energy sources will soon be powering batteries, vehicles and other pieces of equipment that give Soldiers an edge on the battlefield.

Providing Soldiers with greater flexibility, implementing renewable energy, and developing fuel cells and biological power sources are top priorities for the U.S. Army Communications-Electronics Research, Development and Engineering Center's Army Power Division.

Rafael Casanova, battery team leader for the power division at CERDEC, said the center has been tasked with contributing to the modernization of infantry brigade combat teams.

The Army recently deployed the Rucksack Enhanced Portable Power System complete with solar panels for increased charging options, for instance. Casanova said the center has received positive feedback from Soldiers in the field.

"They like to be able to recharge batteries right there where they are located," he said.

The battery division is collaborating with other Army science and technology agencies to develop a conformable battery that Soldiers can wear on their front protection plate. "This allows high flexibility for the Soldier," Casanova said.

The power team is high on renewable energy, and has developed a solar kit that consists of a solar panel and different adapters that allow Soldiers to power any system.

"At the same time, it allows them to recharge any military battery," Casanova said.

A biological battery that uses sucrose as an electrolyte to power systems is in development, and CERDEC has tested fuel cell programs that can be used for recharging batteries and powering rechargeable battery stations.

There are fuel cell systems that can power radios and laptops, and the Army is set to evaluate a 300-watt fuel cell this November at Fort Riley, Kan., Casanova said.

"Depending on the success of the design there is the potential that we will send it to theater for more evaluation," he added.

Other renewable energy programs in the works combine solar and wind power to generate up to two kilowatts of power. These systems can be used to charge radios and recharge batteries. This reduces the amount of fuel needed and makes logistics planning simpler, Casanova said.

Rechargeable batteries are important because they give Soldiers the ability to power systems anywhere on the battlefield, and reduce the amount of money the Army spends on replacement batteries, Casanova added.

Currently, 40 percent of batteries in the field are rechargeable, while 60 percent are non-rechargeable, but those numbers are poised to change in favor of the former variety.

"Every unit, once they try it, they like it," Casanova said. "There are more and more units using more and more rechargeable batteries."

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Source: <http://www.army.mil/-news/2010/08/30/44487-renewable-energy-powers-soldiers/?ref=news-science-title5>