

US army to be powered by waste

October 12 2009, by Lin Edwards



Qinetiq's PyTEC system undergoing trials.

(PhysOrg.com) -- Defense company Qinetiq has been awarded a contract to supply the US army with a system that generates electricity from garbage.

The PyTEC system includes a pyrolysis tube capable of continuously consuming up to 100 kg (220 lb) of [garbage](#) an hour. Mixed waste is heated to high temperature in the pyrolysis tube, a process that releases combustible gases, which are then stored and later burned to generate [electricity](#). The system produces five times more energy than is used to power the system.

The pyrolysis process differs from other systems that generate energy by heating waste in that the heating takes place in the absence of [oxygen](#).

Aerobic systems generally need waste to be of only one type, whereas the pyrolysis system works with untreated mixed wastes.

The thermal systems also need waste to be diced before being fed to the incinerator, and have problems with some components of waste, such as tin and glass. The PyTEC system does not require finely diced waste, and can handle the difficult waste sources with ease.

The end products of the PyTEC system are energy and a glassy waste product that is only 5% of the volume of the original garbage.

The system has been in use for a year on a British ship, the HMS Ocean. According to Qinetiq spokesperson Pat McGlead, the system has been "containerized" for the US army to make it easier to deploy.

Up to ten systems will eventually be deployed, many of them in Iraq and Afghanistan, where they are expected to dramatically reduce the army's use of [fossil fuels](#), and take care of waste disposal at the same time. Until now the "forward operating bases" in Afghanistan and Iraq have had no formal arrangements for disposing of their waste.

The PyTEC system may also find application outside the military, since many people in both commercial and private premises are seeking ways to reduce their [carbon footprint](#) and produce energy from renewable sources. Turning waste into energy has many attractions for a wide range of people.

A side benefit of the PyTEC [waste](#) disposal system in conflict areas may also be a saving of lives, since there will be less need for garbage trucks to be on the roads, where they risk land mines, and other forms of attack. The systems are expected to be delivered by mid 2010, and the period of testing and evaluation is expected to last until early 2012.

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Citation: US army to be powered by waste (2009, October 12) retrieved 26 April 2024 from <https://phys.org/news/2009-10-army-powered.html>

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