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## Microbes Make Electricity from Wastewater

By **Tudor Vieru**, Science Editor  
3rd of August 2009, 09:38 GMT

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Given our seemingly insatiable [efficiency](#) in producing garbage and wastes, it may seem inappropriate to leave all these residues simply accumulate in distant places, and not use them to create something. While artists use trash to make impressive sculptures, scientists use them to create electricity, with the help of microbes. The most recent addition to the ranks of helpful microorganisms is Geobacter, a hairy creature that can apparently convert wastewater into electrical current through natural processes.

According to the research team behind the find, made up from researchers at the University of Massachusetts Amherst, and led by Professor Derek Lovley, the microbe can also use mud as a source of raw materials for consumption. Admittedly, they say, the strain they are using is about eight times stronger than naturally occurring ones, and was entirely created in the laboratory, through careful manipulations of its genes, until the desired end-result was obtained. The new superbug may be used to create microbial fuel cells in the future, the experts say.

Such systems could be installed in average households, and may help offset some of the costs associated with paying the electrical bill, by decomposing the trash that is generated in homes in vast amounts every year. Wastewater is especially targeted by the new process, but the team behind it says that microbial fuel cells using Geobacter could also be used to power medical implants, car batteries, as well as portable electronics, such as digital [mp3 players](#).

The team envisions using the bacteria inside water-treatment plants, possibly in combination with other bio-based treatment systems, so as to convert a now power-intensive clean-up station into a reusable water generator, [CleanTechnica](#) informs. Geobacter was first discovered to have an amazing electron-conducting property back in 2002, and has since undergone significant modifications. Among these, the scientists report, was the fact that they were forced to grow on a substrate through which electrical current passed, which forced them to accelerate their evolution into more [efficient](#) "electrical generators."

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