

## Creative Loafing Tampa

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FRIDAY, APRIL 1, 2011

GREEN LIVING

### Harnessing the power of pee: Researchers develop technology to turn urine into hydrogen fuel

Posted by KATIE MACHOL on Fri, Apr 1, 2011 at 2:00 PM



No, this isn't an April Fool's joke or a reference to the [opening scene in \*Waterworld\*](#). Ohio University professor of chemical and biomolecular engineering Gerardine Botte has developed a technology to produce hydrogen fuel from urine.

Botte realized that if an electrode is placed into wastewater and a current is applied, the ammonia and urea create hydrogen gas that could power a fuel cell. "You can clean the water in a municipal wastewater treatment plant with much less energy [using this new technology]," Botte stated.


Sarah DeWeerd for Conservation Magazine (via [The Guardian](#)) reports:

"Her system operates similarly to the electrolysis of water, a process that can be used to produce hydrogen for fuel cells - except that ammonia and urea hold their hydrogen atoms less tightly than water does, so less energy is required to split them off. Botte isn't the only scientist with her mind in the sewer. A group of scientists in the UK, for example, is working on a fuel cell powered directly by urine."

Botte calculated that an office building with 200 to 300 workers could create around 2 kilowatts of power. Though that's not enough to power an entire building, it's a start. This technology could eventually help power large offices buildings, airports and sports stadiums, where large groups of people gather. It could also generate power from cattle -- as 40-50 kilowatts of power could be produced by 1,000 cows -- and would also rid feedlots of that horrible ammonia smell.

**E3 Clean Technologies** launched earlier this year with claims of a "GreenBox" prototype to harness "pee power." It would eventually allow cities to clean their wastewater using GreenBox's "ammonia electrolysis" process.

Information via [\*\*The Guradian\*\*](#) and [\*\*Huffington Post Green\*\*](#); image via [DemocraticUnderground.com](#).

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