

Scientists create new hydrogen fuel safety app

September 16 2013, by Tom Rickey



Hydrogen Tools.

Engineers and scientists at the U.S. Department of Energy's Pacific Northwest National Laboratory have developed an app that focuses on hydrogen safety.

The [Hydrogen Tools app](#), created with the support of DOE's Office of Energy Efficiency and Renewable Energy, comes at a time when the use

of fuel cells is growing. Fuel cells generate electricity by driving [electrochemical reactions](#) using hydrogen and air, producing power with dramatically reduced emissions compared to traditional hydrocarbon-based fuels. The only [byproducts](#) are heat and water.

Nick Barilo, the PNNL project manager who led the team, said fuel cells are becoming more common in a variety of applications—as back-up energy sources in buildings, in vehicles, and in warehouses, where they are often used to power forklifts.

"In addition to being a clean energy option, fuel cells can offer some real advantages in certain applications," said Barilo. "Last year during Hurricane Sandy, for instance, [cell phone towers](#) that relied on a [fuel cell](#) as a backup energy source continued to work throughout the storm, with just a few exceptions, even in areas where [cell towers](#) relying on other power sources were rendered inoperable.

"With hydrogen being deployed in a greater number of applications, it's the perfect time to make a safety tool like this app broadly available. Many people are unfamiliar with the technology, and this app is intended to make the information they need available at their fingertips."

Hydrogen Tools incorporate a variety of resources and web-based content to help those involved in designing, approving or using [hydrogen fuel cell](#) systems and facilities. It includes information about ventilation of hydrogen, safe distances and pressures for storing hydrogen, and best practices for safely handling hydrogen.

The tool was developed with funding from DOE's Office of Energy Efficiency and Renewable Energy, which accelerates development and facilitates deployment of energy efficiency and renewable energy technologies and market-based solutions that strengthen U.S. energy security, environmental quality and economic vitality.

The app is being unveiled this week at the [5th International Conference on Hydrogen Safety](#) in Brussels and is available for free download through the Apple App Store.

Provided by Pacific Northwest National Laboratory

Citation: Scientists create new hydrogen fuel safety app (2013, September 16) retrieved 26 April 2024 from <https://phys.org/news/2013-09-scientists-hydrogen-fuel-safety-app.html>

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