

# Los Angeles Times

## ENVIRONMENT

### Fountain Valley hydrogen station fills 'er up with sewer gas

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<http://latimesblogs.latimes.com/greenspace/2011/08/hydrogen-fuel-waste-water-treatment-plant.html#comments>



As General Motors, Toyota, Mercedes-Benz and other major automobile manufacturers prepare to bring hydrogen cars to market by 2015, the availability and sustainability of the hydrogen fuel to power them remains an issue. Later this month, what is believed to be the world's first sewage-powered hydrogen fuel station will open in Fountain Valley, offering a renewable-energy solution to one piece of the sustainability puzzle.

"This is a paradigm shift," said Scott Samuelsen, director of the UC Irvine National Fuel Research Center that engineered the system. "This is the epitome of sustainability, where we're taking an endless stream of human waste and transforming it to transportation fuel."

The new station is powered with a 300-kilowatt fuel cell capable of producing 120 kilograms of hydrogen gas, and fueling as many as 30 cars, per day, Samuelsen said. Designed as a three-year demonstration project and funded in part by the U.S. Department of Energy, the station will be accessible to drivers of hydrogen fuel cell vehicles who have arranged for access through the vehicle manufacturer.



On the public side of the Orange County Sanitation District off the 405 Freeway at Euclid Avenue, the hydrogen gas is created from the methane generated by human excrement, garbage disposal waste and whatever else makes its way to the sewer in Orange County. The so-called digester gas from the district's wastewater treatment plant is conditioned to reduce contaminants and to create a quality of biogas that can be fed to the fuel cell. The biogas is then heated to the point of decomposition, at which point it is released as hydrogen gas that is transported to the pump for dispensing.

"What's special about this is it increases the efficiency for the fuel cell," Samuelson said. "There's a synergy there that we're able to take advantage of to create hydrogen that's not only renewable but requires almost no expenditure of energy from the sewer gas to generate the hydrogen."