

# NUVERA®

Hydrogen Generator  
for Industrial Sustainability



## Tomorrow's energy environment requires today's sustainable power.

The need for clean, domestically produced energy has never been greater. The U.S. Department of Energy has identified hydrogen as playing a "vital role in diversifying America's clean energy supply."<sup>1</sup>

By generating hydrogen on-site, the Nuvera® generator puts hydrogen supply in the hands of the user. Argonne National Laboratory has reported greenhouse gas emissions reductions of 32% on average compared to delivered liquid hydrogen.<sup>2</sup>

### On-Site Generation Compared to Delivered Hydrogen

Does your hydrogen supply chain look like this?

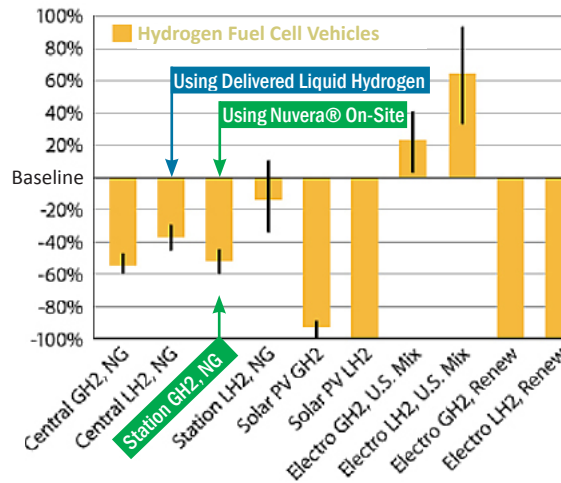


Or like this?



### Changes in Greenhouse Gas Emissions from Fuel Cell Vehicles for Comparison of Hydrogen Supply/Production Methods

Relative to gasoline vehicles as baseline<sup>3</sup>



Generation of hydrogen on-site from natural gas and used in a fuel cell vehicle results in 45-60% fewer greenhouse gas emissions than a gasoline car.

<sup>1</sup>Department of Energy, Fuel Cell Technologies Program. 2012. Clean, Efficient, and Reliable Power for the 21st Century. Accessed June 26, 2015. <http://www.nrel.gov/docs/fy12osti/54315.pdf>

<sup>2</sup>National average basis. Source: Argonne National Laboratory. 2008. Full Fuel-Cycle Comparison of Forklift Propulsion Systems. Accessed June 26, 2015. <http://www.osti.gov/bridge>

<sup>3</sup>Source: Argonne National Laboratory (as cited on Department of Energy Alternative Fuels Data Center, [http://www.afdc.energy.gov/vehicles/emissions\\_hydrogen.html](http://www.afdc.energy.gov/vehicles/emissions_hydrogen.html))

With hydrogen, you can power your electric fleet without buying electricity. No power outage risk, no peak demand fees, and no coal power plants.

Additional benefits:

#### High Efficiency

Hydrogen generation from natural gas and water is a highly efficient and cost-effective alternative to delivered hydrogen.

#### Widespread Infrastructure & Supply

On-site generation provides a dedicated hydrogen supply based on the nation's strong and growing natural gas infrastructure, and historically low natural gas prices.

#### Pathway to Renewables

The Nuvera® generator is capable of generating hydrogen from sources such as landfill gas and biogas, solving more than just your energy needs.

Watch biogas demo online!



<http://www.nuvera.com/blog/?p=2360>

Learn More! [www.nuvera.com](http://www.nuvera.com)