Item:

A hydrogen-powered fuel cell vehicle (FCV) can reduce fuel consumption by at least 50% compared to a conventional vehicle with a gasoline internal combustion engine (ICEV).

Reference and Calculations:

In 2020, the projected fuel economy for a FCV is 65 miles per gasoline-equivalent gallon (mpgge)\(^1\), vs. the projected 28 mpgge for a gasoline ICEV\(^2\). Each fuel economy number is a weighted average assuming that new light-duty vehicle sales will be 49% cars and 51% light trucks. The fuel economy estimates (65 and 28) correspond to adjusted EPA-rated mpgge numbers, i.e., EPA test numbers adjusted further to reflect on-road driving.

65 and 28 mpgge correspond to 0.0154 and 0.0357 gge per mile, respectively.

The fuel consumption reduction is:

\[
\frac{(0.0357-0.0154)}{0.0357} \times 100 = 56.9\%
\]

The example shows that the reduction in fuel consumption will be greater than 50%.

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\(^1\) General information on Argonne National Laboratory’s Powertrain Systems Analysis Toolkit (PSAT) is at [www.transportation.anl.gov/modeling_simulation/PSAT/index.html](http://www.transportation.anl.gov/modeling_simulation/PSAT/index.html). The May 2008 version was used in the above analysis.