

EPA Window sticker for Nissan Leaf battery electric vehicle (BEV) is highly misleading with respect to Greenhouse gases (GHGs):

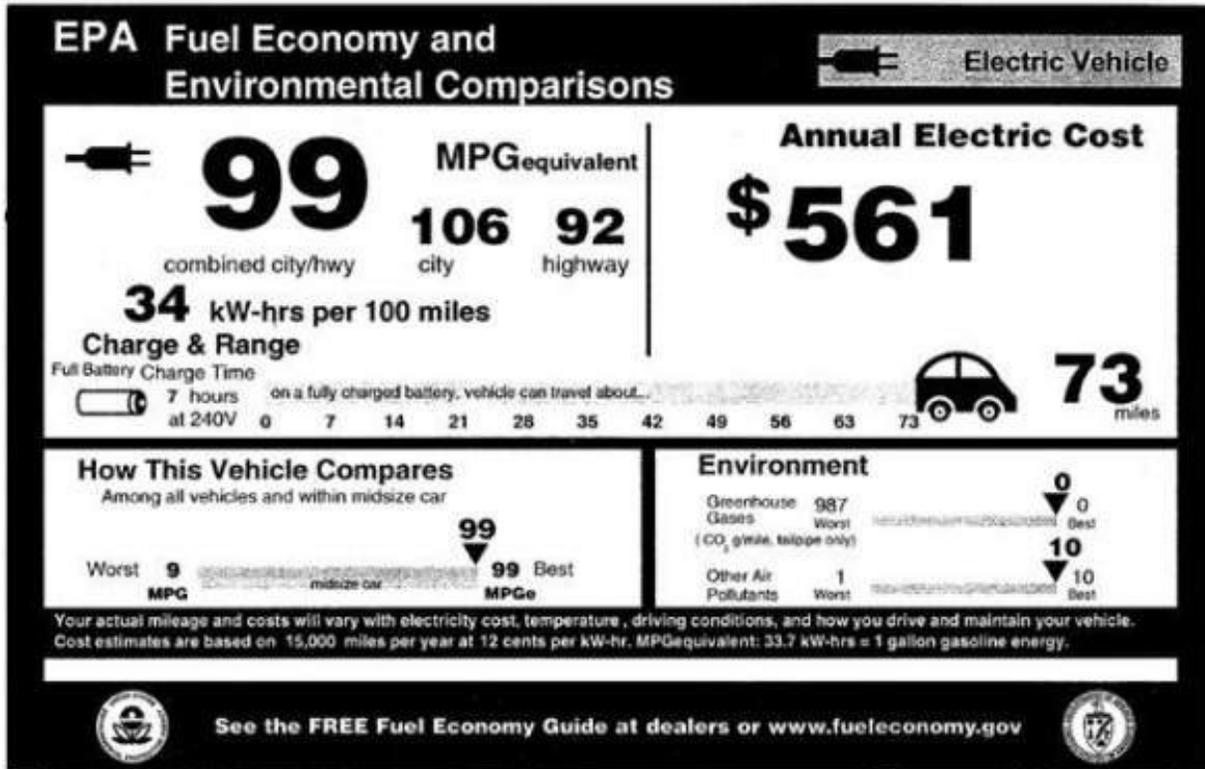


Figure 1 Proposed EPA "Fuel economy" sticker for the Nissan battery EV¹

The fuel economy rating of 99 miles/gallon is based on the electrical energy consumed per mile (0.34 kWhr/mile) which is the same energy per mile as a gasoline car with a gasoline fuel economy of 99 miles per gallon. This is a reasonable comparison in terms of energy consumed, which can be translated into annual cost as shown on the sticker, assuming electricity costs 12 cents/kWh.

The EPA sticker information on GHG emissions includes only the tailpipe emissions, which are zero. This rating is grossly misleading. GHGs are emitted in the process of generating the electricity. The U.S. Department of Energy has estimated that a BEV will generate 230 grams/mile of CO₂-equivalent GHG emissions, assuming the average U.S. grid mix, based on a full "well-to-wheels" (WTW) accounting of all emissions from the electrical generation plant, most of which comes from burning coal in the U.S. For comparison, a conventional gasoline (non-hybrid) car generated approximately 450 grams/mile of GHGs, and a hybrid electric vehicle (HEV) like the Toyota Prius generates approximately 235 grams/mile, only

¹ Taken from an article in the Detroit News: News: <http://detnews.com/article/20101123/AUTO01/11230333/EPA-Leaf-has-73-mile-range#ixzz167WCFzfp>

slightly higher than the GHGs from a BEV with the average US Grid mix. The DOE estimates that a plug-in hybrid electric vehicle (PHEV) with a 40 miles all electric range like the new Chevy Volt will generate 270 grams/mile². The DOE estimates that the lowest GHG emissions (200 grams/mile) today would come from a fuel cell electric vehicle (FCEV) operating on hydrogen made from natural gas as shown in Figure 2. Emissions will be further reduced in the future when electricity and hydrogen is made from renewables such as wind, solar and biomass, but for the next few decades, BEVs will definitely not be a zero GHG emission vehicle as implied by the EPA sticker.

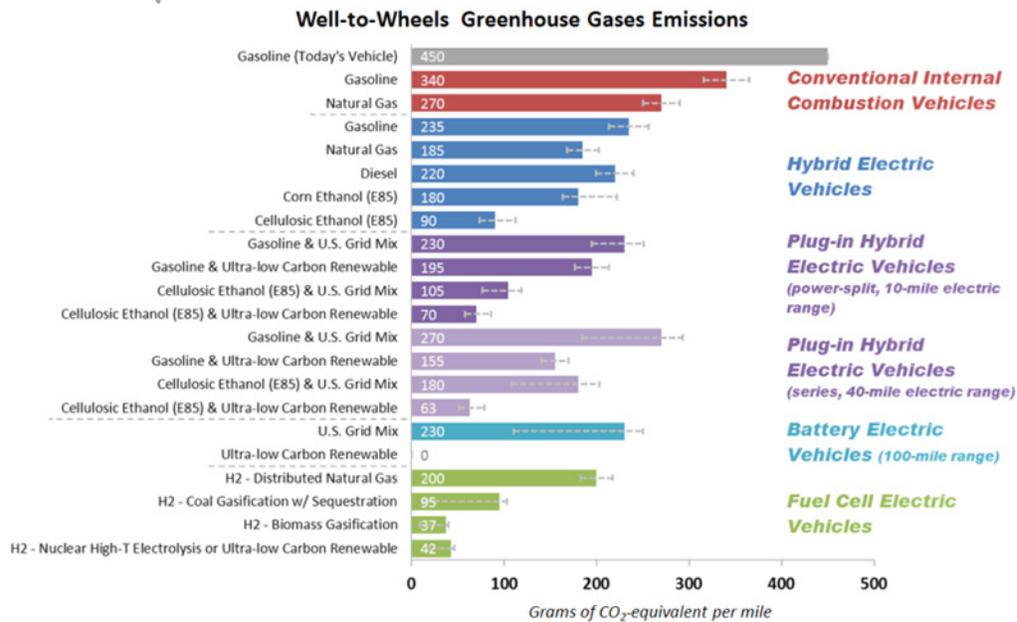


Figure 2. The US Department of Energy estimates of WTW GHG emissions in the 2035 to 2045 time period for a mid-size passenger vehicle, taken from Figure 1.6 of the DOE's 2010 Hydrogen and Fuel Cell Program Plan³.

³ Taken from the 2010 DOE Hydrogen and Fuel Cell Program plan, available at: http://www1.eere.energy.gov/hydrogenandfuelcells/mypp/program_plan.html