

**PUBLIC COMMENTS AND QUESTIONS**  
**RELATED TO DVRPC BOARD ACTION ITEMS**

**April 25, 2019**

**Agenda Item:**

**2a. Transportation Improvement Program (TIP) Action**  
**NJ18-065: Bus Acquisition Program (DB #T111), NJ TRANSIT**

**From:** Bridget Chadwick  
**County:** N/A  
**Zip Code:** N/A  
**Date Received:** 4/24/2019

**Comment/Question:** Kudos to NJ TRANSIT for their purchase of 8 Proterra Catalyst electric buses. The TIP Action Item describes the environmental benefits as: "These buses will provide best in class fuel efficiency and will produce no local emissions. This will reduce ground level emissions of nitrogen oxides, hydrocarbons and particulates". They will, of course, reduce GHG emissions significantly. The Department of Energy's Alternative Fuel Data Center (AFDC) calculate that an electric vehicle charged with in-state electricity produces 78% less GHG emissions than a gasoline vehicle (EV: 2536 lbs. of CO<sub>2</sub>e vs the gas vehicle: 11,435 lbs of CO<sub>2</sub>e). The GHG emission reduction will be about the same between an electric bus and a diesel-powered bus.

[s://afdc.energy.gov/vehicles/electric\\_emissions.html](s://afdc.energy.gov/vehicles/electric_emissions.html)

**Emissions from Hybrid and Plug-In Electric Vehicles**

Hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and all-electric vehicles (EVs) typically produce lower tailpipe emissions than conventional vehicles do. When measuring well-to-wheel emissions, the electricity source is important: for PHEVs and EVs, part or all of the power provided by the battery comes from off-board sources of electricity. There are emissions associated with the majority of electricity production in the United States.

**Electricity Sources and Emissions**

EVs and PHEVs running only on electricity have zero tailpipe emissions, but emissions may be produced by the source of electrical power, such as a power plant. In geographic areas that use relatively low-polluting energy sources for electricity generation, PHEVs and EVs typically have a well-to-wheel emissions advantage over similar conventional vehicles running on gasoline or diesel. In regions that depend heavily on conventional fossil fuels for electricity generation, PEVs may not demonstrate a well-to-wheel emissions benefit.

The source of your electricity has an effect on the emissions of your electric vehicle.

**State Averages for New Jersey**

**Electricity Sources**

Natural Gas	51.70%
Nuclear	42.62%
Solar	1.72%
Coal	1.59%
Biomass	1.27%
Other Fossil	0.74%
Oil	0.43%
Wind	0.03%

**Annual Emissions per Vehicle**

Vehicle Type	Pounds of CO <sub>2</sub> Equivalent
All Electric	~2,500
Plug-in Hybrid	~5,000
Hybrid	~6,500
Gasoline	~11,400

**Response:** Thank you for your comment. Your original comment was forwarded to the DVRPC Board, DVRPC Office of Capital Programs, and NJTransit.

Your support and continued involvement in the region's development is appreciated.