



DEPARTMENT OF TRANSPORTATION
Milwaukee County
Donna Brown-Martin, Director and Highway Commissioner

Marcelia Nicholson, Chairwoman
Milwaukee County Board of Supervisors
Courthouse, Room 201
901 N. Ninth Street
Milwaukee, WI 53233

June 7, 2021

Can you share what research has been done to understand the environmental impact of BEBs vs clean diesel buses?

In 2019, DOT and MCTS acquired the services of MJ Bradley and Associates (MJB&A) to analyze the environmental, capital and operational impacts of electrification for the MCTS fleet.

County Board Report #19-908:

<https://milwaukeecounty.legistar.com/View.ashx?M=F&ID=7937513&GUID=58930F1E-3A6E-4D57-9D13-B8B7BAE52CC9>

Battery Electric Buses only use a small diesel-powered engine to heat the buses in the colder weather for operators and passengers and, therefore, emit few greenhouses gases (GHGs) compared to clean diesel buses. However, it is important to note that GHGs are emitted at the coal and natural gas fired power plants that generate electricity and is subsequently transmitted to the charging stations. Not until the power grid is converted to all clean energy such as solar, wind or hydroelectric, will all GHGs be eliminated.

How does the recommendation to purchase clean diesel buses align with the adopted county policy to be carbon neutral by 2050?

Should DOT's recommendation to provide results of a BEB pilot program in early 2024 be approved, the County would have approximately 24 years (current build times for BEBs is 18-24 months) to replace roughly 390 clean diesel buses with BEBs. This would require the replacement of a minimum of 17 clean diesels per year with BEBs, from 2026-2050.

Has an analysis of the potential cost savings on fuel expenses under a BEB system been completed? Could those potential saving offset any upfront expenses?

MJB&A's electric bus analysis for DOT compared fuel and maintenance costs per mile for both diesels and BEBs (County Board Report #19-908). The fuel costs for diesels is higher than BEBs, on average. However, the upfront expenses for BEBs, including but not limited to, in-route and depot chargers and general infrastructure (civil, electrical) updates, negates any savings. Also, replacement batteries (approximately \$50,000 each) will likely be required during the lifecycle of a BEB. It is difficult to predict those costs.