

DEUSA Fleet Success Stories: Biddeford-Saco-Old Orchard Beach Transit



Location: Biddeford, Saco, and Old Orchard Beach, Maine

Fleet type: Heavy-duty (transit) electric vehicles



Narrative: [Biddeford-Saco-Old Orchard Beach Transit](#) (BSOOB Transit) is the public transit agency serving Biddeford, Saco, and Old Orchard Beach, with express routes connecting to Portland, South Portland, and Scarborough. BSOOB Transit serves as a connector between high-traffic tourism hotspots during the summertime, with ridership reaching 285,707 in 2025. The agency operates seven regular bus routes and four seasonal trolley routes, with a fleet comprising 13 diesel vehicles, 2 battery electric, and 3 hybrid buses.



BSOOB Transit is a key provider of sustainable transportation in southern Maine, supporting regional climate goals by enabling mode shift from single-occupancy vehicles to shared transit. The shift delivers immediate emissions reduction by reducing vehicle miles traveled and providing transportation access across the region. Looking ahead, continued investments in fleet electrification will allow the agency to further reduce emissions and improve operational efficiency. Together, expanding transit service and fleet electrification align with the goals outlined in the state's climate action plan, *Maine Won't Wait*, and the region's long-range transportation plan, *Connect 2050*, by offering near-term emissions reductions and long-term decarbonization of our transit systems.



Published in February 2023, MaineDOT contracted with HATCH Consulting to develop a fleet electrification roadmap for the transit agency. The plan calculates cost and emissions savings compared between pre- and post-electrification, and found that electrification would result in up to a 91% reduction in emissions. Although there is an estimated 51% increase in capital expenditures compared to BSOOB Transit's first battery-electric bus. (Source: [Portland Press Herald](#))

To acquire the electric buses, there would be a 13% annual reduction in operational and maintenance costs due to zero fuel expenses, and improved reliability and efficiency. Overall, it was found that BSOOB Transit would see roughly a 1% lifecycle cost increase by transitioning to an entirely battery-electric fleet.

Outputs

The battery-electric buses are estimated to produce both environmentally and economically beneficial outputs due to improved efficiency, reliability, and zero- tailpipe emissions.

- **Greenhouse Gas (GHG) Emissions Savings:** Over their 12-year lifecycle, the buses are estimated to reduce GHG emissions by an estimated 4.8 million pounds.
- **Lower Operational Costs:** The buses have lower operational costs, costing anywhere from 60-80% less to power compared to a traditional diesel bus. This also reduces the reliance on volatile fossil fuel prices.
- **Higher Efficiency:** The buses operate at a higher efficiency per gallon, up to 25.1 miles per gallon equivalent, which is around five times more efficient than a diesel bus.

Outcomes

In May of 2022, BSOOB Transit welcomed 2 battery-electric buses into their fleet, funded through the federal Department of Transportation's (DOT) Low and No-Emission Vehicle Program. This historic event marks the first set of electric transit buses in Maine since the early 2000's, replacing outdated diesel buses. The Proterra ZX5 battery-electric buses have an estimated range of 240 miles on a single charge. Two EV chargers were installed at the BSOOB Transit depot along with the acquisition of the buses.

In December of 2025, BSOOB Transit was awarded \$1.5 million through the same grant program to fund the purchase of hybrid buses. In the [press release](#), John Savage, Executive Director of BSOOB Transit, stated that "by securing the resources to update our fleet with resilient hybrid technology, we are ensuring that BSOOB Transit remains a safe, reliable, and sustainable connector for the people of Biddeford, Saco, and Old Orchard Beach." In total, BSOOB Transit has two electric-battery buses and three hybrid buses on order from Gillig, expected to arrive in 2027.

Best Practices & Lessons Learned:

Charging - For the most efficient and cost-effective charging of the battery electric buses, charging primarily occurs at the transit agency's depot in Biddeford. The transit agency is currently in the process of installing an on-route pantograph charging station at the Saco Transportation Center, which should be operational by summer of 2026.

Grid Resilience - When developing EV systems, it is crucial to plan for sustained operation in the event of a power outage or system failure. As an effort to increase grid resilience while also responding to the increased energy demand of electrification, BSOOB has introduced a [Smart Grid Transition Plan](#). The plan accounts for mid-day vehicle swaps and charging with a microgrid and battery storage system that will generate and store enough energy to maintain full EV operations. Furthermore, the agency received a federal Strengthening Mobility and Revolutionizing Transportation [\(SMART\) grant in 2023](#) to support grid electrification.

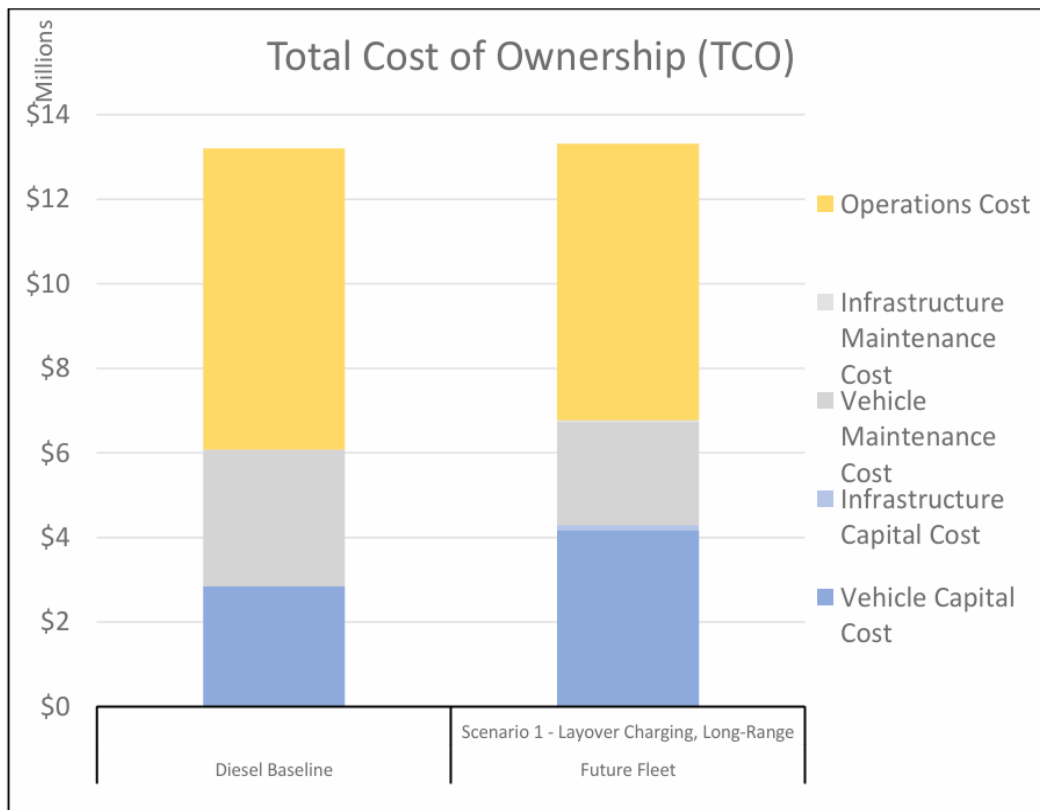


Figure 1: Life Cycle Cost Comparison. (Source: [BSOOB Bus Electrification Transition Plan](#))