

Content	Short Description	Article	
What is predictive maintenance		https://www.ibm.com/think/topics/predictive-maintenance	
Articles on Ebus SOC	- Traffic & dwell inflate consumption. Congestion can lift battery consumption ~50% in bus networks, pushing more kWh per km and faster cycle aging. (Interpretable ML study on e-bus energy use.)	The Troubled State of TTC Green Buses Steve Munro Interpretable machine learning models for predicting Ebus battery consumption rates in cold climates with and without diesel auxiliary heating	
	- Cold weather = higher internal resistance + heavier HVAC loads. Winter energy use rises, forcing deeper cycles to complete blocks (accelerating aging and shrinking practical range). TTC's head-to-head and program updates repeatedly tie performance to operating environment and charging readiness	chrome-extension://efaidnbmninnbpcjpcglclefindmkaj/https://www.toronto.ca/legdocs/mmis/2025/ttc/bgrd/backgroundfile-257225.pdf	
Article on Driver Anxiety		https://blog.cleverdevices.com/addressing-range-anxiety-for-electric-bus-operators?utm_source=	
Current Digital Twin Technology		https://aws.amazon.com/blogs/industries/battery-digital-twin-the-future-of-battery-intelligence/	
		https://aws.amazon.com/solutions/guidance/battery-digital-twin-on-aws/	
		https://eepower.com/industry-articles/using-battery-digital-twins-to-elevate-ev-performance-and-life/#	
	Rolls Royce Digital Twin Case Study	https://ismguide.com/rolls-royce-use-of-digital-twin-technology-case-study/	
Cost Analysis (Real-world implementation - EV)	The AI-powered predictive battery maintenance program by TWAICE and ViriCiti extends e-bus battery life by up to 25 percent and significantly reduces fleet operating costs through real-time health monitoring and data-driven maintenance optimization.	https://www.sustainable-bus.com/news/viriciti-twaice-predictive-battery-maintenance/?utm_source=chatgpt.com	could use in intro
Cost Analysis (Real-world implementation - Not EV)	After implementing Stratio's AI predictive maintenance system, Arriva Czech Republic achieved a 2% reduction in maintenance costs, 25% fewer spare buses, 66.6% fewer towing interventions, and a 13.5% increase in mean time between failures (MTBF) within one year, significantly improving operational efficiency.	https://www.scribd.com/document/687028086/Arriva-Case-Study-2023-ENG-FINAL?utm_source=chatgpt.com	
	Arriva Czech Republic improved operational efficiency with Stratio's AI predictive maintenance solution, achieving a 13.5% increase in mean time between failures, 66% fewer towing incidents, and a 2% cost reduction per km operated.	https://stratioautomotive.com/artificial-intelligence-public-transport/?utm_source=chatgpt.com	
Cost Analysis (Experimental Research)	Combining predictive maintenance with optimized driving can cut e-bus battery degradation by ~25%, extend service life by ~25%, and—through data-driven operations—reduce maintenance and operating costs.	https://www.frontiersin.org/journals/future-transportation/articles/10.3389/ffutr.2024.1506866/full	
Cost Analysis (About Data)	A policy and operational report summarizing the TTC's progress, funding plan, and infrastructure development toward achieving a fully zero-emission bus fleet by 2040.	chrome-extension://efaidnbmninnbpcjpcglclefindmkaj/https://www.toronto.ca/legdocs/mmis/2025/ttc/bgrd/backgroundfile-257225.pdf?utm_source=chatgpt.com	
	A technical evaluation report comparing the real-world performance of three eBus manufacturers (BYD, New Flyer, Proterra) to establish the technical feasibility and procurement standards for large-scale eBus deployment.	chrome-extension://efaidnbmninnbpcjpcglclefindmkaj/https://cdn.ttc.ca/-/media/Project/TTC/DevProto/Documents/Home/Public-Meetings/Board/2022/April-14/Reports/10_TTCs_Green_Bus_Program_Final_Results_of_TTCs_Head_to_Head_eBus_Evalua.pdf	