DEUSA Fleet Success Stories: Mountain Line

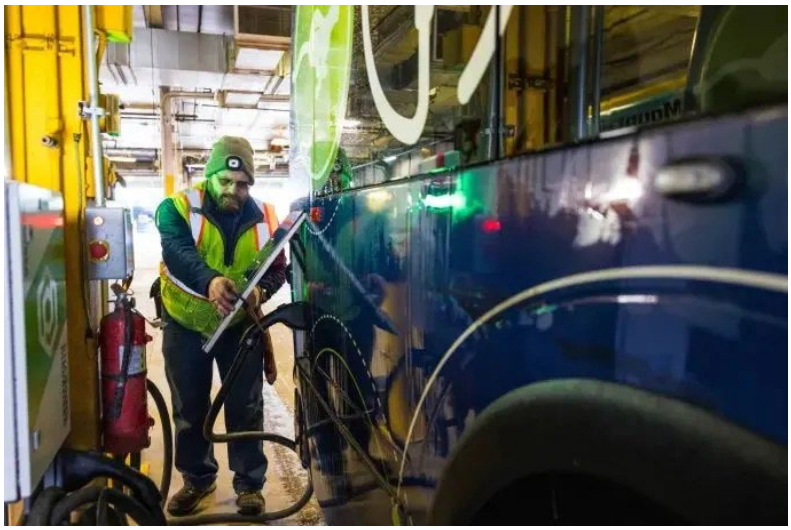
Location: Missoula, MT
Fleet type: Electric Transit buses

Narrative: Like other Montana municipalities advancing fleet electrification, the Missoula Urban Transportation District—known as Mountain Line—has been steadily transitioning its public transit system from diesel-powered buses to battery-electric vehicles in support of long-term sustainability and air quality goals. Since initiating its first electric bus deployments in 2019, Mountain Line has scaled its electrification program into one of the most advanced municipal transit transitions in the state.

The agency formally committed to a fully zero-emissions fleet by 2035 following a 2020 Board of Directors resolution. Since that time, electrification has progressed rapidly, with electric buses now comprising more than half of the total fleet and continued procurement underway. As of recent reporting, Mountain Line is approaching a fully electric operational profile, with 26 of 29 vehicles expected to be battery-electric as additional grant-funded buses enter service.

Supporting this transition is a growing and increasingly sophisticated charging and energy management infrastructure. Mountain Line's depot system relies on coordinated overnight charging strategies supported by smart load management software. The agency has adopted the BetterFleet platform to optimize charging schedules, manage energy demand, and ensure vehicle availability for daily service. This system dynamically allocates charging based on route requirements, plug-in timing, and departure schedules, helping prevent grid spikes while maintaining operational reliability.

In parallel with fleet expansion, Mountain Line has invested heavily in infrastructure planning and utility coordination. Early engagement with local utilities has been a critical component of deployment strategy, recognizing that interconnection timelines and capacity upgrades can take 12 to 36 months. The agency's planning approach avoids assuming peak simultaneous charging loads and instead relies on modeled demand profiles that reflect actual fleet behavior.



Mountain Line is also advancing toward a more integrated energy future, with plans for a microgrid system incorporating solar generation, geothermal energy, and battery storage. These efforts are intended to improve resilience, reduce operating costs, and align charging demand with on-site renewable energy production. The system is designed to integrate directly with fleet management software, ensuring that energy strategy and vehicle readiness remain aligned in real time.

Operationally, the transition to electric buses has proven highly effective, even in Missoula's cold winter climate. Agency leadership and operations staff report that electric buses are capable of completing nearly all service routes, with only limited exceptions on the longest shifts during extreme cold conditions. Continued improvements in vehicle technology have expanded range and reliability, further reducing operational constraints.

Outputs & Outcomes: Mountain Line's electrification program has delivered measurable operational, environmental, and financial benefits. The transition to battery-electric buses has reduced operating costs significantly, with reported per-mile energy expenses substantially lower than diesel equivalents. In addition, reduced maintenance requirements—such as the elimination of oil changes and fewer mechanical service needs—have contributed to lower lifecycle costs.

Environmental benefits include major reductions in greenhouse gas emissions, with agency reporting indicating substantial monthly CO_2 reductions attributable to electric bus operations. These reductions are especially impactful in the Missoula Valley, where winter inversion conditions can trap pollutants and amplify the effects of tailpipe emissions.

The system has also improved service quality through quieter operation, reduced vibration, and a more comfortable rider experience. Public transit usage continues to exceed one million rides annually, with a significant portion of trips supporting access to employment and essential services.

Federal grant funding has played a central role in enabling rapid electrification, supporting both vehicle procurement and infrastructure development, including plans for a fully electric operations facility. These investments ensure long-term scalability and position Mountain Line as a leading example of cold-climate transit electrification in the United States.

Best Practices & Lessons Learned: A key lesson from Mountain Line's experience is the importance of early and continuous utility coordination. Electrification at scale requires long lead times for interconnection and grid upgrades, making proactive planning essential.

Another critical success factor is the use of intelligent charge management systems. Rather than relying on static or overly conservative charging assumptions, dynamic load management enables agencies to optimize energy use while maintaining strict vehicle availability requirements for transit operations.

Fleet electrification has also demonstrated the value of phased deployment. Starting with pilot vehicles and scaling gradually has allowed operators to build technical expertise, refine operational procedures, and improve confidence in new technology under real-world conditions.

Finally, Mountain Line's experience highlights that electric transit is viable even in extreme winter climates when systems are designed holistically. When vehicles, charging infrastructure, software, and utility planning are integrated effectively, electrification can scale without compromising service reliability.