# InductEV leads the charge in wireless inductive technology for electric vehicles



The landscape of electric vehicle (EV) charging is poised for transformation, particularly within commercial fleets, as wireless inductive charging technology emerges as a potential game-changer. InductEV, based in Pennsylvania, is at the forefront of this innovation, which promises to make EV charging faster and more convenient, thereby enhancing the overall viability of electric commercial transport.

The efficiency of the charging process is critical for the success of electric vehicles, especially for businesses where vehicle uptime is linked directly to profitability. Current practices predominantly involve overnight charging at depots, a process that is both time-consuming and energy-intensive. InductEV’s wireless charging system, utilising electromagnetic induction, offers a new approach. Instead of traditional cabled connections, vehicles charge automatically through a magnetic resonance system embedded within a charging pad on the ground. As Managing Director for Europe, Middle East & Asia, James Wroe, remarked, “You have a pizza box-sized charging pad that fits on the underside of a vehicle and a corresponding one on the ground. As vehicles arrive in close proximity to these pads, charging begins within two seconds.”

InductEV’s solutions range from 75 kilowatts to 450 kilowatts, designed specifically for often high-demand transport sectors such as municipal buses, airport vans, and drayage vehicles. This method is particularly significant as road freight vehicles contribute to over two billion tonnes of CO2 emissions annually, accounting for more than 6% of global emissions. Wroe emphasised that the combination of high power and automated, touchless solutions represents an optimal opportunity for various industrial applications.

Although wireless charging for electric vehicles has been available for decades, commercial deployment has remained limited. InductEV, however, is actively commercialising its technology, with installations currently in use powering municipal buses in cities like Indianapolis and Martha’s Vineyard. The company has also secured an agreement with Seattle’s Sound Transit to implement its charging systems on new electric double-decker buses. By 2026, it is expected that half of the battery-electric buses in Washington will be charged using InductEV’s technology.

In addition to public transportation, the company is expanding its reach into other sectors, including charging electric port tractors and taxi fleets, such as the electric Volvo SUVs operating in Gothenburg and Oslo. This broad engagement has seen InductEV collaborating closely with original equipment manufacturers (OEMs) to integrate its wireless systems during vehicle production, with partnerships that include notable manufacturers like Volvo and BYD.

While wireless charging technology presents numerous benefits—increased convenience and a reduced reliance on large batteries—it has faced critiques regarding energy efficiency and alignment issues with the charging pad. InductEV addresses these concerns by claiming a transmission efficiency rate of 90% from the grid to the vehicle battery and emphasizing the potential to extend battery life significantly.

Examples of practical solutions to alignment challenges include using parking cameras to provide drivers with a top-down view of charging pads, enhancing the efficiency of charging processes in urban environments. Wroe noted, “The drivers quickly become accustomed to knowing where to go,” illustrating the adaptability of operators to new technologies over time.

InductEV’s innovations align well with the trends in the sector, particularly as fleet operators are increasingly mandated to electrify their vehicles. Wroe suggests that wireless charging makes the most financial sense for high-utilisation operations, where the necessity to maximise vehicle availability outweighs the benefits of standard plug-in charging in certain contexts.

Looking towards the future, InductEV’s prominence has been recognised, as the company was named one of Time’s Best Inventions for 2024. This accolade, alongside the establishment of one of the world’s first research and development centres dedicated to wireless vehicle charging, indicates a robust outlook for further advancements.

Moreover, with major players like Tesla entering the wireless charging space, the validation of this technology stands to catalyse broader acceptance within the electric vehicle sector. Tesla's unveiling of a wireless charging system at the launch of its robotaxi concept in October 2024 suggests that the adoption of inductive charging could become increasingly mainstream, particularly for autonomous vehicles that do not require human intervention to charge. John Rizzo, Chief Executive of InductEV, remarked on Tesla’s involvement, stating, “Tesla’s entry into the wireless charging space is exciting and further validates the vision that InductEV has been pursuing since inception,” signalling a future where wireless charging could play a pivotal role in the ongoing evolution of electric mobility.

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## Bibliography

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