Brief: Airports are Electric Vehicle Ready

A Guide to Successful EV Adoption at Airports

Metropolitan ENERGY CENTER

Executive Summary

The airport deployment guide by Metropolitan Energy Center (MEC) in partnership with Clean Cities, a federal Department of Energy program, provides a comprehensive guide for aviation departments transitioning to electric vehicles (EVs) in their fleets. It outlines the phased approach needed to evaluate, plan, deploy and sustain EVs effectively, focusing on reducing greenhouse gases and petroleum use while promoting energy and cost efficiency.

Key Points

The guide emphasizes five critical phases for successful EV adoption at airports.

Phase 1: Evaluation

The Evaluation phase lays the groundwork for successful EV adoption by helping aviation departments identify sustainability goals, key decision-makers and fleet data. MEC emphasizes the importance of a cross-divisional approach, engaging stakeholders from finance, legal, operations and sustainability early on to streamline the transition to EVs. Airports are encouraged to assess existing infrastructure and fleet profiles to identify how EV adoption aligns with current environmental and economic objectives. This phase also suggests involving local Clean Cities coalitions and utility providers to gain access to evaluation tools, industry insights and potential funding sources.

Phase 2: Develop Project Scope

In this phase, airports define the project's parameters, including scope, budget, timeline and infrastructure needs. This stage focuses on building partnerships with key stakeholders, such as local government agencies, utility providers and Clean Cities coalitions, to access technical and financial support. MEC advises airports to conduct thorough assessments of available funding opportunities, including grants and rebates, and to initiate conversations with utility companies early to discuss infrastructure requirements. This phase also includes creating a list of potential vendors and technology providers that align with the project's scope and sustainability goals.

Phase 3: Pre-Deployment

The Pre-Deployment phase is where airports finalize logistical and operational aspects before procuring and deploying EVs. MEC recommends airports establish clear communication channels across departments to ensure alignment on project goals, timelines and expectations. Developing an infrastructure implementation schedule and a vehicle procurement timeline is crucial at this stage, allowing airports to synchronize vehicle deliveries with infrastructure readiness. Airports are also advised to conduct thorough modeling of energy requirements to determine the number and type of charging stations needed. Regular meetings with utility

partners help address any adjustments in infrastructure needs or budget.

Phase 4: Deployment

The Deployment phase involves putting the EV infrastructure and vehicles into operational use. MEC highlights the importance of adopting maintenance best practices tailored for EVs, including regular inspections of battery and charging systems, monitoring regenerative braking wear and ensuring compliance with electrical safety protocols. Airports are advised to implement telematics systems for real-time monitoring of fleet performance, optimizing charging schedules and reducing demand charges, or utility fees, by avoiding peak electricity times. To maximize efficiency, airports should provide comprehensive training for drivers, technicians and emergency responders on EV operations and safety protocols. By carefully managing this phase, airports can reduce operational costs and maximize the environmental benefits of their EV fleet.

Phase 5: Project Sustainability

This phase ensures the long-term success and resilience of the EV program. MEC advises airports to consider "future-proofing" their infrastructure by installing scalable systems capable of supporting increased EV adoption over time. Incorporating renewable energy sources, such as solar power, enhances sustainability and reduces strain on the grid. Airports are also encouraged to continuously monitor fleet data to identify performance trends and areas for improvement. Strengthening partnerships with Clean Cities coalitions, utility providers and local governments can provide ongoing support, funding opportunities and policy advocacy. This phase reinforces the commitment to sustainable practices and helps airports remain resilient to energy disruptions and evolving regulatory requirements.

Recommendations

Collaborate with Stakeholders: Work with utilities, local governments, and Clean Cities coalitions to secure funding, manage infrastructure, and ensure alignment with broader sustainability goals.

Implement Resilience Measures: Invest in future-proofing infrastructure, such as renewable energy solutions, and develop protocols for managing energy demands during peak periods.

Prioritize Training and Safety: Provide thorough training for EV operators, maintenance teams and emergency responders to maximize efficiency and safety in EV operations.

Challenges

High initial costs, infrastructure needs, and utility fees pose barriers to EV adoption. Addressing these through careful planning, grant funding and utility collaboration is essential for cost-effective deployment.

Conclusion

The airport deployment guide emphasizes that airport EV adoption can enhance sustainability, reduce operational costs and promote cleaner air. By following this strategic approach, airports can lead the way in clean transportation, demonstrating their commitment to sustainability and cost savings while improving air quality for the communities they serve.