Thought Leadership
White Paper

Meet sustainability goals by choosing EV chargers in multi-family and commercial buildings

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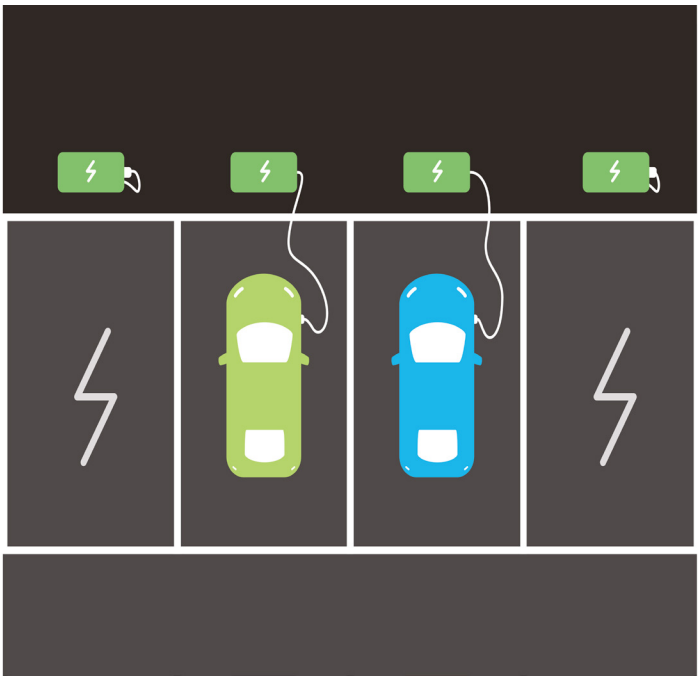
Electric vehicles are becoming an integral part of the mainstream automobile market in the United States due to strong environmental concerns amongst the population, government initiatives and rising fuel costs. According to the International Energy Agency, annual EV sales experienced an increase of nearly 55% in the United States in 2022, making it one of the fastest-growing markets for electric vehicles. [1]

Several automotive companies are entering into strategic alliances to meet the growing demand – for instance, partnering with lithium mining companies to avoid raw material shortages or collaborating with EV charging station providers to leverage charging technologies. However, the lack of quick, convenient and safe charging stations for electric vehicles remains a key barrier for many potential customers. Therefore, commercial and multi-family building owners are now focusing on providing charging capabilities as a part of the parking infrastructure to their employees and residents, respectively.

The shift towards electric vehicles has also provided building owners, managers and parking operators with an opportunity to meet their sustainability goals while establishing new revenue streams. This whitepaper will concentrate on understanding the benefits of installing EV chargers in the parking lots of multi-family and commercial buildings.



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Organizations such as Leadership in Energy and Environmental Design (LEED) grant certification points if EV charging stations are integrated into the building infrastructure – marking the project for sustainable design and building performance. Likewise, installing EV chargers in parking lots can offer owners and residents several other benefits, namely –

1. **Ease of access –** Employees, residents and customers can readily charge their vehicles while they reside or work in the property.

2. **Meeting sustainability goals –** Installing EV chargers can help the real estate industry reduce carbon emissions and meet overall sustainability goals like net zero carbon by 2050. [2]

3. **Future-proofing the building –** The adoption of electric vehicles is expected to increase significantly in the coming years with the United States expected to sell 14 million units of electric vehicles by 2040 according to Goldman Sachs. [3] Therefore, commercial and multi-family building owners can stay ahead of the curve by integrating charging stations in their parking facilities.

4. **Brand reputation –** Installing electric vehicle charging infrastructure improves the asset position in the market; many class A multi-family and office properties offer EV charging.

5. **Financial incentives –** Government incentives at state, county and municipality levels provide financial support to building owners if they provide charging stations in their premises. For instance, Arkansas provides rebates for the installation of Level 2 EV charging stations for government, private and non-profit entities across the state. [4]

By installing EV chargers in commercial and multi-family buildings, building owners can provide multiple practical benefits to their employees and residents while demonstrating a strong commitment towards sustainability.

Figure 1. Green Motion EV smart breaker chargers

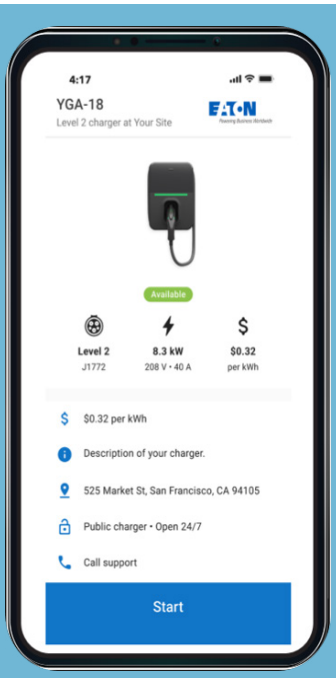

Figure 2. Charging Network Manager software platform

Ideal EV charging infrastructure components for multi-family and commercial buildings

Several power management companies offer a range of solutions that help building owners to effectively install and manage EV charging stations while addressing EV customers' growing demand for reliable and efficient charging stations.

Integrated assembly solutions are available as EV panelboards and switchboards, based on the number of chargers required by the builder owners or property managers. A standard panelboard can integrate up to six EV chargers, providing a single space-saving and factory-assembled solution. An EV panelboard integrated into a distribution switchboard permits up to 18 EV chargers and gives the option to add adjacent, integrated equipment such as an upstream transformer. This consolidates the traditionally separate electrical distribution and control equipment resulting in a significant reduction in installation time, space and a 20% lower installation cost of EV panelboards when compared to a comparable wall-mount charger installation.

A key benefit offered by the integrated panelboard solution is the improved security for the hardware – EV chargers are installed within the panelboard ensuring that they can be secure while being located remotely. The solution also offers ease of maintenance for service personnel as it enables the replacement of the circuit breaker; eliminating the need to repair traditional large chargers. Furthermore, the assembly-integrated chargers are designed to incorporate various safety features such as overcurrent protection, ground fault detection and thermal management to ensure safe charging operation. Overall, the solution helps the building owners and property managers save time, effort and cost while providing safe and reliable EV charging services to the end customers.

To stay ahead in meeting the changing needs of EV customers, the larger power management companies have added smart and intelligent features to their chargers. Smart and connected chargers create new possibilities through real-time energy insights and integration with onsite renewables and energy storage systems. It also provides remote access that allows property managers and owners to optimize charging times and effectively manage the load. To connect the EV chargers to a network, the building owner only needs to install the Wi-Fi in the vicinity of the panelboard rather than being spread out across the parking lot.

The smart charging mechanism also comprises of a management software that provides a network dashboard, location and station information, access and pricing controls and reporting capabilities. The charging management software is typically intuitive, easy-to-use and an information-rich resource for all the charge station owners. It allows owners to monetize the installation by accepting payments, offer differentiated pricing based on driver categories and mitigate peak loads while matching electricity cost with the actual usage. In situations wherein an existing multi-family building wasn't constructed with the intention to integrate EV loads in the future, a charging management software can help owners in managing the electricity load while utilizing the original electricity infrastructure thereby efficiently serving the customers.

Figure 3. Integrated facility systems (IFS) switchboard

EV chargers in commercial and multi-family buildings

Conclusion

The installation of EV chargers in a building's parking lot offers multiple immediate and long-term benefits to the owners and building managers such as increase in property value, good reputation in the market, contribution to sustainability and green initiatives. Early adopters of EV charging infrastructure in the real estate industry are likely to attract high-earning tenants, clients and visitors to their properties. Therefore, power management companies are developing technology-driven solutions with smart features and enhanced safety to meet the rising demand of charging stations in commercial and multi-family buildings.

About Eaton

Eaton is an intelligent power management company with 2022 revenues of $20.8B that is dedicated to improving the quality of life and protecting the environment for people everywhere. By capitalizing on the global growth trends of electrification and digitalization, we're accelerating the planet's transition to renewable energy and helping to solve the world's most urgent power management challenges. 2023 marks Eaton's 100th anniversary of being listed on the New York Stock Exchange.

For more information, visit **Eaton.com**

References

1 Global EV Outlook - IEA Report

2 The U.S. Landscape from a Global Perspective

3 Goldman Sachs Research - EV Forecast

4 Level 2 EVSE Rebate Program

For more information, visit
Eaton.com/evchargers
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