

Plugging Into Equity: Ownership Strategies for Bidirectional EV Charging

Introduction

As Illinois moves toward a cleaner energy future, ComEd is exploring innovative solutions like bidirectional charging to support the state's goal of 1 million electric vehicle (EV) registrations by 2030. Bidirectional charging allows EVs to not only draw power from the grid but also send energy back to homes, buildings or the grid itself. This two-way energy flow can improve grid reliability, reduce energy costs and lower emissions—benefiting both customers and communities.

As implementation of the [Beneficial Electrification Plan](#) progresses, ComEd continues to evaluate how to best deliver benefits to all customers, with a specific focus on [Low-Income](#) (LI) households; [Restore, Reinvest, and Renew](#) (R3) communities; and [Environmental Justice](#) (E) communities, jointly referred to as “Select Customers.”

While bidirectional charging can be a powerful tool for improving grid resiliency and lowering energy bills, as well as providing environmental and social benefits, realizing these outcomes equitably depends on how clean energy technologies are owned and operated. Thoughtfully designed ownership and operational models are essential to lowering barriers and ensuring these benefits are accessible to all.

Why Ownership Models Matter

Ownership models determine who is responsible for, maintains control of and can reap the benefits of bidirectional charging equipment such as battery energy storage systems (BESS), EVs, charging stations (electric vehicle supply equipment; EVSE) and the electrical systems that support them. These models shape how accessible, affordable and sustainable bidirectional charging technologies can be, especially for communities that have faced challenges accessing these technologies, and their benefits, in the past.

In traditional energy systems, ownership is relatively straightforward: Utilities produce power, and customers consume it. But with bidirectional charging, those roles can shift. EVs and batteries can now send energy back to the grid, acting like mobile or stationary power sources. Software platforms can help manage how energy flows across homes and neighborhoods.

This shift introduces new possibilities for, and new questions about, who owns and operates these technologies. Different ownership models can affect who benefits, how costs are shared and how equitably clean energy is distributed.

A New Landscape of Ownership

Bidirectional charging systems are made up of multiple components: charging equipment, software platforms and interconnection to the grid. Ownership can be distributed across these layers, creating a spectrum of models.

1. Site-Host Owner-Operator

Organizations like school districts and delivery companies or building owners who host charging stations would own the charging station in addition to hosting it. This model offers autonomy, allows site hosts to collect potential revenue and can reduce energy costs, but requires capital investment and regular maintenance considerations.

2. Utility Ownership

Utilities can own the charging infrastructure but may lease chargers to site hosts or manage their own sites and charging network. This model supports grid reliability and allows utilities to prioritize deployment in specific areas, such as underserved communities. For example, a utility might install bidirectional chargers at public schools, using electric buses or stationary batteries to support the grid during peak hours. While utility ownership of make-ready infrastructure is more common, full utility ownership of EV charging stations, particularly those intended for use by a single customer, is relatively rare.¹

3. Infrastructure/Charging-as-a-Service

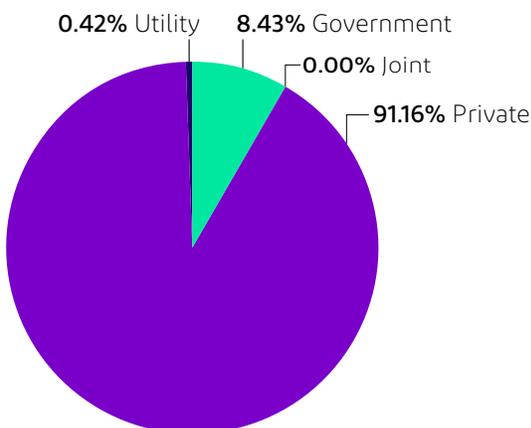
A third-party provider may own chargers and software, and lease equipment to site hosts under a service agreement, allowing EV owners to opt in with their EVs or batteries. Aggregators then pool these resources to provide grid services and share revenue with participants. This model can be beneficial to site hosts who would otherwise be unable to install charging equipment due to upfront capital costs. However, site hosts may be at risk of higher total costs depending on service agreement structures, operation and maintenance expectations, and more.

4. Community/Joint Ownership

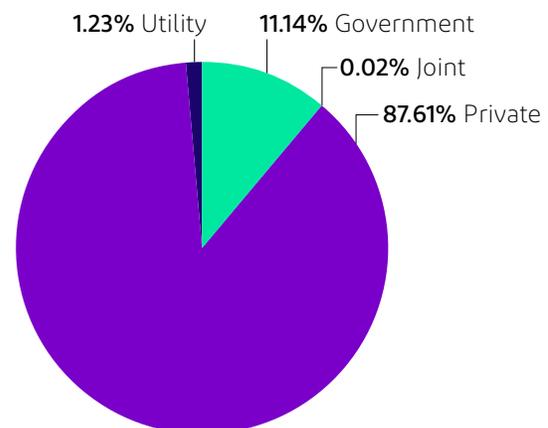
Local cooperatives or nonprofits own and manage bidirectional systems—whether mobile (like shared EVs) or stationary (like charging infrastructure). This model could foster local engagement and can be tailored to meet specific community needs. Of all ownership models, this may be one of the rarest due to the added complexity associated with joint ownership.

According to the [Alternative Fuels Data Center's \(AFDC\) Station Locator](#), the majority of EV charging stations in Illinois are privately owned (over 90%) while the remaining EV charging stations are government-owned (about 8%), and a small number of EV charging ports are owned by utilities.² Note that AFDC EVSE data is not comprehensive and may not capture all installed EV charging infrastructure, especially Level 1 ports, non-networked ports and more.

Illinois EVSE Ports by Ownership Type (as of October 2025)



U.S. EVSE Ports by Ownership Type (as of October 2025)



Equitable Considerations

While bidirectional charging technologies have the potential to deliver financial, social and environmental benefits, many customers face challenges that can make it difficult to participate in the clean energy transition. These challenges include renting their homes, lacking access to private parking, living in areas with limited grid infrastructure or simply not having the financial means to invest in new technology.

To ensure bidirectional charging technologies deliver benefits to everyone, ownership models can be evaluated based on how accessible they are for Select Customers.

Barrier	Why It Matters	Equitable Ownership Considerations	Case Studies
High Upfront Costs	EVs, batteries and chargers can be expensive. Many households can't afford the initial investment.	Utility/publicly owned systems, on-bill financing and public subsidies can reduce financial barriers and make participation easier.	Consumer Financing of Beneficial Electrification Products in Maine (2024) CPUC Expands On-Bill Financing Options for Non-Residential Energy Utility Customers (2023)
Renters and Multifamily Housing	Renters often can't install chargers or batteries. Landlords may not invest in infrastructure they don't directly benefit from.	Community-owned systems, shared fleets and curbside chargers allow renters to access clean energy without needing private property.	EV Spot Network Saint Paul Minnesota (2024) Overcoming Barriers to EV Charging in MUDs: A Westside Cities Case Study (2017)
Limited Charging and Storage Access	EJ communities and rural areas often lack public chargers and/or grid capacity.	Utility/publicly funded installations, microgrids and battery storage systems can fill infrastructure gaps and improve reliability.	Dunamis Charge Connects Underserved Communities With Free EV Chargers at Local Churches and Community Organizations - Plug In America (2025) First-in-Nation Pilot to Provide Affordable Access to EV - Fermata Energy
Technology Awareness and Trust	Some customers may be unfamiliar with bidirectional charging or worry about complexity and safety.	Partnering with trusted local organizations for education, outreach and hands-on demonstrations builds confidence and encourages participation.	Alternative Fuels Data Center: Building Community Relationships Through Streetlight EV Charging in Kansas City (2024) The Power of Engagement: Building Trust and Support for Clean Energy Products (2025)

Recent pilots and case studies highlight practical strategies for advancing equitable clean energy access through inclusive utility investments and innovative charging solutions. For example, the [Inclusive Utility Investment Guide for Distributed Energy Resources](#) documents how utilities can scale inclusive investments, emphasizing stakeholder engagement and tailored program design to reach underserved communities. Local government strategy documents like [LA100 Equity Strategies](#) demonstrate the effectiveness of targeted pilots in overcoming barriers for LI and EJ communities, such as on-bill financing and community-owned charging infrastructure. City-led initiatives, including public and curbside EV charging strategies, detailed in [Case Studies: City Public & Curbside EV Charging Strategies](#), show how partnerships and flexible ownership models can expand access for renters and multifamily residents. Additionally, engagement-focused efforts, as detailed in the [Power of Engagement](#) report, underscore the importance of building trust and awareness through local outreach and education. Collectively, these examples demonstrate that well-designed pilots and collaborative approaches are essential for ensuring the benefits of clean transportation reach all communities.

What's Next?

ComEd is conducting a study to explore the environmental and social impacts of bidirectional charging technology. Insights from this study may help ComEd shape future programs and investments by examining how bidirectional charging technologies could best deliver benefits to all customers, whether through cleaner air, more reliable power or support for Select Customers. The findings may also guide how ComEd engages with communities and customers to expand access to these emerging solutions.

Want to Learn More?

Learn more about bidirectional charging at the [Backup Power Capabilities - ComEd Customer Innovation](#) webpage. Visit the ComEd [Beneficial Electrification Plan Pilots](#) webpage and [V2G Pilot Program](#) webpage to learn how you can participate in or benefit from upcoming initiatives. For additional information on ComEd's available resources and programs, please visit [ComEd.com/EV](#).

¹ Kresge, G., & Steimer, H. (2022, December). *Electric Vehicle (EV) Make-Ready Programs: Considerations for Utility Regulators for Electric School Buses and Beyond*. Electric School Bus Initiative, World Resources Institute. <https://electricschoolbusinitiative.org/sites/default/files/2022-12/Electric%20Vehicle%20%28EV%29%20Make%20Ready%20Programs.pdf>

² U.S. Department of Energy. (n.d.). *Alternative Fueling Station Locator*. Alternative Fuels Data Center. Retrieved from <https://afdc.energy.gov/stations>