



Plugging In

Readying America's Cities for Electric Vehicles

With more electric vehicles on the road, and many more coming soon, cities will face the challenge of where electric vehicles will charge, particularly in city centers and neighborhoods without off-street residential parking. Smart policies can help U.S. cities lead the electric vehicle revolution while expanding access to clean transportation options for those who live, work and play in cities.

Electric Vehicles Are Here

Technological gains that allow electric vehicles (EVs) to drive farther, charge faster, and be produced more affordably are revolutionizing the vehicle market. In fact, the number of EVs on America's streets is at an all-time high:

- Sales of electric vehicles increased 32 percent in 2017.
- Chevrolet's Bolt EV was named Motor Trend's 2017 Car of the Year.
- The introduction of the Chevy Bolt, Tesla's Model 3 and other affordable, long-range electric vehicles suggests that growth in EV sales is just beginning.

Cities Need to Get Ready

In a few short years, tens of thousands of electric vehicles could hit city streets across America, from Portland, Maine, to Portland, Oregon. Yet, as of now, most cities are unprepared.

These vehicles will need a place to charge, so public access to EV charging stations will be critical, especially since only about half of vehicles in the U.S. have a dedicated off-street parking space, like a driveway or garage.

Major cities will require the installation of hundreds to thousands of publicly accessible electric vehicle chargers in order to serve the increased demand for electric vehicles.

Possible Number of EVs on Selected City Streets by 2030 and Corresponding Publicly Accessible Charging Needs

City	Number of EVs Estimated in City by 2030	Public & Workplace Plugs Needed by 2030*	Public Plugs Currently*
Austin, TX	29,000	1,055	482
Cleveland, OH	9,000	328	16
Las Vegas, NV	22,000	800	60
Philadelphia, PA	34,000	1,448	85
Pittsburgh, PA	9,000	328	120
St. Louis, MO	8,000	292	15

* Estimated number of Level 2 publicly accessible plugs; for fastchargers and more information, see full report.

City Policy Can Support Electric Vehicles

The world's leading EV cities have adopted key policies that enable urban residents to drive electric vehicles, including:

- Residential access to **on-street EV charging**, since many city residents do not have access to off-street parking spots where they might charge their electric vehicles overnight. Residents in London, for example, can ask the city to install, and mostly pay for, EV charging infrastructure at streetlights on their block.
- Access to **public charging stations** so people can charge their EVs when they are commuting, shopping or traveling. The two countries in the world with the highest rate of EV sales – Norway and the Netherlands – have the most public charging points per electric vehicle.
- Support for **private investment** in publicly accessible stations. For example, Utrecht in the Netherlands offers \$1,750 USD for people to install a charger at homes or businesses, as long as they make the charger available to the public.
- **Electric carsharing services** are expanding access to EVs and EV charging around the world. Fleets of shared electric cars, like BlueIndy in Indianapolis, allow people to drive electric vehicles without needing to personally own one.

To facilitate the adoption of electric vehicles locally, cities should develop comprehensive plans for electric vehicle charging.

Philadelphia's Experience Provides a Cautionary Tale

In 2007, Philadelphia started allowing electric vehicle owners to install a charging station in front of their home. Ten years later, 67 electric vehicle spots had been completed. Despite the permitted EV spots taking up only a small fraction of Philadelphia's available parking, opponents blamed the program for exacerbating parking shortages. The city put the program on hold and has proposed terminating the program, without a specific replacement option.

Ending the program, especially without a strategy to get charging infrastructure on the city's streets quickly, disincentives electric vehicle purchases and puts up hurdles for Philadelphia residents to participate in America's electric vehicle revolution.



An EV charging station on a lamppost in Los Angeles. Innovative solutions, like using existing infrastructure, can cut costs and allow rapid expansion of EV charging stations.



Electric carsharing programs, like BlueIndy in Indianapolis (above), expand access to electric vehicles.

For more information and the full report, please visit www.pennenvironment.org



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