



# What Can Cities Do to Prepare for the Electric Vehicle Transition?

Demand for electric vehicles is growing with no signs of a slowdown. According to Bloomberg New Energy Finance, there will be 559 million EVs on the road by 2040 - which is about 33% of the world's cars - and by then 55% of all new car sales will be electric. To accommodate this development, it is imperative for cities to ensure the right infrastructure is in place to not only meet this demand, but also encourage the adoption of electric vehicles by city residents.

Amid increasing global urgency to contain the disastrous effects of climate change, cities are under growing pressure to reduce carbon emissions. One way this can be accomplished is through electric vehicles in city centers. The challenge, however, is to deliver the right resources in the right places in order for the transition to be successful. Electric vehicles need to recharge their batteries in convenient locations, at appropriate times of day/night and for an acceptable price point as well as duration.

Widespread adoption of electric vehicles is still precluded by various factors such as limited choices when it comes to these car types, range anxiety due to perceived lack of charging infrastructure, as well as lack of enough policy incentives globally providing tax breaks to consumers to prompt EV purchases. An important aspect critical to furthering widespread EV adoption is adequate and appropriate charging infrastructure, and this is something that cities have the most control over. To meet future demand as well as help address the issues around climate change and pollution, cities need to implement appropriate charging infrastructure in their municipalities.

Every city is unique with its own distinguishing culture, government, features and problems. To design and implement the most suitable charging network, each city needs to begin by defining its electric vehicle/mobility objectives to create a blueprint for optimal EV infrastructure build and adoption. Additionally, any future known plans by EV automakers need to be considered in order to future proof the design.

It is important to identify and engage with the various stakeholders involved with the EV infrastructure decision-making process, and then develop an appropriate communications strategy. The goal is to align all parties involved and have them champion the initiative by promoting the benefits of EVs as much as possible to encourage adoption within the municipality.

There are four types of charging infrastructure points that need to be implemented to ensure charging coverage for all electric vehicle drivers, help eliminate range anxiety and prompt wider adoption. These include residential, workplace, destination, and in-transit charging points. While the first two are self-explanatory, destination chargers mean the location of publicly accessible places such as retail centers and hotels, and in-transit are located along highways and other public points that see a lot of traffic.

While differing standards and interoperability between electric vehicle network operators especially across regions is still an issue, strides towards uniformity are being made. Arcadis is currently helping a leading company in this space with the planning and construction of ultra-rapid chargers across Europe that will service different type of electric vehicle models.

Potential charging locations must be identified and secured – this should be done as soon as possible to ensure the site meets the necessary power and accessibility requirements, and that all permissions and agreements are in place. The right hardware must be determined along with a long-term business model to ensure the charging network remains available for use and is sustainable.



To enable the charger rollout, the right team must be in place to ensure the installation and commissioning process is seamless and meets required standards both for regulations and brand identity. This will include local highway authority teams, civil and electrical contractors experienced in charging infrastructure installations, and the developer commissioning the infrastructure. For the best customer experience, it is recommended to select a network operation model that works well with existing network operators and have an easy to use access and payment mechanism. Crucially, it must be ensured that a robust system is in place for managing and maintaining the infrastructure as reliability of service is key to end user confidence.



Cardiff County Council commissioned Arcadis to conduct a feasibility study to explore how electrically powered Ultra Low Emission Vehicles (ULEV) charging points could be integrated across the city of Cardiff. It had been named in a report as one of the most polluted cities in the UK and consequently decided to take action on air quality. Since the market share of ULEV vehicles is growing, it was critical that the necessary infrastructure be in place to support this growth and support a cleaner transport system in the city.

Some oil conglomerates are already taking steps to prepare for a future with less petrol driven powered vehicles. Arcadis worked with Ecotricity on a multi-disciplinary design with project and commercial management of installing electric vehicle rapid chargers at 30 petrol stations in the UK. If cities work with petrol stations to set up EV charging points, it would help provide additional convenience for residents and encourage the take up of these vehicle types.

The proliferation of electric vehicles is something that will continue and there is currently no indication of this abating. In order for this transition to happen effectively, it is crucial for cities and all stakeholders involved work together and put the appropriate infrastructure in place.

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