

How to electrify a fleet?

5 questions mobility providers are asking

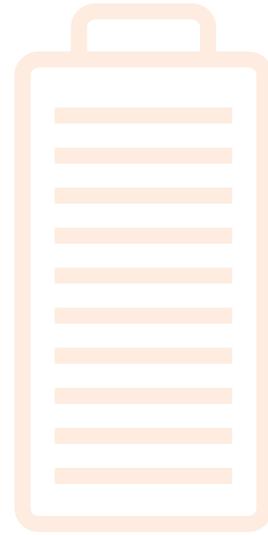
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Why electrify?

Before the how, let's start with the why. Cities across the globe are aiming to be cleaner by 2030. That means big changes for urban transportation. London, Rome, Barcelona and at least 20 more European cities aim to meet their sustainability goals by banning cars powered by internal combustion engines (ICEs) and encouraging urban mobility fleets to go green.

Growing consumer preference for clean travel and the falling cost of electric vehicle (EV) ownership make the case for electrification even more powerful. Yet for mobility providers to go electric, much depends on the willingness of cities and regions to provide a supportive economic landscape and much-needed infrastructure.



The 5 big questions

Despite the many good reasons to electrify micromobility, buses and on-demand services, it brings a unique set of challenges – like how can chargers be shared by a fleet? How do services organize battery swaps for electric scooters? This eBook explores five big questions mobility providers are asking themselves about electrifying their fleets.



In fact, city transportation is already changing...

Cleaner ride-hailing fleets

Uber has committed to all of its rides in the US, Canada and Europe being electric by 2030. It plans for its global fleet to be electric by 2040.

California Clean Miles Standard

To encourage zero emissions, operators must account for – and reduce – greenhouse gases from 2023.

Greener government

President Joe Biden has committed to replace the entire US federal fleet of cars, trucks and SUVs with EVs.

1 With an EV fleet, will I need to rethink where I operate?



“There is very little fast-charging infrastructure in Stockholm. You have to go outside the city... If you’re only operating in central Stockholm, that’s a challenge.”

Emil Ekdahl, Head of Development, Cabonline

Figuring out where to deploy is a critical first step for a provider, but if part of a city is poorly stocked with chargers, should you rethink where you operate? Effective asset allocation is central to keeping costs low and coverage high. That means understanding demand in the context of charger availability.

More dynamic operations

A key success factor in electrification is understanding the location, capacity and

availability of chargers alongside real-time data on battery status. While providers might have EVs in service, only a detailed level of fleet knowledge will support widespread electrification. If providers can better identify high-demand areas and predict hotspots, then deployment can become more efficient. Places with few chargers shouldn’t be no-go areas. If providers can track vehicles and understand real-time battery load, they can confidently assign rides in tricky locations to drivers with enough range to make the trip – and make it back.

Extending operational zones

Complementing an existing transit network with assets deployed around stations can provide better coverage across a city. That's fine for ride-hailing, but for bikes and scooters, it means investment. Placing docks in and around stations, high footfall areas and pedestrianized zones is important. Get them in the right place and they can support seamless multi-modal journeys.

Getting placement right means understanding key access points to buildings and high-traffic areas across the city. When you know the location of the crowd – and the time it appears – it's an opportunity to improve convenience, improve asset utilization, loyalty and profit.



Discover more about HERE's urban mobility solution.



How HERE helps

Mobility providers can optimize daily operations with a better understanding of the zones where they operate.

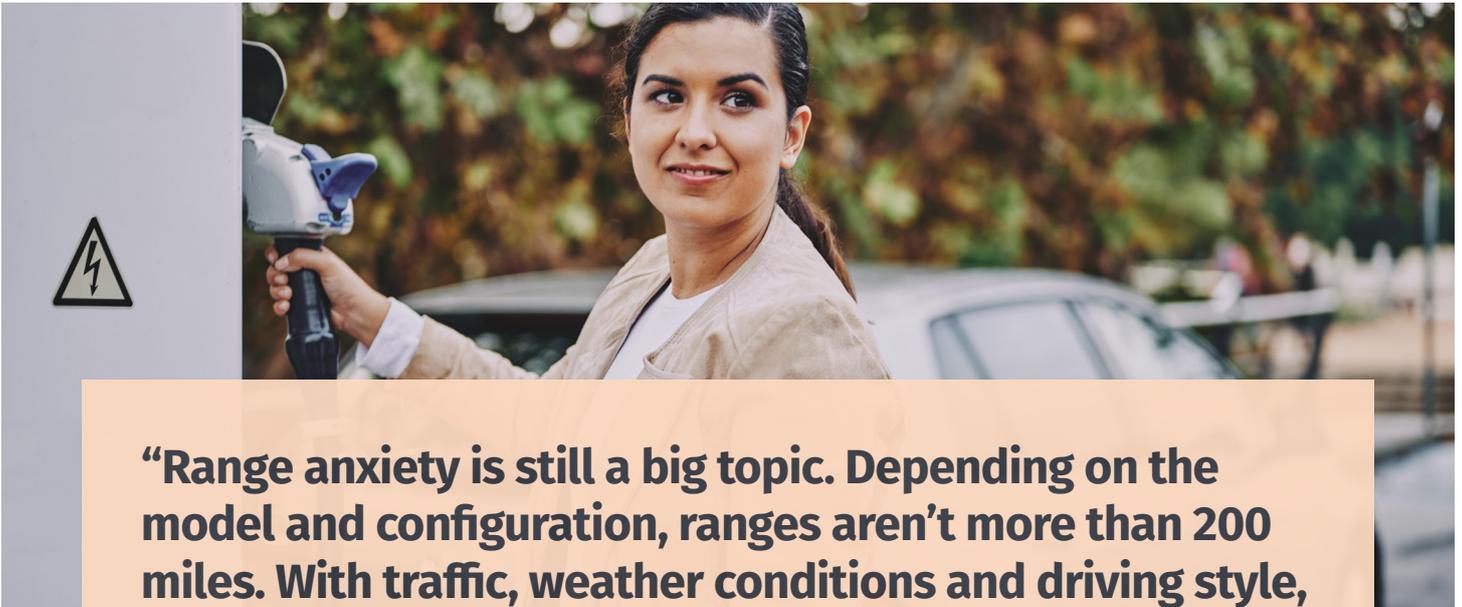
HERE Map Data provides more than 1,000 map attributions for display and search, to help localize operations to a specific network and easily track assets. →

HERE Transit delivers valuable insights to help solve complex commuting problems. →

The **Intermodal Routing API** enables developers to combine car, pedestrian and public transportation in a single route, with added information on parking near transit stops. →

HERE Cellular Signals helps predict network connectivity along a route and determine the streaming potential. →

2 How do I convince drivers to electrify?



“Range anxiety is still a big topic. Depending on the model and configuration, ranges aren’t more than 200 miles. With traffic, weather conditions and driving style, that can go down 50%. This can occur unexpectedly.”

Carolin Reichert, VP Connected Mobility Solutions e-Mobility, Bosch.

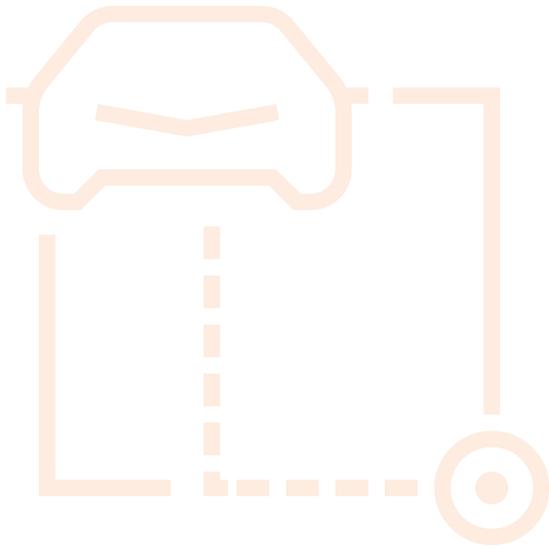
The average US driver may travel less than 30 miles a day, yet fear of running out of charge is still a reason why people don’t want to invest in an EV. Providers may even harbor their own doubts if range is limited. So, how do you overcome this anxiety?

Understand your fleet to serve drivers better

On-demand operators should understand the capability of their EV fleets, including

things like battery capacity, range and charger type. This helps ensure drivers don’t run out of charge and miss profitable rides. Adding this peace of mind to drivers also supports the case for electrification.

Providers can reassure drivers that smarter planning will mean they won’t lose revenue as charging will be brief, occur infrequently, and take place when they’d otherwise be idle.



Specialized routing for EVs

Location technology supports EV-specific route planning with information on things that impact battery charge – like topography, road geometry, real time and historical traffic patterns. Attributes like this can be synced to a vehicle’s consumption model and adjusted for driving style, load or even weather conditions.

Tackling driver concerns

What about offsetting a driver’s range anxiety with more informed planning? Can smarter allocation support a driver’s earnings by ensuring demand is met in an area, without scores of vehicles on standby? Streamlining operations around demand could be a win-win for drivers and operators.



How HERE helps

Find out how HERE and Hyundai are combatting range anxiety [→](#)

The EV Routing feature of **HERE Routing API** offers EV-specific options, such as energy consumption and routing via charging stations. Learn how HERE’s EV Routing helps combat range anxiety. [→](#)

3 How do I charge a fleet during a busy shift?



“After range anxiety there is charging anxiety. This is the second important hurdle for drivers to buy an electric vehicle.”

Carolin Reichert, VP Connected Mobility Solutions e-Mobility, Bosch.

The availability and time taken to charge are critical challenges for mobility fleets looking to electrify. Even if 80% of EV charging in the US occurs at home, providers need to plan shifts around top-up charging.

Home charging, of course, isn't an option for scooters and buses. They need reliable battery swaps, dedicated charging points and depots fitted for charging, energy generation and storage.

How on-the-go charging is made possible.

In cities with uneven charger distribution, drivers don't want a lengthy commute mid-shift to a charging point. Variations in range and charger location are a challenge, but a coordinated use of infrastructure can deliver for drivers, providers and riders.

With real-time tracking of assets, traffic, battery levels, road and driver characteristics, ride-hailers can deliver frictionless rides, while regularly dispatching drivers to top up charge. Location technology can optimize routing by minimizing charging stops and reducing charging times, based on the vehicle's consumption model.



How HERE helps

HERE EV Charge Points helps locate the right charger with details on brands, real-time availability, subscription and pricing information. →

HERE Routing API delivers routes optimized for EVs using drive times, charging duration, charger locations and charge needed to reach a destination. →

Location insights on where people are located and how they move in cities help optimize asset deployment and the placement of chargers.

4

Electric vehicles cost a lot more, right?



“For us, sustainability is being pushed by our drive to win public tenders. We have to match and excel for those. If we push too hard in electrifying our fleet, it will be very expensive. We need to find a balance between cost and requirements.”

Emil Ekdahl, Head of Development, Cabonline

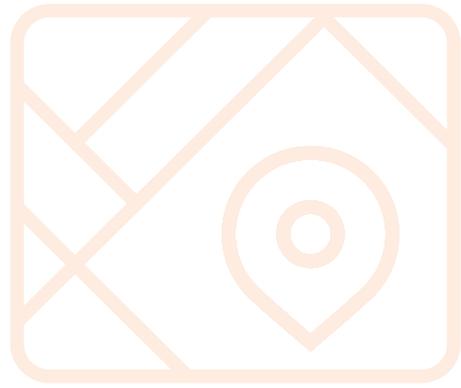
The up-front cost of an EV is typically more than an ICE equivalent. The potential financial impact of limited EV range adds an extra layer of complexity. Additional cost isn't just limited to cars and vans, of course. Bikes and scooters require docks and replaceable batteries; and buses need energy storage, investment for charging and networked charging points.

Depends on where you operate

The electric car rental market is expected to grow dramatically over the next few years, but converting your fleet isn't going to happen overnight or at the same speed around the world. In Norway, for example, abundant charging and tax incentives make EV ownership common – and easier. Yet next door in Sweden, electrification isn't as advanced. Electrification around the world is likely to be driven by the need to meet requirements of customers – both commercial and private.

Consumers are going green, too

Clean travel is becoming a selling point for individual riders. Several providers already let customers specify rides in hybrids or EVs, and some even charge a premium that many drivers are willing to pay. By simplifying journey planning and providing better ETAs, operators can make it easier for riders who want to personalize their journeys and travel more sustainably.



Costs are trending downward

Electrification is the main reason the shared mobility market is set to grow*. The good news is that as batteries get more affordable and new technologies standardize, the up-front cost will tumble. At this point, the lower maintenance and running costs of an EV make even more sense. In fact, over its lifetime, an EV can be the more cost-effective option.

New sources of revenue are opening up

Ever thought of a bus as a battery? Admittedly, the idea is in the early stages, but distributed energy strategies could be a future revenue source. Small, on-site units could decentralize power generation, bringing it into depots. Energy could be generated, stored, and released when needed. EVs used for on-demand services could similarly use vehicle-to-grid (V2G) transactions to supply surplus energy when not in use.



*Frost & Sullivan

5 Scooters end up everywhere. How do you make operations more efficient?

“Recharging, battery swap and moving assets are a big part of costs for mobility providers. If the availability of a fleet can be increased with more efficient operations, there is a better chance to generate higher revenues and be more profitable.”

Christian Lang, Co-Founder, Surve Mobility

Charging, servicing and moving shared scooters and cars is a big part of a mobility provider’s operational cost. As micro-mobility becomes more widespread, the need to optimize maintenance of this kind grows greater. Insight on charge points, location of assets and battery levels helps providers plan maintenance tasks more efficiently, getting vehicles back into service quickly. This allows more assets to be put in places they’re needed most.

Apply real-time information

Maintenance crews can use intelligent, EV-specific routes to make swapping batteries and retrieving scooters more efficient. This is possible if tasks and routes are based on service insights, such as which assets need to be repaired or moved to a new location.

Real-time tracking of asset status, traffic flow, weather and other factors impacting demand, could help create a dynamic understanding of a city’s needs. This feeds back into service planning for smarter, faster maintenance.



Customer-centric infrastructure

The placement of depots, hubs and chargers is a key part of operational planning. Location technology helps clarify how people and traffic move. This allows operators to combine public maps with their own insights to get infrastructure in just the right spot.

Blend data on private spaces with public information

The best place for a dock might be in a private or pedestrian area, a station or retail venue. With the right map, operatives can seamlessly transition between public and private spaces. By adding proprietary data to maps – like the location of their docks – providers can enhance operational intelligence and task efficiency on the ground.



How HERE helps

Find out how HERE helps you create customized and private maps for greater EV fleet efficiency.

Use **HERE Marketplace** to integrate your data with third-party datasets or the location of assets to create a unique world view. [→](#)

HERE SDK, which helps you integrate location features into apps, includes EV routing capabilities [→](#)



You may also be interested in:



How else do we help mobility operations?

See the solution [→](#)



Transform anxiety to delight for EV drivers

Watch the video [→](#)



Fast, reliable electric vehicle charging is closer than you think

Read the blog [→](#)

Want to know more about location-powered mobility services?

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About HERE Technologies

HERE, a location data and technology platform, moves people, businesses and cities forward by harnessing the power of location. By leveraging our open platform, we empower our customers to achieve better outcomes – from helping a city manage its infrastructure or a business optimize its assets to guiding drivers to their destination safely. To learn more about HERE, including our new generation of cloud-based location platform services, visit 360.here.com and here.com.