

## Update on the EV Infrastructure Strategy

Date: 19<sup>th</sup> February 2024

Report of: Chief Officer Climate, Energy and Green Spaces

Report to: Climate Emergency Advisory Committee

Will the decision be open for call in?  Yes  No

Does the report contain confidential or exempt information?  Yes  No

### Brief summary

#### Electric Vehicle Infrastructure Strategy (EVCI) Update

The Leeds Best City Ambition has Net Zero as a clear objective, decarbonisation of transport is a key pillar of the work that needs to be delivered to achieve that goal. The Connecting Leeds Transport Strategy therefore also has a focus on decarbonisation based upon delivering changes to the way we move people and goods around the city. Within the Transport Strategy there are key steps identified to deliver the changes needed in transport to meet the 2030 net zero ambition; one of these is the need to encourage and lead in the uptake of zero emission vehicles in freight, public and private transport.

A key facilitator of this uptake will be to ensure that there is sufficient vehicle charging infrastructure in place. UK average data shows that burning a litre of diesel produces around 2.62kgs of carbon dioxide and a litre of petrol about 2.39kgs. Using UK average new car fuel consumption data for 2019 (according to the RAC Foundation this is 49.2mpg for petrol or 55.4mpg for diesel) offsetting 4.5million miles would save almost 1,000,000 kg of tailpipe carbon emissions regardless of whether the journeys were replacing diesel or petrol use. The average UK driver will cover 7,400 miles per year, as such just 608 zero emission plug-in vehicles would deliver that saving of 1,000,000kg of CO<sub>2</sub> emissions annually. In addition to the carbon reduction benefits, shifting to zero emission vehicles would also result in considerable health benefits because of improved air quality with the reduction in NO<sub>x</sub> and particulates from the tailpipe in comparison to diesel or petrol vehicles.

### Recommendations

- a) That the contents of this report are noted as an update on progress made since the Electric Vehicle Infrastructure Strategy was approved in 2022.
- b) That the need to support the transition of transport towards zero-emission as a key component of the councils Net Zero ambitions is re-enforced.

## What is this report about?

- The EVCI Strategy identified the key actions and the role of the council in facilitating and supporting the development of infrastructure required to support the transition to zero-tailpipe emission vehicles.
  - This report updates on the actions taken in delivery of those actions.
1. The Leeds Best City Ambition has Net Zero as a clear objective, decarbonisation of transport is a key pillar of the work that needs to be delivered to achieve that goal. The Connecting Leeds Transport Strategy therefore also has a focus on decarbonisation based upon delivering changes to the way we move people and goods around the city. Within the Transport Strategy there are key steps identified to deliver the changes needed in transport to meet the 2030 net zero ambition; one of these is the need to encourage and lead in the uptake of zero emission vehicles in freight, public and private transport.
  2. A key facilitator of this uptake will be to ensure that there is sufficient vehicle charging infrastructure in place. UK average data shows that burning a litre of diesel produces around 2.62kgs of carbon dioxide and a litre of petrol about 2.39kgs. Using UK average new car fuel consumption data for 2019 (according to the RAC Foundation this is 49.2mpg for petrol or 55.4mpg for diesel) offsetting 4.5million miles would save almost 1,000,000 kg of tailpipe carbon emissions regardless of whether the journeys were replacing diesel or petrol use. The average UK driver will cover 7,400 miles per year, as such just 608 zero emission plug-in vehicles would deliver that saving of 1,000,000kg of CO2 emissions annually. In addition to the carbon reduction benefits, shifting to zero emission vehicles would also result in considerable health benefits because of improved air quality with the reduction in NOx and particulates from the tailpipe in comparison to diesel or petrol vehicles.
  3. The EVCI Strategy identified the key actions and the role of the council in facilitating and supporting the development of infrastructure required to support the transition to zero-tailpipe emission vehicles. This report updates on the actions taken in delivery of those actions.
  4. The EVCI stated that to meet the challenge of decarbonisation of transport through city scale adoption of EV, there is a need for the council to:
    - **Work with Charge Point Operator's (CPO's) to identify opportunities to facilitate commercial investment in infrastructure on both LCC estate and private land.** This has been carried out with several opportunities being established at various stages of development that all aim to attract investment from the commercial sector to support the delivery and maintenance of EV infrastructure as well as seek to identify revenue opportunities for the authority. This work is being supplemented with the authority continuing to successfully secure public funding, with over £16m of Local Electric Vehicle Infrastructure (LEVI) funding having been allocated to the West Yorkshire Region to support delivery of charging over the next few years aligned to the commercial investment we are also securing.
    - **Facilitate the development of on-street charging hub facilities to widen access to EV charging. This would be in appropriate locations that facilitate and support high utilisation, shared use of charging facilities in public bays, rather than directly located outside domestic properties.** This work is underway with identification of suitable on street locations around the city, with selection based upon key factors, such as areas where housing typically lacks off street parking, therefore restricting domestic charging opportunities. We have worked with the University of Leeds in mapping the city to identify

these areas, as well as overlaying data on projected EV uptake, grid connectivity and site feasibility in line with other Highways user requirements.

- **Develop the technical design principles for where on-street charging can be delivered and the designs, specification and impacts of such schemes.** The Highways and Transport service are working on evaluating on street charging layouts and site plans with charge point operators to commence delivery of on street charging. This will be delivered utilising a range of potential charging speeds to ensure appropriate charging for the locations.
- **Recognise the council as a facilitator, for example supporting the development of commercial charge provision and Electric Vehicle based car park developments. Ensuring that key council services such as Planning and Highways & Transport are aligned in supporting this commercial development and ensuring that it aligns with the Transport Strategy and the wider Leeds targets for decarbonisation.** This work is ongoing with the key stakeholders across the council working together to support the development and expansion of charging both within and beyond the council estate. Highways and Transport are engaged in on street design, as well as exploring charger types, planning and asset management on land use and commercial opportunities and legal and procurement services in the development of agreements and contracts with charge point operators to ensure that best value is secured for both the council and end users of networks. This work is also being replicated across the region with close working with the other four West Yorkshire Districts and the Combined Authority on development and delivery of a West Yorkshire EV Strategy as well as the delivery of the LEVI programme.
- **Engage proactively with developers on EV hubs/EV-car parks, or similar commercial infrastructure plans as well as with the wider community to demonstrate the benefits of EV uptake for the city and wider environment.** This work is ongoing with regular engagement with fuel operators, charge point providers and other key stakeholders to ensure that Leeds remains an attractive destination for EV charging investment and delivery as well as supporting the uptake of plug-in electric vehicles in the city.

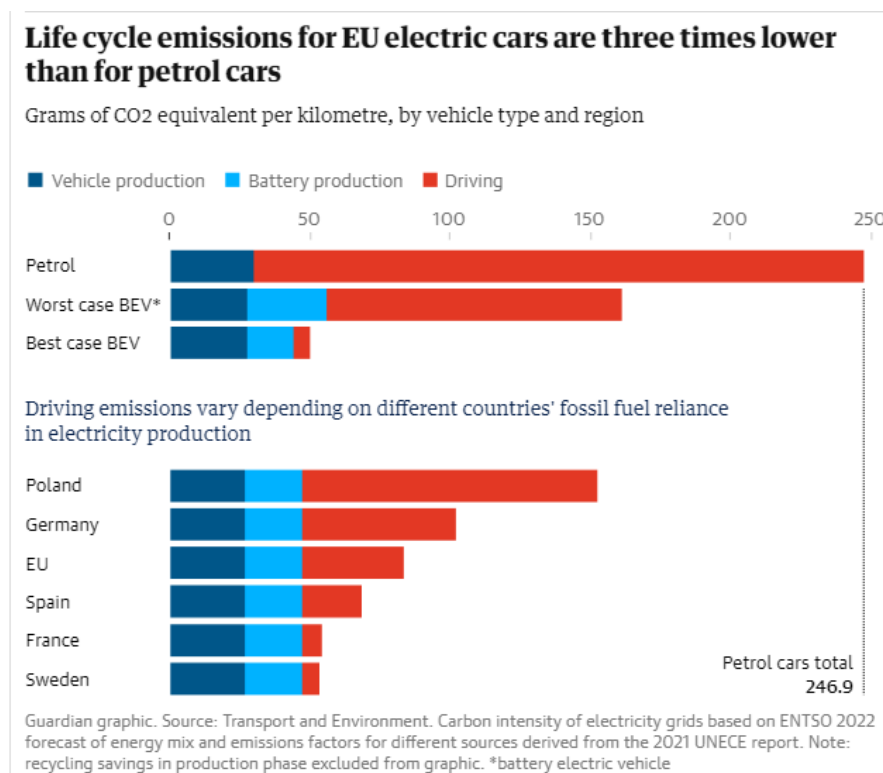
## 5. Charge point provision

Core Cities comparison

6. The below table shows the provision of public charge infrastructure across the core cities, with the provision of rapid charging also highlighted, along with the availability of charging per 100,000 of population. Whilst the number of public chargers is an important metric, the bulk of charging is done at the home or workplace, with many thousands of private chargers installed across the city at homes and offices/occupational settings. Leeds planning conditions have for many years now required the provision of electric vehicle charging at new developments, that has supported the significant number of plug in vehicles registered in the city.

City	Public Chargers (Rapid)	Public Chargers/100k of population
Liverpool	581 (29)	120
Leeds	499 (104)	61
Birmingham	498 (160)	44
Glasgow	376 (78)	59
Sheffield	236 (67)	43
Nottingham	226 (73)	71
Manchester	160 (60)	33
Bristol	139 (41)	30
Cardiff	135 (45)	38
Newcastle	130 (29)	44
Belfast	114 (17)	33

7. The above data shows that Leeds is among the top-ranking cities in terms of all 3 metrics, the total number of public charges (2<sup>nd</sup>), the number of rapid chargers (2<sup>nd</sup>) (defined as 50kW or above) and the number of chargers per head of population (3<sup>rd</sup>). There are now over 50,000 plug-in vehicles registered in Leeds according to the DVLA data and the House of Commons library dashboard as of January 2024.
8. There remain some misconceptions regarding electric vehicles that can prevent uptake, however whilst some of the perceived barriers to switching to EV may have been more understandable some years ago, plug-in vehicles have developed significantly in recent years.
9. MOT data in 2023 revealed that less than 5% of UK vehicles travel over 15,000 miles per year, or 41 miles per day - the average car journey length in the UK is just 8.4 miles. This annual mileage per vehicle data provides a really valuable insight for EV charging provision. Over half the vehicles in Great Britain travel less than 100 miles per week. As most electric vehicles have a range of over 200 miles then this suggests that planning for a once a fortnightly charge could be a good option for most people, with even just a weekly charge offering even more reassurance on range.
10. Some are also concerned about the 'Carbon Debt' of EV's from the manufacturing process, however multiple studies that look at the entire lifecycle of vehicles and their carbon footprint have shown that this concern is misplaced. There is a clear whole life carbon saving from use of electric vehicles in comparison to ICE vehicles, that can be improved further as the blend of electricity sources pivots further away from fossil fuel based towards renewables, both in terms of the energy used in production and in the fuel for driving. The below graphic shows the whole life carbon emissions for petrol cars compared with best- and worst-case EV emissions (best and worst case is based on the proportion of renewable on the grid that fuel the vehicles). This data is based on a European average.



11. The cost of electric vehicles can also be seen as a barrier to transitioning, however the picture on that is changing too. Bloomberg New Energy Finance predicts that electric SUVs in Europe will hit price parity with petrol equivalents as early as 2025, whilst the US will be three years behind because of a preference for larger batteries. Battery costs themselves fell by 14% over the past year, the consultancy said.

12. Data from Auto Trader, a UK car sales website, suggests that price parity is already here for some second-hand electric models versus their closest internal combustion engine equivalent. In September 2022 a three-year-old Renault Clio (with a petrol engine) was £7,000 cheaper than a three-year-old electric Renault Zoe; in November there was no price gap. In the same period a Jaguar F-Pace started out £13,000 cheaper than an electric Jaguar I-Pace but now the latter is £4,000 cheaper.
13. On the total cost of ownership, it already appears to make sense for most people to switch. The UK government's authoritative Climate Change Committee said in October: "Electric vehicles will be significantly cheaper than petrol and diesel vehicles to own and operate over their lifetimes, so any undermining of their rollout will ultimately increase costs for consumers."
14. Finally, there is a fear regarding the fire risk presented by EV's with the media often portraying EV's as more likely to catch fire than petrol or diesel vehicles. This however has been disproven with the opposite in fact the case. Australia's Department of Defence funded EV FireSafe to investigate the question. It found there was a 0.0012% chance of a electric vehicle battery catching fire, compared with a 0.1% chance for internal combustion engine cars. (The Home Office said it was unable to provide data for the UK.). Tesla - the world's biggest maker of electric cars – has pointed to the number of fires on US roads involving Teslas from 2012 to 2021 was 11 times lower per mile than the figure for all cars, the vast majority of which have petrol or diesel engines.
15. Charge Point Provision & Projects
16. As stated in the EVCI Strategy the role of Leeds City Council is to facilitate and support the delivery of infrastructure and there are several projects underway in support of that.
17. LEVI funding is designed to assist with supporting provision of EV charging in areas where charging infrastructure is lacking and where the commercial investment case may be more challenging, therefore without intervention the areas could wait longer for charging to be provided if left to the market. The LEVI funding is also designed to support provision in areas of deprivation, housing types that lack off street parking or areas where connection costs to the grid may be higher and therefore require subsidy.
18. Leeds is working with the Combined Authority in delivery of LEVI funded charging in line with government process that has directed the allocation of budget at the CA level. The scheme will be delivered across three phases, a pilot phase that aims to delivery charging in 20-30 locations with up to 100 charge connectors, followed by two city scale phases that in total will aim to deliver charging across approximately 250-300 locations with 1000 or more connectors provided.
19. Additionally, Leeds City Council is working with operators on a range of projects to deliver charging infrastructure that will be fully funded by the commercial sector that will again aim to delivery additional numbers of charging facilities across the city. All of these projects will also aim to secure best value for the end user as well as the council with an approach of utilising a multi-operator model to drive competition in terms of price per kWh when charging as well as incentives operators to ensure their networks are reliable and resilient.

## Challenges and Risks

20. The key challenges to delivery of EV uptake and infrastructure are.
  - **Grid connection** – all public charging requires successful connection to the energy grid; this means that the charge point operators must ensure that there is sufficient capacity on the grid through applications to the District Network Operator (DNO). This means that not all sites are suitable for delivery of charging if the DNO cannot provide sufficient power to support the installation. This is a challenge that we are working to mitigate through extensive liaison with the charge point operators, the DNO – Northern Power Grid – as well as at a

national level through the Office for Zero Emission Vehicles and the Energy Savings Trust (the delivery arm of OZEV for LEVI funding).

- **Site selection** – we must ensure that the needs of all are considered when identifying sites for charging. In particular with on-street charging, the Connecting Leeds Strategy must be aligned with. As such the needs of all road users and pedestrians need to be considered, so we need to ensure that charging does not create issues for those who travel actively, with plans for other road measures, such as bus lanes, cycle paths and other highway schemes. Pavements must remain accessible to all users, so there must be consideration of pavement width and design of charging.
- **Accessibility** – the bulk of EV owners currently have their own charging point installed at home. Development of infrastructure needs to be delivered to ensure that EV charging is accessible to those who cannot charge at home, which in Leeds covers around 30% of households. This means that we need to look at the areas where home charging isn't possible due to housing type or look at other methods of allowing charging for those who lack off street parking. This is something we are working with Highways and Transport on with different technical solutions that will facilitate charging by the home for those without garages or drives being investigated for potential pilots/trials in Leeds. We also await information from government who have promised to issue guidance to local authorities regarding on street charging solutions.

### **What impact will this proposal have?**

21. This work to support the transition to zero emission vehicles is both a component part of the Connecting Leeds Strategy and the Best City Net Zero ambition. The associated air quality improvements from a transition away from combustion engine vehicles also supports Health & Wellbeing outcomes through improvement in air quality. Development of the green economy, in particular the opportunities for jobs and skills in the EV industry also supports inclusive growth.

### **How does this proposal impact the three pillars of the Best City Ambition?**

Health and Wellbeing

Inclusive Growth

Zero Carbon

22. This report highlights independent recognition of the city's progression towards the zero-carbon ambition.

### **What consultation and engagement has taken place?**

Wards affected:

Have ward members been consulted?

Yes

No

23. Engagement and consultation on EV infrastructure projects remains ongoing with internal and external stakeholders in respect of project delivery, air quality, jobs and skills and commercial opportunity.

### **What are the resource implications?**

24. There are no direct resource implications as a result of this report.

### **What are the key risks and how are they being managed?**

25. There are no specific risk management implications as a result of this report.

### **What are the legal implications?**

26. There are no direct legal implications as a result of this report.

### **Options, timescales and measuring success**

27. Ongoing reporting on the development of EV infrastructure delivered annually to Executive Board as part of the Climate Emergency programme updates. With separate project governance completed as part of delivery of schemes. The LEVI programme is expected to be delivered across at least a 3 year schedule.

### **What other options were considered?**

28. Not applicable

### **How will success be measured?**

29. Ongoing assessment on the number of plug-in vehicles, EV infrastructure are verified by using the House Of Commons Library data dashboards.

### **What is the timetable and who will be responsible for implementation?**

30. Not applicable

### **Appendices**

31. None

### **Background papers**

32. None