

# Coventry – Electric Vehicle Network

Business, Economy and Enterprise Scrutiny Board – Wednesday 11th January 2023

John Seddon – Head of Transport and Innovation

Shamala Evans-Gadgil - Programme Manager

[John.Seddon@coventry.gov.uk](mailto:John.Seddon@coventry.gov.uk)/[Shamala.Evans-Gadgil@coventry.gov.uk](mailto:Shamala.Evans-Gadgil@coventry.gov.uk)

# Coventry's Transport Strategy

- Built around four overarching objectives – informed by existing international, national and regional strategies
- Achieving these requires a significant change to the way we travel:
  - Away from car dependency – draft strategy is explicit that in future most people will not need to own a car to access the services they need
  - Towards walking, cycling and public transport first
- Main areas of activity:
  - 'Step change' in the city's public transport system (including Very Light Rail)
  - Much better infrastructure for walking and cycling
  - Targeted investment in the road network (i.e. not aimed at simply creating capacity for more cars)
  - Widespread electrification (of public and private transport)
  - Changes to the way we transport freight
  - Encouraging 'behaviour change'

1. Supporting the city's economic recovery and enabling long-term growth

2. Delivering a sustainable, low carbon transport system

3. Ensuring equality of opportunity

4. Maximising health and wellbeing

Approved 6<sup>th</sup> December 2022

# Coventry City Council

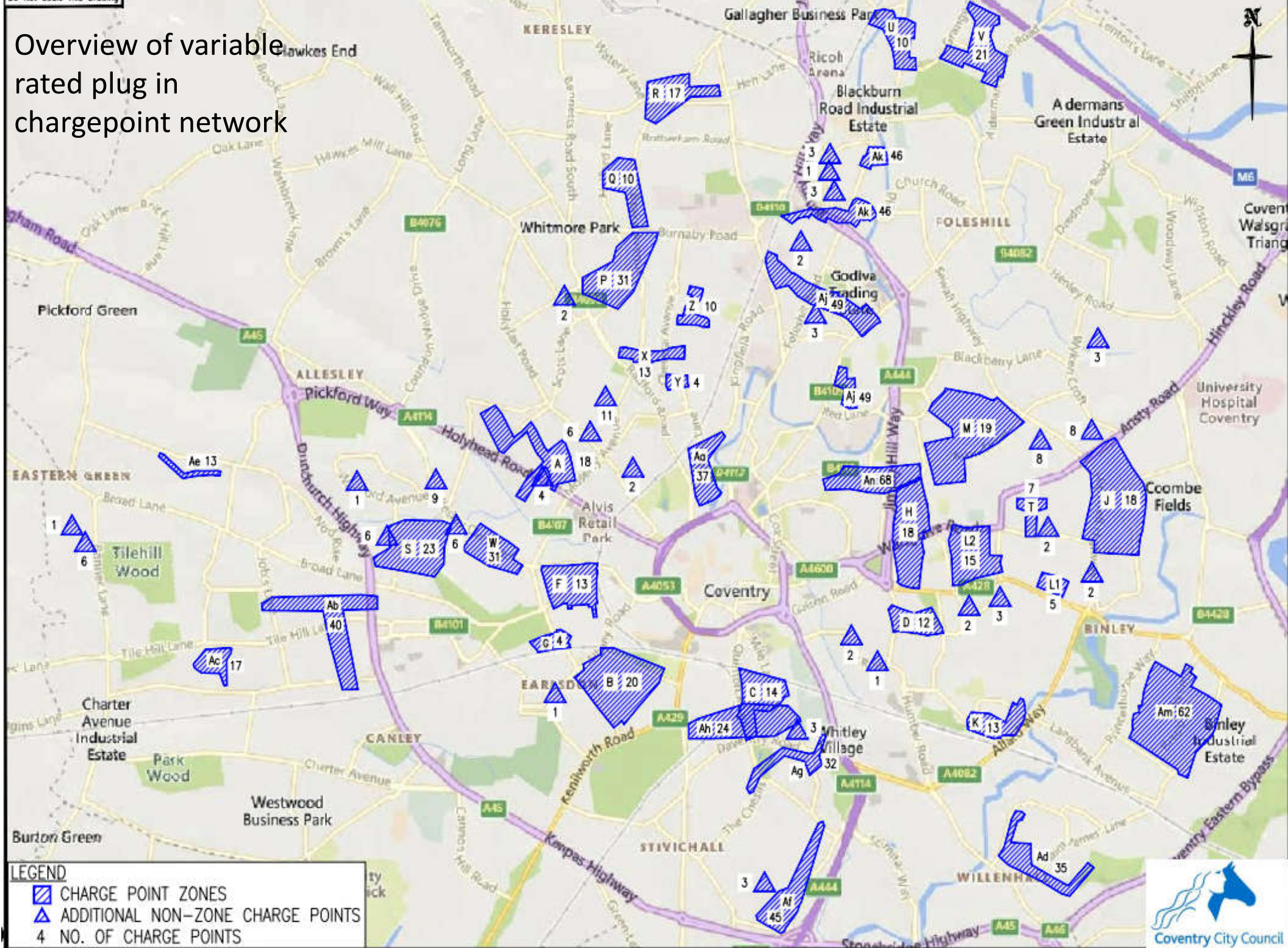
- Coventry has one of the most comprehensive EV charging networks outside London. 603 Public Chargers (includes single and dual sockets chargers with a further 157 becoming operational by January 2023. This will take the total to 744 EVCP capable of charging 1,030 electric vehicles at any one time.
- Work Place Charging –44 fast chargers at Council’s properties and Plug-in Coventry project to support charge point provision at business premises
- Ultra Low Emission Buses – Office for Zero Emission Vehicle (OZEV) grant funding of £2.255m for 10 electric buses in partnership with National Express – Launched end of August 2020
- All Electric Bus Town [AEBT] – Coventry secured funding of £50 million to fully electrify the bus fleet in the city and key corridors into Warwickshire – joint project with Warwickshire County Council and major bus companies. 130 double decker electric buses were ordered in January 2022 as first phase of the delivery programme.
- Electric Fleet First project – Coventry has been awarded funding by Highways England for a fleet of electric vans, pool cars and taxis for local businesses to try before they buy electric vehicles for their fleets.
- DynaCoV project – Dynamic Charging of Vehicles, a feasibility study project is underway, completed December 2021

# Developing an EV culture

- Central Government Funding
- Private sector investment
- Holistic approach of extending EV charging infrastructure to the wider city
- Access to Charge points in the City of Coventry for Electric Taxi's [Hackney carriages]
- Promote increase use of EV cars through workplace charging, home charging and onstreet charging
- Improve Air Quality
- Future Proofing for Emerging Technology
- Combination of VLR, all electric buses and electric taxi's making a fully electric public transport system in Coventry from 2025



# Overview of variable rated plug in chargepoint network





# Slow, Standard, Fast and Rapid Charging points

## Rapid Charging

*ULEV Taxi Infrastructure Project Siemen/ESB*



## Slow & Fast Charging

*Onstreet Residential Charging Scheme*

*Char.gy & Connected Kerb Ltd*



## Slow & Fast Charging

*Workplace Charging Scheme*

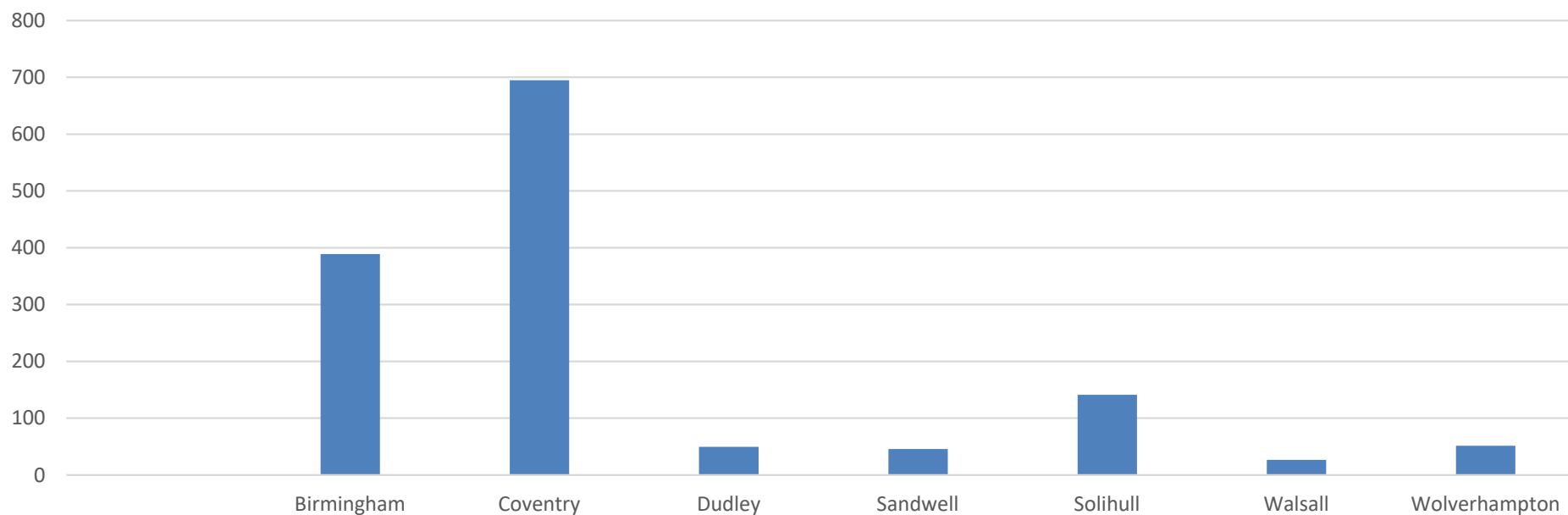


Coventry City Council has partnered with EO Charging to create one of the UK's only truly open fast charging networks

No more memberships, no more RFID cards & no more apps

# Dft Official Statistics: Electric vehicle charging device statistics: October 2022

Oct-22 (Total Charging Device)



Source: veh0131 - <https://www.gov.uk/government/statistics/electric-vehicle-charging-device-statistics-january-2022/electric-vehicle-charging-device-statistics-january-2022#:~:text=in%20April%202022,-,Headline%20figures,available%2C%205%2C156%20were%20rapid%20chargers>

# Background

- The first chargers were installed in September 2018
- In Coventry, there are:
  - 39x 50 kW chargers delivered by ESB
  - 373x slow-fast chargers delivered by Charg.y
  - 155x standard-fast chargers delivered by Connected Kerb Ltd
  - 36x standard-fast chargers delivered by EO Charging in two multi storey car parks
  - 44x standard-fast chargers delivered by EO Charging at CCC assets
- These chargers have been delivered using Office for Zero Emission Vehicle funding, chargepoint operator investment and CCC investment
- 1,004 EV owners are registered with Char.gy and 251 are registered with Connected Kerb, and are therefore reliant upon the on-street chargepoints for routine charging needs. This represents around a quarter of the 5,200 EVs registered in the city

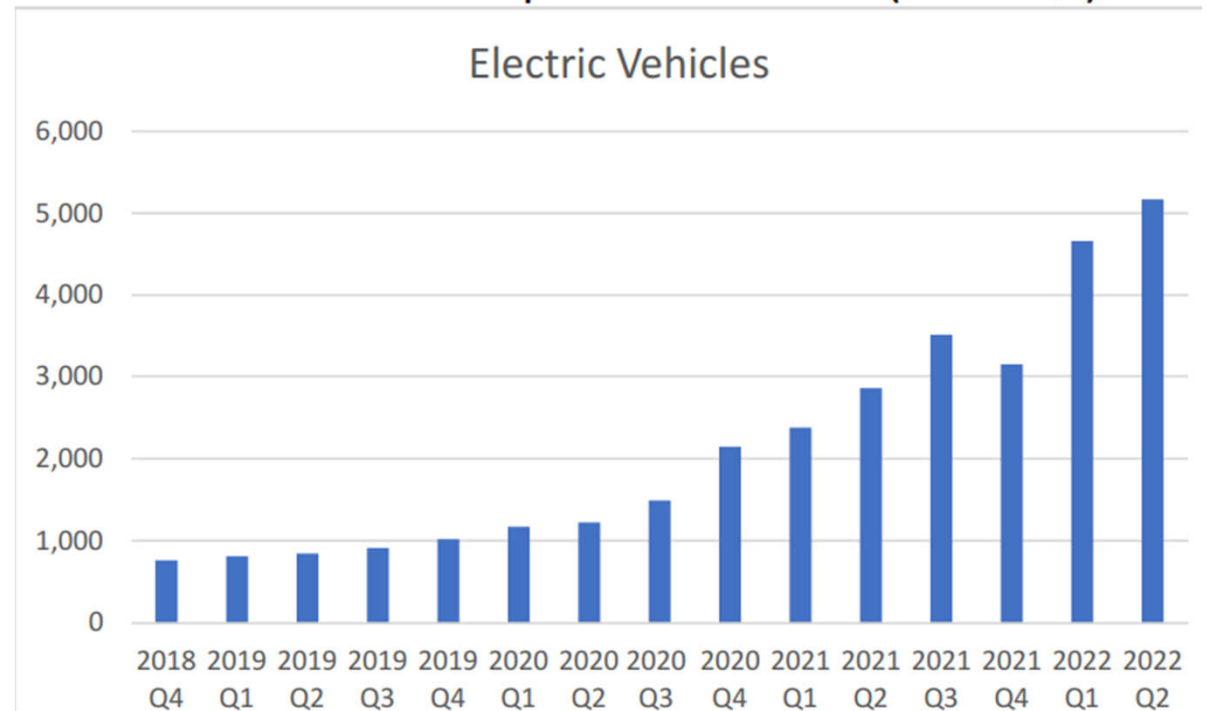


# Number of electric vehicles in Coventry

- This graph shows the increase in the number of electric vehicles registered in Coventry since Q4 2018.

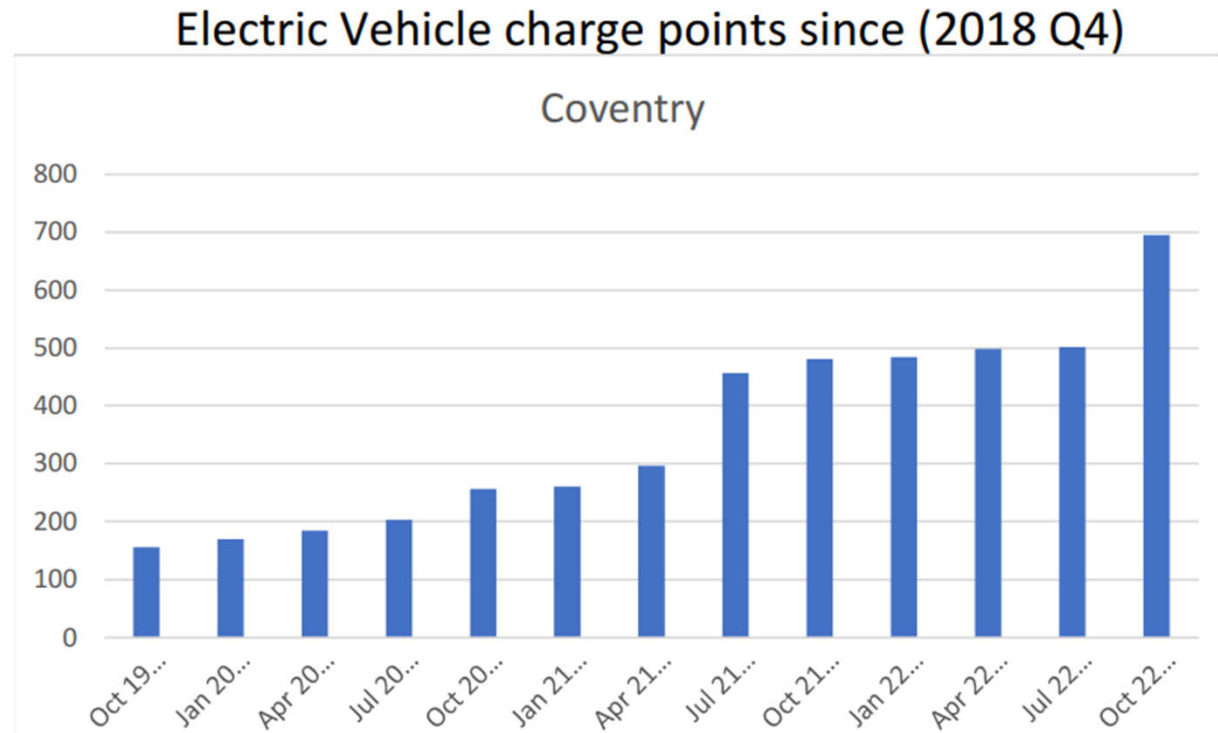
- The increase is significant, with 4,000 more electric vehicles registered in Q2 2022 than in Q4 2018
- There is a dip in 2021 Q4, but this promptly recovers in 2022 Q1

Electric Vehicle uptake data since (2018 Q4)



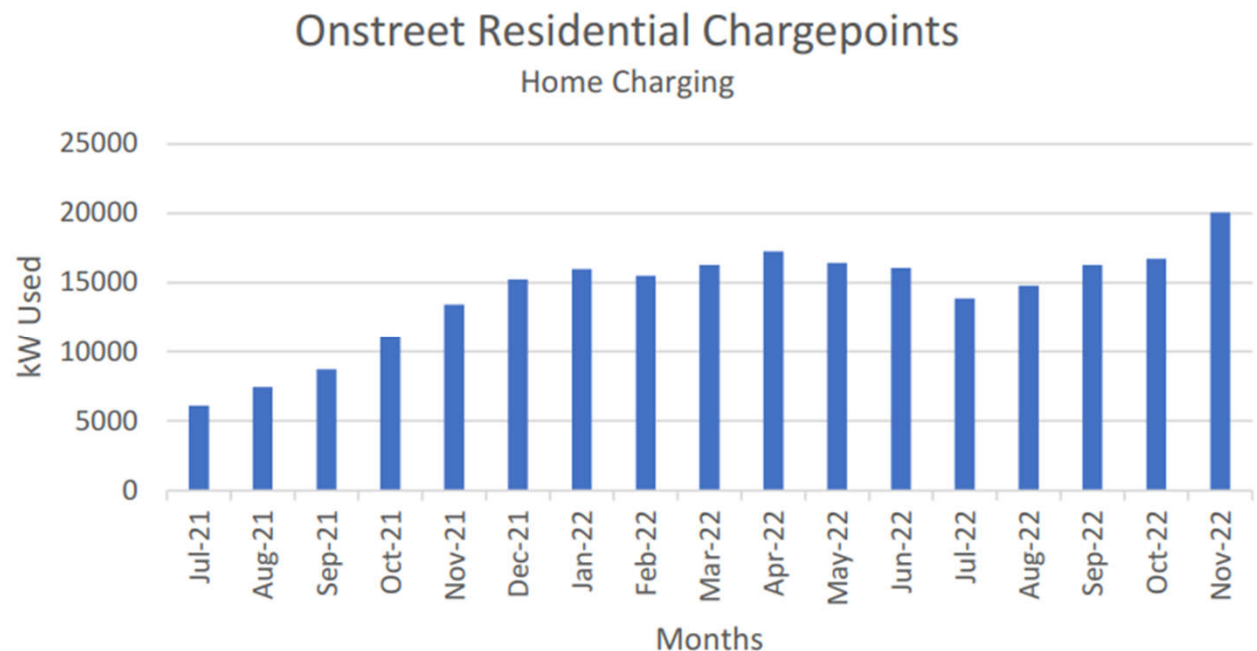
# Number of charging devices in Coventry

- This graph shows the number of charging devices in Coventry between October 2019 and October 2022
- Large increases can be seen in July 2021 and October 2022 where large scale charger installations were completed



# Residential charger usage graph

- This graph shows the usage of the residential chargers between July 2021 and November 2022
- There has been a significant increase in charger usage, with 15,000 kWh more used in November 2022 than July 2021
- There were less charging sessions in July 2022 but this is likely because of price increase and part upgrades to the chargers





# Charger zoning

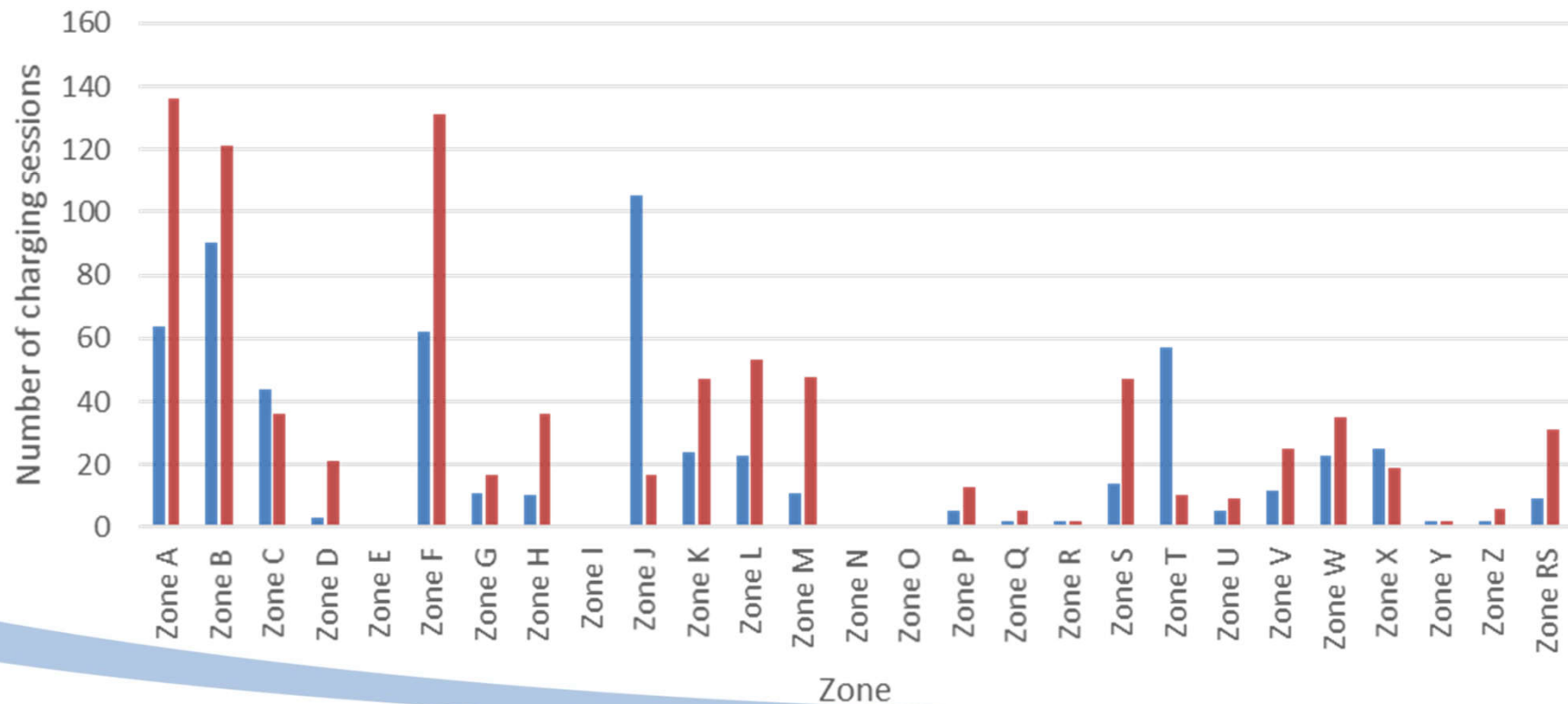
- Coventry was separated into different zones for charger delivery, as can be seen in this table

Zone A	Coundon	19	Zone P	Bablake and Radford	32
Zone B	Earlsdon	19	Zone Q	Bablake and Holbrook	14
Zone C	Cheylesmore	13	Zone R	Holbrook	15
Zone D	Lower Stoke	5	Zone S	Whoberley	21
Zone F	Chapelfield	16	Zone T	Lower Stoke	9
Zone G	Earlsdon North	2	Zone U	Longford	10
Zone H	Walsgrave	17	Zone V	Longford	19
Zone J	Wyken	16	Zone W	Henley	36
Zone K	Lower Stoke	12	Zone X	Wyken	12
Zone L	Lower Stoke	22	Zone Y	Radford	4
Zone M	Upper Stoke	20	Zone Z	Radford	10

# Charger usage by zone

- The graph shows that usage in most zones increased substantially from September 2021 to 2022

Bar chart showing the number of charging sessions per zone in September 2021 and 2022



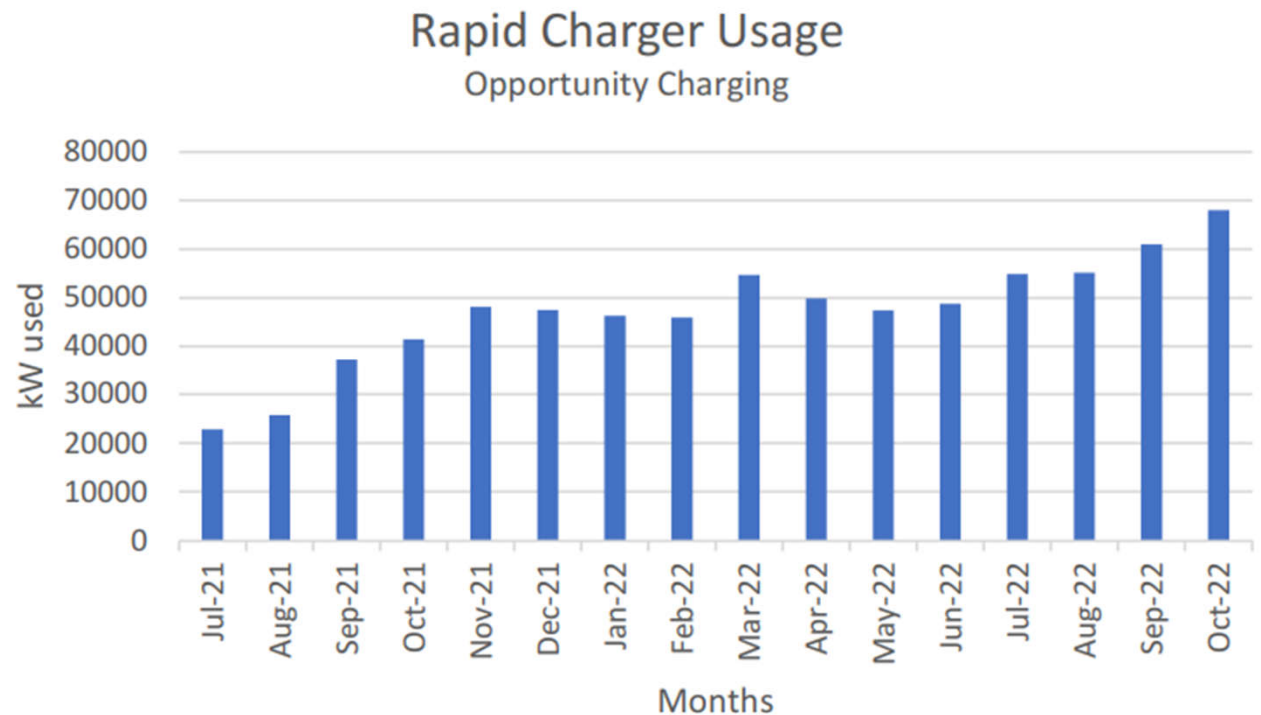
# Charger usage by zone - analysis

- The usage increased in Coundon, Earlsdon and Chapelfields areas
- The usage decreased in Wyken and one part of Lower Stoke. The reasons for this are not known, but possibly reflects the installation of charge points across the Lower Stoke area giving EV users more convenient charging options closer to home
- Bablake, Holbrook and Radford experienced very little chargepoint use, although usage is increasing from a low base.



# Rapid charger usage graph

- This graph shows usage over a 15 month period. This time period was chosen because all 39 rapid chargers had been installed
- Rapids chargers are for both, visitors and residents
- Usage dropped in April-June 2022, coinciding with an increase in the charging tariff. Usage has now recovered

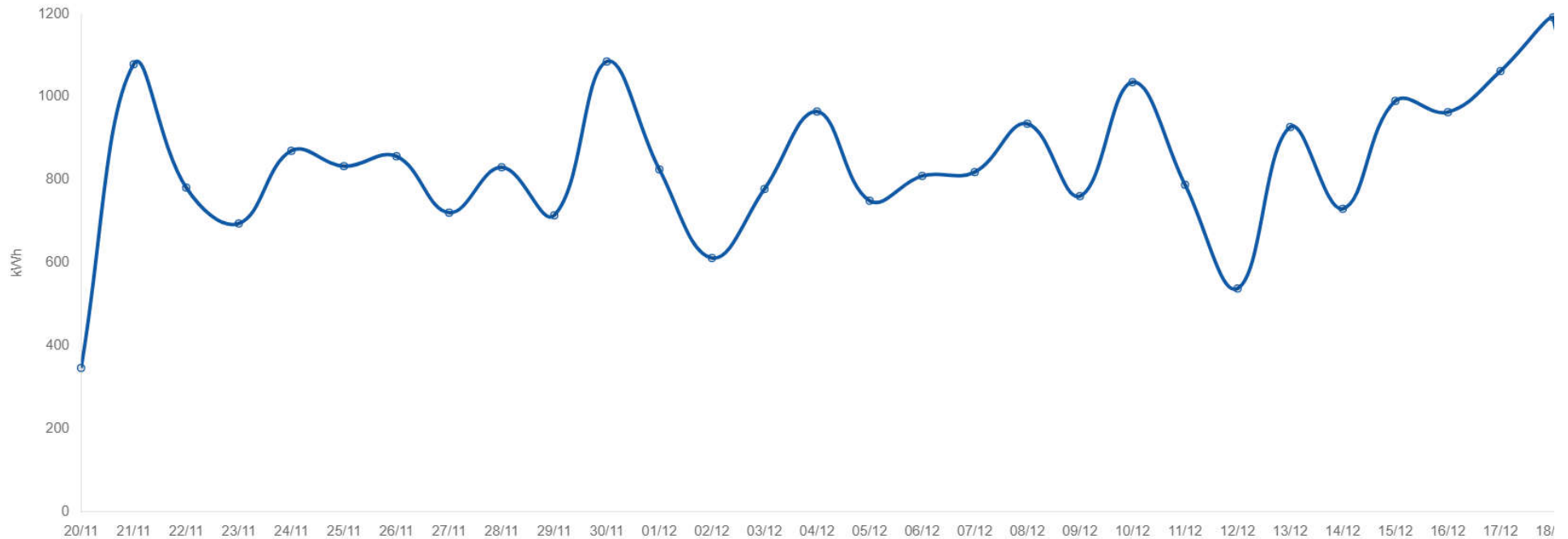


# Popular chargers

- This table shows the five most popular chargepoint sites in Coventry and the average number of charging sessions per month

	ID	Location	Zone	Average number of charging sessions
1	198	5 Queen Isabels Avenue	A	42
2	449	105 – 115 The Barley Lea	K	28
3	381	54 Shakleton Road	F	26
4	317	Opposite 108 Sir Thomas White's Road	F	23
5	1074	124 Bulwer Road	X	21

# Chargepoints Analytics from 20/11/22 to 18/12/22



Energy usage (kWh) was up by 35.9% and utilisation was up by 0.8%

This slide will be updated for 11.01.23



# Coventry City Council

## Coventry, AppyWay & Connected Kerb EV Bay Monitoring

### Use case

AppyWay is working in collaboration with Coventry City Council's EV provider, Connected Kerb to deploy IoT sensors in over 500 EV Bays across the authority.

### City Benefits

Bay occupancy data joined with ECV status creates efficiencies for the enforcement of anti-icing in EV Bays. This will increase up-time of the charge points for residents. The data also provides powerful data insights to Coventry for monitoring ongoing EV adoption.

### Resident Benefits

EV drivers will be able to see true real-time availability of EVCPs. Not only the status and whether the charge point is in use but also if the bay is occupied.

Partners



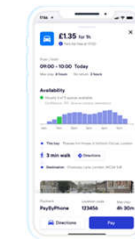
Bay Occupancy Sensor



Bay Occupancy Sensor



City back office



Resident mobile apps



Enforcement handhelds

# Coventry City Council

AppyWay Platform

## Surface mounted sensors



Surface mounted sensor detects vehicle occupancy and updates the platform

Real time parking bay occupancy data, back office analytics, and cashless management portal



Users utilise the mobile app to find available parking in advance and in real-time



VMS signs expose live occupancy for parking guidance



App and website real-time availability



Back office systems integration

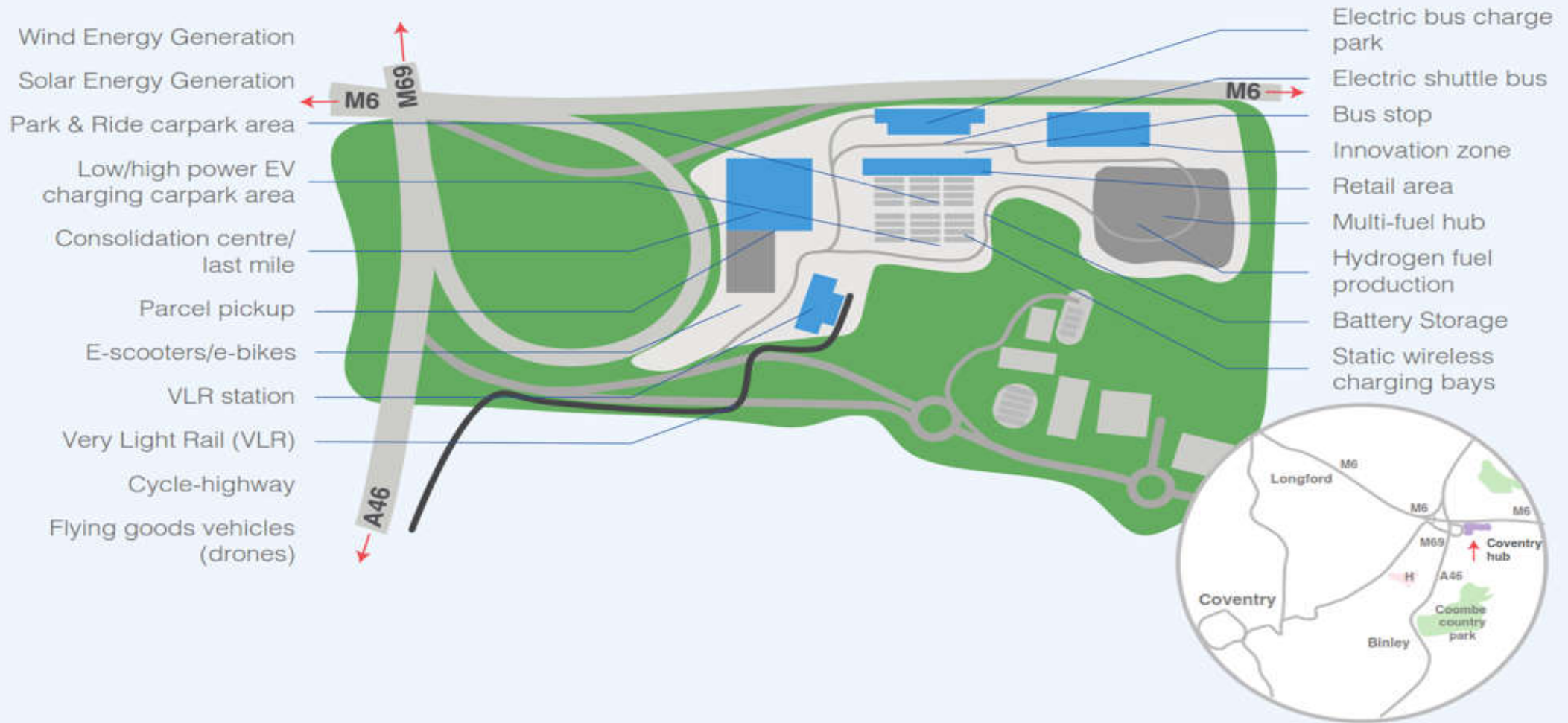


# Coventry City Council





# Coventry & Warwickshire City Linking Energy and Network Hub (CLEAN Hub)







# Progress within the council



Whitley Depot charging bay improvements ✓

Whitley Depot Rapid Charger ✓

Road Map to a self-sustained green fleet

- Workshop staff EV training
- In house electric MOTs and ✓ services
- More depot charge points ✓
- Council commitment policy ✓

# Additional notes

- 6 taxi drivers taken advantage of the DEFRA funding when trading in their EURO 4 taxi for a hybrid equivalent. Due to long lead-times of vehicles this number is likely to increase month by month as other drivers who have committed to purchasing hybrid vehicles are waiting on delivery.
- 2 businesses have placed orders for electric vehicles to replace their business vehicle that is currently petrol/diesel ran
- A further 10 businesses are actively looking at purchasing vehicles when there existing lease is due for renewal later this year
- 320,000 miles driven. According to some carbon emission sites, this equal to 190 tonnes of CO2 savings but these are U.S sites and not 100% these calculators are accurate

<https://www.fleetnews.co.uk/costs/carbon-footprint-calculator/>

# Next Steps

- CCC is in the process of installing 157x 7 kW chargers that will be operational by the end of January
- A bid has been submitted to Office for Zero Emission Vehicles for delivery of 167 additional 7 kW chargers
- Develop and publish an Electric Vehicle Charging Infrastructure Strategy in 2023 to support delivery
- Develop a protocol for implementing Traffic Regulation Orders in electric vehicle charging bays
- Development and presentation of a monthly 'dashboard' to members



# Thank you

John Seddon – Head of Transport and Innovation

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[John.Seddon@coventry.gov.uk](mailto:John.Seddon@coventry.gov.uk)/[Shamala.Evans-Gadgil@coventry.gov.uk](mailto:Shamala.Evans-Gadgil@coventry.gov.uk)