



Dacorum Borough Council's **ELECTRIC VEHICLE STRATEGY**



Contents

Background Information	3
Corporate Priority - Climate and Ecological Emergency	3
National Policy and Changes	5
Hertfordshire County Council	7
Funding and Guidance	8
Electric Vehicles Explained	9
What are Electric Vehicles (EVs)	9
Electric Vehicle Uptake	9
Electric Vehicle Chargepoints (EVCPs)	10
Electric Vehicle Connectors.....	10
Electric Vehicle Charging Hierarchy	11
Using a Public EVCP in the UK	12
Understanding the Scale of the Challenge	13
Overview of Current EV Charging Infrastructure	13
Modelling EVCP Demand in Dacorum.....	14
Public EVCPs in Hertfordshire	16
Dacorum’s EV Resident Survey	17
Current EV Ownership in Dacorum.....	17
Developing the EV Work Programme (EVWP)	18
Spheres of Influence	18
National Influence.....	18
Partnership Working and Local Influence	18
Timeframes	18
Aim and Objectives	19
EV 1: Data Gathering.....	20
EV 2: Rapid Charging Hubs.....	20
EV 3: Destination Charging.....	21
EV 4: Workplace Charging.....	21
EV 5: On-Street Charging	22
EV 6: Home Charging	22
EV 7: EV Car Club.....	23
EV 8: Fleet	24
EV 9: Communication, Engagement and Guidance	24
EV 10: Policies and Key Documents.....	24
Glossary and Useful Links	25

Background Information

Corporate Priority - Climate and Ecological Emergency

Tackling the Climate and Ecological Emergency (CEE) is one of Dacorum Borough Council's six Corporate Priorities. One of the key pledges and objectives from this work is that the Council will: *"Support the borough in reducing its emissions and reaching net-zero as quickly as possible."*

In Dacorum, transport is responsible for around 45% of the borough's total greenhouse gas emissions (Figure 1), with cars being responsible for a third of these emissions. As such, 'Sustainable Transport' is one of the four key strands of [Dacorum's Climate and Ecological Emergency Strategy](#) and within this document we outline a number of commitments.

There are two main focuses of this theme;

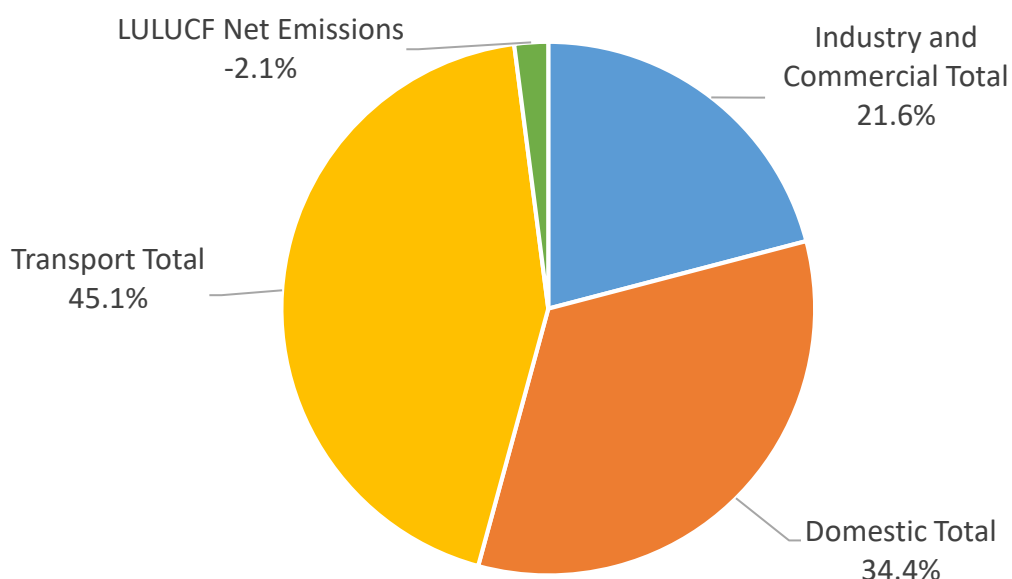
- Encouraging and enabling an increase in active travel
- Encouraging and enabling the uptake of EVs

The 'Comparing Carbon Emissions of Travel Methods' graph (Figure 2) shows the significant difference in CO₂e emissions between using EVs compared to other forms of transport.

Within Dacorum's [Corporate Plan 2020-2025](#) this EV work is summarised by our commitment to: *"Install more publicly accessible electric vehicle chargepoints, and work to encourage more organisations to install these throughout the borough."*

To address the above commitments, as well as meet the current and future needs of our residents in light of upcoming industry changes, the Council has developed an EV Work Programme (EVWP); the aims and objectives of which are outlined and explained within this strategy, along with background and industry knowledge.

**Figure 1 - Dacorum Borough Council
CO₂ Emissions - 2019**



Comparing Carbon Emissions of Travel Methods per passenger, per kilometre (2018)

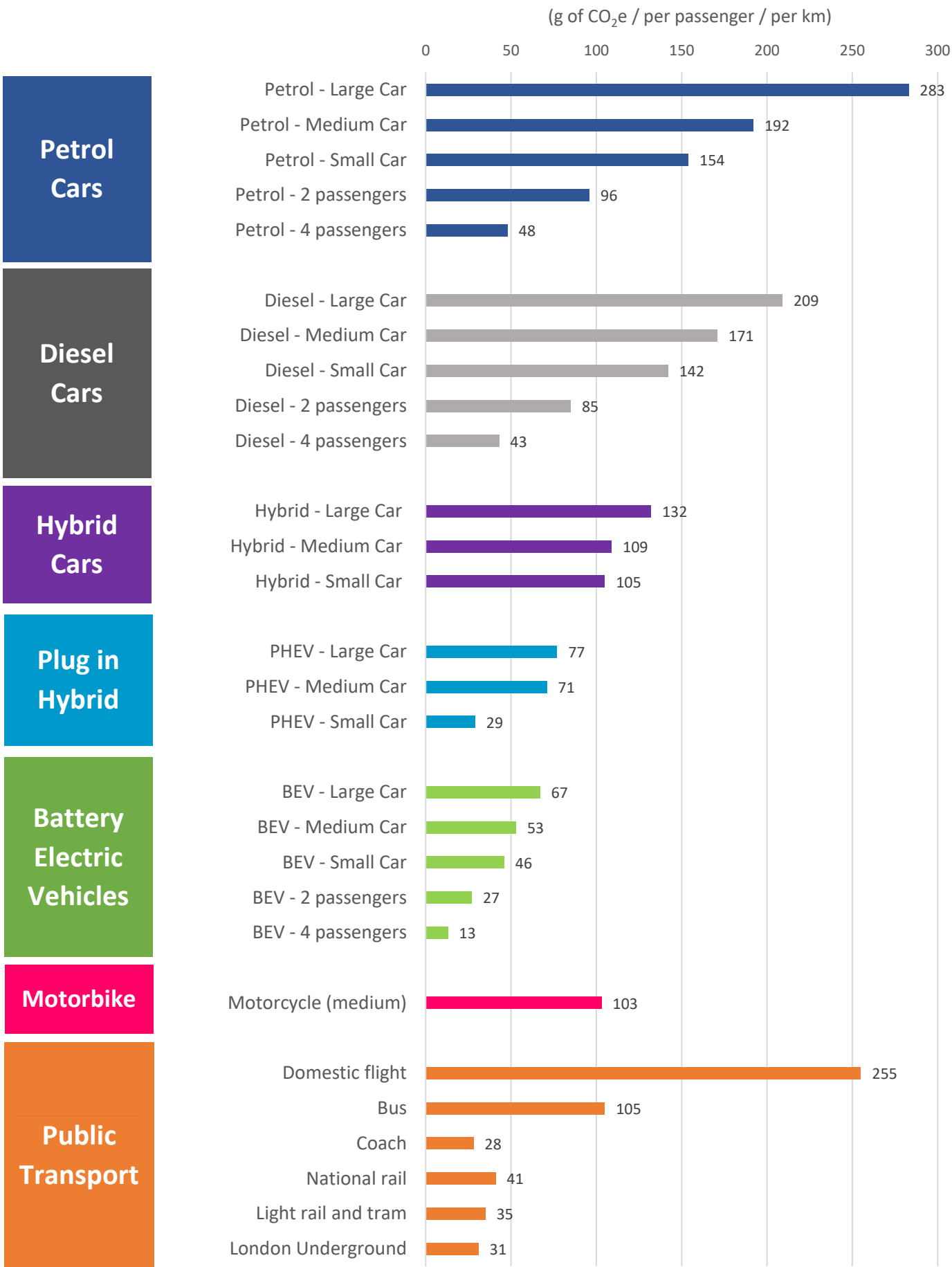


Figure 2 – [Comparing Transport Method Emissions](#)

National Policy and Changes

Transport is the UK's largest emitting domestic sector and 91% of UK transport emissions come from road transport. The government has pledged to achieve net zero emissions in the UK by 2050, to achieve this, it has to decarbonise road transport.

At a national level, the UK's commitment to decarbonise transport is outlined through a series of published acts, strategies and guidance.

The introduction of the [Climate Change Act 2008](#) saw carbon emissions from the UK energy sector more than halve, yet transport emissions did not decrease.

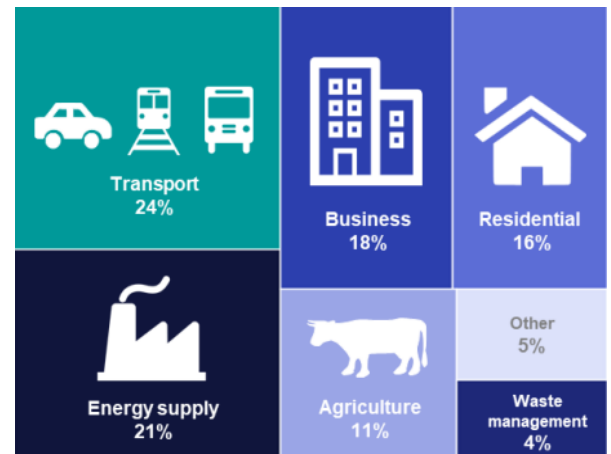


Figure 3 - [2020 UK greenhouse gas emissions](#) by sector

In 2017 the Transport sector became the UK's biggest source of greenhouse gases – accounting for around a quarter of all domestic emissions. The most recent 2020 [emissions data](#) (Figure 3) shows a slight decrease, but this decline is widely attributed to the COVID pandemic travel restrictions.

Ultra-Low Emission Vehicles (ULEVs) have a significant role to play in meeting targets to reduce greenhouse gases and improve local air quality – especially electric vehicles (EVs). To address this, the UK Government released the 'Road to Zero' strategy in 2018, pledging to end the sale of new petrol and diesel vehicles by 2040 and implementing [The Automated and Electric Vehicle Act 2018](#). This was adopted into the UK's wider Industrial Strategy, emphasising the importance of zero-carbon mobility not just to the environment but to the long-term economic prosperity of the UK. This was later reinforced by the [Future of Mobility: Urban Strategy](#) in 2019.

In 2019, the Climate Change Act was amended to commit the UK to becoming net-zero carbon by 2050. To address this, the UK Government announced in its 'Ten Point Plan for a Green Industrial Revolution' that the sale of new petrol and diesel vehicles would be banned by 2030, with hybrids permitted until 2035. In 2020, the [Transport Decarbonisation Plan](#) was released alongside the [2035 Delivery Plan](#) which provided a roadmap for how the transport sector will decarbonise (Figure 4). A £2.8 billion package of funding was pledged to support this transition.

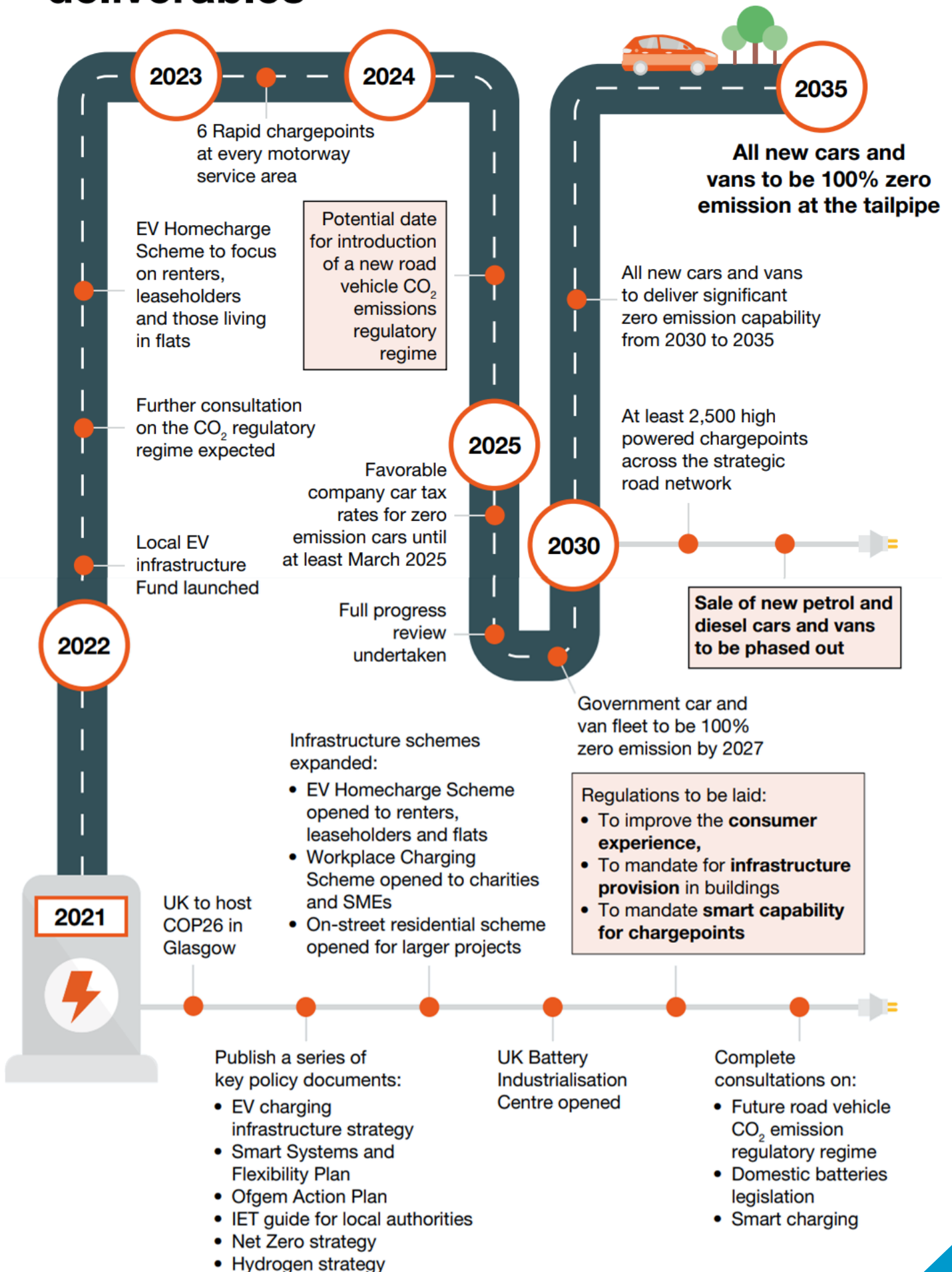
In March 2022, the government released the [UK electric vehicle infrastructure strategy](#), which set out the vision, commitments and action plan for the rollout of EV charging infrastructure in the UK, ahead of the planned phase out dates.

From June 2022, new legislation was brought in stating that all new developments, including homes, workplaces and supermarkets, as well as existing buildings undergoing large scale renovations, will all be required to install EV chargepoints (EVCPs).

As a result of these and other steps (e.g. congestion and ULEZ exemption, parking) EV sales are rapidly growing.

Figure 4

Road to 2035: Timeline of key deliverables



Hertfordshire County Council

Hertfordshire County Council (HCC) is the Local Transport Authority and as such has responsibility for the development of the [Local Transport Plan 2018-2031](#). It has also produced a [Sustainability Strategy](#). Within these documents, there are a range of objectives which are outlined in Table 1 below.

HCC Strategy	Objectives
Local Transport Plan 4	Improve access to international gateways and regional centres outside Hertfordshire
	Enhance connectivity between urban centres in Hertfordshire
	improve accessibility between employers and their labour markets
	Enhance journey reliability and network resilience across Hertfordshire
	Enhance the quality and viability of town centres
	Preserve the character and quality of the Hertfordshire environment
	Reduce carbon emissions
	Make journeys and their impact safer and healthier
	Improve the access and enable participation in everyday life through transport
Sustainability Strategy The Hertfordshire Climate Change and Sustainability Partnership has set out a range of transport objectives which are being used as a basis for the development of HCCs positions on EV charging infrastructure	Deliver net zero carbon emissions for local authority transport operations by 2030
	Work towards zero carbon emissions for Hertfordshire's transport network by 2050
	Embed sustainable transport policies in Local Plans and prioritise the needs of sustainable travel within every planning decision
	Only support new developments where they will have full sustainable transport access
	Systematically pursue opportunities for active travel in everything we do
	Look to reduce air pollution arising from local transport sources
	Promote a shift to active travel and public transport through behaviour change campaigns and infrastructure improvements
	Facilitate a move to BEV for taxis across the county
Facilitate appropriate EV charging networks across Hertfordshire and complement what is already there.	

Table 1 – HCC Policy Context

HCC is in the process of developing its own EV Strategy. In the meantime, the [HCC EV webpage](#) provides the latest information on its position. Currently, HCC is not planning a large scale roll-out of on-street EVCPs, but will, instead, consider the potential installation of fast chargepoints under a limited number of circumstances. A full table of rules and criteria have been drafted for consideration, some of which include:

- If residents do not have their own off-street parking and are not within reasonable walking distance of a current or planned public chargepoint.
- If residents only have allocated on-street parking spaces
- If residents have specific accessibility needs
- For public transport and taxis in destinations without off-street chargepoints.

HCC is undertaking work, using its newly developed EV mapping tool, to identify locations which might meet these criteria and plan to work with boroughs and districts to develop a process to enable the deployment of chargers in suitable locations. HCC will also be looking at suitable land for off-street charging hubs. Provision for specialist zero-emission buses is being investigated through other HCC programmes of work.

HCC is currently not allowing residents to trail cables across pavements, use cable covers or install cable gullies. The majority of lamp posts in Dacorum that are situated by roads are owned by HCC and HCC does not currently have any existing plans to convert these into chargepoints.

Funding

Government grants and private investment from a range of specialist companies are funding the majority of EV infrastructure being implemented throughout the UK. Forming commercial partnerships to support the roll out of sufficient EVCP infrastructure locally within Dacorum will be key, as well as accessing and promoting available funding such as:

- The [On-street Residential Chargepoint Scheme](#) (ORCS) provides funding for local authorities to install residential EVCPs. Dacorum will plan to utilise this funding where possible throughout the borough. One key barrier to using this funding is land ownership – as a Council, Dacorum does not own a large amount of land.
- The [Workplace Charging Scheme](#) (WCS) is a voucher-based scheme that provides support towards the up-front costs of the purchase and installation of electric vehicle chargepoints. Businesses, charities and public sector organisations are all eligible for this funding.
- The [Electric Vehicle Homecharge Scheme](#) (EVHS) historically provided residents with support in installing EVCPs at home. From April 2022, the EVHS closed to homeowners who live in single-unit properties (such as bungalows and detached, semi-detached or terraced housing). The scheme will remain open to those who live in flats; and people in rental accommodation. The grant covers up to 75% of the cost to buy and install a chargepoint socket, up to £350 per grant.
- The [Local EV Infrastructure Fund](#) (LEVI Fund) is a £450 million scheme currently being trialled throughout 2022-2023. After the trial, the fund will be launched more widely to help local authorities leverage private sector investment into their local charging networks and put in place long-term, sustainable charging infrastructure.
- The [Rapid Charging Fund](#) (RCF) is a £950 million fund to future-proof electrical capacity at motorway and major A road service areas to prepare the network for 100% electric vehicles.
- The [Plug-in Vehicle Grant](#) - this is a discount which is automatically applied by the supplier. The grant for cars ended in June 2022, but other vehicles such as motorbikes, taxis and vans are still eligible.

Guidance

The [Local Government Support Programme](#) helps local authorities decarbonise transport, improve air quality and increase electric vehicle adoption. The programme is fully funded by the Department for Transport and available to all local authorities across England.

Energy Saving Trust has several [resources and best practice guides](#), such as [procurement guides](#), [design guides](#), etc. These contain practical advice and informative case studies, providing a useful reference for local authorities on different aspects of planning, delivering and operating public EV charging infrastructure.

The government released several [Local Authority transport decarbonisation toolkits](#) in 2022 providing guidance on a range of areas. There is also a government [EV local authority support page](#) with specific information which is kept up to date with useful industry information. The WWF provides specific guidance for how to [charge EVs with renewable energy](#).

Electric Vehicles Explained

What are Electric Vehicles (EVs)

Ultra Low Emission Vehicles (ULEVs) is a term used to describe any vehicle that uses low carbon technologies; and emits less than 50g of CO₂/km from the tailpipe.

Electric vehicles (EVs) are the primary type of ULEV. There are two main types of EV available:

Battery (BEVs) - A vehicle powered only by electricity, also known as a 'pure' or 100% electric car. The vehicle is charged by an external power source, such as a chargepoint. These vehicles do not produce any tailpipe emissions. Almost all manufacturers offer pure electric cars. Most BEVs have a real-world range of 100-300 miles on a single charge – though this is improving as newer models come onto the market with some reaching over 500 miles.

Plug-in Hybrid (PHEVs) - This is a vehicle that has a battery, electric drive motor and an internal combustion engine (ICE). It can be driven using the ICE, the electric drive motor, or both, and can be recharged from an external power source. Typical PHEVs will have a pure-electric range of up to 50 miles. Once the electric battery is depleted, journeys can continue in hybrid mode.

As BEVs have zero tailpipe emissions, this makes them better not only for drastically helping to reduce emissions in comparison to fossil-fuel powered cars, but they have a number of additional benefits:

- Lower running costs; which often can offset the initial cost of the vehicle
- Zero rate of vehicle excise duty
- Qualify for various ULEZ and Congestion Charge discounts
- Improvement in local air quality and pollution, through reductions in the emission of nitrogen dioxide and particulate matter as a result of fewer exhaust pipe emissions.

Electric Vehicle Uptake

The uptake of EVs is accelerating rapidly. For the first time, more battery EV cars (64,000) were registered in the UK during 2022 Quarter 1 than diesel cars (34,000), following a 102% increase in BEV cars compared to 2021 Quarter 1. By contrast, over the same period there were falls of 11% and 52% for petrol and diesel cars respectively.

It is anticipated that, by 2030, there will be up to 10 million EVs on the road, requiring a minimum of 300,000 public chargepoints.

Electric Vehicle Chargepoints (EVCPs)

One of the key challenges for transitioning to EVs is the availability of charging infrastructure.

EV charging points (EVCPs) are primarily defined by the power (in kW) they can produce and therefore what speed they are capable of charging an EV.

There are three main categories of EVCPs - each have varying pros and cons and charging connections, as outlined in Table 2.

Type	Capacity (kW)	Charge Time <i>(From empty to 80% charge of a 60kWh battery).</i>	Suitable Dwell Time	Estimated range added in 15 minutes	Suitable at...
Slow	3	16 hours	7 hours +	3 miles	Residential
Fast	7 – 22	2 - 7 hours	1 – 7 hours	7 - 20 miles	Residential, destinations, charging hubs or workplaces and en route charging.
Rapid / Ultra Rapid	50 – 350	Up to 1 hour	Less than 1 hour	45 – 325 miles	Destinations, charging hubs, taxi ranks, en route charging, and fleet/commercial use.

Table 2 – Comparison of charger speeds

The estimated time to achieve a full charge is shown in the below formula. For example, a 40kWh battery on a 7kW EVCP would take between 5-6 hours to fully charge.

$$\text{Battery Size} / \text{Charging Speed} = \text{Time to full charge.}$$

Slow and Fast chargers are best suited for overnight charging, which is good for the longevity of the EV battery, more cost-effective for the user, as well as being beneficial for the National Grid too.

Rapid EVCPs speeds are often more convenient, but also are more expensive to install and use, they require lots of electrical capacity from local sub-stations, often requiring costly upgrades and, when used long-term, are likely to reduce the longevity of the EV battery.

Currently, not all EVs on the market are able to rapid charge, but this technology rapidly evolving.

Electric Vehicle Connectors

There are a range of different EV connector types, depending on the model – as shown in Table 3. Most EVs will either be Type 1 or Type 2.






				
3 Pin	Type 1	Type 2	CHAdeMO	CCS
AC	AC	AC/DC	DC	DC
2.3 - 3kW	3 - 7kW	7 – 43kW	25-100kW	50 - 350kW

Table 3 – Comparison of charger types

Electric Vehicle Charging Hierarchy

EVCP access follows a hierarchy (Figure 5) that is based on both behaviour, infrastructure and ownership.

Public chargepoints will be essential for those who do not have the private options available to them. How and when people charge matters for both individual drivers and the management of the National Grid.

Smart charging allows EVs to be charged when it is most efficient for the balance of supply and demand across the National Grid. This means shifting charging to periods of lower overall demand for electricity (for example, overnight) or high renewable generation (for example, particularly windy or sunny weather).

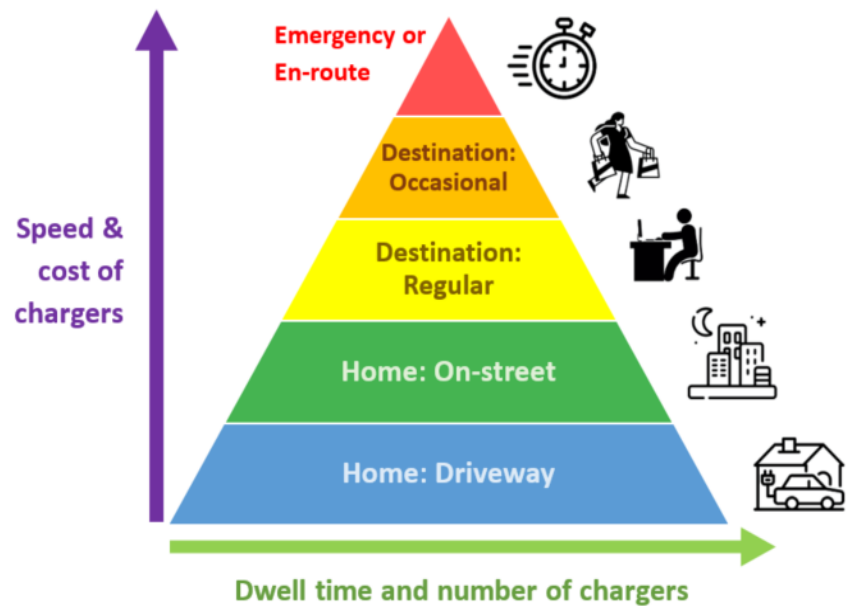


Figure 5 – EV Charging Hierarchy

This hierarchy will be considered when developing our aims and objectives to ensure that we are planning actions that can support all of these charging methods.

- **Home – driveway (*private*):** Around two-thirds of residents will have the ability to charge their EVs at home either at home or on a driveway – this will be preferred as it is cheaper and more convenient. These will suit slow - fast EVCPs and will make up the majority of EVCPs.
- **Home – on-street (*private / public*):** Where feasible, on-street chargepoints will allow those without driveways to charge their vehicles overnight and benefit from convenience and cheaper energy tariffs. These will suit fast EVCPs and there will need to be a sufficient amount for meeting residents' needs depending on the population density and nearby parking pressures.
- **Destination – regular (*private*):** This will typically be provided by workplaces. Businesses and organisations will play an important role for providing chargepoints for their staff who may not be able to access convenient chargepoints otherwise. These will suit fast-rapid EVCPs. It would be highly beneficial for all workplaces with staff car parks to consider installing these.
- **Destination – occasional (*public*):** Locations such as supermarkets, shopping centres and other visitor locations are ideal for providing quick and convenient top-up charges for users. These will suit rapid – ultra-rapid.
- **Emergency or en-route (*public*):** It will be important to ensure that residents are able to get a guaranteed charge quickly when needed – e.g. in busy areas, on motorways and A-roads. Rapid – Ultra-rapid EVCP hubs with numerous connections will be established along or nearby to key roads.

Using a Public EVCP in the UK

There are currently over 32,000 public EVCPs available in the UK and the network is constantly growing.

Websites such as [Zap_Map](#) provide EV users with a quick, easy and free map to find the nearest chargepoints.

When using a public charger, payment and access will depend on who the provider is, as there is a growing range of UK-wide networks and regional operators. Some will be pay-as-you go, others will require users to have their own cable or RFID card, or require an app.

Public EVCP numbers rose by 82% between 2019 and 2021, but the number of electric cars during the same period rose 600%. Industry experts are highlighting that this rate of growth is not fast enough.

Figure 6 of the [UK national EVCP league table](#) shows a snapshot of the total number of devices per 100,000 people throughout the UK, broken down into local authorities and ranked into the best performing percentiles. The map shows that there are inconsistencies throughout the UK. Dacorum is currently in the bottom 20%.

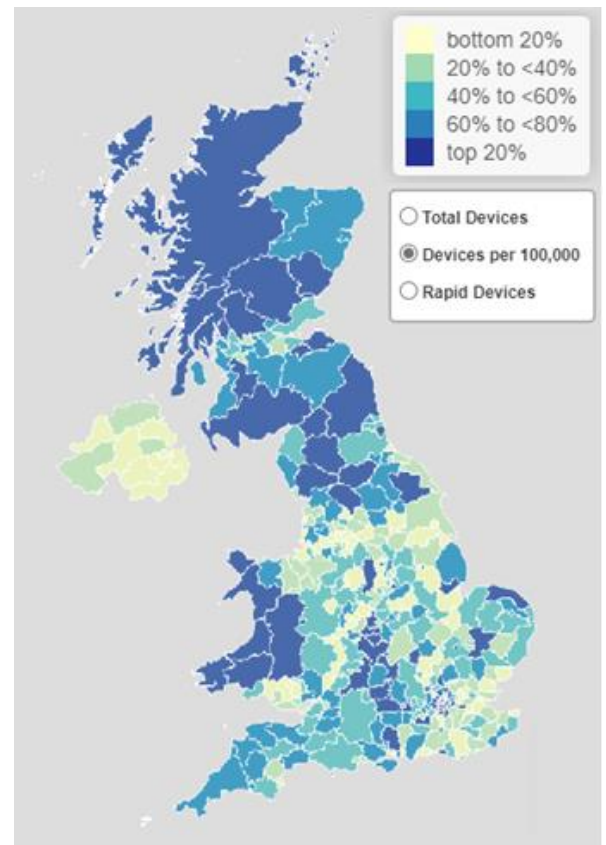


Figure 6 – EVCPs by local authority, per 100,000

Understanding the Scale of the Challenge

As the world of EVs is a new and fast-developing technology, it has been necessary to spend time gathering data to help understand the scale of the challenge and guide the development of Dacorum’s aims, objectives and work programme.

Overview of Current EV Charging Infrastructure

In Dacorum there are currently 13 publicly accessible EVCPs. Of these, five are commercially owned and eight are Council-owned. Of our 25 public Council-managed car parks, we currently have EVCPs at 6 of these sites (24%).

This heat-map (Figure 7) shows a [National Ranking of EV Charge Point Coverage](#). It was created by Field Dynamics using Zap-map data, and provides useful information and a straightforward demonstration of public EVCP coverage by local authority in terms of how many devices are within a 5 minute walk of households with no off-street parking. As shown, EVCP coverage is exceptionally high in London, with vast improvement required across much of England.

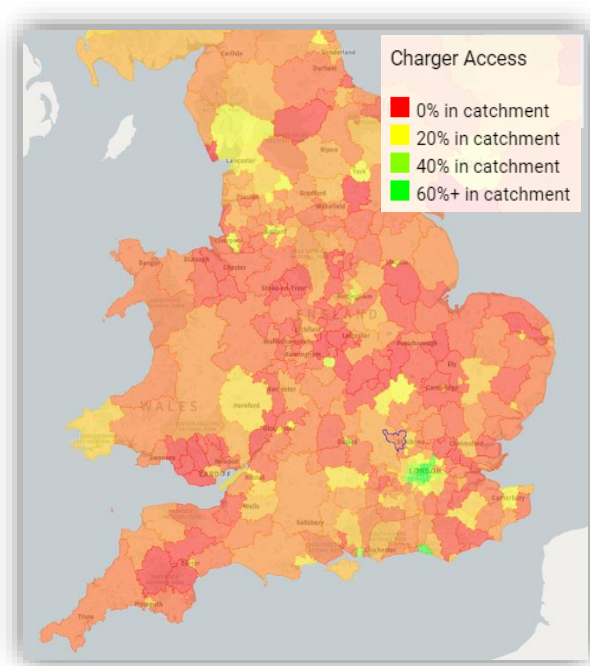


Figure 7 – EVCPs by local authority, within 5 min walking distance

Table 4 below shows a comparison of Hertfordshire local authorities and their current EV infrastructure and how this relates to their resident populations and needs.

The Dacorum data shows that 6.7% (1,671) of the households who do not have access to a driveway or garage to park their car are within a 5 minute walking distance from a publicly available EVCP. This is slightly below the Hertfordshire average of 9%.

Hertfordshire Local Authority	Households relying on on-street parking?	% of pop'n	On-street households within 5 min walking distance of EVCP	% of pop'n	Charging sites per 1,000 on-street households
<i>Herts Average</i>	<i>19,223</i>	<i>39%</i>	<i>1795.7</i>	<i>9%</i>	<i>0.65</i>
Broxbourne	14,715	36%	886	6%	0.4
Dacorum	24,791	39%	1671	6.7%	0.6
East Herts	23,298	37%	1511	6.5%	0.4
Hertsmere	16,745	38%	1296	7.7%	0.6
North Herts	21,139	37%	1605	7.6%	0.7
St Albans	22,335	37%	3569	16%	0.9
Stevenage	16,587	44%	1153	7%	0.3
Three Rivers	11,673	31%	641	5.5%	0.8
Watford	20,180	51%	4294	21%	1.2
Welwyn Hatfield	20,769	42%	1331	6.4%	0.6

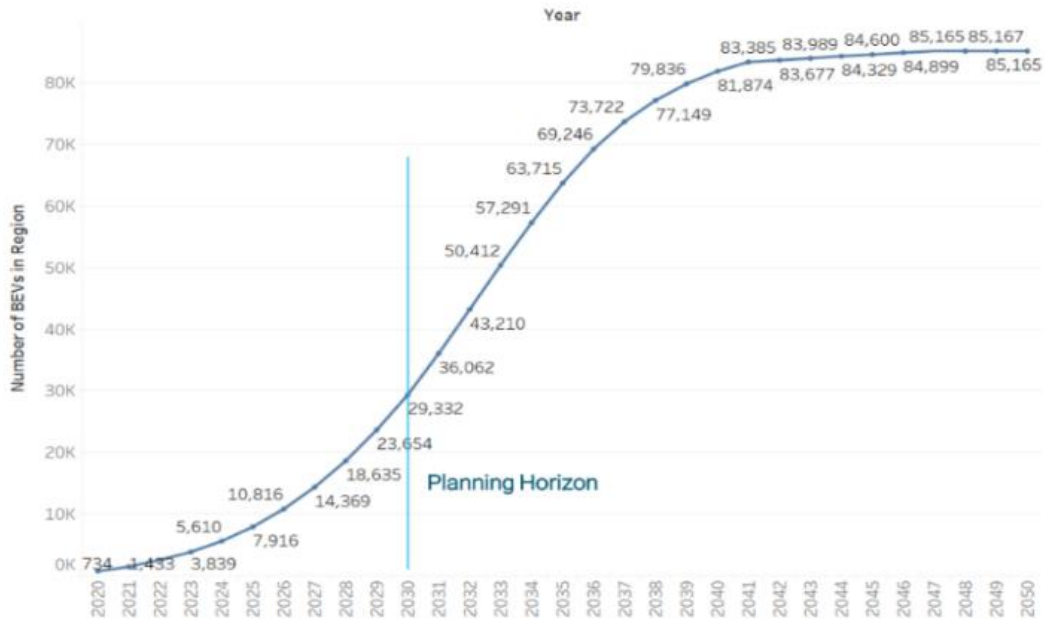
Table 4 – Comparison of [public EVCPs and their walking distance](#) in Hertfordshire local authorities

Modelling EVCP Demand in Dacorum

As a borough, Dacorum has a variety of differing urban and rural areas, as well as demographics. We invited Field Dynamics, as specialist EV consultants, to create a report specifically for Dacorum to model our future EVCP demand. Dacorum was one of the first authorities in the UK to benefit from their new 'Jumpstart' programme which provides support around this type of modelling.

An uptake curve (Figure 8) developed by Department for Transport 'National Grid: Future Energy Scenarios – Consumer Transformation' was applied to understand the number of EVs that there will be in the borough by our selected year of 2030.

Figure 8 – EV Uptake Curve Model



The borough was then modelled and split into zones to help us further understand the demand (Figure 9):

- **Commercial** - Zones where residents will be able to rely on commercially provided chargers
- **Public Need** - These zones have a high level of residents who will be reliant on public charging
- **Off-Street** - These zones have a high level of residents who will be able to charge at home
- **Visitor** - Zones where non-residents will make a up a high level of charging
- **Minimum need** - Zones where there is a minimum need for public charging

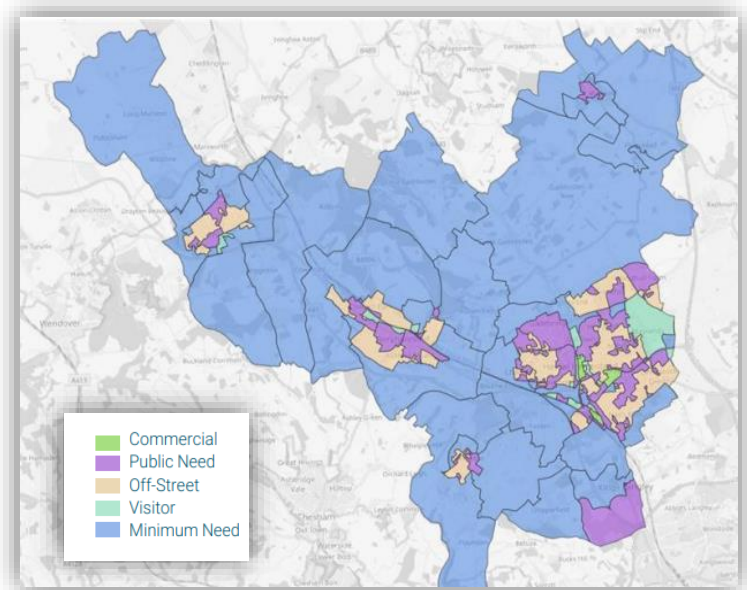


Figure 9 – Map of Dacorum with EVCP zoning

The key outcomes of this work are that:

- **By 2030, we are likely to have over approximately 30,000 Battery Electric Vehicles (BEVs) in Dacorum.** This does not take into account Plug in Hybrid Electric Vehicles (PHEVs), which will also be using charging infrastructure.
- **Approximately 2 in 5 households, (equivalent to about 25,000 households) do not have a driveway or garage to install home chargepoints.** These are symbolised by blue dots on the map (Figure 10).
- **The borough is estimated to need around 700 publicly available Electric Vehicle Chargepoints (EVCPs) by 2030 to meet demand.** Achieving this will need a collaborative effort between all land-owners, businesses and organisations.

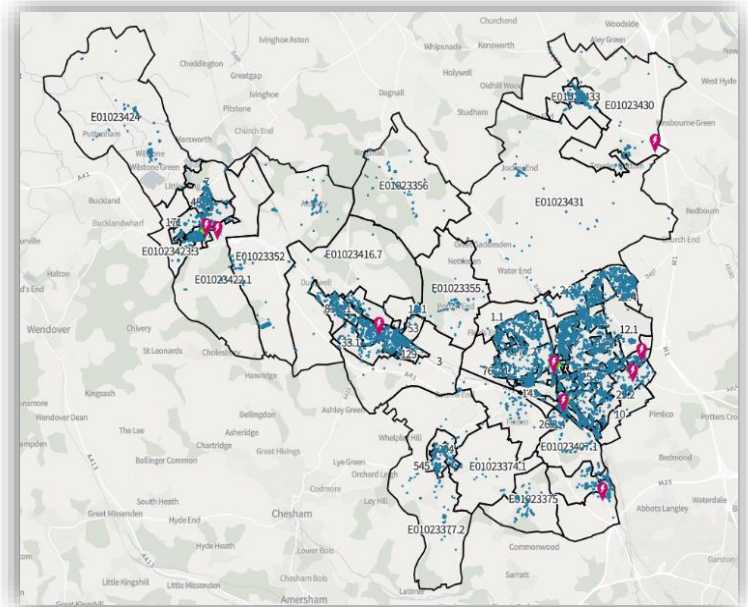


Figure 10 – Map of Dacorum showing the households (blue dots) which cannot charge at home.

Using specialist software, it is possible to calculate approximately how many households would be within a 5 minute walk of a potential EVCP location – as demonstrated in Figure 11. Dacorum will use this, and other similar, software and technology when planning where to install EVCPs.

Figure 12 shows the catchment achieved in Hemel Hempstead by putting EVCPs into all of our council-owned car parks. As demonstrated by the map, implementing EVCPs in these areas will not be sufficient on their own to meet the future needs of the borough. As such we will need to explore a range of additional options to work alongside our car parks to ensure that demands will be met.

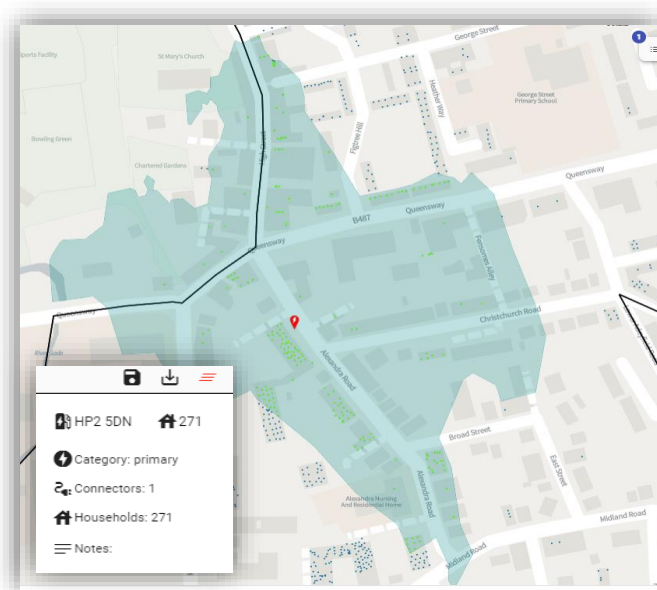


Figure 11 – 5 minute walk catchment area from EVCP

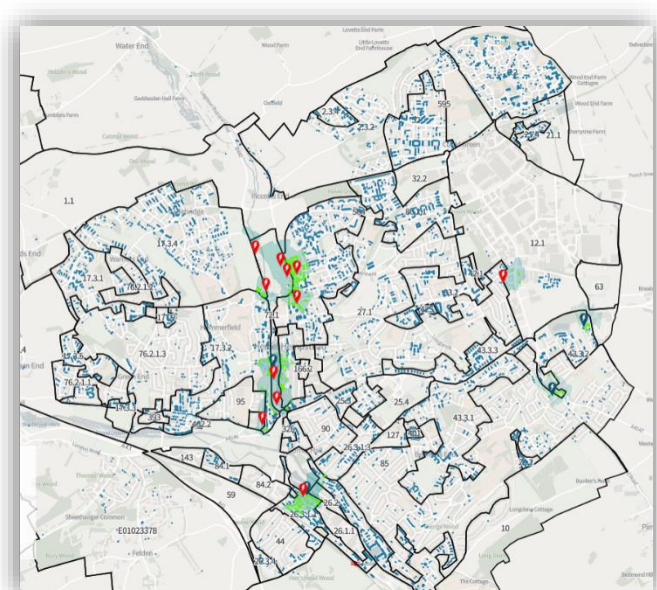


Figure 12 – 5 minute walk catchment area from EVCP

Public EVCPs in Hertfordshire

Table 5 below compares the total number of public EVCPs throughout Hertfordshire and the percentage that they have increased by from July 2020 to 2022.

The data shows that the average number of public EVCPs per 100,000 population is 40.7, with a minimum of 11.6 (Dacorum) and a maximum of 83.9 – this highlights that there is a great deal of inconsistency between Hertfordshire’s boroughs, and that Dacorum is currently the lowest performing borough. As aforementioned, this inconsistency is a national issue.

To address this, and using the information from the Field Dynamics research, we are currently progressing a large-scale EVCP roll out within Dacorum’s car parks, over 100 EVCPs are expected to be installed (both fast and rapid) in the first phase – this will be over a 500% increase in EVCPs. Additional phases will follow, which will be dependent on the uptake and usage from the first phase.

Once the first phase of this project is completed in early 2023, Dacorum will become the borough with the highest number of chargepoints in Hertfordshire and Dacorum will also move into the top 20% of the national table. However, as highlighted from our data modelling work, a lot more work will still be required throughout the borough in order to meet future infrastructure demand.

Table 5 – EV Charging Device Statistics: July 2022

Local Authority / Region Name	Jul-20		Jul-22		# Increase	% Increase
	Total public EVCP devices	per 100,000 population	Total public EVCP devices	per 100,000 population		
Hertfordshire	230	19.3	477	39.9	247	107%
Broxbourne	6	6.2	30	30.7	24	400%
Dacorum	16	10.3	18	11.6	2	13%
East Hertfordshire	15	10.0	71	46.8	56	373%
Hertsmere	25	23.8	40	37.9	15	60%
North Hertfordshire	18	13.5	36	27.0	18	100%
St Albans	31	20.9	48	32.1	17	55%
Stevenage	6	6.8	15	17.0	9	150%
Three Rivers	57	61.1	61	64.9	4	7%
Watford	38	39.3	54	55.9	16	42%
Welwyn Hatfield	18	14.6	104	83.9	86	478%

Dacorum's EV Resident Survey

An ongoing [Electric Vehicle Residents Survey](#) was launched in February 2020 to help us to obtain and collate local EV information from our residents regarding charging infrastructure demand, likely speed of uptake; and to help us predict future need.

Thousands of residents have already taken part in this short survey, which takes less than five minutes to complete. The information provided will help to support future funding applications, such as ORCS, and aid conversations with commercial partners.

Key insights so far:

- Over 63% of respondents plan on buying an EV within the next five years, or already own one.
- The two main motives for people switching to electric vehicles are; to help mitigate the climate emergency; and to help improve air quality.
- Availability of charging points is the primary concern for switching to EVs.
- 65% of respondents would be encouraged to buy an EV sooner if more chargepoints were installed in their local area.
- 58% of respondents would only want to walk 1 - 3 minutes to a chargepoint.
28% would be happy with a 4 – 6 minute walk.
Only 14% said they would be happy with over a 7 minute walk.

This data will be used to help support us in meeting resident needs.

Current EV Ownership in Dacorum

Using 2022 [Department for Transport \(DfT\) statistics](#) and [data tables](#), we are able to see that EV ownership within Dacorum is rising rapidly – with nearly 1,900 EVs in Dacorum registered by the end of March 2022 (Figure 13).

This trend is in line with the predicted 'S-curve' uptake model which the DfT forecasts (Figure 14)

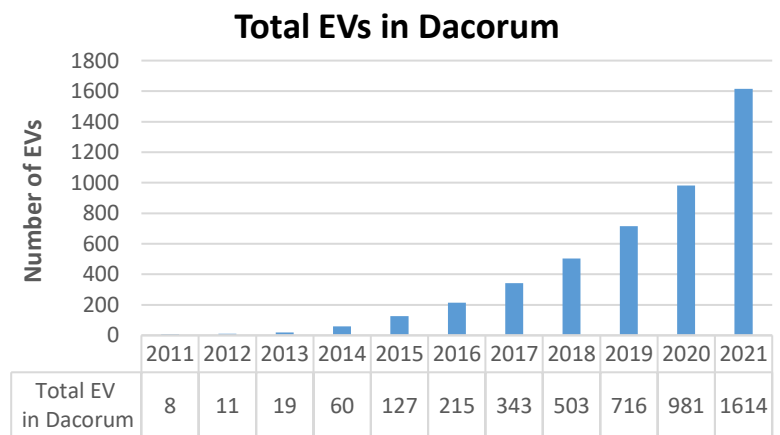
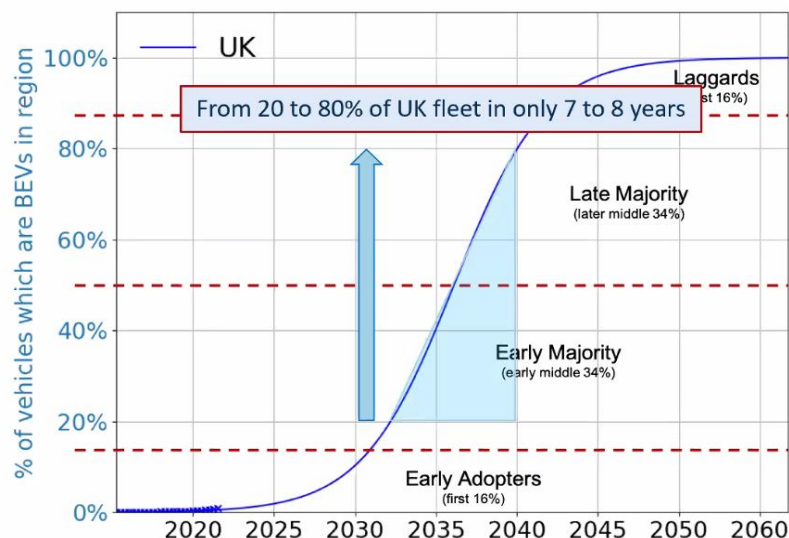


Figure 13 – EV Ownership in Dacorum

Figure 14 – DfT Predicted EV Uptake Curve Model



Developing the EV Work Programme (EVWP)

Spheres of Influence

Dacorum is able to have a larger, more meaningful impact on reaching net-zero targets, by utilising our 'Spheres of Influence' and working throughout a range of other areas.

Whilst shaping our aims and objectives we have considered how we can use our spheres of influence to engage, enable, encourage and educate wherever possible through:

- Direct Influence
- Indirect local and national influence through funding, policy, partnerships, initiatives, advice, lobbying and leadership

These will consistently be reflected by the actions which are added into our EV Work Programme (EVWP).

National Influence

When planning and implementing the EVWP it is important to note that the EV industry is evolving quickly. Due to national influence such as new government policy or funding, EV manufacturers and EVCP providers, etc, actions may be added or removed in to the EVWP at any time.

Partnership Working and Local Influence

In order to successfully support the transition to EVs locally, it will be necessary to work with a wide range of partners and key stakeholders – especially local businesses and organisations. Forming good relationships with commercial EVCP providers will be essential to the viability of rolling out EVCPs.

In November 2020, Dacorum adopted a [Parking Standards Supplementary Planning Document \(SPD\)](#), which provides information regarding the number of EV charge points that should be installed per development, alongside future cabling provision to allow for an increase in future demand. The [New Dacorum Local Plan](#) will support the delivery of EVCP infrastructure. Work is also taking place to address [air quality](#) issues locally, which also has synergies with the EVWP.

One of our main partners is HCC and we are currently supporting the County Council in the development of its own EV strategy and work programme. The outcome of this will have a local influence on the actions we are able to take. HCC can also have additional influence through Green Travel Plans, which are a routine planning requirement for developments of sufficient scale.

The [Hertfordshire Climate Change and Sustainability Partnership \(HCCSP\)](#) is a group that can be used to support the sharing of best practice and guidance between Hertfordshire local authorities. Transport is one of its main priorities.

We will support Local Town and Parish councils in the installation of EVCPs on their own land and we also plan to feed into the development of the [Hemel Garden Communities](#) project.

Timeframes

The actions from the EVWP will be broken down into deliverable time-frames:

Short (2022 – 2024)

Medium (2025 – 2027)

Long-term (2028 – 2030)

Ongoing

Aim and Objectives

Our strategic aim is to: **‘Support the uptake of electric vehicles and the implementation of appropriate charging infrastructure throughout Dacorum.’**

Based upon the information outlined in this strategy, we have developed ten key objectives to help meet our strategic aim. These have been developed primarily with the EV charging hierarchy in mind.

EV-1: Data Gathering

Gather data from various sources to guide best practice and ensure evidence-based decision making when designing the EV work programme.

EV-2: Rapid Charging Hubs

Support the development of dedicated rapid charging hubs within the borough.

EV-3: Destination Charging

Enable and encourage destination charging throughout the borough.

EV-4: Workplace Charging

Work alongside local businesses and organisations to enable and encourage workplace charging throughout the borough.

EV-5: On-Street Charging

Enable and encourage on-street charging for residents who are unable to charge at home.

EV-6: Home Charging

Support the uptake of home charging throughout the borough.

EV-7: EV Car Clubs

Support the development of a range of EV car clubs throughout the borough.

EV-8: EV Fleet

Lead by example by transitioning to an EV fleet

EV-9: Communication, Engagement and Guidance

Communicate and engage with local residents and organisations to provide guidance, advice and support on all areas of the transition to EV.

EV-10: Policies and Key Documents

Ensure that the work is supported by and referred to in relevant documents and policies.

Under each of these objectives, a number of potential actions will be proposed and captured in the EVWP. Some of these actions are already underway, or have been completed – such as data gathering. The EVWP will remain a ‘live’ document – meaning that it will be under constant review and development and be updated regularly to reflect the progression of projects and initiatives, as well as national and local influence.

Potential actions will all be explored and implemented wherever possible, however depending on feasibility, evolving technology and best practice, and other external factors – after initial exploration some proposed actions may not become viable.

From a legal perspective, this strategy has identified the relevant legislation and Government targets in relation to EVs to 2035. There are no direct legal implications for Dacorum Borough Council. Full legal title reports would be carried out before installing any EVCPs on Council-owned land.

EV 1: Data Gathering

EVs and all of their associated infrastructure make up a complex new industry, which in turn will lead to a range of new societal behaviours. Supporting this paradigm shift will be crucial to reduce greenhouse gas emissions and, in addition to this, there is a relatively small timeframe to make meaningful changes. As such, it is essential that the decisions we make are the right ones and will be successful in driving the transition to EVs, not obstructing progress.

Good progress has already been made in this area with the information that has been collected and this has shaped this strategy so far. To ensure that we continue to make appropriate, evidence-based decisions, it is necessary to have an ongoing objective of data gathering. This will ensure that we will be well-informed on the latest industry information, which will help guide best practice and shape the actions which continue to be added into the EVWP.

Ensuring that we share this information and engage with key stakeholders will also be a key component – this feeds into Objective EV 9 – ‘Communication, Engagement and Guidance’.

EV 2: Rapid Charging Hubs

Rapid charging hubs will be the part of the EV charging hierarchy that is most similar to fuel stations. The provision and roll out of these rapid charging hubs is a very new field. The first replacement of a petrol station with a rapid charging hub in the UK took place in January 2022 – symbolising an important milestone for the transition to EVs.

These hubs will be a crucial part of the charging hierarchy as they will provide the confidence and reassurance that many will need to encourage them to purchase an EV. The hubs will enable emergency en-route charging; charging for those who have a high-mileage lifestyle (e.g. a delivery driver); and provide an EVCP option for those who do not yet have them conveniently located nearby. However, out of all EVCPs, these hubs will be the most expensive to install and use and therefore will not be suitable as a primary charging source.

For rapid/ultra-rapid chargepoints, capacity issues and costs can be mitigated by placing in close proximity to existing substations (with enough capacity). HCC have liaised with UK Power Networks (UKPN) to overlay substation location data onto their EV mapping tool which will enable Dacorum to make more informed decisions about the placement of future rapid/ultra-rapid charge-points in the future.

These hubs will need to be installed in specific locations – in urban areas of high population, next to destination facilities and close to main arterial roads (M1, A41 and A414). We will need to rely on commercial partners installing these and, as such, their implementation will be driven by the speed of EV ownership locally.

We aim to have our first rapid charging hub up and running in Dacorum in 2023.

EV 3: Destination Charging

The primary focus of our short-term actions will be on fast and rapid destination charging. Whilst EV ownership is still in its early stages, these types of EVCPs will provide firm foundations for local charging infrastructure, allowing us to build on this as ownership levels increase.

We plan to install EVCPs in Council-owned car parks and other destination areas where we own land. However, there will also be a reliance on other key destination organisations to install EVCPs. We will need to engage with key stakeholders (e.g. supermarkets, visitor destinations, shopping centres, car parks) to encourage them to install these.

Potential locations will need to undergo feasibility studies to ensure they are fit for purpose, have sufficient grid capacity, meet current and future demand from residents, businesses, and visitors, fill in gaps in the charging network, and have good access.

Dacorum Borough Council will need to rely on commercial partners and/or government funding to install EVCPs on council-owned land. This programme of work will need to be developed and delivered over several phases. The aim would be for every urban area in Dacorum with a population over 10,000 to have at least three Rapid public EVCPs by the end of 2023.

EV 4: Workplace Charging

A fundamental aspect of the charging hierarchy will be the provision of EVCPs in workplaces. This objective carries a range of benefits for organisations throughout Dacorum:

- Supports staff who do not have convenient access to an EVCP at home
- Provides an attractive incentive for new and existing customers and visitors
- Can allow a company to transition to an EV fleet – where feasible.
 - This ties in specifically with Objective EV 8 ‘EV Fleet’.
- Can provide an additional income by making EVCPs available to the public outside of core hours – where feasible.

Dacorum Borough Council will carry out feasibility studies to understand which of its existing work places it can install EVCPs into for staff, and potentially public use.

Research from Zap-Map suggests 30% of businesses are willing to share their work charge points with the public. Promoting this type of action (e.g. [Zap-Work](#)) could significantly increase the public charge point network.

Although Dacorum will have limited direct influence, besides within our own organisation, there are several actions we will be able to take to encourage businesses and organisations to install EVCPs. A two year [ULEV Experience](#) project identified this as one of its key lessons learned. This feeds into Objective EV 9 – ‘Communication, Engagement and Guidance’.

EV 5: On-Street Charging

With over a third of our residents in the borough not having the ability to charge at home, there will be a need to provide on-street charging for pockets of high population density of households who need support and have no sufficient EVCP infrastructure nearby. This will be especially important near large blocks of flats where parking pressures may already be an existing issue.

Areas will need to be assessed on a case-by-case basis to determine what infrastructure is suitable.

As HCC typically owns the majority of the highways land, it will be necessary to collaborate with the County Council in instances where Dacorum Borough Council is not the landowner.

The Council already has a road-verge hardening project in progress which we aim to be able to tie together with EVCP installation on Dacorum-owned land.

As this type of charging infrastructure is more specifically tailored, and will be dependent on a rise in EV ownership to make it viable, installing on-street charging will be more of a medium-term priority. However, in the short-term we will need to be gathering initial area information for where there is likely to be a need and what infrastructure is feasible in each location. This feeds into Objective EV 1 – ‘Data Gathering’.

EV 6: Home Charging

Home-chargers will form the most essential part of the EV charging hierarchy and are the cheapest and most convenient method of charging EVs.

Approximately two thirds of households in Dacorum will be able to install an EVCP at home. By doing so, there will be less pressure on both public chargepoints and the National Grid as home chargers will enable users to charge at off-peak times such as overnight by using Smart Charging.

Research from ZapMap suggests 50% of EV drivers are willing to share their home charge point with others. There are several peer-to-peer platforms that now encourage this (e.g. [Zap-Home](#)), and promoting this type of action could significantly increase the public charge point network.

Future policy will need to be agreed regarding the use of cables crossing footpaths – e.g. specialised cable gullies, as this would enable more residents to install wall-mounted EVCPs, reducing the demand for public EVCPs. This could be managed in a similar way to residents applying for dropped kerbs. Permission would need to be provided by HCC, who are currently opposed to this, but the County Council is monitoring trials in other parts of the UK and may change its stance on this as technology evolves.

New development provides the best opportunity to accelerate the scale of provision for EVs and should include charging provision for EV use as standard, as outlined in Dacorum’s aforementioned newly adopted parking standards SPD. From June 2022, new government legislation came into force requiring all new-build and retrofit homes and commercial buildings in England to be installed with EVCPs. Dacorum’s Housing Development team was already making progress with this before legislation was brought in.

As a Council, Dacorum owns over 10,000 homes – a percentage of these will be suitable for the installation of home-chargers. As such, work will need to be carried out to decide how best to roll this out to eligible properties.

Dacorum will also play an important role in encouraging home owners and landlords to install EVCPs and utilise available funding such as the EVHS – this will feed heavily into Objective EV 9 – ‘Communication, Engagement and Guidance’.

EV 7: EV Car Club

EV car clubs are a [government recommended measure](#), which allow users to access an EV without owning one and can offer a flexible, convenient alternative to private car ownership or leasing. Providing EV car clubs allows users to hire EVs for as little as an hour at a time. This method of short-term hiring can help overcome a range of barriers and encourage more people to use EVs.

By providing an alternative to driving a private car, car clubs reduce carbon emissions, air pollution, parking pressure and congestion, while supporting the shift to lower carbon forms of travel.

Local authorities have an essential role to play in this area as they are able to provide access to parking. In Dacorum, we already have provision for an electric car club in our off-street road Traffic Regulation Order, which means that car clubs are permitted to be sited in our council car parks.

Our EV Residents survey showed that 70% of respondents would use an EV car club if it were available, with over 15% telling us that they would use it frequently.

Currently the cost of EVs are relatively high; a cost which will fall over the coming years once more are being manufactured and technology around production improves. The high cost of living is currently a limiting factor for people considering purchasing an EV – with over 90% of respondents to our EV Residents Survey telling us that this was an important concern (it is worth noting that many of these responses were collected *before* the cost of living crisis).

Furthermore, a key ethos of sustainability is sharing resources. People have a natural tendency to have a ‘fear of the unknown’ and, as such, early actions to help encourage the use of new technology will also encourage uptake.

EV car clubs address all of these barriers and Dacorum will play a role in establishing one of these for both staff and public use.

EV car clubs can be procured for use by council staff as an alternative to grey fleet mileage (personal cars used for work purposes) and to complement pool cars. These vehicles may be for the sole use of council employees or shared with the public at specific times or days. Sharing use can increase vehicle utilisation rates and improve the financial viability for operators.

Several Hertfordshire local authorities have adopted an early model which allows an EV car club to be used by staff during office hours and then be available to the public during evenings and weekends. Once demand increases, the pool can increase and hours of availability and locations can be adapted accordingly.

Making e-bikes available for staff and public can also help support a transition to alternative electric travel methods. Hire schemes can support residents who want to trial an e-bike before investing in one.

Dacorum can explore making use of section 106 obligations to [require developers to establish a car club](#), either as a direct contribution towards car club set-up and operating costs, via a contribution to the local authority for sustainable transport initiatives. This may include car club provision, or to directly cover the costs of a TRO for a car club bay. Community Infrastructure Levy funds can also be used.

Dacorum can also work with local businesses and organisations to encourage the uptake of additional EV car pools throughout the borough - this will feed into Objective EV 9 – ‘Communication, Engagement and Guidance’.

EV 8: Fleet

The early adoption by businesses and organisations of having their own fleet of EV vehicles will be important for driving the EV market forward. As these groups often purchase new vehicles ordinarily, not only are they in a situation to typically be able to afford this whilst EV prices are relatively higher, but by doing so they will ultimately help to provide more affordable second-hand EVs for the public.

Dacorum Borough Council will work to lead by example and transition its own fleet to EV. The current fleet is made up of around 100 vehicles, with approximately 60% light vehicles, and 40% heavy vehicles. There are also a number of ride-on mowers and other plant machinery.

The heavy vehicles (typically waste collection trucks) and specialised grounds maintenance mowers will take longer to replace due to technology still evolving in these industries, making this a more complicated challenge. It is anticipated that technologies such as hydrogen may develop further in this area, but the pathway to this is still unclear.

As the majority of the waste trucks still have a useful life span of around 5 years, procurement for these vehicles will be explored as a medium-term action, to allow technology the opportunity to develop. In the meantime we will initially focus on installing charge points in our work places, replacing our light vehicles where this will be more straightforward as the necessary technology already exists and carrying out trials of EV waste trucks. Dacorum will also be working to optimise the routes taken by our fleet in order to further reduce the emissions from our vehicles.

Guidance will be provided to local businesses and organisations to encourage them to also make this transition and to make the most of free support, e.g. the Energy Saving Trust's free [Fleet Advice](#) scheme and [Fleet Management Toolkit](#). 'Try before you buy' hire schemes and other similar initiatives can support local orgs purchasing EVs – taxis especially (e.g. [Nottinghamshire's wireless charging taxi trial](#)). These types of actions will feed into Objective EV 9.

EV 9: Communication, Engagement and Guidance

Communication and engagement with local stakeholders – especially residents and organisations – through the provision of advice, guidance and support, will be a fundamental part of Dacorum's role in supporting the transition to EVs. This will be especially important as EVs are such a fast evolving technology and people requiring updates and information from a reliable, trustworthy source.

Dacorum is able to support other organisations transition to EVs in various ways. The government suggests that [local authorities provide support to organisations](#) through methods such as engagement events, 'try before you buy' schemes, charging infrastructure, supporting last mile delivery for organisations and raising awareness of funding such as the Workplace Charging Scheme.

All of the aforementioned objectives EV1-8 will require communication, engagement and guidance to some extent – whether it is through large-scale initiatives, informative social media campaigns, website content, guidance documents, community talks, and so on. Demystifying EVs will help to encourage people to transition more quickly. Information will need to be provided around EV benefits, where people can charge conveniently and the various funding streams and incentives available.

Dacorum will be working with other local authorities in Hertfordshire through the HCCSP on joint initiatives to encourage residents and organisations to transition to EVs. One element currently being explored is a Taxi Vehicle Licensing Policy to support the accelerated uptake of EV taxis.

EV 10: Policies and Key Documents

We will ensure that all related EV work is sufficiently supported by, and incorporated into relevant policies and key documents, such as the Local Plan, Transport Plans and other emerging documents.

Glossary

- AC – alternating current
- BEIS – Business, energy and industrial strategy – UK government department
- BEV – battery electric vehicle
- CEE – climate and ecological emergency
- CHAdeMO – charge for moving
- CO₂ – carbon dioxide
- CO₂e – carbon dioxide equivalent
- COP26 – most recent climate change conference of parties
- CCS – Combined Charging System
- DC – direct current
- DfT – Department for Transport
- EV – electric vehicle
- EVCP – electric vehicle chargepoint
- EVHS – electric vehicle home-charge scheme
- HCC – Hertfordshire County Council
- HCCSP - Hertfordshire Climate Change and Sustainability Partnership
- ICE – internal combustion engine
- kW – kilowatt
- ORCS – on-street residential chargepoint scheme
- PHEV – plug-in hybrid vehicle
- TDP - Transport Decarbonisation Plan
- UKPN – UK Power Networks
- ULEV - ultra-low emission vehicles
- WCS – workplace charging scheme

Useful Links

- [2020 UK Greenhouse Gas Emissions – BEIS](#)
- [Road to Zero - BEIS](#)
- [Zap-map](#)
- [Transport Decarbonisation Plan - BEIS](#)
- [Transitioning to zero emission cars and vans: 2035 delivery plan - BEIS](#)
- [On-street Residential Chargepoint Scheme](#)
- [Workplace Charging Scheme](#)
- [Electric Vehicle Homecharge Scheme](#)
- [On Street Charging \(acceleratedinsightplatform.com\)](#)
- [Hertfordshire County Council – EV info](#)
- [Hertfordshire Climate Change and Sustainability Partnership \(HCCSP\)](#)
- [Dacorum - EV Residents Survey](#)
- [Dacorum - Climate and Ecological Emergency Strategy](#)
- [Carbon footprint of travel per kilometre](#)
- [Energy Saving Trust – EV advice](#)
- [Energy Saving Trust – EV Fleet Advice](#)
- [ULEV Experience Lessons Learned](#)