

# Vehicle Decarbonisation Strategy

This strategy provides a structured approach to enable the council to make informed, evidence-based decisions on fleet decarbonisation, in line with budget cycles and maintaining high standards of service.





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The West Lindsey District Council's (the council) Corporate Plan puts climate change and the environment at the heart of organisational priorities through a 'green thread' of aims and objectives designed to embed tackling climate change and promoting the environment and sustainability into all areas of our operations.

The council, in June 2024, adopted a refreshed Environment and Sustainability Strategy. The Strategy reaffirms the commitment to deliver a net zero council by 2050. As part of that commitment the council has introduced three mid-way commitments to be achieved on or before 2035. One of those commitments relates to the decarbonisation of the council's waste fleet.

Emissions relating to transport account for 34% of the council's total carbon footprint, of which the waste fleet is responsible for approximately 26%.

# Waste Fleet = 26% of Council's Carbon footprint



As the district grows that percentage will only increase unless a new approach to vehicle procurement is adopted. This Strategy looks ahead to the future, providing context for considering and adapting the approach to assessing vehicle decarbonisation opportunities to deliver the council's commitment to be net zero by 2050, whilst balancing costs and service delivery.

Vehicles are a corporate asset; they have a capital value, require regular maintenance and statutory safety inspections and are required to meet stringent Health and Safety Regulations. Operational Services is responsible for the purchase, maintenance, repair and disposal of all vehicles owned by West Lindsey District Council, including those used for waste collection, street cleansing, market duties and a small amount of supporting plant.

The purpose of this strategy is to set out the replacement pathway for the waste and recycling fleet to circa 2035, which is a statutory service delivered by the council.

This new approach needs to be undertaken against a backdrop of new and emerging technologies, fuels and energy vectors, continued financial pressures and new collection regime, whilst continuing to maintain the high level of customer service established by the service over many years.

## Background

West Lindsey is one of the largest districts in England and one of the most rural in the county of Lincolnshire. One of seven districts in the county, West Lindsey covers 1,125km<sup>2</sup> (or 447 square miles) and has a population of approximately 95,200 people, making it a relatively sparsely populated area.

The size and rural nature of the district can create operational and efficiency challenges and as such it is necessary to ensure that collection rounds are well planned and effective. Currently, collection rounds are large, and the fleet is primarily fuelled with diesel to ensure that the services is value for money and high performing.

It is, however acknowledged that new vehicle technologies are rapidly developing, primarily in the form of electric powered vehicles. Hydrogen cell fuelled vehicles are also now available but limited at present by hydrogen production and the infrastructure that is required to supply it. In the context of limited resources and emerging new technologies which may be effective but often initially expensive, the route to decarbonisation of the council fleet is a significant challenge.

Some progress has already been made towards reducing the carbon impact of the fleet. The recent move to the Caenby Depot has allowed the amount of Supervisor vans to be reduced from six to three; two of which are fully electric variants.

Equally, recently procured Refuse Collection Vehicles (RCVs) are equipped with the latest generation diesel engines; fitted with electric bin-lifts, and most of the fleet have solar panels which reduce fuel usage for ancillary equipment.

In addition, as part of broader council workforce development requirements, all drivers receive regular training which includes utilising driving techniques which reduce fuel usage.

The council recently commissioned Energy Saving Trust (EST) to undertake a detailed assessment of the council's current fleet operations, the market and available technologies in order to better understand the potential

for using alternative fuels and assess the impact of this on day-to-day operations and service delivery.

This document has been used as a basis to inform the development of this strategy which will in turn inform future decision making of the council when procuring new fleet vehicles for the delivery of Operational Services.



## Overview of the current fleet

The Operational Services team currently have a total of 38 vehicles which are owned and operated by the Council. The table below provides a summary (as of financial year 2022/23) of the type of vehicle and number of vehicles, average annual mileage and approximate tonnage of greenhouse gas (GHG) emissions per year.

Table 1

Fleet Category	Number of Vehicles	Annual Mileage	Approximate GHG (Scope 1 in tonnes)
HGV/RCV	17	285,691	650
LCV up to 5.2t	13	150,886	87
Sweeper	3	15,847	32
Plant	3	12	Less than 1
Civic Car	1	2,097	Less than 1
Various	1	0	28
<b>Totals</b>	<b>38</b>	<b>454,533</b>	<b>799</b>

\* It should be noted that fuel recorded in the 'various' category was used across the categories, but no registration data was recorded to identify the specific vehicle.

Table 1 shows that 81.3% of GHG emissions come from the Heavy Good Vehicles/Recycling Collection Vehicle (HGV/RCVs) which undertake 62.9% of the fleet's mileage. Light Commercial Vehicles (LCVs) contribute only

### Heavy Good Vehicles



### Light Commercial Vehicles =



This demonstrates that the greatest potential for emission reductions is in the heaviest vehicles, and as such provides justification for an increase in fleet investment in this area to achieve this when technology is available to provide an efficient service to meet district needs.

It is also important to note that in a fleet of this nature, relatively small changes and improvements to the fleet can also result in several tonnes of GHG emissions saved. This has been previously demonstrated by the reduction in emissions following the switch from diesel to electric for 2 of the managers vans.

The Operational Services Team have a planned rolling replacement schedule for fleet vehicles, with only 'back-up' vehicles over seven years old. This rolling replacement schedule is vital for maintain operational efficiency and reducing maintenance costs.

All vehicles are now at least Euro VI/6 emissions standard. Ongoing improvements in emission technology and standards mean that today's Euro 6/VI(d) fossil fuel Internal Combustion Engine (ICE) vehicles will be superseded by cleaner ICE models with (Euro 7/VII) which is now under consideration for introduction in 2025/26. Typically, the council replaces vehicles every six years.

A full breakdown of all 38 vehicles, including specification and age can be found in appendix 3. However, it is important to note that the vehicle replacement schedule is an operational document which is updated regularly and as such will form an important part of the vehicle decarbonisation decision making framework.

This is particularly important as changes introduced by the Environment Act 2021, including the implementation of Food Waste Collections will have an impact on the make-up of the council's fleet profile and numbers of vehicles owned and operated.

### **Key Considerations**

The council's strategic target is for West Lindsey to become a net zero council by 2050, as such all current and future decisions made by the council must be considered within that context. However, decisions cannot be made on meeting that strategic aim alone, a balance between achieving net zero, whilst also ensuring we meet other key priorities such as delivering value for money to our residents and ensuring that services are modern, sustainable and of high quality is also fundamental to the operation of the council.

A shift from a traditional fully diesel fleet to alternative sustainable fuel sources will not be undertaken quickly due to a number of factors, which includes costs. The decision-making process is made even more

challenging due to the fast-paced technological developments and the impact that has on the market, availability of product and also the price points of various vehicles.

As such, ensuring that any changes to operational services, which includes the replacement of fleet vehicles must be undertaken in a thorough and managed way which balances both climate and fiscal responsibility.

To do this, rather than trying to predict where technological developments, the market and national policy may go within the next 10 to 15yrs, a framework that draws together the keys considerations to be assessed at each decision point should be adopted.

Providing a clear set of criteria which will be used to consider each vehicle replacement decision as it arises, testing the requirements and capabilities of the vehicles needed against the opportunities provided by the market and suitability of function within the relevant timeframe.

The sections below provide a short summary of each of those key considerations which will need to be balanced to enable to council to make timely and informed vehicle replacement decisions based on service need.

A factor in determining the vehicle decarbonisation strategy is establishing the most appropriate fuel type for the vehicles. Even before the mandate for improved sustainability and the reduction in the Council's carbon footprint was set, the assessment and understanding of vehicle function and performance has been embedded within the decision-making process of the council.

A standardised fleet running, as far as possible, on the same fuel type has always been centre to this approach to support maintenance contracts and ensure economies of scale in both the purchase of fleet vehicles and the fuel on which they run. The fleet currently, with the exception of two of the managers vans are diesel. The use of diesel vehicles has always been driven by the need to cover a very large rural area efficiently and effectively.

However, with the change in national policy, around combustion engine manufacture and availability, this has led to a change in the market, seeking to develop vehicles which run on alternative fuels.

As such the need to better understand alternative fuel capabilities along with other technical enhancements is required to ensure that the developments and opportunities that arise are factored in, in order to maximise budgetary and environmental benefits, in line with the operational requirements of the council.

There are currently three main sustainable alternatives to fossil fuels in development within the market. Each having their own pros and cons. Ensuring that an alternative fuel choice is right for the council's operational requirements is fundamental to any future decision.

### **Hydrogen fuel cell electric vehicles**

Hydrogen fuel cell electric vehicles (H2FCEVs) offer potentially convenient rapid refuelling, and zero harmful air quality emissions where vehicles are operating. However, whilst there is a potential role for 'green' hydrogen in decarbonising heavy transport, based on current assessment it is not considered to be the best pathway for council vehicles.

The detailed assessment of technical reasons is provided within the EST report, however to summarise the constraints, hydrogen fuel cell vehicles are more expensive to purchase and are far more technically complex and require more maintenance and specialist intervention, than other sustainable fuel sources, also the council would need to secure a reliable local third-party green hydrogen refuelling infrastructure, along with a back-up plan if the refuelling supply becomes unavailable.

Therefore, currently, hydrogen fuel cell vehicles do not provide a financially viable pathway to reduce emissions for the council at this point in time.

### **Compressed Natural Gas and Biofuel**

Some vehicle manufacturers offer CNG powered vehicles as an alternative to diesel. Vehicles are powered by spark ignition engines (similar to petrol engines) and fuel is often grid gas that is compressed at a suitable facility, which relies on a sufficiently high-volume gas supply.

There are some benefits of utilising this type of fuel, including financial associated with gas costs and tax incentives, however these are outweighed by issues around supply vulnerability due to limited suppliers in the UK, much of the current supply comes from Holland and Belgium, equally there is currently a limited choice in vehicles utilising this type of technology.

There are future opportunities to secure a more local supply, particularly in the context of harvesting energy from food waste, however the end of combustion engine sales will mean that even if this can prove viable, it will only be a transition fuel over a small number of replacement cycles. The most likely niche would be for vehicles that cannot currently be replaced with battery electric vehicles, but this may not be enough to deliver value for money with the gas supply.

## Hydrotreated Vegetable Oil (HVO) and other equivalent fuels

There is a growing interest in the use of this 'drop-in' diesel replacement, which includes used cooking oil. Whilst it is acknowledged that this is an attractive and flexible fuel source, there are a number of challenges around supply and sustainability, with a direct link being made between the use of this fuel source and an increase in global deforestation to meet demand. It is acknowledged that a number of high-profile international companies advertise and are advocates of this fuel type, however concerns around scalability and long term sustainability make this a potentially challenging long-term fuel choice for the council unless supply and sustainability issues can be addressed.

## Battery electric vehicles

Probably the most well-known alternative vehicle fuel type is the battery electric vehicle, which has risen in prominence across the private car market. Initially considered an incredibly expensive alternative to combustion engine vehicles, as a result of a number of national policy changes, electric and hybrid vehicles have increase in popularity and have become more of a mainstream option.

It is expected that new battery prices will fall 60% by 2030 (compared to 2020), rapidly reducing electric vehicle costs. The use of dedicated manufacturing platforms for battery electric vehicles will allow vehicle manufacturers to reduce costs by up to 25% thanks to simpler assembly, the use of standard battery packs, and the savings from producing higher volumes of various battery electric vehicle models on the same chassis.

However, whilst costs are reducing and availability is increasing for small to medium sized vehicles, their remains a significant gap in the market for larger and heavy good vehicles capable of delivering equivalent performance requirements to that demonstrated by diesel powered vehicles.

It is accepted that this position is changing rapidly, with many city and small borough councils switching to battery electric vehicles across all of

their fleet. However, currently like for like vehicles for larger rural districts where rounds are structed around longer routes where a significant daily range is required, the technology does not currently exist.

This is not to say that an incremental switch to battery electric shouldn't be considered as part of the council's long term vehicle decarbonisation strategy. The pace at which battery electric vehicles are evolving means that it is highly likely that within the life of the vehicle decarbonisation strategy that the opportunity to switch a large proportion of the current fleet to this fuel type is feasible.

The detailed Fleet Decarbonisation Review undertaken by the Energy Saving Trust goes as far as to recommend that out of all of the sustainable fuel options it is battery electric that the council should be planning to move to in order to stay on track with the strategic objective to be a net zero council by 2050. However, in order to do this, there are a number of steps that must be taken to prepare the council, ensuring that any switch to an alternative fuel source continues to balance finance, customer service and sustainability aspirations.



### Infrastructure Requirements Current Infrastructure

The current infrastructure at the Caenby Corner depot, primarily designed to support traditional fuel vehicles, is inadequate for a wholesale transition to battery electric vehicles. An initial assessment shows that the electrical capacity available is sufficient to handle a limited additional number of electric vehicles. However, for a complete transition, significant upgrades are necessary.

### Existing Procurement and Maintenance contracts

Vehicle replacement is managed through the established vehicle replacement schedule, which details all of the fleet vehicles owned by the council, including specification, age and use, and most importantly when that vehicle will need to be replaced.

It is not clear yet, what the impact of running vehicles which are not internal combustion engine models will make on the current procurement or maintenance contracts, however this would need to be explored through the decision-making process and form part of a fully costed business case.

Anecdotally the market indicates that whilst battery electric vehicles are relatively new to the mainstream market, it is considered that battery electric vehicles tend to have a longer operational life, supported by the simplicity of electric drive train components which have been used across a wide range of transport modes, for example trains and trams, for over 100 years. In many circumstances batteries can be serviced, and faulty cells replaced, to extend their operational life at full capacity.

With larger electric vehicles, it may be necessary to take a different approach to the replacement cycle with the chassis, drive train, battery and rig all being treated as separate and independently replaceable components. To maximise the return on the investment in battery electric vehicles, it is recommended to align replacement cycles with a vehicle's battery warranty, although if a battery is well maintained, its life could be a

lot longer than its warranty period. This may mean planned replacement cycles of eight or, in some cases, ten years.

### Electrical Grid Capacity

Initial feasibility studies indicate that the current grid connection at the Caenby Corner depot can support the charging needs of approximately nine electric refuse vehicles and a few light commercial vehicles. To accommodate the entire fleet, the electrical supply would need to be enhanced to a 400kVA capacity. This upgrade is crucial for ensuring that the fleet's operational needs are met without disruption and aligns with the broader objectives of fleet decarbonisation.

### Charging Infrastructure

The development of a comprehensive battery electric vehicle charging infrastructure is a central component of the vehicle decarbonisation strategy. Current facilities only feature minimal charging points, which are insufficient for scaling up to a fully electric fleet. This would involve:

- Installation of Charging Points: Based on the vehicle downtime and charging time requirements, a phased installation of charging stations at strategic locations within the depot is planned.
- Smart Charging Solutions: To optimise charging schedules and manage energy demand efficiently, the integration of smart charging technology is essential. This will allow the council to minimise peak load impacts on the grid and reduce electricity costs.

### Renewable Energy Integration

The council is already considering opportunities to reduce its carbon footprint across all operational areas by exploring options to integrate renewable energy sources such as solar and wind power on existing buildings, which would include the depot and further reduce the operational costs associated with charging battery electric vehicles. This would include:

- **Solar PV Panels:** Installation of photovoltaic panels on depot buildings and surrounding areas to generate electricity and reduce external power demand.
- **Battery Storage Systems:** To enhance energy security and maximize the use of generated solar power, battery storage systems could be installed to store excess power during low usage periods.

### Timeline and Phasing

The rollout of the necessary infrastructure will be phased according to the fleet replacement schedule and budget allocations. Initial focus will be on upgrading grid connections (if necessary) and installing essential charging points, with subsequent expansions aligned with the increase in electric vehicle acquisitions.

### Vehicle utilisation and vehicle data

As part of the decision-making process to transition from a traditional fuel vehicle to battery electric or other alternative sustainable fuel it will be important to consider and understand in detail the specific operation requirements of the vehicles needing to be replaced.

This will include assessing the current capability and function requirements, in terms of mileage, capacity, operational coverage in terms of the routes and purposes the vehicle is used for and assess what new opportunities may be presented by the purchase of a sustainable fuel vehicle. It will be necessary to undertake a thorough assessment of the Councils data and telematics to further support and evidence future vehicle needs to aid in the decision-making process.



### Cost of Transition

The transition to a battery electric fleet involves considerable upfront costs, including the purchase of new vehicles and the establishment of necessary infrastructure. Battery electric vehicles generally have higher initial purchase prices compared to traditional diesel vehicles. However, these costs can be offset by lower operating and maintenance expenses over the vehicles' lifespans. The Energy Saving Trust report provides details of headline costs. However, due to the time sensitive nature of each decision point an internal appraisal would need to take place and a full financial appraisal appended to each new procurement decision report.

### Staged Replacement Cycle

As previously referenced the council operates on a staged vehicle replacement cycle, which provides a structured approach to gradually transitioning from traditional fuel vehicles to battery electric vehicles. This cycle is strategically aligned with the vehicles' end-of-life, ensuring that replacements are economically viable and operationally necessary. A staged approach allows the council to spread the financial burden over several years, making the transition more manageable within the council's annual budgets.

### Whole Life Cost Analysis

A Whole life cost analysis will be integral in assessing the total economic impact of purchasing and operating each vehicle in the fleet over its expected service life. Unlike diesel vehicles, keeping battery electric vehicles for longer does not have a negative impact on green-house gas emissions due to deterioration in diesel engine performance. As the UK grid decarbonises, greenhouse gas emissions from battery electric vehicles fall year on year. This means that higher battery electric vehicle procurement costs can be deferred over a longer period of ownership, without adverse environmental impact and it also makes best use of the energy and resources used to make the battery.

Analysis of whole life cost should also include the cost of purchase, fuel, maintenance, and disposal, adjusted for the time value of money. Whole

life costing provides a more accurate representation of long-term financial impacts, guiding more informed decisions that align with the Councils financial and environmental goals. When taking decisions on vehicle purchases the whole life costing exercise must be weighed against local factors and market conditions at each purchase decision point.

### Funding and Partnerships

To mitigate the high initial costs associated with fleet electrification, the council will explore various funding opportunities. These include government grants, low-interest loans, and potential incentives available for local authorities committed to reducing carbon emissions. Securing external funding will be critical to advancing the fleet's electrification without imposing undue financial strain on the council's resources. Some are available now and these are expected to become more prevalent in the future.

As well as pursuing various funding avenues, partnerships will be important, as well as shared learning with peers within the Lincolnshire Waste Partnership and other local authorities, collaboration with energy providers and technology firms may also be necessary to access the latest innovations and cost-effective solutions in electrification technology. There may also be opportunities to further reduce electricity costs and increase security of supply by exploring a long-term power purchase agreements with local renewables producers.

### Financial Risk Management

Transitioning to an electric fleet poses certain financial risks, including the potential for higher-than-expected vehicle costs, changes in government policy, or technological advancements that could render newly acquired technologies sub-optimal. To manage these risks, the Council will establish a risk mitigation strategy that includes regular market reviews, intelligent procurement, and continuous monitoring of technological developments in the electric vehicle market and factor those into all decisions taken. Borrowing costs need to be considered in the cost of replacement assets.

### Budget Planning and Reporting

Accurate and transparent budget planning and reporting will be essential to track the financial performance of the vehicle decarbonisation strategy. Regular updates will be provided to Management Team and the Environment and Sustainability Member Working, detailing expenditures, savings, and comparisons to projected financial outcomes with diesel and electric. This transparency will help maintain trust and ensure continued support for the initiative.

### Risks and Opportunities

In recognising that there are opportunities for the fleet to transition to battery electric vehicles over the next 10 years, there are a number of challenges in transitioning the fleet to zero emissions. These include the current lack of sufficient charging infrastructure, the higher initial costs of electric vehicles, and the need for significant upgrades to electrical supply at vehicle depots.

However, these challenges also present opportunities to innovate and improve, such as leveraging the predictable downtime of vehicles to implement efficient charging schedules and exploring renewable energy options to power the fleet. However, in order to do this effectively and efficiently a clear stepped approach must be taken within the project which also allows for reflection and sense-checking prior to decisions being made.

### Implementation Risks

Risk	Mitigation
Technological uncertainty - the rapid advancement in battery electric vehicle technology poses a risk of current choices becoming obsolete.	The council will look to engage in a flexible procurement approach, allowing for updates and adjustments as newer, more efficient technologies become available.
Infrastructure development delays - Delays in upgrading charging infrastructure could impede the rollout of electric vehicles.	WLDC will address this by establishing an investable business case infrastructure plan in the Caenby Corner Depot within 6 months and establishing strong partnerships with the DNO and contractors. Officers will closely monitor project timelines through rigorous project management practices. The depot Infrastructure project is being overseen by Commercial Board and Stage 2 project document plan has been submitted.
Funding Instability - potential changes in government funding and grants for sustainability projects could affect the financial planning of the fleet transition.	The council will mitigate this risk by maintaining business cases fleet investment and by working with the regional MNZH hub and lobbying for consistent government support.
Supplier Reliability - dependence on specific suppliers for EVs and charging equipment could lead to vulnerabilities.	Officers will develop contingency planning to help manage this risk.

## Operational Risks

Risk	Mitigation
Vehicle Performance and Reliability - as the fleet transitions to electric vehicles, concerns about vehicle performance under various operational conditions may arise.	The council will conduct pilot programs to test new vehicles in different settings to ensure they meet operational needs.
Change Management - resistance to change from within could hinder the transition process.	The council will implement comprehensive training and engagement programs to ensure all staff are informed, involved, and supportive of the transition.
Energy Supply Disruptions - reliance on the electrical grid and potential energy supply disruptions pose risks to fleet operations.	Incorporating renewable energy sources and battery storage systems at depot sites will provide energy security and reduce reliance on the grid. A high-capacity diesel generator will remain as back up.

## Opportunities

### Environmental Leadership & Regulatory Compliance

By transitioning the fleet a sustainable fuel type, such as battery electric, the council will position itself as a leader in environmental sustainability within the region, enhancing its reputation and setting a benchmark for others to follow. It will also ensure that the council is in the best position to comply with future environmental regulations and stay ahead of new legislative requirements.

## Operational Cost Reduction

Electric vehicles offer lower running and maintenance costs compared to traditional vehicles. These savings can be significant over the lifecycle of the vehicles, contributing to the overall financial health of the council. Innovation and Partnerships

The transition process presents opportunities for the council to engage in innovative projects and form new partnerships with technology providers, other local authorities, and government agencies. These collaborations can lead to shared learning, additional funding opportunities, and enhanced public services.



All future vehicle procurement decisions will be made subject to the adopted decision-making framework and the established business case process.

All business cases will detail the proposal, initial expenditure and future planned capital and revenue expenditure, with a suitable risk management framework, and assessment of capacity and capability to deliver the approach. The business case will summarise the outcome of the due diligence undertaken and set out appropriate alternative options that have been considered as part of the process.

### Vehicle capabilities, procurement and Maintenance

As each diesel vehicle is identified for replacement as part of the vehicle replacement programme an assessment should be made to establish if that vehicle can feasibly be replaced by a battery electric vehicle or other such vehicle with a sustainable fuel source.

This assessment will be undertaken in strict accordance with the Fleet Decarbonisation decision-making framework and associated governance, balancing a number of challenges and opportunities to ensure an appropriate approach is taken that balances the council's Environment and Sustainability commitments with Corporate Plan objectives around delivering a value for money and high-quality service to local taxpayers.

\*\*Fleet Decarbonisation Decision Making Framework – see Page 18.

### Transition Team

The move to a net zero fleet is a once in a generation transformation and is not just a project for the fleet team. In acknowledging both the challenges and opportunities of managing a successful transition of the council road transport fleet to a zero-emission fleet will require the council to establish a small working group encompassing fleet management and any relevant vehicle operating departments, estates, energy management or sustainability, human resources, procurement and finance.

The robust appraisal of need and utilisation, changing vehicle procurement to a whole life cost model, funding the new fleet and installing the charging infrastructure to support new battery electric vehicles, will require input and resources from all the groups identified above, as well as a governance and reporting structure with full senior management team engagement.

Following the detailed assessment of the council's fleet, the district and the depot, it is considered that decarbonisation of the fleet can be achieved. Based on current available technologies and their performance it is considered that battery electric vehicles are the most appropriate option and that with careful consideration of all the factors, that a staged shift from diesel to battery electric vehicles can be achieved within the next 10 years.



This is however on the basis that technological advancements in relation to battery capacity and vehicle range on larger vehicles such as HGVs are achieved and that the works to increase power capacity at the depot can also be delivered in a timely manner to meet the charging requirements of the new vehicles.

As such it is recommended that the Operational Services team continue to work with vehicle manufacturers to keep abreast of advances in technology and alternative fuels, with a focus on battery electric vehicles. The evaluation of all new developments in vehicle technology will be assessed against the decision-making pathway and will consider, operational fitness for purpose, ease of maintenance, ease of use, environmental impact (including include CO2 emissions) and operating cost.

If opportunities arise to pilot battery electric vehicles for certain operational functions at reasonable comparable cost these should be explored, with decisions made on a case-by-case basis.

Equally that a transition team is established that will work, not only on the vehicle replacement strategy but also the depot electrification project to ensure capacity is available was needed.

On going review of the day-to-day operation of the service will also need to be undertaken to ensure opportunities for changes in working practices which may secure other efficiencies and co-benefits are also taken to expedite transition where appropriate.

### **Member Scrutiny and Monitoring of the Strategy**

Oversight of this strategy will sit with the Environment and Sustainability Member Working Group, a cross party group of elected members which meets once a month. The Working Group is responsible for developing, implementing, monitoring and reviewing the Environment and Sustainability Strategy Action Plan. One of the priorities within this Action Plan is to decarbonise the Councils operational services, specifically the waste vehicles. This Vehicle Decarbonisation Strategy has been developed to provide a framework for future procurement decisions taken, as part of that programme.

The success of this strategy will be monitored through those subsequent vehicle procurement decisions effectively utilising the decision-making framework. Corporate Policy and Resources Committee is one of two policy committees responsible for making key decisions affecting our people and our place.

Corporate Policy & Resources Committee has overall responsibility for the Vehicle Replacement Strategy, which is responsible for adopting the Strategy and monitoring its progress. The Committee has the power to 'call-in' the Vehicle Replacement Strategy to the Council's Overview and Scrutiny Committee if it has significant concerns over the decisions being made and overall performance of the strategy.

## Glossary of terms

BEV – Battery Electric vehicles

CNG – Compressed Natural Gas

CO<sub>2</sub> – Carbon-dioxide

EST – Energy Saving Trust

Euro VI/6 emissions standard – the legal limit on the amount of NO<sub>x</sub> gases a vehicle can emit

GHG – Green House Gas

HGV – Heavy Goods Vehicle

HVO – Hydrotreated Vegetable Oil

H<sub>2</sub>FCEVs - Hydrogen fuel cell electric vehicles

ICE – internal Combustion Engine

LCV – Light Commercial Vehicle

RCV – Refuse Collection Vehicle

WLC – Whole Life Costing



Stages	Description	Issues to consider
Stage 1 	<ul style="list-style-type: none"> <li>Vehicle(s) identified for replacement by operational services through the established vehicle replacement cycle. The transition team undertake appropriate investigative and due diligence assessments, including an overview of the current vehicle and its function as well as future business need to ensure alignment with key corporate priorities.</li> <li>If the proposal is supported, the potential vehicle acquisition will progress to Stage 2.</li> </ul>	<ul style="list-style-type: none"> <li>Current specification of vehicle to be replaced</li> <li>Type (HGV, van etc.)</li> <li>Function (Waste Collection – garden waste, general)</li> <li>Current mileage</li> <li>Specific specialist features.</li> <li>Business need.</li> <li>Like for like.</li> <li>Flexibility in specification (less, additional etc.)</li> <li>Options to change operations (service, round etc.).</li> <li>Opportunity to pilot an alternative approach (vehicle/fuel type mix)</li> <li>Ability to adapt vehicle replacement cycle.</li> </ul>
Stage 2 	<ul style="list-style-type: none"> <li>The opportunity is reported in writing, with all supporting information and considered by the Council's Management Team.</li> <li>The report will include:               <ul style="list-style-type: none"> <li>A risk assessment and SWOT analysis.</li> <li>A high-level financial appraisal.</li> <li>An outline business case including detailed narrative around business need, the market and availability.</li> </ul> </li> <li>The business case will also include an assessment of the depot and detail timeframes and any investment required for adaption and or creating capacity.</li> <li>If the proposal is supported, the potential vehicle acquisition will progress to Stage 3</li> </ul>	<ul style="list-style-type: none"> <li>Review and summarise outcomes of pilot.</li> <li>Assessment of the market and availability.</li> <li>Vehicle options (brand, type).</li> <li>Fuel type available.</li> <li>Specification (mileage, function, capacity).</li> <li>Availability &amp; lead in times.</li> <li>Same, similar compatible functionality.</li> <li>Risks to service delivery.</li> <li>Impacts on the depot.</li> <li>Timeframe.</li> <li>Adaption actions.</li> <li>Cost.</li> </ul>
Stage 3 	<ul style="list-style-type: none"> <li>Appropriately qualified council officers will progress a full financial appraisal and costed solution.</li> <li>A recommendation will be reported in writing to the Chief Finance Officer / Section 151 Officer.</li> <li>If the proposal is supported, the potential vehicle acquisition will progress to Stage 4.</li> </ul>	<ul style="list-style-type: none"> <li>Financial appraisal considerations.</li> <li>Whole Life Costing.</li> <li>Alternative procurement route – lease/purchase/retain.</li> <li>Depot upgrades.</li> <li>Fuel costs.</li> <li>Maintenance.</li> <li>Value for money v environment impacts (cost per carbon).</li> </ul>

Stages	Description	Issues to consider
Stage 4 	<ul style="list-style-type: none"> <li>In accordance with current constitutional requirements in making any decision to purchase new fleet vehicles, the Chief Finance Officer will take a report to the council's Corporate Policy and Resources Committee which will include the full business case, financial appraisal and officer recommendations.</li> <li>If the proposal is supported, the potential vehicle acquisition will progress to Stage 5.</li> </ul>	<ul style="list-style-type: none"> <li>Report recommendations.</li> <li>Ensure there is a balance between corporate priorities, specifically maintaining excellent service delivery, financial stability and delivering a carbon net zero council by 2050.</li> </ul>
Stage 5 	<ul style="list-style-type: none"> <li>Subject to the CPR committee resolution, a full procurement exercise will be undertaken to purchase the required vehicles to meet the business need at the time the decision is taken.</li> </ul>	<ul style="list-style-type: none"> <li>Procurement approach.</li> <li>Lead in times and delivery.</li> </ul>



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