Corporate Policy & Resources Committee	
Thursday, 18th July 2024	

Subject: Fleet Vehicle Decarbonisation Strategy for West Lindsey District Council

Report by:	Director of Commercial & Operational Services
Contact Officer:	Rachael Hughes Head of Policy and Strategy rachael.hughes@west-lindsey.gov.uk
Purpose / Summary:	To present, for adoption West Lindsey District Council's first Fleet Decarbonisation Strategy

RECOMMENDATION(S):

1) **That members adopt the Fleet Decarbonisation Strategy and Decision-Making Framework, as attached at Appendices 1 and 2 of this report.**
2) **Members delegate authority to the Head of Policy and Strategy in consultation with the Chair of Corporate Policy and Resources Committee to make minor editorial modifications to the strategy which includes the decision-making framework, where updates to data or legislation occur, that does not fundamentally change to the core objectives of the strategy.**

IMPLICATIONS

Legal:

Net-zero greenhouse gases by 2050 is a statutory target. In May 2019, the UK Government declared a non-legally binding Climate Change Emergency declaration and the Committee on Climate Change recommended a new emissions target for the UK: net-zero greenhouse gases by 2050. This was made a statutory target in June 2019 through the Climate Change Act (2050 Target Amendment) Order 2019.

Sale of new diesel vans will be banned from 2030 and sale of diesel HGVs will be phased out by 2040 at the latest.

Financial: FIN/45/25/MT/SL

A full review and report on Fleet Decarbonisation Opportunities, the markets, funding and suitability of fuel types for a rural district was commissioned, and a draft was submitted by the Energy Saving Trust (EST) in December 2023 This was funded at a cost of £13k from the Climate Change Reserve and has been used to inform the approach taken in this strategy at appendix 1.

A grant of £25k has been received from Midlands Net Zero Hub (MNZH) and up to £13k match funding budget (previously drawn down from the climate reserve) approved to fund the spend.

£500k was allocated to support delivery of the Carbon Management Plan, (with a recognition that other funding solutions are needed to support this). The capital programme 2021-22 to 2025-26 also included for £260k of carbon reduction initiatives.

£50k of this was spent in 2021/2022 against the capital scheme 'Solar Proposal for New Waste Depot', funded from grant income.

£210k remains in the capital programme 2024/2025 for Carbon Efficiency around parish lighting. This is funded from the Maintenance of Facilities of reserve.

The uncommitted balance on the Environmental and Climate Change Reserve is £477.2k:

		2021/22	2022/23	2023/24	2024/25	2025/26
		£	£	£	£	£
	Opening Balance	(500,000)	(480,000)	(608,000)	(531,206)	(477,206)
	Contribution to Reserve		(182,000)			
Capital	Solar Refuse Fleet Project			22,794		
Revenue	Climate Change Consultancy costs	20,000				
Revenue	Contribution to Head of Strategy & Policy post		54,000	54,000	54,000	
	Closing Balance	**(480,000)**	**(608,000)**	**(531,206)**	**(477,206)**	**(477,206)**

The Vehicle Replacement Reserve table is included within the report at Appendix 3. This table includes replacement costs for 16 refuse collection vehicles (RCV). The replacement cost for each current vehicle (diesel) is £220k for 2024/2025 and £232.2k from 2025/2026.

The forecast cost to replace the existing 16 RCV's with diesel vehicles is £3,666.4k across the years 2024/2025 to 2030/2031, leaving a balance on the reserve at year end 2030/2031 of £68.6k.

The cost of an electric RCV is reported to be £422k each and would be a total replacement cost of £6,752k for the 16 vehicles. This is a total additional cost of £3,085.6k.

Over six years there would be an average requirement for £514.3k extra contribution to the vehicle replacement scheme each year.

There is a OZEV grant of £25k per vehicle for the first 100 vehicles, a total of £400k that would reduce the additional cost to £2,685.6k.

	16 vehilces £k
Diesel RCV	3,666.4
Electric RCV	6,752.0
Additional cost	3,085.6
OZEV grant	(400.0)
Pressure	**2,685.6**

The current cost difference between electric and diesel vehicles varies significantly by vehicle category. For the Council's light commercial vehicles (LCVs), electric models are estimated to have upfront purchase costs around 55% higher than equivalent diesel models. For the heavy goods vehicles (HGVs) that make up a large portion of the fleet, the headline cost of electric models can be 80-100% more than diesel equivalents.

In terms of charging infrastructure, installing the necessary charge points to support a fully electric fleet is estimated to require an investment of around £2,000 per unit – circa £30,000 in total. This can only be preliminary estimate and actual costs will depend on the specific infrastructure plans developed and grid connection costs if an increase is required. The initial EST review suggests that a relatively modest increase in grid connection capacity of around 100 kVA may be sufficient to support initial fleet electrification, and that securing this additional capacity in the near-term could be a low-cost option to mitigate future supply risks.

It is important to note that while electric vehicles have higher upfront costs, there is anecdotal evidence that they can have lower operating costs related to fuel and maintenance over the life of the vehicle, however this has yet to be robustly tested by the Council and will be addressed through an agreed whole life costing methodology as part of future financial appraisals.

Detailed financial appraisals will be conducted for each vehicle procurement decision to determine whole-life costs. Grant funding opportunities will also be explored to offset some of the increased capital costs of transitioning to an electric fleet.

Staffing:

There are no staffing implications arising from this report. Implementation of the Strategy will be delivered with existing officer capacity and has been factored in to both the Operational Services Business Plan, and the Policy and Strategy Business Plan, through a Transition Team.

Resource and skill requirements will be reviewed as the Strategy matures to ensure they remain adequate. The Council's usual project management and governance frameworks will apply to any projects arising from adoption of this strategy.

Equality and Diversity including Human Rights:

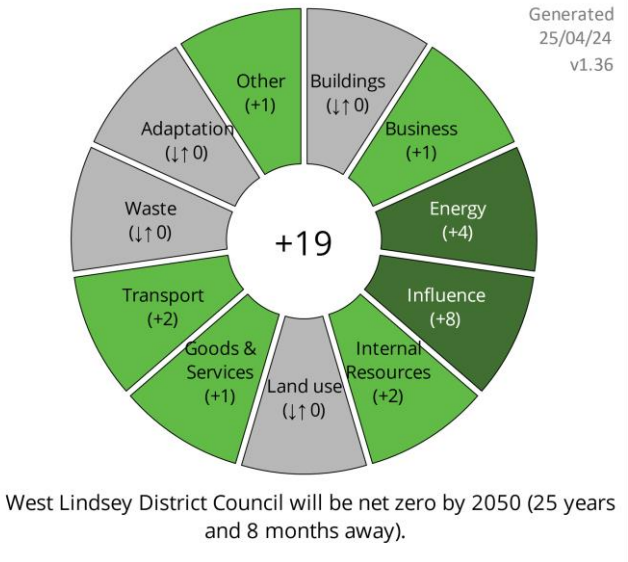
The Council's ambition is to ensure that neither the effects of climate change, nor the costs of reducing emissions, disproportionately affect anybody living or working in the district. There are no EDI implications arising from this report, however, a full equalities impact assessment will be carried out as required on any projects arising from this strategy.

Data Protection Implications:

None arising from this report.

Climate Related Risks and Opportunities: The Carbon Management Plan, Climate Strategy and Action Plan contain proposals aimed at reducing the Council's carbon emission to a net-zero position by 2050 and achieve the same across the District of West Lindsey within the same timescale.

A climate, environment, and sustainability (CESIA impact) assessment is shown below.



The CESIA shows positive climate and environmental benefit from adopting the fleet decarbonisation strategy in several areas. Proceeding with the work scores highly because it represents a commitment to continued assessment of decarbonisation options, analysis and improvement action and sends a positive message to internal and external stakeholders. In 22/23 fleet emissions contributed 797 tonnes of C02 equivalent emissions out of an organisational footprint of 1396t C02e and that figure is expected to rise.

It doesn't score higher, because it only represents a commitment to a new approach, and it is not until procurement decisions are made and diesel vehicles are replaced that the carbon savings will accrue. Climate related risks are inherent. The risk of not having a Fleet Decarbonisation Plan and its aims and objectives could lead to the Council contributing to irreversible temperature rises and subsequent damage to the climate and natural environments.

Adopting a Fleet Decarbonisation Strategy now provides a clear framework in which future decisions on procurement of fleet vehicles can be based and allows the Council to properly consider and balance all factors to ensure that decisions not only deliver on the organisation's commitment to be a net zero Council by 2050, but also ensure delivery against other corporate priorities.

Section 17 Crime and Disorder Considerations:

N/A

Health Implications: Health and wellbeing are strongly linked and interwoven into the aims of the Climate, Environment, and Sustainability strategy as co-benefits of taking positive action to address climate change.

Title and Location of any Background Papers used in the preparation of this report :

West Lindsey District Council's Carbon Management Plan and Greenhouse Gas emissions report

Fleet Update and Vehicle Procurement Request Report to CP&R (July 23)

West Lindsey District Council's Environment & Sustainability Action Plan & Annual Progress Report (Oct 23)

Risk Assessment :

Fleet decarbonisation was identified as a priority within the Council's Carbon Management Plan which was adopted in June 2021. The risks associated with not undertaking this work include:

1. Failure to reduce the Council's category 1 carbon emissions. This is mitigated by following the staged procurement decision-making approach as outlined in the strategy and by using the decision-making framework within the strategy and also shown in appendix. 2
2. Risk of a damage to reputation. Having committed to becoming a net zero council and leading the agenda within the district, there is a risk that inaction will impact on the Council's reputation and role as community leader in this area and opportunities to influence other organisations and sectors will be lost.
3. Fleet decarbonisation is being achieved by early-adopters in recent years. At the moment it is too early to fully understand vehicle life cycle and ongoing maintenance costs. Indicative evidence is that maintenance costs are lower however these vehicles have not been tested in our rural environment, therefore there may be a cost risk or benefit but that is not yet understood.

Call in and Urgency:

Is the decision one which Rule 14.7 of the Scrutiny Procedure Rules apply?

i.e. is the report exempt from being called in due to urgency (in consultation with C&I chairman)	**Yes**		**No**	**x**

Key Decision:

A matter which affects two or more wards, or has significant financial implications	**Yes**	**x**	**No**	

Executive summary

This report presents for adoption a West Lindsey District Council Fleet Decarbonisation Strategy, attached as Appendix 1 and associated decision-making framework within the strategy and as shown in appendix 2. This is the first such strategy for West Lindsey District Council ("the Council") which provides a roadmap and decision-making pathway for transitioning to zero emission vehicles by 2035.

Through its Carbon Management Plan, the Council has made significant strides in recent years, reducing carbon emissions by 32% since 2008. However, at 34%, fuel consumption remains the biggest contributor to the Council's current carbon footprint with significant changes required to reduce this going forward.

The approach outlined in this report has been developed to support delivery of the Council's strategic environmental aim of becoming carbon net zero by 2050, as described in the Environment and Sustainability Strategy. Adopting this Strategy will enable the Council to make informed, evidence-based decisions to decarbonise the fleet. The timescales for implementing this decision-making framework will be driven by the already established fleet replacement schedule and in line with budget cycles.

1.0 Introduction

1.1 To support the development of this Strategy, officers have worked with the Energy Savings Trust to identify a staged approach, appropriate to the priorities, needs and resources of the Council. To ensure alignment with other strategic priorities and with legislative requirements, not least the Environment Act 2021, due consideration has been given to key initiatives such as the collection of food waste.

1.2 Particular attention has been paid to aligning the Fleet Decarbonisation Strategy to the Council's Carbon Management Plan 2021-2026, which states that "significant switching of the fleet is required for the Council to achieve its decarbonisation emissions.

1.3 Importantly, the ability to continue delivering an efficient high quality, high performing service that meets the needs of our customers was paramount in designing the approach set out in this report within the resources available to the Council. This ensures that the rollout of a decarbonised fleet will not result in a drop in the high quality and reliability that our residents have come to expect from the Council's Operational Services.

2.0 Key Considerations

2.1 In developing this Strategy, a number of challenges and opportunities were considered to ensure an appropriate approach that balances the Council's Environment and Sustainability commitments with the Corporate Plan objective of delivering a value for money, high quality service to local taxpayers. Such challenges and opportunities are summarised below for members consideration, as well as being described in more detail in the Strategy itself.

3.0 Financial Considerations

3.1 The transition to an electric fleet involves considerable upfront costs, including the purchase of new vehicles and the establishment of necessary infrastructure. The timescales for when these decisions will need to be made, will be driven by the vehicle replacement schedule used by Operational Services to manage vehicle replacement and procurement, ensuring the service continues to deliver high quality services to residents and businesses across the district.

3.2 Alternative technology vehicles, such as battery electric vehicles generally have higher initial purchase prices compared to traditional diesel vehicles. However, these costs may be offset by lower operating and maintenance expenses over the vehicles' lifespans.

3.3 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 and business case appended to each new procurement decision report.

4.0 Operational Requirements

4.1 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.

4.2 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.

4.3 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.

4.4 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.

5.0 Strategic Linkages

5.1 In addition to those already mentioned, such as the Environment and Sustainability Strategy, the Corporate Plan and the Environment Act 2021, it is important that the Fleet Decarbonisation takes into account other strategic decisions to ensure alignment across the organisation.

5.2 In July 2023, CP&R approved a Fleet Update and Vehicle Procurement Request Report which brought forward replacement dates for some of the Council's existing fleet due to increasing maintenance cost, and also highlighted the need for a new vehicle replacement strategy which should include options for decarbonisation. The Strategy presented in this report delivers the requirements of this recommendation.

5.3 Further this strategy also provides a timely and clear framework for the Council to make decisions on vehicle procurement in connection with the new requirements of the Environment Act 2021, specifically the implementation of commercial and residential food waste collections starting in 2025.

5.4 Due to the lead in times for vehicle procurement a decision on vehicle specification and fuel type for the food waste collection service will be imminent. As such it is important that a clear framework for assessing and balancing vehicle specification, the market, operational needs and service delivery needs to be established to ensure consistency and transparency.

6.0 Benchmarking and the Evidence Base

6.1 In designing this Strategy, officers carried out a benchmarking exercise to understand the fleet decarbonisation approach taken by other local authorities.

6.2 This focused primarily on those Lincolnshire authorities who have also been supported by the Energy Saving Trust. In doing so, the Council officers have benefitted from knowledge transfer and the ability to develop and implement a fully costed action plan based on the advice of experts in this field.

6.3 The Energy Savings Trust also conducted a comprehensive review of the Council's existing fleet operations, the findings of which shaped the emerging priorities include within the Fleet Decarbonisation Strategy. In summary, the Review concluded that the Council's approach to fleet decarbonisation should:

- Understand the market & technological developments including current and future capabilities of vehicles.
- Identify which vehicles are suitable for replacement with battery electric vehicles or other alternative technologies as they come onto the market.
- Formulate a procurement strategy based on whole life costs (in both financial and carbon terms)
- Review whether the depot is ready to accommodate vehicles powered by alternative fuels, for example install charge points at the Caenby depot and review the options for charging.
- Advise on supporting measures, such as driver and mechanic training.

6.4 A copy of the Review, which forms the evidence base for the Fleet Decarbonisation Strategy, is included in full at Appendix 4 for members information.

7.0 Current Fleet Analysis - Fleet Composition and Usage

7.1 The Council operates a diverse fleet essential for delivering various award-winning council services, including waste collection, street cleansing, and enforcement activities.

7.2 The current fleet consists of 17 heavy goods vehicles (HGVs)/refuse collection vehicles (RCVs), 13 light commercial vehicles (LCVs), and additional specialist vehicles. Collectively, these vehicles are responsible for significant annual mileage, contributing to the Council's carbon footprint.

7.3 The fleet's operational profile is characterised by regular, predictable routes, with vehicles typically available for charging for extended

periods, suggesting a favourable setup for transitioning to battery electric vehicles. This availability aligns with the Council's operational strategies and facilitates efficient scheduling for charging times without disrupting service delivery.

8.0 Challenges and Opportunities

8.1 The analysis in the EST report highlights several 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.

8.2 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.

9.0 Infrastructure Requirements - Overview of Current Infrastructure

9.1 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 (BEVs).

9.2 The initial assessment reveals that the electrical capacity available is sufficient to handle a limited number of electric vehicles. However, for a complete transition, significant upgrades will be necessary. An assessment and full costing of any upgrades required to the depot will be undertaken as part of all future vehicle procurement decisions and will be fully costed as part of a comprehensive business case.

10.0 Electrical Grid Capacity

10.1 The feasibility studies conducted, including insights from the Energy Saving Trust (EST) and internal reviews, 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.

10.2 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 electrification.

10.3 The EST review estimates that upgrading the Caenby Corner depot's grid connection from the current 275 kVA to approximately 400 kVA will be necessary to support a fully electric fleet. While specific costs are not provided, the report suggests that an increase of around 100 kVA and smart charging solutions may be a relatively low-cost option and recommends engaging with the local District Network Operator (DNO), Northern Powergrid, as soon as possible.

10.4 Establishing costs for this work is a priority so that accurate information can be used to inform future vehicle procurement business cases, specifically in relation to the one-time infrastructure costs and ongoing monthly charges associated with the upgrade.

10.4 Following the award of a government grant, officers have been able to take a proactive approach, and consultants will shortly be appointed to assist with formalising costs for this enabling work. This work will help plot when sufficient capacity is required in order to minimise the risk of future supply constraints. The Council will reach out to the DNO to obtain more detailed cost estimates and explore options for incrementally increasing the grid connection capacity in alignment with the phased electrification of the fleet.

11.0 Charging Infrastructure

11.10 The development of a comprehensive battery electric vehicle charging infrastructure is a central component of any depot electrification plan. Current facilities only feature minimal charging points, which are insufficient for scaling up to a fully electric fleet.

A depot electrification project 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.

12.0 Renewable Energy Integration

12.1 To further reduce the carbon footprint and operational costs associated with charging battery electric vehicles, the Council has the opportunity to explore options to integrate renewable energy sources such as solar and wind power at the depot. This initiative could involve:

- **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.

13.0 Funding and Partnerships

13.1 To mitigate the high initial costs associated with fleet electrification securing the necessary funding for these upgrades is a key consideration. The Council will pursue various funding avenues, including government grants, private partnerships, and green financing options. Collaboration with energy providers and technology firms will also be critical to access the latest innovations and cost-effective solutions in electrification technology.

13.2 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. The Council was recently successful in applying for a £25,000 grant to aid in undertaking scoping works for depot electrification.

13.3 There is an opportunity to further reduce electricity costs and increase security of supply by exploring a long-term power purchase agreement with a local renewables' producer.

14.0 Timeline and Phasing

14.1 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.

15.0 Financial Analysis

Cost of Transition

15.1 The transition to an 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.

15.2 However, these costs might be offset by lower operating and maintenance expenses over the vehicles' lifespans. These costs are detailed at a headline level within the EST report. However, an internal appraisal needs to take place and a full financial appraisal in lie with the requirements of the decision making framework will be included with the final report.

Staged Replacement Cycle

15.3 The Council operates on a staged vehicle replacement cycle, which provides a structured approach to gradually transition the fleet to electric vehicles.

15.4 This cycle is strategically aligned with the vehicles' end-of-life, ensuring that replacements are economically viable and operationally necessary.

15.5 The 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

15.6 A Whole Life Cost (WLC) analysis will be integral in assessing the total economic impact of purchasing and operating each vehicle in the fleet over its expected service life.

15.7 This analysis includes the cost of purchase, fuel, maintenance, and disposal, adjusted for the time value of money. WLC provides a more accurate representation of long-term financial impacts, guiding more informed decisions that align with the Council's financial and environmental goals.

15.8 These have been undertaken in the EST report but will need to be examined and validated internally by the Council's accountants and weighed against local factors and market conditions at purchase decision points. A dedicated financial analysis appendix will be included within the final report.

Financial Risk Management

15.9 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.

15.10 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.

Budget Planning and Reporting

15.11 Accurate and transparent budget planning and reporting will be essential to track the financial performance of the fleet transition strategy.

15.12 Regular updates will be provided to Management Team and other stakeholders, detailing expenditures, savings, and comparisons to projected financial outcomes with diesel and electric. This transparency will help maintain stakeholder trust and ensure continued support for the initiative.

16.0 Adoption of a Procurement Decision-Making Framework

16.1 To guide each procurement decision effectively, the Council will adopt a version of the procurement decision-making framework as recommended in the Energy Saving Trust's report.

16.2 This tool will help in evaluating whether to replace, retain, or refurbish a vehicle based on a comprehensive assessment of total cost of ownership, environmental impact, and operational requirements. The

decision-making framework will be tailored to reflect the Council's specific needs and constraints, ensuring that each decision maximises both financial and environmental benefits.

16.3 It is recommended that the decision-making process and approach to procurement follows the 5-stage process in the table shown within the strategy and at appendix 2.

16.4 Where current assets are underutilised, replacements should be robustly challenged because of the high capital cost of battery electric vehicles. A well utilised, right-sized battery electric vehicle or similar can save money.

17.0 Member Scrutiny and Monitoring of the Strategy

17.1 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.

17.2 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.