NORTH AYRSHIRE COUNCIL

30 May 2023

Cabinet

Title:	**Decarbonisation of the Council's Fleet**
Purpose:	To provide an update on the journey to date and further proposals to decarbonise the Council's vehicle fleet.
Recommendation:	That Cabinet: i. notes the decarbonisation routemap work summarised within this report; and ii. agrees the proposals and recommendations set out at paragraph 2.31 of the report

1. Executive Summary

1.1 North Ayrshire Council has declared a climate emergency, and, through its Environmental Sustainability & Climate Change Strategy, has set an ambitious target to become net-zero by 2030. The Strategy details multiple work streams to help achieve these targets, with a key one being Transport & Travel, given that this represents a significant proportion of area wide emissions. The Council also published an Electric Vehicle Strategy in 2021 which aims to increase the number of Electric Vehicles (EVs) used within North Ayrshire.

1.2 National commitments for reduction of transport emissions have been made, with the 2019-2020 Programme for Government committing to phase out the need for any new petrol and diesel light commercial vehicles by 2025 and to create the conditions to phase out the need for all new petrol and diesel vehicles in Scotland's public sector fleet by 2030.

1.3 The Council therefore needs to take action to ensure our fleet meets both national and local targets.

1.4 As part of our ambition to achieve net zero carbon emissions by 2030, progress has already been made in terms of investment in both EVs and charging infrastructure. However, to assist in the acceleration of more electric and alternative fuelled vehicles along with the relevant charging infrastructure, external support was commissioned to review our assets and prepare a detailed implementation plan or 'routemap' for decarbonisation.

1.5 A summary of the findings is set out within this report, along with recommended proposals for next steps for Cabinet approval at paragraph 2.33.

2. Background

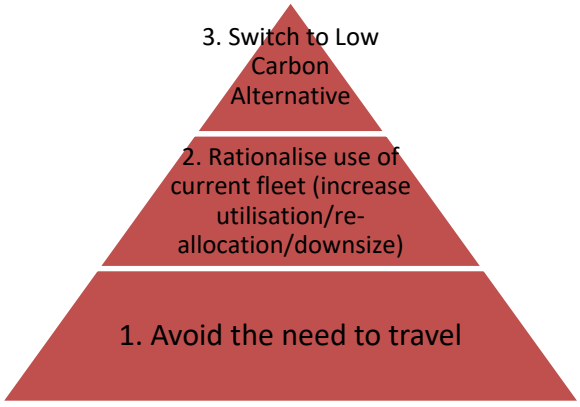
2.1 The Council's fleet currently consists of 566 road registered vehicles and plant. The vehicles are primarily maintained at our in-house workshops at Kilwinning and Lamlash. All vehicles and plant are operated in accordance with our Fleet Asset Management Plan. The current fleet includes a range of vehicles intended to serve varying purposes, with some more suited to switching from conventional fuels to alternative sources than others.

2.2 A total of 397 vehicles have been identified as being immediately suitable to be replaced by EV alternatives. This excludes 169 vehicles (heavy fleet and plant) which do not currently have a cost-effective solution however options for this category of vehicles have still been considered within the study.

2.3 Progress has already been made in relation to acquisition of electric vehicles and we currently operate 31 EVs, which equates to almost 10% of the 397 vehicles noted above.

2.4 Much of the Council's fleet is stored overnight on Council-owned premises and therefore any attempts to electrify these vehicles will require appropriate charging infrastructure. As of May 2023, the Council has installed 29 workplace chargers (65 sockets) to support the decarbonisation of our fleet vehicles.

2.5 A key part of our decarbonisation journey is to follow a hierarchy approach as follows:



<u>Avoid the need to travel</u>

2.6 The Council's fleet is generally engaged in essential service delivery with a need to travel. However, there are opportunities to reduce travel demand, including through digital service delivery options and improved journey planning for essential travel.

2.7 Our decarbonisation routemap therefore includes a recommendation to consider the opportunities available from the Council's Digital Strategy, and also to work with high mileage services to review telematics data and understand if there is any potential to further review the journey planning approach to reduce mileage requirements and associated fuel, maintenance and repair costs.

2.8 In terms of staff business travel, we continue to promote sustainable travel and employees are reminded to select the best option to meet their business travel needs. The sustainable travel hierarchy encourages staff to choose the most appropriate solution with the lowest CO_2 impact.

Rationalise the current fleet

2.9 Fleet rationalisation is the process of reducing the size of the fleet to ensure that each vehicle is used as efficiently as possible. This involves examining the usage of each vehicle and removing any vehicles that are excess to requirements, reallocating vehicles within the fleet, and/or downsizing vehicles. This can provide cost (both revenue and capital) and carbon savings as vehicles are optimised and less vehicles overall need to be leased/purchased and maintained.

2.10 The Council's staff pool car scheme was successfully re-launched during 2022/23 with an aim to reduce carbon emissions and expenditure associated with staff business travel. Over 1,500 members of staff have signed up to the scheme, with access to 11 low emission vehicles and four EVs across seven Council office locations. We will switch over the 11 low emission vehicles to EVs on a phased basis, following further analysis of utilisation patterns and investment in charging infrastructure.

Switch to low carbon alternatives

2.11 Creating a 100% zero-emission fleet will likely require the replacement of our current vehicles with a mixture of different technologies. Currently most zero emission vehicles are battery electric vehicles but there are also hydrogen options available which could have particular applicability to our heavier fleet.

2.12 Of our 566 fleet vehicles, 397 vehicles have realistic EV replacements options currently available (passenger cars, light commercial vehicles (LCVs) and buses). A breakdown of the fleet (as of May 2023) is as follows:

Table 1: Fleet Baseline

Vehicle Type*	Volume	% of Fleet
LCV	**291**	52.8%
Passenger Car	**80**	14.0%
HGV	74	13.0%
Minibus	**18**	3.1%
Compact Sweeper	12	2.1%
Bus	**8**	1.4%
Road Registered Plant	83	14.6%
Total	566	100%

*Categories that total the 397 vehicles noted earlier in the report are highlighted in bold.

2.13 The fleet currently operates 31 leased EVs with a further 25 vehicles purchased and due for delivery imminently.

2.14 The majority of the current EV fleet are leased; this was primarily due to these being funded through the national Switched on Fleet programme. However, where capital finance is available to support outright purchase, this is the preference, balanced against the benefits of evolving technology, for the following reasons:

- Flexibility in respect of use and length of ownership
- Avoidance of end of lease costs, particularly in respect of annual mileage and return condition
- Avoidance of early termination penalties should service reviews identify the requirement for a different type of vehicle.

- Negates premium lease payments to compensate for low residual values associated with specialist vehicles with limited second-hand opportunities
- Reduces pressure on revenue budgets

2.15 It is estimated that the total capital funding required to replace all 397 vehicles currently suitable for low emissions alternatives is £15.85m (which includes both vehicle replacement and charging infrastructure), based on today's prices. This investment figure excludes the 169 vehicles which do not currently have a cost-effective solution; however, these units will still require to be replaced with traditional units over the next eight years. They have been included within the replacement table below at a cost £12.13m however this is only based on their current combustion replacement costs.

2.16 Our forecast costs for vehicle replacements based on 2030 target date to decarbonise the 397-vehicle fleet currently suitable for switchover are as follows:

Year	23/24 £m	24/25 £m	25/26 £m	26/27 £m	27/28 £m	28/29 £m	29/30 £m	30/31 £m	**Total £m**
Vehicle Replacement Capital	£3.360	£1.020	£2.000	£2.980	£2.000	£2.000	£2.000	£2.000	**£17.360**
Estimated Budget Required	£3.260	£2.840	£3.660	£4.930	£3.620	£3.440	£3.350	£2.880	**£27.980**

2.17 The profiling of the above illustration is based on a decarbonisation model undertaken which considered remaining lifespan of current combustion vehicles, the need for a managed approach, and the lead-in time for vehicle charging investment (both work based and home charging).

2.18 As the table demonstrates, the current capital programme budget to the target date of 2030 is significantly less than the budget available due to the costs of EV vehicles (often double the cost of combustion counterparts) and the need for charging infrastructure.

2.19 It is therefore recognised that the ability of the Council to decarbonise the fleet in the short to medium term will be very challenging due to affordability constraints and other delivery challenges. Options to address the current £10.620m gap will need to be considered as part of the next refresh of the capital programme. However, the estimated figures may reduce, including in response to ongoing transformation projects, service reviews and a reduction in the cost of EVs themselves. Research suggests that electric cars and vans should be cheaper to make than petrol or diesel vehicles by 2027, with some segments achieving price parity from 2026.

2.20 It should also be noted that previously allocated additional capital of £2.500m in support of decarbonising the fleet will aid the introduction of around 65 EVs and supporting charging infrastructure by end of March 2024.

Charging Infrastructure

2.21 In parallel with zero emission vehicles adoption, the Council must plan for, and install, suitable charging infrastructure to support our expanding electrified fleet. This will require a mixture of workplace and home-based charging, as some vehicles are stored on Council premises overnight, and others are taken home.

2.22 As of May 2023, the Council have installed 29 dedicated workplace chargers (65 sockets) to support the decarbonisation of our fleet vehicles. These have been funded through the Switched on Fleets programme which is solely used in support of charge point infrastructure for fleet vehicles.

2.23 The EV Working Group continues to review the Council's non-domestic buildings and fleet mileage data to identify further opportunities to install workplace charge points, with cognisance taken of site constraints (e.g. parking, grid capacity) and vehicle requirements (travel patterns, daily mileage, time available to charge).

Heavy Duty Vehicles

2.24 The UK Government Decarbonising Transport plan for Heavy Duty Vehicles (HDV) details that all sales of new medium sized trucks (up to and including 26 tonnes) to be zero emissions from 2035. with the heaviest (above 26 tonnes) zero emissions by 2040.

2.25 There is a growing number of viable zero emission alternatives, particularly for Refuse Collection Vehicles (RCVs), however at present they do have high upfront costs (up to three times the cost of a diesel equivalent and with limited range) and it is likely that costs will reduce and more viable zero emission replacements options will emerge.

2.26 Hydrogen is likely to be a key fuel source in a net zero future. Fuel cell electric vehicles (FCEVs) use hydrogen to produce electricity, these offer efficient and quiet transport with no exhaust emissions other than water. If fuelled by hydrogen produced from renewable sources, they are a true zero emission solution.

2.27 It is important that, given climate change targets and aspirations, that we investigate options for our heavier fleet at an early stage to best position ourselves to capitalise on early adoption of alternative fuels.

2.28 In support of decarbonising the existing heavy duty vehicle (HDV) fleet, an interim approach could be the use of hydrotreated vegetable oil (HVO). This can offer a potential short to medium term option for our HDV fleet where ready electric replacements are not available or would be cost prohibitive. HVO can deliver up to a 90% reduction in carbon emissions. The following table details the potential impact on our RCV fleet from introducing HVO fuel:

Table 2: Impact on RCV Fleet from using HVO

Vehicle	Approx. Annual fuel usage	Approx. annual CO2 (conversion - 2.60240)	Potential annual CO2 emissions using HVO (90%)	Potential annual CO2 reduction (90%)
1 x RCV	9,600ltrs	25 tonnes	2.5 tonnes	22.5 tonnes
36 x RCV's	345,600ltrs	900 tonnes	90 tonnes	810 tonnes

2.29 However, the latest HVO pricing has shown that the cost per litre is currently around 40% more expensive than diesel.

2.30 From 2030 onwards, the Council will need to consider the procurement of zero emission HDVs. These vehicles typically have the longest life cycles and have the highest potential for CO_2 savings. Were we have HDVs that must be replaced in the short term but have no zero emission replacement options, we will continue to specify that these are equipped with the latest Euro 6 diesel engines with the option for HVO conversion.

2.31 In summary, the routemap study undertaken has identified the following recommendations in support of decarbonising the fleet by 2030:

(i) The purchase of new passenger and Light Commercial Vehicles (LCVs) will be zero emission vehicles only, two years ahead of the 2025 target to phase out acquisition of petrol and diesel versions of such vehicles by public bodies.
(ii) Utilise existing budget provision to acquire c.65 EV passenger and LCV vehicles by March 2024 (including 25 already on order)
(iii) Progress with preparatory work for implementation of further passenger and LCV EV vehicles, including a wide communications programme with employees who use Council vehicles.
(iv) Lobby Scottish Government through existing networks (including COSLA, SOLACE and the Sustainable Scotland Network) to outline the financial requirements associated with decarbonisation requirements and additional financial support required.
(v) Agree to review the capital programme provision for financial year 2024/25 onwards to consider the current £10.620m gap (which excludes heavier fleet decarbonisation costs) to further support decarbonisation requirements.
(vi) To undertake further research, including with the Hydrogen Accelerator Project, to identify solutions for the Council's heavier fleet, incorporating potential consideration of a hydrogen fuel pilot to understand potential and inform future deployment strategy for heavier vehicles and plant, consideration of HVO (hydrotreated vegetable oil) as a potential short to medium term option for existing heavy fleet combustion vehicles, as well as future electricity generation proposals at Shewalton and potential links with charging requirements at that depot location for EV related heavy fleet solutions. Opportunities for external grant funding will also be investigated.
(vii) Review the potential emerging from our Digital Strategy and work with services including Waste, Care at Home and Building Services, to understand any opportunities for fleet reduction and/or route mapping through use of our telematics data.
(viii) Develop the existing EV working group into a fleet decarbonisation group, which will report to our already established Climate Change Steering Group.
(ix) Share the findings of our decarbonisation routemap with CPP partners to identify any potential synergies including in relation to vehicle charging infrastructure.
(x) Review the forthcoming Ayrshire EVCI pathfinder project, which is anticipated to deliver over 300 new EV charging points across Ayrshire, for any synergies with the charging requirements of our further electrified fleet.
(xi) Explore the potential for an EV salary sacrifice scheme with the Head of People and develop a supporting communication strategy for staff to aid the wider uptake of EVs.
(xii) Continue in the development of the Council's mechanics by supporting attendance of training on electric/hybrid vehicle systems repair and replacement, which is accredited at IMI level 3.
(xiii) Create a programme management role, which is essential to help manage the ongoing implementation and development of the decarbonisation project. The activities for this role will include monitoring and implementation of the decarbonisation plan, co-ordination of activity across the relevant departments within the Council and reporting on progress.
(xiv) Reflect the above commitments in the forthcoming update to the Council's Environmental Sustainability & Climate Change Strategy.

3. Proposals

3.1 It is proposed that Cabinet (i) notes the decarbonisation routemap work summarised within this report; and (ii) agrees to the recommendations and proposals set out at paragraph 2.31 above.

4. Implications/Socio-economic Duty

Financial

4.1 The Council is already investing significantly in its journey to net zero, taking action on climate change and addressing the Climate Emergency. An initial £2.500 million has been allocated in support of our current fleet decarbonisation programme. The ability of the Council to fully decarbonise the fleet in the short to medium term, however, will be very challenging due to affordability constraints. Options to address the current £10.620m gap will need to be considered as part of the next refresh of the capital programme.

Human Resources

4.2 The creation of a programme management role is essential to help manage the ongoing implementation and development of the decarbonisation project. Funding for this resource (c.£175k total over three years) will be provided from the Council's Change and Service Redesign Fund.

Legal

4.3 There are no implications arising from the report.

Equality/Socio-economic

4.4 There are no implications arising from the report.

Climate Change and Carbon

4.5 The proposals within the report aim to:

- make a positive contribution to national carbon reduction targets
- contribute to the Council's commitment to be carbon neutral by 2030
- contribute to the delivery of the EV Strategy 2021-2025 and the development of a network of strategically located EV charge points across North Ayrshire
- contribute to the delivery of the North Ayrshire Environmental Sustainability & Climate Change Strategy (ESCCS) Transport and Travel workstream.

Key Priorities

4.6 The proposals contained within the report support the North Ayrshire Council Plan priorities:

- A sustainable environment; and
- People enjoy good life-long health and wellbeing

Community Wealth Building

4.7 Community wealth building benefits will be considered through the procurement of replacement EVs as part of the decarbonisation programme.

5. Consultation

5.1 Consultation and stakeholder engagement with frontline services has taken place throughout the review, including by engagement with the Council's EV Working Group along with service specific surveys and questionnaires. The development of the existing EV working group into a fleet decarbonisation group will help support the transition to alternative fuelled vehicles.

RUSSELL McCUTCHEON
Executive Director (Place)

For further information please contact **David Hammond, Head of Sustainability, Corporate Property & Transport,** on 01294 324514.

Background Papers
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