

**CARBON
REDUCTION
PLAN &
NET ZERO
STRATEGY
POLICY**

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CARBON REDUCTION PLAN & NET ZERO STRATEGY POLICY

Background

Ashe Group (inclusive of Ashe Construction and Ashe Roofing) is a leading provider of design and construction management for private and public sector clients for new build, extensions, internal and external refurbishments, alterations and fit-outs. The company employs over 120 people and operates a sizeable fleet of vehicles. Carbon emissions are the company's most significant sustainability impact.

We recognise that global warming is a climate, ecological and social emergency and are committed to playing our part in mitigating global warming. Our ambitious net zero plans align with, and support delivery of the aspirations of many key organisations, including:

- The UN Sustainable Development Goals, particularly Goal 13, Climate Action.
- The UN's Race to Zero campaign.
- The UK Government's commitment to be Net Zero by 2050 and the Decarbonising Transport: A Better, Greener Britain (2021).
- The Science-Based Target Initiative's best practice recommendations in relation to near-term and net zero targets.
- Fleet Operators Recognition Scheme (FORS) Silver standard fuel, emissions and air quality requirements.

Baseline emissions (scope 1 and 2)

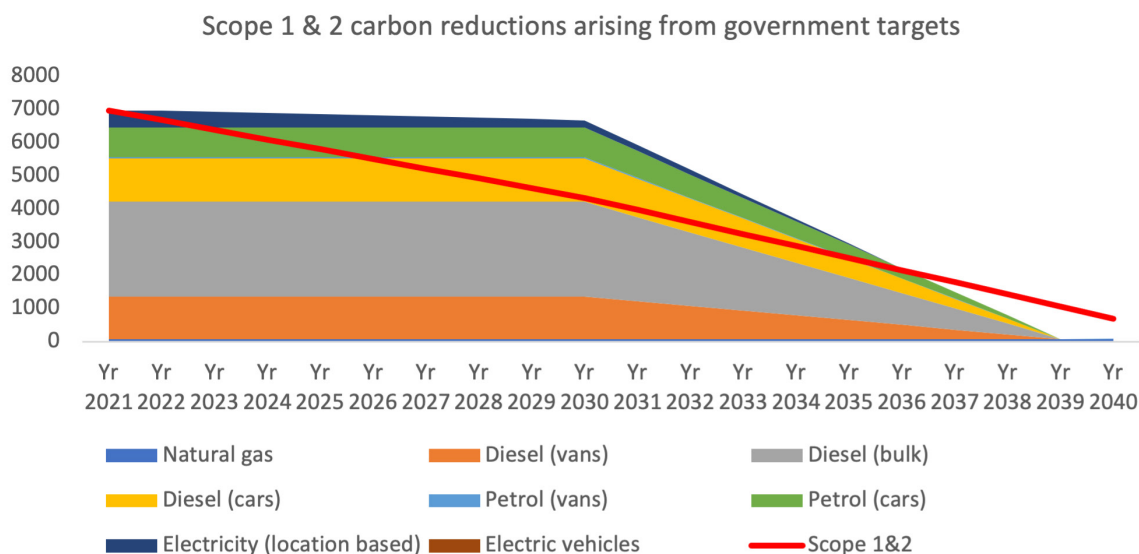
Baseline emissions relate to scope 1 (direct use of gas, diesel and petrol) and scope 2 (electricity) emissions.

Ashe Group's baseline emissions (which includes Ashe Construction and Ashe Roofing) are from financial year 2021 (1st January 2021 to 31st December 2021). Emissions have been measured in accordance with the GHG Protocol Corporate Standard, with reporting boundaries defined by the operational consolidation (control) approach. UK Government conversion factors covering seven greenhouse gas (GHG) emissions sources have been applied.

Emissions sources	tCO2e
Scope 1: Natural gas	80.16
Scope 1: Diesel (vans)	1273.10
Scope 1: Diesel (cars)	1303.02
Scope 1: Petrol (vans)	31.81
Scope 1: Petrol (cars)	906.49
Scope 1: Bulk diesel (site)	2863.45
Scope 2: Electricity	511.20
Total scope 1 and 2 emissions (baseline)	6969.23

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These baseline emissions have been based on the location-based approach for electricity. We anticipate that a change to the market-based approach, plus some additional minor data improvements will result in a slightly reduced carbon footprint of circa 4% (see Appendix 1).



Carbon dioxide – CO₂; methane – CH₄; nitrous oxide – N₂O; hydrofluorocarbons – HFCs; Dichlorodifluoro methane – CFC; Difluoromono chloromethane – HCFC; and sulphur hexafluoride – SF₆.

Our strategy to net zero takes these anticipated reductions into consideration and we will this year engage a third party to validate our baseline in accordance with ISO 14064-1 (see Appendix 3). Further, we will be implementing a number of measures to streamline our carbon data collection processes (see Appendices 4 and 5).

Baseline emissions (scope 3)

Scope 3 emissions are the indirect emissions arising from the companies up- and down-stream impacts. Scope 3 emissions for calendar year 2021 will be measured in accordance with the GHG Protocol procedures and the baseline formalised for this year.

For Ashe Construction Ltd, the relevant GHG Protocol scope 3 categories are as follows:

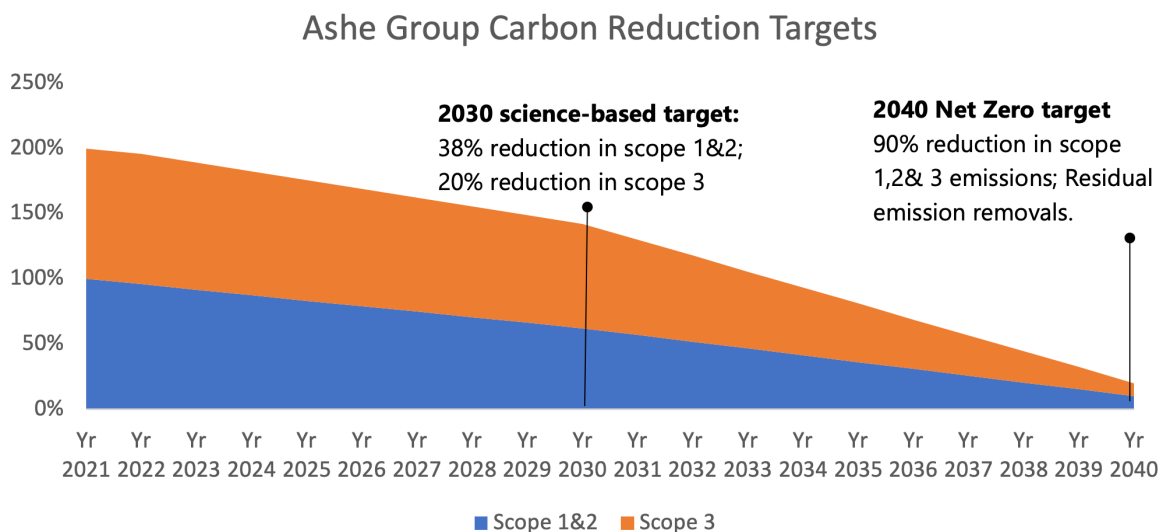
- Category 1: Purchase Goods and Services
- Category 2: Capital Goods
- Category 3: Fuel- and energy-related activities
- Category 4: Upstream transportation and distribution
- Category 5: Waste generated in operations
- Category 6: Business travel
- Category 7: Employee commuting
- Category 11: Use of sold products
- Category 12: End of life treatment of sold products

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Further work is required to measure Scope 3 emissions; for the purpose of target setting preliminary estimates of each category has been conducted with more data to be ascertained to create more robust projections for scope 3 emissions.

Emission source	tCO2e	Comments
Category 1: Purchase Goods and Services; and Category 2: Capital Goods.	TBC	Based on the spend-based method. High-level categorisation with conservative assumptions. Further work to categorise spend and align to suitable conversion factors is needed.
Category 3: Fuel- and energy-related activities	1,636	Well-to-tank emissions for petrol and diesel plus transmission and distribution emissions for electricity calculated. These may change as a result of changes to scope 1&2 emission calculations.
Category 4: Upstream transportation and distribution	152	Based on emissions from another construction company this is assumed to be 5% of the emissions from categories 1 and 2.
Category 5: Waste generated in operations	172	Estimate based on waste spend. 50% of waste is assumed to go to landfill with the other half recycled or to a waste to energy plant.
Category 6: Business travel	1	This covers business travel not included in scope 1 and 2 emissions i.e. by train, plane, taxi etc. As a company operating solely in the UK this is assumed to be minimal. Estimate here is for 200 train journeys of 100 km.
Category 7: Employee commuting	344	Assumed to only relate to office-based staff. Estimate here is for 200 people commuting 40 miles a day in a car. Going forward the standard way to measure this is through an employee survey.
Category 11: Use of sold products	TBC	Emissions here relate to the lifetime use of permanent traffic management systems e.g. traffic lights. It is understood that the majority of works are for temporary structures and that this will likely be relatively small.
Category 12: End of life treatment of sold products	TBC	Disposal/recycling of end-of-life permanent traffic structures. As above, it is anticipated that emissions here will be very small.
TOTAL	2,305	Total scope 3 emissions (baseline estimated)

Targets and commitments



Ashe Group’s ultimate carbon target is to achieve Net Zero scope 1, 2 and 3 emissions by 2040 (see Appendix 6). In accordance with Science-Based Target Net Zero Standard this will be achieved by at least a 90% emission reduction, with residual emissions offset with high quality and certified carbon removal investments.

We intend to solidify our net zero commitment by joining The Climate Pledge, part of the UN’s Race to Zero Campaign.

Our long-term target will be supplemented by near-term Science-based target (SBT)s that align our reduction trajectory with that necessary to limit global warming to 1.5oC. We have defined these in accordance with the parameters of the Science Based Target Initiative (SBTi) as a 38% reduction in scope 1 and 2 emissions by 2030, and a 20% reduction in scope 3 emissions by the same year. The baselines for this will be Year 2021 and Year 2022 respectively.

We will seek formal accreditation of our near-term targets by the Science-Based Target Initiative (SBTi) during 2022-23.

Net zero strategy

Our net zero strategy is structured around seven goals which will enable delivery of our near-and long-term scope 1, 2 and 3 targets.

The first five goals support achievement of our scope 1 and 2 near- and long- term reduction targets. Indirectly these also support achievement of our near-term scope 3 reduction target through the reduction of well-to-tank fuel-related emissions. The final two goals support achievement of our long-term net zero targets with a focus specifically on supplier engagement and neutralising our impact.

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1. Reducing our travel:

- a. Smart transport planning and monitoring using logistics and telematics tools (see Appendix 7).
- b. Using technology such as solar powered traffic lights to eliminate site visit requirements (see Appendix 7).
- c. Using video conferences as the default option for meetings.

2. Improving the efficiency of our fleet:

- a. Introducing vehicle emission caps and integrating CO2 emissions into vehicle purchase decisions (Appendix 8).
- b. Replacing vans with cars where possible (Appendix 9).
- c. Reducing fuel wastage (Appendix 10).

3. Enabling low carbon transport by our employees:

- a. Installing electric charging points at office hubs and employee homes (see Appendix 11).
- b. Introduce fuel cards to allow the charge of electric vehicles.
- c. All new company cars to be electric from FY22/23.
- d. Trial use of electric vans in all Group companies by FY22/23.

4. Pioneering new innovations:

- a. Establishing an Innovation Fund, funded by an internal carbon price.
- b. Trialling use of HVO on plant (Appendix 16)
- c. Introducing an electric fleet (Appendix 17).
- d. Facilitate customer carbon emission reduction through mobile electric charging points. (Appendix 18).

5. Integrating carbon reduction throughout the business

- a. Working with our landlords to source renewable energy sources wherever possible and seeking opportunities to reduce and avoid gas usage.
- b. Moving to cloud-based servers and software.
- c. Embedding climate change mitigation into the business culture and communications.

6. Collaborating with our supply chain:

- a. Measuring our scope 3 emissions and working with our supply chain to make this as specific and relevant as possible (Appendix 5).
- b. Working together to reduce carbon emissions from materials and packaging (Appendix 22).

7. Neutralising our impact:

- a. Using high quality and certified carbon offsets to offer customers a carbon neutral fuel proposition (Appendix 23).
- b. Developing an approach to emissions removal for the achievement of net zero once >90% emission reductions have been achieved (Appendix 23).

Quick Wins to be achieved by Ashe Group

Ashe Group's approach to carbon and environmental management is structured around robust management systems, ISO 14001 certified, through which a number of successful emission reduction initiatives will be implemented. These include:

- Establishing first 'Green Offices' at Hitchin. These pioneering sites includes a diverse range of sustainable initiatives including a green wall, infra-red heaters, renewable energy supply, and outfitted solar panels.
- Using 100% REGO backed renewable energy in all locations where the energy supply is controlled by Ashe Construction.
- Use of telematics to analyse and reduce travel and idling time.
- Use of renewable materials where possible. Use of concrete and bricks, for example, are made from 90% recyclable materials and can be recycled at end of life at demolition phases.
- Third party support to maximise recycling of waste wherever possible.
- Engaging with suppliers to reduce packaging waste. For example, Ashe Roofing tiling suppliers (clay, concrete, slate, metal, plastic etc), now delivers products with no plastic packaging and in cardboard boxes made from 100% recycled pulp.
- Installing LED light where practicable.
- Replacing end of life infrastructure in offices and portacabins with low energy solutions such as energy efficient boilers and hand dryers.
- Removal of single use plastics where possible.
- Migration of local servers to more efficient and renewably powered cloud-based servers.
- Introduce two internal business measures focussed on fuel:
 1. Average emissions per mile traveled (Kg CO₂e). This will allow for performance comparison across Ashe Construction and Ashe Roofing and set a business-specific benchmark for each division to improve against.
 2. Total litres of fuel purchased. This will form the basis of an internal carbon price. Each business (Construction and Roofing) will pay a quarterly levy proportionate to their emissions and these funds will be invested in low carbon technology and infrastructure through our Innovation Fund (see Appendix 15).

Governance and reporting

The Board is ultimately responsible for delivery of this strategy and will be aided on a day-to-day based by the Sustainability Manager. All Group companies will be required to align the goals set out in the strategy.

Progress against the strategy will be monitored on a quarterly basis at the board level and we will report externally on progress on an annual basis.

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Appendix 1: Baseline emissions data review

Baseline emissions from the report have been based on the company's 2020/21 Streamlined Energy & Carbon Report (SECR). There are some data improvements that could be made outlined below:

- Ensure the latest Government conversion factors are used. These are updated annually, typically in July. For FY20/21 the 2020 conversion factors were used but 2021 would be the norm.
- For diesel and petrol cars, mileage should be converted to emissions by applying the "average car" emission factor (diesel = 0.27108; petrol = 0.28052 for 2021). If more specific vehicle details (engine size etc.) are available then these can be honed further. The current method uses delivery vehicle emission factors which are much higher.
- Emissions arising from electric vehicles should be reported under scope 2 (currently in scope 1), with the conversion factors specified in the "UK electricity for EV" tab. If vehicles can be categorised by type (e.g. mini, exec, etc.) or size (small, medium, large) then do so, otherwise use the average vehicle conversion factor (0.08097). With current emissions less than 0.1 tCO₂e this has no impact on the baseline but could be significant in years to come.
- Refrigerant leaks from air conditioning units in the company offices/depos should also be captured. These should not occur in a well-functioning system but do occasionally occur with system failures and therefore the annual servicing records should be checked for chemical top-ups. Even if no leaks occur these should be included as a line item in your reporting to indicate they have been considered and measured.
- All energy consumption values should be in kWh. Fuel is currently reported in litres and mileage but these should be converted to kWh, again using the Government conversion factors.

Appendix 2: Market- vs. Location-based method for electricity

An important data enhancement is to measure electricity using the 'market based' method in addition to the 'location based'. The latter must be measured, but by also measuring the former, and setting the market based total as your baseline, then any renewable electricity benefits will be captured. This is because the market based method considers the exact emissions of the supply you purchased, and thus if you are on a green (renewable) or blue (nuclear) tariff, the emissions will be 0. The location-based method in contrast applies the grid supply mix to your emissions. We recommend that market-based emissions are retrospectively calculated for FY20/21 and that the baseline is accordingly restated. We understand that renewable electricity is available at most locations and therefore the 3% of emissions from electricity will notably reduce.

Appendix 3: Baseline validation

External validation of carbon emissions (e.g. to ISO 14064-1) is not a mandatory requirement however it is recommended here specifically in relation to the baseline year. This is because of the particular importance of the baseline – all future progress will be measured against this. Achilles includes questions on data verification and several clients ask about data measurement. An indicative cost of external validation is £5-10k. Verification should be completed by a UKAS accredited provider such as the Carbon Trust or TUV.

Appendix 4: Scope 1 and 2 data collection processes

Measuring strategy progress will be vital to ensure delivery. Carbon-related reports are produced by multiple people in the business e.g. for FORS, for SECR, for fuel management. Our recommendation is that these are streamlined under a single resource at the Group level (e.g. the new Sustainability Manager) with quarterly reporting of fuel-related emissions, using the performance metrics suggested, to the board.

Note that there are many software tools to aid in the measurement of carbon emissions. Given that >95% of scope 1 and 2 emissions are potentially from fuel, and there are existing data sources for this – fuel cards and telematics – we do not recommend investing in a stand-alone data reporting tool but rather that you work with the fuel card and telematics suppliers to enhance what you have (see Appendix 12). Reporting emissions from non-fuel sources could remain on an annual cycle.

Appendix 5: Scope 3 emission estimation

For the Group's scope 3 emissions, further work should be done to calculate these more precisely using the GHG Protocol scope 3 prescribed methodology.

Typically, scope 3 emissions >40% of the company's total footprint are deemed significant and would need to be included in targets (per the Science-Based Target Initiative).

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Emission source	tCO2e	Comments
Category 1: Purchase Goods and Services; and Category 2: Capital Goods.	0	Based on the spend-based method. High-level categorisation with conservative assumptions. Further work to categorise spend and align to suitable conversion factors is needed.
Category 3: Fuel- and energy-related activities	0	Well-to-tank emissions for petrol and diesel plus transmission and distribution emissions for electricity calculated. These may change as a result of changes to scope 1&2 emission calculations.
Category 4: Upstream transportation and distribution	0	Based on emissions from another construction company this is assumed to be 5% of the emissions from categories 1 and 2.
Category 5: Waste generated in operations	0	Estimate based on waste spend. 50% of waste is assumed to go to landfill with the other half recycled or to a waste to energy plant.
Category 6: Business travel	0	This covers business travel not included in scope 1 and 2 emissions i.e. by train, plane, taxi etc. As a company operating solely in the UK this is assumed to be minimal. Estimate here is for 200 train journeys of 100 km.
Category 7: Employee commuting	0	Assumed to only relate to office-based staff. Estimate here is for 200 people commuting 40 miles a day in a car. Going forward the standard way to measure this is through an employee survey.
Category 11: Use of sold products	TBC	Emissions here relate to the lifetime use of permanent traffic management systems e.g. traffic lights. It is understood that the majority of works are for temporary structures and that this will likely be relatively small.
Category 12: End of life treatment of sold products	TBC	Disposal/recycling of end-of-life permanent traffic structures. As above, it is anticipated that emissions here will be very small.
TOTAL	0	

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For the first year of scope 3 emission measurement, as this will form the baseline, we recommend measuring as many categories as possible. Thereafter, categories that cumulatively equate to less than 5% of the company's footprint can be excluded from measurement, as de-minimis, and when they become more significant (i.e. as you get closer to net zero), these can be measured again.

For high emitting categories, such as purchased goods and services, best practice is to evolve measurement over time to make it more specific to the company supply chain. Focussing on the high emitting spend categories in the first instance should be the priority. Obtaining this information from suppliers can be challenging and a collaborative, supportive approach may unlock some of the barriers. Useful resources to support this can be found in the Supply Chain Sustainability School.

Appendix 6: Target levels

The combination of a near-term Science-based target (SBT) and net zero target is best practice in climate change mitigation. Near-term SBTs are set at scientifically determined levels required to limit global warming to 1.5oC. The 5-10 year targets require a 4.2% reduction per annum for scope 1 and 2 emission and a 2.5% reduction per annum for scope 3 emissions. For both, they must be set in relation to scope 1, 2 and 3 emissions. These targets are also specifically relevant to Ashe Group because the majority of local authorities have stipulated they wish for construction work in their counties to be net zero emissions in maintenance and construction by 2040. To continue to work for them Ashe Group will therefore also need to be net zero by this time, hence the proposed target date of 2040.

Net zero, which has historically not been well defined, was defined in October 2021 by the Science-based target initiative (SBTi) as an emission reduction of at least 90% plus the removal of residual emissions from the atmosphere. In terms of achievability, circa 86% of the 90% reduction required for Net Zero scope 1 and 2 emissions will be achieved simply because of alignment to existing government targets – zero emission at tailpipe for new vans and cars by 2035 (assuming all Ashe Group vehicles are less than 5 years old) and the grid fully decarbonised by 2035.

In contrast, achieving the near-term scope 1 and 2 SBT will require implementation of business changes to fast-track this reduction. Other reduction initiatives outline in the emission reduction strategy are all less costly however it is very unlikely that the combination of these will yield the emission reductions necessary alone.

Importantly, introducing carbon pricing (see Appendix 15) will incentivise the businesses to seek these lower cost reduction opportunities prior to investment in electric vehicles, whilst also funding the latter.

Note that the energy reduction target of 35% by 2030 is not really an additional target – it is included because some customers require an energy target and it has been set at a level aligned to achieving the scope 1 and 2 emission reduction target.

Finally, whilst optically beneficially, initiatives to reduce electricity and gas at premises and electrifying the car fleet will yield relatively few emission reductions.

In terms of scope 3 targets, there isn't adequate data currently available to make firm conclusions on near-term target achievability, without more data the strategy cannot be developed further at this point but supplier collaboration will be key.

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Finally, in terms of target validation. The proposal is for Ashe Group to seek validation of only their Near-Term SBT (at a cost of \$9,500). Very few companies have yet had their Net Zero targets validated – the standard was only introduced in October 2021, and validation costs an additional \$9,500. Our recommendation in the short term is that instead of pursuing this validation, the Group aligns with another best practice standard, which is free – The Climate Pledge – which is one of the partners to the well-established and regarded UN Race to Zero Campaign. This pledge does not stipulate the parameters around net zero to the level of the SBT (the two are complementary) but is a commitment to:

- Regular Reporting: Measure and report greenhouse gas emissions on a regular basis
- Carbon Elimination: Implement decarbonization strategies in line with the Paris Agreement through business change and innovations, including efficiency improvements, renewable energy, materials reductions, and other carbon emission elimination strategies, commitment to a near-term SBT and the plan outlined here meets this standard.
- Credible offsets: Take action to neutralize any remaining emissions with additional, quantifiable, real, permanent, and socially beneficial offsets to achieve net-zero annual carbon emissions by 2040, part of this strategy (see Appendix 22).

Other companies also signed up to The Climate Pledge are Costain, Morgan Sindall and MACE.

Ashe Group should also keep abreast of news relating to the EV100 and EV100+ schemes, which are recognition schemes relating to the switch to electric vehicles. The EV100 scheme is a commitment to 100% of 3.5t vans electric by 2030 and the EV100+ scheme, launching imminently, will require all newly purchased 7.5-20t vehicles to be zero emission from 2030. Whilst not suitable commitments for now, they may be appropriate in due course when testing of electric vans and HGVs has taken place.

Appendix 7: Transport reduction

Reducing the need for transport in the first place is the most climate beneficial solution of all, and should be a business priority. This could be through smart planning of travel routes and/or technology. Technology enhancements in particular are likely to be positively received by clients however may come at a premium. Carbon pricing could support the funding of this (see Appendix 15). Suitability of these products will be project and client specific, and therefore their use should be led by the respective companies.

Note that in terms of overall emission reduction impact, this is likely to be relatively low (estimated at 3%) because business growth will also increase the need for travel.

Appendix 8: Vehicle emission caps

- Introducing an emissions cap to a) new vehicle purchases/hires within the company fleet and b) temporary vehicle hire decisions e.g. 260 gCO₂/km for 3.5T LGVs etc. Caps should exist for each vehicle type and these should reduce over time. Forward planning future cap levels and documenting these in a Fleet Policy will give tangible carbon reduction trajectory evidence to customers.
- Prioritising the replacement of less efficient fleet vehicles.
- Engaging fleet procurement in the Group's reduction strategy and seeking their support to measure, scrutinise and prioritise the selection of lower emission vehicles.
- Applying the emissions cap to sub-contractor vehicles. A review would need to be conducted to see if this should be at the same level, or different to the internal policy. Again this should be documented in the Fleet Policy.

By improving the quality of fuel use and MPG data, actual emissions of specific vehicle types could be analysed and used to further hone decision making.

Finally note that our recommendations do not include the following:

- Plug-in hybrids (PHEV). These could be included in the above however these typically have only very short electric driving ranges (20-30 miles) and therefore do not yield significant emission reductions unless targeted at users conducting frequent short journeys with the ability to charge in between.
- Vehicles using AdBlue. Whilst this additive is environmentally beneficially (reduces NO_x/CO_{2e} emissions), the Government emission factors used to calculate carbon footprints do not distinguish vehicles using this and thus their use won't impact on the Group's overall carbon footprint.

Appendix 9: Replacing vans with cars

An assumption is made (without data) that the majority of Ashe Group vehicles are vans. Vans are necessary for a number of reasons, not least taking materials to site, and removing them. However there are also scenarios during the maintenance stages where materials are limited and the vans are largely empty. In some cases dedicated vans (presumably the smaller ones) are used for this and emissions will be lower accordingly.

It will not always be possible to use a different maintenance vehicle, for example where works last only a day, but for multi-day projects the supplementary use of smaller van or even car for maintenance would reduce emissions. For example, the Ford Ranger which is already used and has manufacturer emissions of 177-188 gCO₂/km (EcoBlue range).

Appendix 10: Reducing fuel wastage

Idling is a significant source of emissions but is challenging to address when the on-site role can involve significant waiting (for example between maintenance visits). Fuel will be used for heating/cooling, music, mobile phone charging etc. Behavioural change campaigns (posters etc.) have already been conducted and we suggest these continue.

One option for music/mobile phones is to provide a portable mobile phone charging device coupled with a seasonal ban on idling (i.e. spring/winter or temperatures in the range of X-X) but this would need to be trialled to determine its practicality and effectiveness.

Appendix 11: Electric charging points

Establishing an infrastructure to enable electric vehicle charging – at depots but also employee homes – will be vital before EVs can be utilised. Some of the challenges of this – cost of install, reimbursing at home charge costs etc can potentially be reduced through coupling this investment with a commercial arrangement for fuel cards (see below). Government support for this, at £350 per socket, capped at 40 charge points, is also available through the Workplace Charging Scheme.

The most suitable locations for charging points are best determined by Ashe Group, who can take into consideration project locations and employee circumstances (suitability of their homes etc.). This will be effortful but necessary until national infrastructure has evolved further.

To support the companies it is important that once a location has been identified, the process of installing a charge point is as simple as possible, hence a Group supplier for this is recommended.

Appendix 12: Fuel cards

Not enough data to give a recommendation.

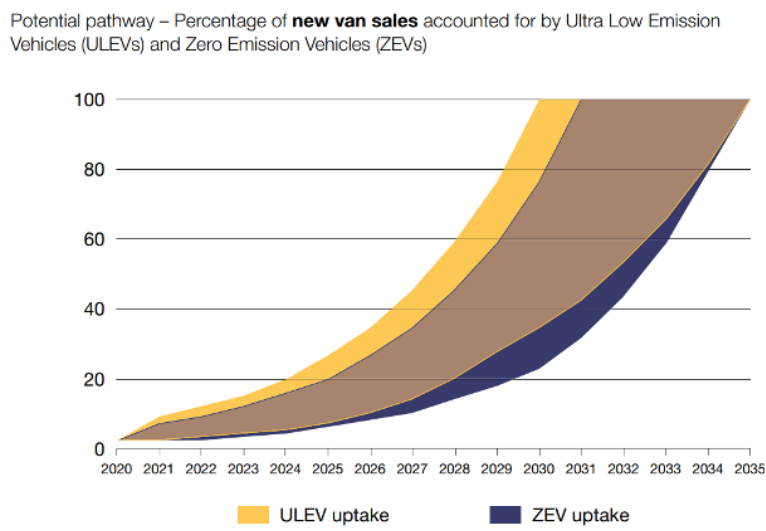
Appendix 13: Electric car fleet

Ashe Group operates only a small car fleet, that does not contribute significantly to the company's overall carbon emissions. Regardless, reducing emissions here provides an opportunity to showcase a sustainability commitment both in terms of an impressive public statement ("fully electric car fleet") but also a powerful in-person impression when visiting clients.

Firms specialising in electric car fleets e.g. Octopus can facilitate this if necessary. Home charging infrastructure would need to be provided for these beneficiaries prior to receipt of their vehicle. Additional i.e. depot/office charging points would not be necessary for this size of fleet given the prevalence of public charging points. However a mechanism to enable payment of electric charges would be necessary (see Appendices 11 and 12).

Appendix 14: Electric van fleet

Legislation requires that by 2035 all new vans will be zero emission at the tailpipe. The projected market share of electric vans has already exceeded Government projections, and an increasingly rapid uptake is expected with 100% electric vehicles possible between 2031 and 2035.



A government grant to bridge the gap between diesel and EV vehicle prices is currently reducing the price of many electric vans. This plug-in-van grant (PIVG) has been extended to 2024/25, whereafter, if removed, vehicle prices could increase.

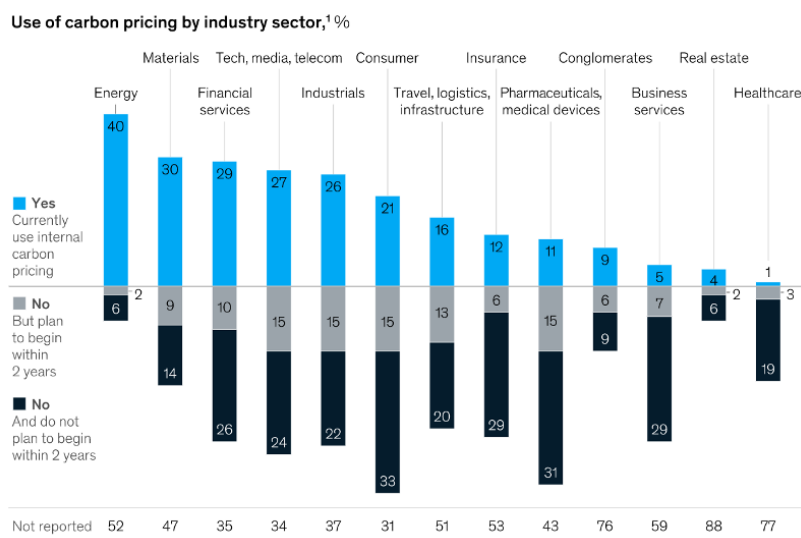
In summary, the payback for electric vehicles is fairly long (and only indicative – it will vary extensively based on driver behaviour and fuel/electricity prices) however it does seem that they will be suitable in many instances (subject to provision of charging facilities – see Appendix 11). At worst, to meet the 2030 target half the Group’s transit vehicles will need to be electric. However, if emissions reductions are achieved through reducing the need to travel, improving fleet efficiency, and office/depo/IT emission improvements then the proportion of electric vans needed could reduce the Group’s carbon emissions.

As new vehicles are purchased in tranches, our recommendation in the first instance is that electric vans are trialled as lease vehicles in a range of project types (e.g. one per business), and that user feedback is evaluated on the experience. This will provide more data to understand their suitability and limitations, and an analysis of the trial will be valuable for bids, and industry collaborations on these issues.

Appendix 15: Innovation fund and carbon pricing

Carbon pricing already exists at a national level for high emitters (e.g. the UK ETS; EU ETS, etc.) and many companies are now implementing or considering implementing such as scheme – 45% in a set of 2,600 global large companies reviewed by McKinsey.

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Source: McKinsey

It is still a relatively pioneering initiative and implementing such a scheme will position Ashe Group as a climate change leader, whilst also establishing an equitable way to fund and benefit from investments in carbon technology.

There are many ways to structure a carbon pricing scheme (see a useful discussion here). For Ashe Group our recommendation is to use an internal carbon price that is based on the worse-case annual investment amount needed to achieve the reduction required (4.2% per annum) for the science-based target. For Ashe Group, the most costly near-term reduction measure is the switch to electric vans.

In theory the carbon fuel levy could be calculated for each project at the tender stage, resulting in a project-specific 'carbon investment budget'. Naming the specific investments relevant to that project would be valuable information for tenders and National Highways carbon management plans.

Finally, Ashe Group should consider engaging with or joining the Carbon Pricing Leadership Coalition as a source of best practice in this area.

Appendix 16: HVO

Hydrogenated vegetable oil (HVO) is becoming a popular alternative to diesel, not least because it can work directly in existing diesel machinery without significant performance impacts. Companies including Kier and Amey are now using HVO. Regardless, there is some controversy over its use because it can contain palm oil and it is an import, thus using it in the UK is not as climate-change beneficial as it being used in the home country. Long-term supply is also constrained by the amount of waste oil available, and recent demand increases have seen prices dramatically increase. Balfour is choosing not to use HVO for these reasons.

Regardless, HVO has significant benefits. It reduces emissions immediately by 90% compared to diesel and is available now. Companies such as Speedy can supply to bowsers across the UK straight away.

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In order to use HVO, manufacturers and suppliers (for leased equipment) will need to have confirmed that the product warranty will not be affected. We know that JCB has approved the use of HVO for some machinery (e.g. forklifts), as has UK Forks.

The Group company with the largest plant fleet, and existing bowser storage is Barrier. Subject to receiving suitable manufacturer approval, we suggest a trial of HVO for a project, with equipment performance and costs analysed. Should this prove successful, then Barrier could offer this to selected clients as appropriate. The wider use of HVO (e.g. on all plant as standard) would require a cost comparison with the use of electric vans to see which yields the greatest emissions saving for the additional spend.

Trialling HVO in this way would provide a good case study/story for inclusion in bids.

Appendix 17: Offices and depots

Overall, emissions from company buildings should be relatively small compared to fuel use.

Where Ashe Group is the premise owner, improvements to reduce gas usage (e.g. heat loss improvements or heating system replacements) should be prioritized. To aid in this analysis we recommend focussing next year's Energy Saving Opportunity Scheme (ESOS) audits on premises with gas. Further, for all new building purchases/leases, those with gas should be avoided wherever possible.

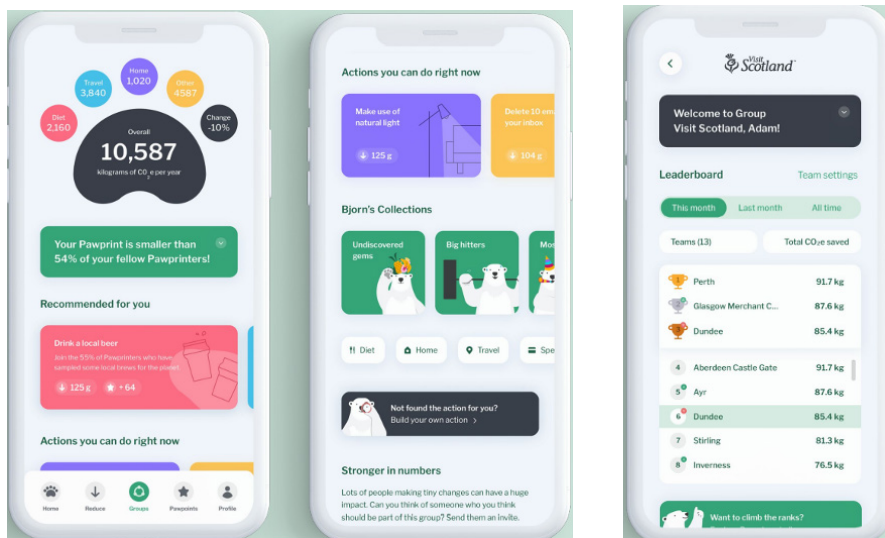
Appendix 18: Engaging employees

There is already a sustainability passion within the business that needs to be harnessed. A lot of the strategy priorities (selection of vehicles etc.) may not feel directly relevant to everybody so there needs to be a structured engagement plan to bring all employees along the journey. This should include:

- Development of an Energy and Climate Change Policy to formalise and summarise the company's commitment to climate change mitigation. This should be displayed on the intranet and the Group website.
- Inclusion of the company's commitment and strategy to net zero in the company induction.
- Periodic carbon strategy updates through all-hands communication channels (emails, cascades, townhalls etc.), particularly when led by the leadership team.
- Review of website communications for all companies to ensure prospective employees understand the Group's/company's carbon commitments.
- Social media, intranet and press releases (as appropriate) to showcase achievement of significant milestones, including the launch of the strategy.
- Support for climate-related campaigns. For example, for Earth Hour (25th March 2023) Ashe Group can switch off all interior and exterior lights for one hour and for Earth Day (22nd April 2023) the Group could consider planting a tree for every visitor, costing c.£1 per tree. This can be purchased from the Earth Day website.

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Ashe Group should also consider investment in Pawprint. This app encourages carbon emission reductions in people's work and personal lives through surveys, practical advice and company-specific competitions. Cost = c.£22.29 per employee (c.£30k). Further it can provide data on employee commuting.



Finally, for very passionate employees consider how they can be involved in the Innovation Working Group and/or any working groups established to implement the changes, which could also be career development opportunities.

Appendix 19: Supply chain engagement

With purchased goods and services (category 1) and the delivery thereof (category 4) making up almost half of scope 3 emissions, supply chain engagement will be key to delivering the long-term net zero target.

Very positive strides have already been made in this regard, particularly around recycled content of cones, reusing signs and removing PPE packaging etc. but the priority in the short-term is to measure these scope 3 emissions (see Appendix 5) such that these sort of emission reductions result in a reduction in the company carbon footprint.

Once measured, the purchasing categories should be categorised so that efforts to reduce carbon are focused on the most significant emission sources. Reductions can be achieved through both careful selection of suppliers (i.e. integrating carbon emissions into the procurement process) but also collaboratively working with existing suppliers to reduce their footprint. Resources and training from the Supply Chain Sustainability School may be useful here, as may be workshops, where best practice across the company's supply chain can be shared.



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