



Case study

DEFRA Group Fleet Services

Government Fleet Commitment

The Environment Agency, as part of Department for Environment, Food and Rural Affairs (DEFRA) Group Fleet Services, operates a 5,000-vehicle fleet, including 1,500 vans and 3,500 company cars. Their dedication to reducing emissions is underpinned by their mission to protect and improve the environment for people and wildlife. This mission is embodied by their commitment to be net carbon zero by 2030 and absolute zero by 2050

Working with Energy Saving Trust on their small, medium and large (up to 3.5t) two-wheel drive vans, up to 292 vans were identified that could be full electric with no change to their current journeys phased over two years. The analysis pioneered by Energy Saving Trust will be integrated into the organisation's annual replacement process. This means the Environment Agency will have the opportunity to change vehicles as new electric vehicles become available. In doing so, they will transition their van fleet to zero carbon technologies as fast as possible

“Our two-wheel drive van fleet will be 100% ULEV by 2025.”

Environment Agency commitment

Taking stock

As of May 2019, the Environment Agency's DEFRA Group Fleet Services van fleet of 455 vans drove 3.9 million miles during 2018, emitting 1,340 tonnes of CO₂e. Six of these vehicles were full electric (EV) at the time of analysis.

Fleet analysis

The fleet comprises of six types of light commercial vehicles, from small vans through to heavy 4x4 and over 3.5t vans. Three categories were selected for analysis; small, medium and large vans, where electric alternatives are available. Vehicle driving range and energy consumption for each category were established based on a realistic, year-round minimum for market leading vehicles at the time of the analysis.

A forecast of the availability and capabilities of vehicles in these categories available through 2020/21 was also established based on Energy Saving Trust industry knowledge. Using this approach, worst-case driving style and environmental conditions reducing range were accounted for, alongside anticipated near-term improvements in vehicle capability.

Once vehicle parameters were agreed, Energy Saving Trust analysed 12 months of telematics data provided by the Environment Agency, comparing the daily mileage of the fleet to the vehicle category and assumed range of vehicles currently on the market and those expected to be on the market in 2020/21.

Overall, the results found that 143 vans (32%) could be replaced with EVs over two years. As well as having zero tailpipe emissions, this would reduce the carbon footprint of these vans by 55% and that of the overall fleet by 10%.

The analysis was re-run to include vehicles which only travelled over the available range of the vehicles either once or twice in the year, as these could still be accommodated operationally. The inclusion of these vehicles resulted in the total number of vans which could be electric by 2022 increasing to 292, 64% of the vehicles analysed.



Challenges

A Whole Life Cost analysis comparison on a single small van revealed electric vans are slightly more expensive on a whole life cost basis than diesel, by £113 per annum in the example considered. However, it is anticipated that electric van costs will reduce as supply increases and greater numbers of vans are acquired.

Infrastructure

Chargepoint infrastructure is an important consideration when electrifying a fleet. This can be limited by electricity supply at the locations required, either physically (by the size of the service fuse) or contractually (a supply agreement with the network operator). It is important to have adequate charging infrastructure in place to power the fleet and this was calculated as follows:

The vans are based at 67 sites across the country and most return to base each day. For each site, the average daily electricity consumption of the vehicles based on-site, and the maximum consumption based on all of them driving their maximum daily mileage on the same day, was calculated to enable the Environment Agency to work with chargepoint suppliers to minimise any infrastructure upgrade costs. The vans were assumed to be parked on-site and available for charging for eight hours per day.

The chargepoint supply analysis revealed that for the 2018/19 specification vehicles, 13 dual chargepoints would be required at 13 locations, and an additional 72 chargepoints would be distributed across a further 60 sites for the 2020/21 vehicles.

“Energy Saving Trust’s experts have helped us create a framework around which we can structure our transition to pure electric commercial vehicles. They have proved that we can reach our ambitious carbon reduction goals without impacting our operations.”

David Collins, Reducing Fleet Emissions Project Manager





Moving forward

The Environment Agency plan to install 20 to 30 new smart chargepoints for the 20 to 30 electric vans to be introduced in early 2020 and anticipate transitioning another 150-200 vans to full electric in 2021. They are looking at ULEVs for their lease car fleet and are thinking ahead to plan the network of chargepoints needed to support both lease cars and vans.

The Environment Agency is also raising staff awareness of EV benefits, considering the policies needed to maximise the availability of chargepoints to operational colleagues and promoting the use of the public chargepoint network.

“Responding to the climate emergency requires everyone to make significant operational and business changes to reduce their carbon emissions and limit their impact on the environment.

This can rarely be achieved by working alone or in isolation, with all carbon reduction plans needing support from internal and external partners.

Working with Energy Saving Trust and harnessing the expertise they provide, the Environment Agency has been able to both accelerate and increase its carbon reduction plans – a true partnership approach.”

Dale Eynon, Director for Defra Group Fleet Services

If you run a fleet, you are likely to be eligible for free of charge consultancy. For more information, [visit our website](#) or email fleetadvice@est.org.uk.