PHEV CASE STUDY – HEATHROW AIRPORT

FORD TRANSIT CUSTOM PLUG-IN HYBRID

USAGE PATTERN

The Ford Transit Custom Plug-In Hybrid van was part of a fleet of vehicles used by maintenance engineers airside at the busy Heathrow Airport in north west London. Daily driving distance tended to be low and the travel within the airport site, but occasional longer journeys were necessary to pick up specialist equipment. The vans were plugged in overnight and when not in use at the depot.

Type of organisation	International airport
Average daily distance using electric power	16 .2 km (10.1 miles)
Average daily distance using range extender	19.6 km (12.2 miles)
Longest daily journey	N/A
Average electric usage in Congestion Charge Zone	N/A
Average electric usage in Greater London	86 %

OPTIMISING PERFORMANCE

To maximise electric-only running and help Heathrow achieve its air quality targets, drivers were encouraged to plug the van in whenever it was not in use during the day, for example over lunch times and breaks.

TRIAL HIGHLIGHTS

- Heathrow's usage is ideal for electrified vehicles because of availability of plug-in points and low mileage
- The vehicle largely remained on site and did not enter the Congestion Zone or London ULEZ
- The high proportion of pure electric running fits Heathrow's strategy to reduce emissions from airside vehicles

CUSTOMER STRATEGY

Heathrow's sustainability strategy – Heathrow 2.0 – details how the airport will drive down harmful emissions to become carbon neutral by 2020. Key to meeting this target is to reduce emissions from airside vehicles by working with partners to develop an ultra-low emissions zone for airside vehicles by 2025. Currently Heathrow has one of the highest densities of EV charging infrastructure in Europe and is looking to make further investments in its electric vehicle programme to support its sustainable goals. Heathrow Duty Engineer, Paul Glass said: "In many ways the Transit Custom Plug-In Hybrid is the perfect van for us. We run a large range of electric vehicles at the airport, but none offer the load space and flexibility of the Transit Custom."

The high proportion of pure electric running fits Heathrow's strategy to reduce emissions from airside vehicles

TRANSIT CUSTOM

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PHEV CASE STUDY – MORRISON UTILITY SERVICES

FORD TRANSIT CUSTOM PHEV

USAGE PATTERN

Morrison Utility Services (MUS), the UK's largest dedicated utility service provider and part of M Group Services, works with clients in the electricity, gas and water sectors, helping them repair, renew, refurbish and maintain their infrastructure and networks.

The Ford Transit Custom Plug-In Hybrid van joined a fleet of vehicles driven by MUS engineers fitting water meters. The engineer was given a schedule of customer's addresses in a certain area to visit each day, and at each property would locate the water main and fit a meter to record water usage to inform future bills. The Transit Custom Plug-In Hybrid only visited the depot occasionally to collect new meters and drop off used pipes and fittings.

Type of organisation	Transport authority
Average daily distance using electric power	29.9 km (18.6 miles)
Average daily distance using range extender	65.8 km (40.9 miles)
Longest daily journey	263.9 km (164 miles)
Average electric usage in Congestion Charge Zone	68.2 %
Average electric usage in Greater London	26.1 %

OPTIMISING PERFORMANCE

The Transit Custom Plug-In Hybrid was driven by one driver for several months who was able to plug in at home at night and when visiting the depot, this driver used selectable EV modes effectively to achieve a high percentage of electric running. A second driver then took over, who was not able to plug in at night. The driver was given coaching to optimise electric run ning using selectable EV modes, and the company could still gain benefits from the electric engine by running tariff-free in the Congestion Charge Zone.

TRIAL HIGHLIGHTS

- Average daily mileage of 96.6 km (60 miles) included regular longer journeys that required use of the range extender
- Driver was able to complete a 263.9 km (164-mile) return trip to fit a meter without stopping to charge the battery
- The Transit Custom Plug-In Hybrid was able to achieve 68 per cent electric driving in the London Congestion Charge Zone

CUSTOMER STRATEGY

M Group Services Plant & Fleet Solutions is investigating electric/hybrid vehicles on behalf of fellow M Group Services company MUS for its fleet, which make frequent visits to London's Congestion Charge Zone. The high daily mileage for this application would not suit a fully electric vehicle, so the plug-in hybrid van was ideally suited to the company's needs.

The Transit Custom Plug-In Hybrid was able to achieve 68 per cent electric driving in the London Congestion Charge Zone

TRANSIT CUSTOM

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PHEV CASE STUDY – SPEEDY HIRE

FORD TRANSIT CUSTOM PLUG-IN HYBRID

Exemption from the London Congestion Charge Zone fee saved Speedy Hire £1,288 during 112 visits. The vehicle drove using pure electric power for 83 per cent of mileage inside the zone

USAGE PATTERN

Speedy Hire offers plant and specialist equipment for hire, such as lighting for events, water pumps and cutting equipment for construction. The Transit Custom Plug-In Hybrid van was used by engineers maintaining equipment on hire at customers' addresses, and was fitted with racking designed for tools and parts. The van was plugged in overnight at the driver's home in Greater London and occasionally at the depot if the engineer needed to pick up some specialised tools during the day. Most journeys into the Congestion Charge Zone were short, but the van entered the zone 112 times, running in pure electric mode for 83 per cent of the time. The longest journey in one day was 402 km (250 miles), and 122 km (76 miles) were driven on pure electric power.

Type of organisation	Equipment hire
Average daily distance using electric power	25.1 km (15.6 miles)
Average daily distance using range extender	46.2 km (28.7 miles)
Longest daily journey	402 km (250 miles)
Average electric usage in Congestion Charge Zone	83.2%
Average electric usage in Greater London	35.2 %

OPTIMISING PERFORMANCE

The driver was trained to plug in overnight to start the day with a full charge, and to use selectable EV modes to make the most of charging opportunities while driving.

TRIAL HIGHLIGHTS

- Exemption from London's Congestion Zone saved Speedy Hire £1,288 in charges for 112 visits to the Congestion Charge Zone, the PHEV drove on 83 per cent pure electric power on these occasions
- One delivery required a 402 km (250-mile) return trip which included 122 km (76 miles) – more than 30 per cent – driven on electric-only power
- Average daily mileage would not be ideal for a fully electric vehicle

CUSTOMER STRATEGY

As part of its environmental strategy, Speedy Hire has set a target to reduce the company's carbon footprint significantly over the next five years. The company offers a Green Option (GO) produce range with performance across seven categories including energy efficiency, and energy efficient and electrified vehicles are an important part of the company's environmental strategy. As the average daily distance driven might be challenging for a pure electric vehicle, a Plug-In Hybrid makes an ideal choice for the fleet.

Mark Woolworth, head of transport and logistics, Speedy Hire said: "Our vehicle fleet is the lifeblood of our business, ensuring we're able to get tools and equipment to our customer's sites on time. In London, where we provide critical support to hundreds of projects, our Capital Commitment initiative means we'll deliver our top 52 products within four hours of them being ordered.

"But, alongside this commitment to customer service excellence is another to make our business more sustainable. We're targeting a big reduction in our carbon output over the next five years. Using the latest in clean vehicle technology, like the Transit Custom Plug-In Hybrid van, this means we can deliver both for our customers and on our commitment to the environment."

TRANSIT CUSTOM

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PHEV CASE STUDY – TFL

FORD TRANSIT CUSTOM PLUG-IN HYBRID

Drivers were excited about trialling the new technology and soon began to enjoy their driveability, with the knowledge they were contributing to a cleaner London

USAGE PATTERN

Transport for London, the local government body responsible for large parts of the transport system in Greater London, U.K., tested three Ford Transit Custom Plug-In Hybrid vans for a year. One of the vans was based at the depot in Hammersmith, two more were based at the depot in Stratford, east London, and used by engineers carrying out ultrasonic rail inspections across the network, mainly during the night. Average mileage was low, and almost entirely in Greater London; the vehicles only occasionally entered the Congestion Charge Zone.

Type of organisation	Transport authority
Average daily distance using electric power	19.9 km (12.4 miles) total
Average daily miles using range extender	46.3 km (28.8 miles) total
Longest daily journey	72.4 km (45 miles)
Average electric usage in Congestion Charge Zone	96 %
Average electric usage in Greater London	62 %

OPTIMISING PERFORMANCE

Transport for London's primary goal was to optimise electric-only running to help improve air quality in the city. This was achieved by plugging in whenever possible.

TRIAL HIGHLIGHTS

- Over a total of 40,233 km (25,000 miles), the Transit Custom Plug-In Hybrid vans showed the capability to drive almost exclusively on electric power while carrying out normal operations
- All three were plugged in at their workplace overnight and when not in service during the day
- On the occasions when the vans entered the Congestion Charge Zone, they recorded an average of 96 per cent zero-emission electric running

CUSTOMER STRATEGY

In line with the Mayor of London's aim for London's entire transport system to be zero emission by 2050, Transport for London is introducing electrified vehicles to its fleet, including hybrid and zero-emissions buses. The Transit Custom Plug-In Hybrid vans were well suited to the organisation's needs because they were able to cover TFL's entire transport network without stopping to charge. The vans achieved a high percentage of pure electric running, with an average of 62 per cent in Greater London and 96 per cent in the Congestion Charge Zone where they were exempt from the charge.

Glenn Jones, TfL Vehicle Development Manager said: "Drivers were excited about trialling the new technology and soon began to enjoy their driveability, with the knowledge they were contributing to a cleaner London. The vehicles proved themselves in mixed-use environment on longer and shorter journeys, however, it would ideally be deployed on routes within the Ultra-Low Emission Zone with back to base for recharging, giving us an advantage of a lower operating cost when driving within the zone, as well as the benefits of zero emissions."

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