

# Data-Driven Approaches to Fleet Decarbonisation





0  
1

What challenges are others discussing around fleet decarbonisation?

## Data visibility & accuracy

**Unsure** on true duty cycles – daily mileage, dwell times, payload impacts

**Hard** to separate which vehicles/ routes are genuinely electrifiable

## Infrastructure & energy constraints

**Power** availability and DNO engagement flagged as a major blocker

**Home** charging complexity for vans taken home by staff.

## Operational disruption

**Worry** about scheduling downtime for charging.

**Anxiety** about needing additional headcount to manage charger logistics (e.g. moving vans between bays).

**Nervousness** about public perception if services are disrupted (waste collection, police patrols).

## Vehicle technology limitations

**Battery** capabilities with specialist vehicles (refrigerated units, RCVs, sweepers, HGV rigids/artics).

**Range** anxiety in rural or high-mileage duty cycles.

## Financial uncertainty

**Upfront** costs vs long-term savings hard to evidence internally.

**Worry** about funding windows closing before decisions are made

## Missed funding and policy targets

**Risk** losing access to grants (LEVI, SME funds, OZEV schemes).

**Falling** behind on UK Net Zero mandates and local authority climate commitments.

## Operational risks

**Service** disruption if charging isn't planned into duty cycles.

**Lack** of resilience if depots hit power constraints.

**Knock-on** impacts to critical services (e.g. police, waste, utilities).

## Financial consequences

**Over-investing** in the wrong vehicles or chargers.

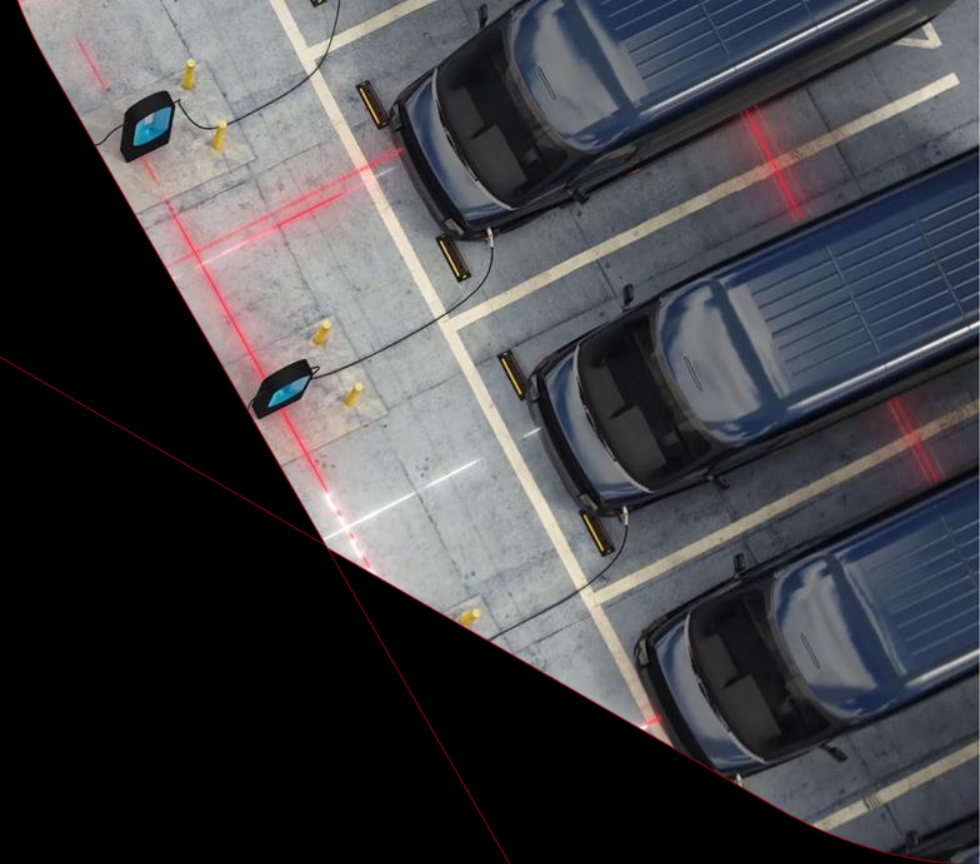
**Stranded** assets if technology choices don't align with long-term needs.

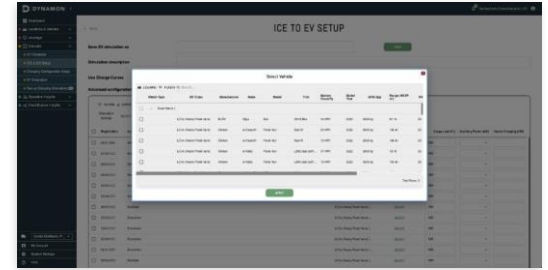
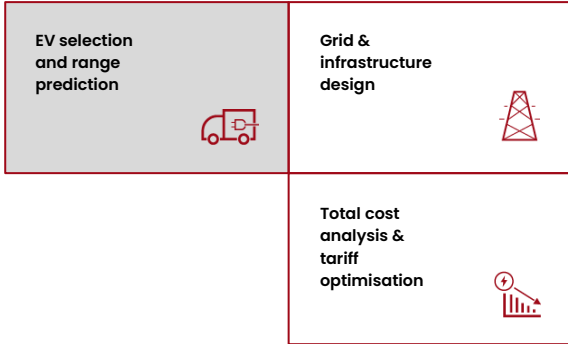
## Reputation and accountability

**Pressure** to show visible progress.

0  
2

# The Three Pillars

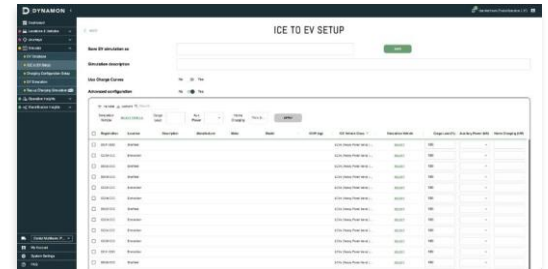


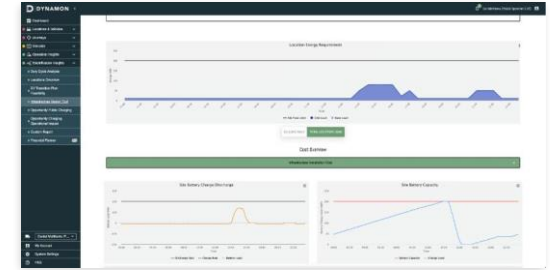
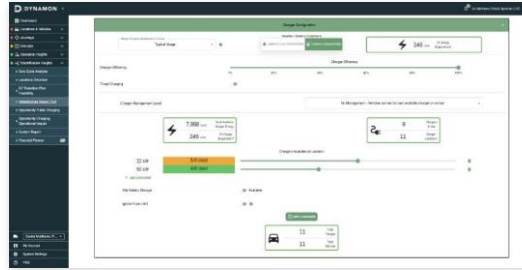
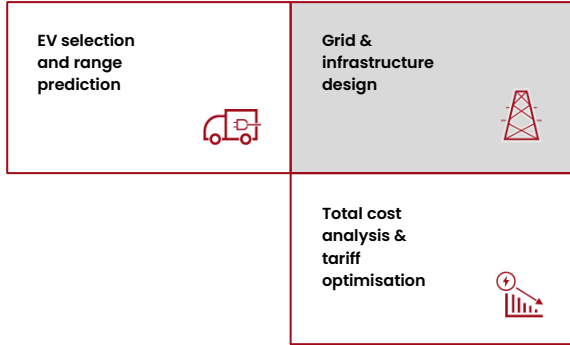


## EV selection and range prediction

ZERO identifies the optimum EVs with the right battery size for your operation. Using ZERO, you minimise fleet capital investment by correctly selecting vehicle assets.

ZERO performs journey analysis based on fleet operational data to determine the accurate real-world range of specific electric vehicles for any given operation or journey.

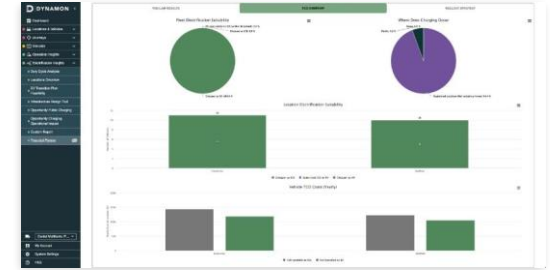
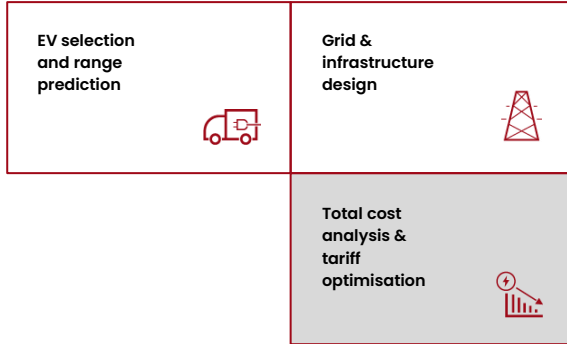




## Grid & infrastructure design

By analysing fleet operations, energy consumption, and depot stops, ZERO determines the optimal number and type of chargepoints to ensure EVs can operate efficiently whilst minimising investment costs. EV charging will greatly increase depot electricity use. ZERO forecasts future demand to assess if the grid can meet this need and recommends solutions (such as grid upgrades, charger load-balancing, or micro-grid solutions) if it cannot.

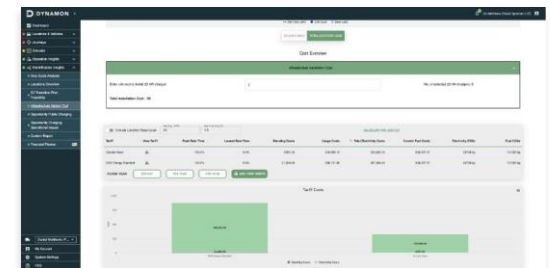
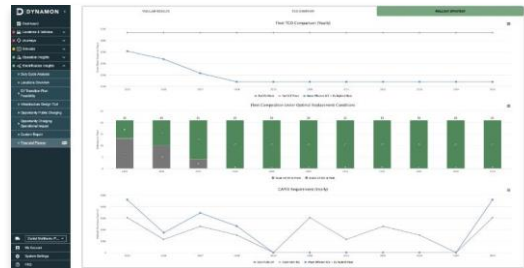




## Total cost analysis & tariff optimisation

ZERO accurately forecasts EV fleet costs and CO2 compared to your existing ICE operations, taking into account ICE vs EV depreciation, service & maintenance, insurance, and charging electricity costs.

ZERO Identifies the most cost-effective electricity pricing tariffs for charging electric vehicles, ensuring charging costs are minimised.





0  
3

# Fleet Decarbonisation in Practice: Insights and Case Studies

## The challenge

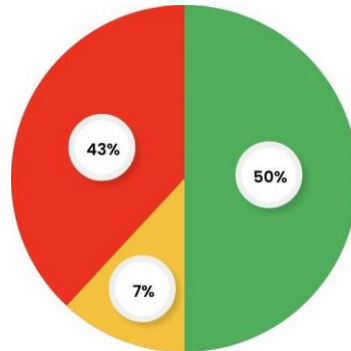
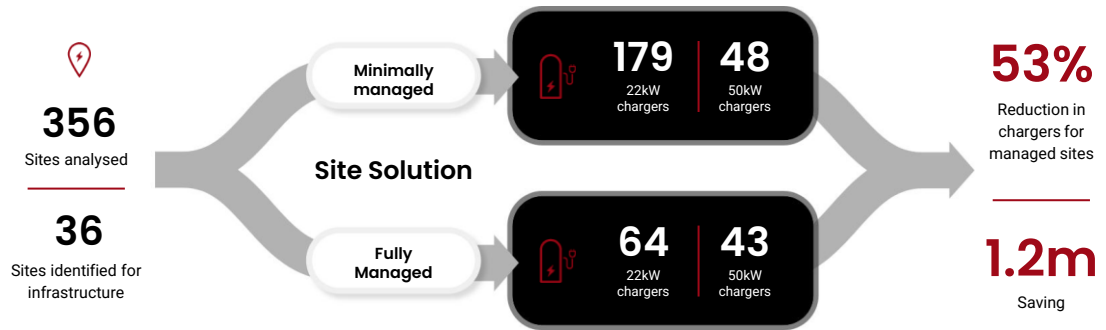
Transport for London (TFL), managing a fleet of 3,000+ vehicles, aims to transition to zero-emission vehicles (ZEVs) by 2030 as part of the Mayor's Transport Strategy. However, with 754 vehicles operating across 356 sites and diverse routes, TFL needed to balance avoiding overspecification of EV assets while ensuring operational efficiency, requiring precise infrastructure planning to meet varying demands without incurring unnecessary costs

**Objective:** Complete a telematics-based analysis to assess EV feasibility, determine charging infrastructure needs, and deliver a phased, cost-effective plan for fleet electrification.

## The solution

Dynamon's ZERO software provided:

- Comprehensive fleet analysis, identifying suitable EV models.
- A streamlined charging infrastructure plan.
- Clear recommendations for infrastructure sites.



## Results overview

(754 vehicles analysed)

- Green vehicles (suitable for immediate electrification)
- Amber vehicles (Can be electrified with minor adjustments)
- Red Vehicles (Greater challenges for electrification)

## The outcome

The TFL fleet would require a mix of EVs with battery sizes-45 kWh, 65 kWh, and 113 kWh-for each vehicle category. For the green vehicle tranche, ZERO recommended EVs with smaller batteries for 255 vehicles in the fleet, saving £1 million in costs.

## The challenge

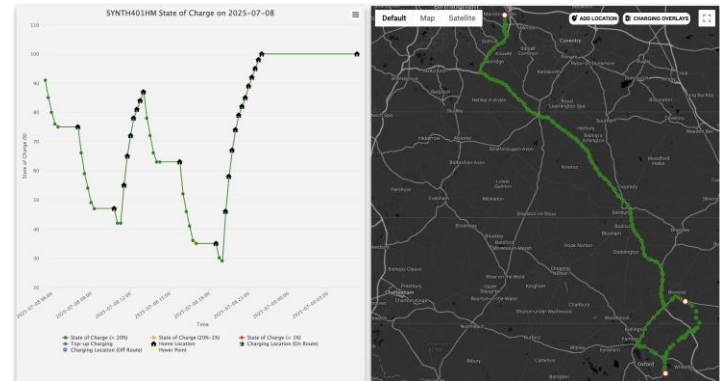
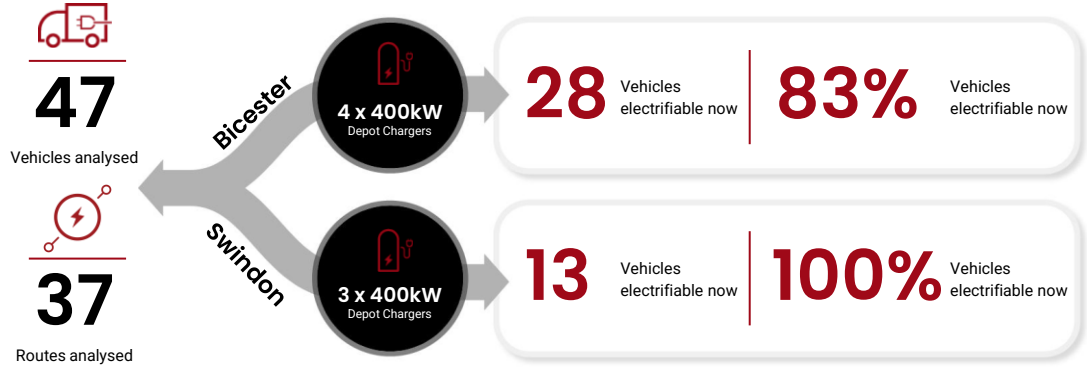
DP World aims to decarbonise its HGV fleet but faces challenges with understanding which routes are feasible and what depot infrastructure is required to support fleet electrification. DP World needed to balance avoiding overspecification of EV assets while ensuring operational efficiency, requiring precise route analysis and infrastructure planning to meet varying demands without incurring unnecessary costs.

**Objective:** Assess EV route feasibility and infrastructure needs for operations at Swindon and Bicester depots. Recommend an optimal cost-effective electrification pathway.

## The solution

Dynamon's ZERO software provided:

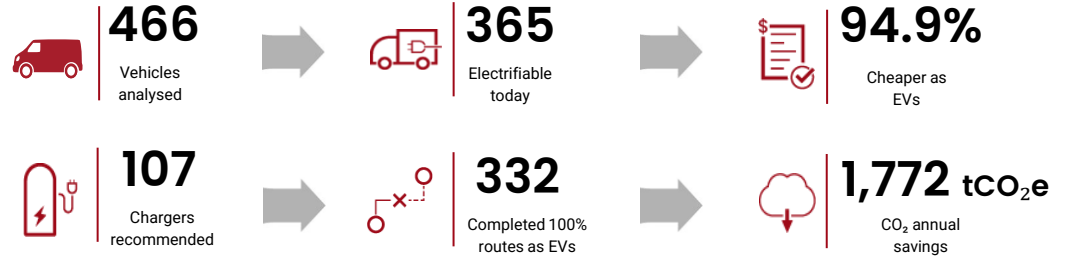
- Route based EV feasibility analysis, simulating a MAN eTGX
- Charging infrastructure design based on smart load management
- Clear recommendations for infrastructure sites.
- Cost modelling under peak/off-peak electricity tariffs



## The challenge

South East Water operates a fleet of 466 vehicles across 14 depots with varied duty cycles and charging constraints. The business needed a clear, data-driven roadmap to electrify its fleet while controlling costs and ensuring operational reliability.

**Objective:** Identify which vehicles can transition to EVs, what charging is required at each depot, and build a cost-effective rollout strategy towards SEW's 2030 decarbonisation target.



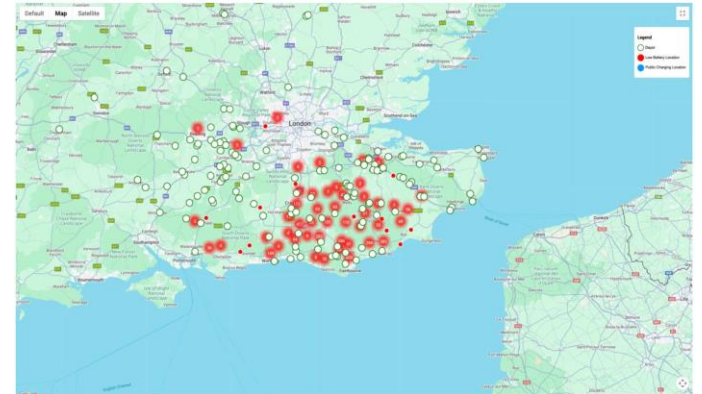
## The solution

Dynamon's ZERO software provided:

- Analysed 1 million+ miles of telematics data across the fleet.
- Simulated 8 replacement EVs under harsh conditions to test route feasibility.
- Designed depot-specific charging strategies (managed vs unmanaged)
- Built a TCO model showing long-term savings from electrification.
- Produced a phased rollout plan aligning vehicle replacement with EV readiness.

## Recommendation

- Install a mix of 7kW, 11kW, and 50kW depot chargers with managed load systems at 7 depots.
- Enable home charging for drivers (>93% journey completion).
- Use public charging top-ups for <95% feasible vehicles.
- Phase rollout: 394 EVs by 2029.
- Monitor 3 depots (Snodland, Boxalls Lane, Hockers Lane) closely for highest energy demand



The map above shows a sample of all the EV low battery hotspots for the vehicles based at Arlington WTW

## The challenge

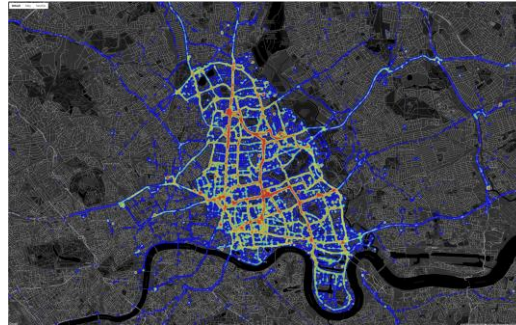
Met Police (MPS) aims to decarbonise its 5,000+ fleet and recognises manufacturers may begin to discontinue ICE vehicles in the near future. MPS faces challenges with the unpredictable nature of their operation and a requirement to ensure operational efficiency. MPS also need to optimise their infrastructure deployment to avoid unnecessary CAPEX expenditure at core locations.

**Objective:** Complete a combined telematics and synthetic based analysis to assess EV feasibility, determine charging infrastructure needs, and deliver a phased, cost-effective plan for fleet electrification.

## The solution

Dynamon's ZERO software provided:

- Comprehensive fleet analysis, identifying suitable EV models.
- An optimised charging infrastructure plan.
- Clear recommendations for infrastructure sites.



## The challenge

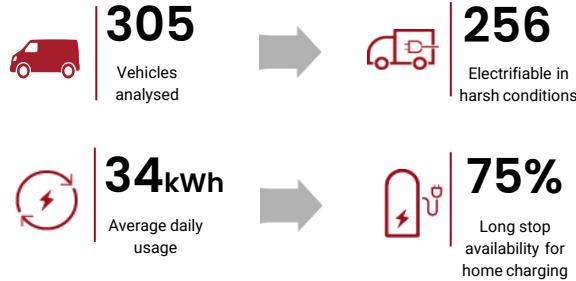
WWU operates a fleet of 305 vans across Wales and England. As a critical national infrastructure company, every journey must be completed reliably, even in harsh weather conditions. The challenge was to understand whether current EV technology could deliver this resilience under a home-charging-only model..

**Objective:** Assess the feasibility of electrifying WWU's van fleet using Toyota's Proace EV range, identify vehicles requiring additional support, and recommend a transition strategy that maintains operational resilience.

## The solution

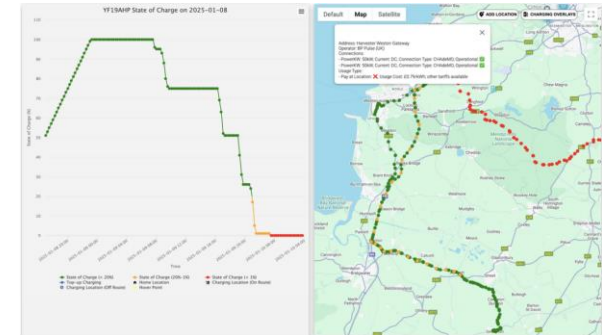
Dynamon's ZERO software provided:

- Simulated Toyota Proace Medium (75 kWh) and Proace Max (110 kWh) vans.
- Tested under standard and harsh (-20% battery) conditions.
- Modelled home-charging-only (7.2 kW) with long-stop availability >75%.
- Identified high-suitability vehicles and those needing additional charging support.



## Recommendation

- Adopt a home-charging-first strategy for majority of vans.
- Provide public rapid charging access or depot top-ups for edge cases.
- Use Toyota Proace Medium and Max EV mix to balance daily duty cycles..
- Phase rollout prioritising electrification-ready vehicles, while monitoring high-mileage vans.



## Contact Dynamon

If you would like to connect, learn more about our software tools and discuss your requirements please contact:

**Dean Mahoney**

Email: [dean.mahoney@dynamon.co.uk](mailto:dean.mahoney@dynamon.co.uk)