

Taking A Data Driven Approach to Fleet Decarbonisation

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How data can help overcome the specific challenges of ambulance, fire and police fleets

Drivers for Change

UK Government Policy

2025 (ZEV Mandate)

28% of new cars and 16% of new vans to be zero emission vehicles



2035 (ICE Phase Out)

All new cars, vans, and HGVs up to 26 tonnes to be zero emission vehicles



80% of new cars and 70% of new vans to be zero emission vehicles. Phase out of new petrol and diesel (ZEV Mandate)

2030 (ZEV Mandate)

All new HGVs up to 44 tonnes to be zero emission vehicles

2040 (ICE Phase Out)

Market Trends

Petrol and Diesel ↘

43% market share in 2024

Petrol and diesel in decline

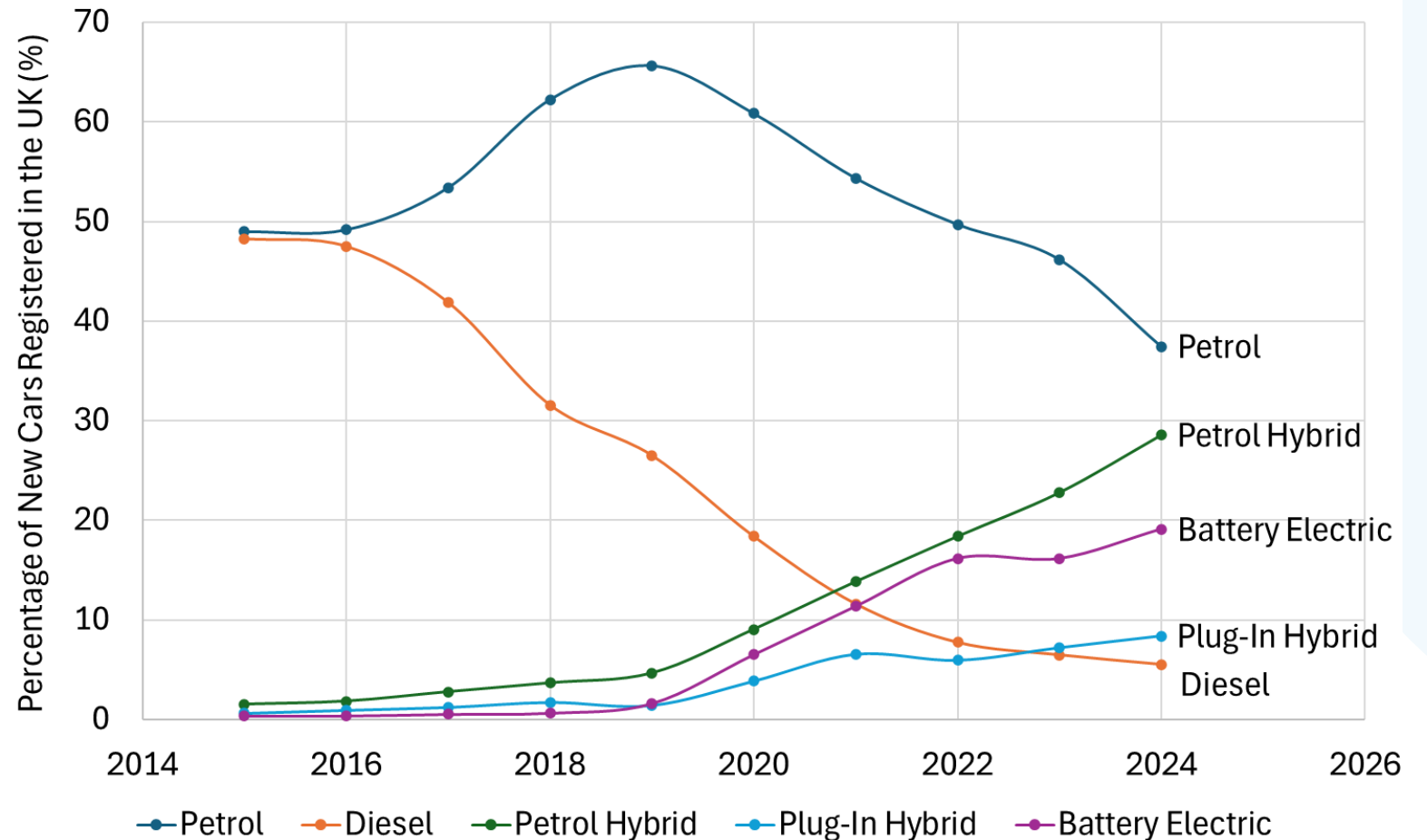
Petrol Hybrid ↗

29% market share in 2024

Electric Vehicles ↗

27% market share in 2024

19% BEV, 8% PHEV



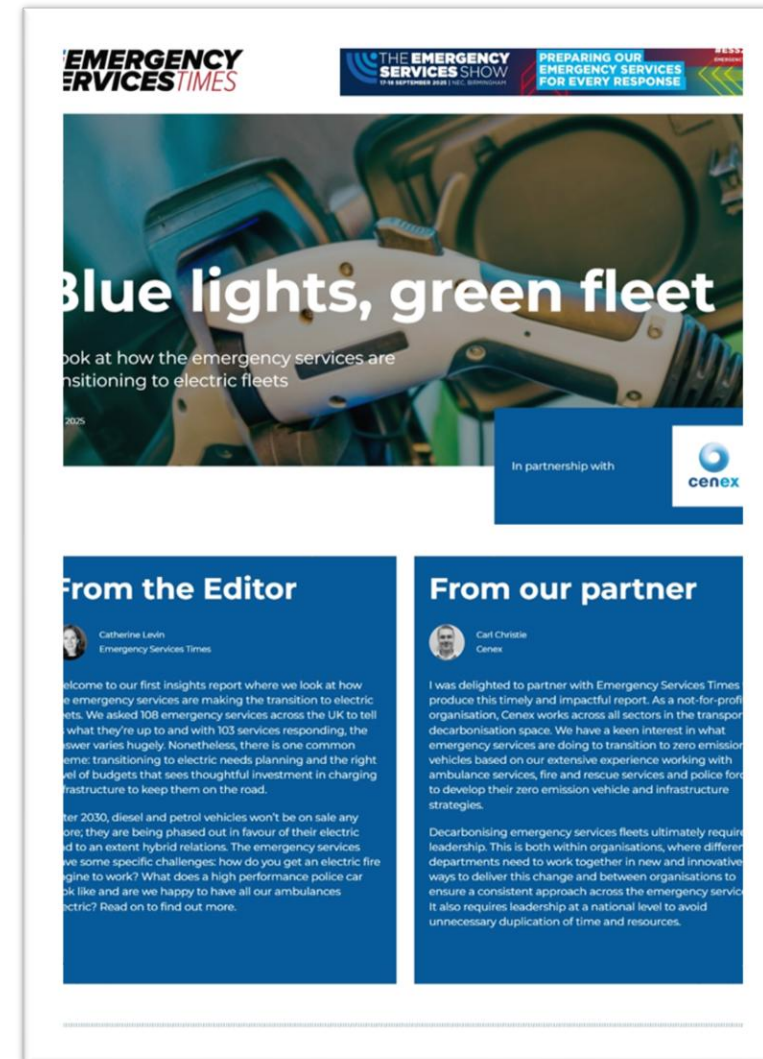
“The concern we have is the limited market for non-EVs from about 2027”

Progress to Date

Blue Lights, Green Fleet

What is it?

- An insights report published by Emergency Services Times in March 2025
- Provides a look at how the emergency services are transitioning to electric fleets
- Delivered in partnership with Cenex



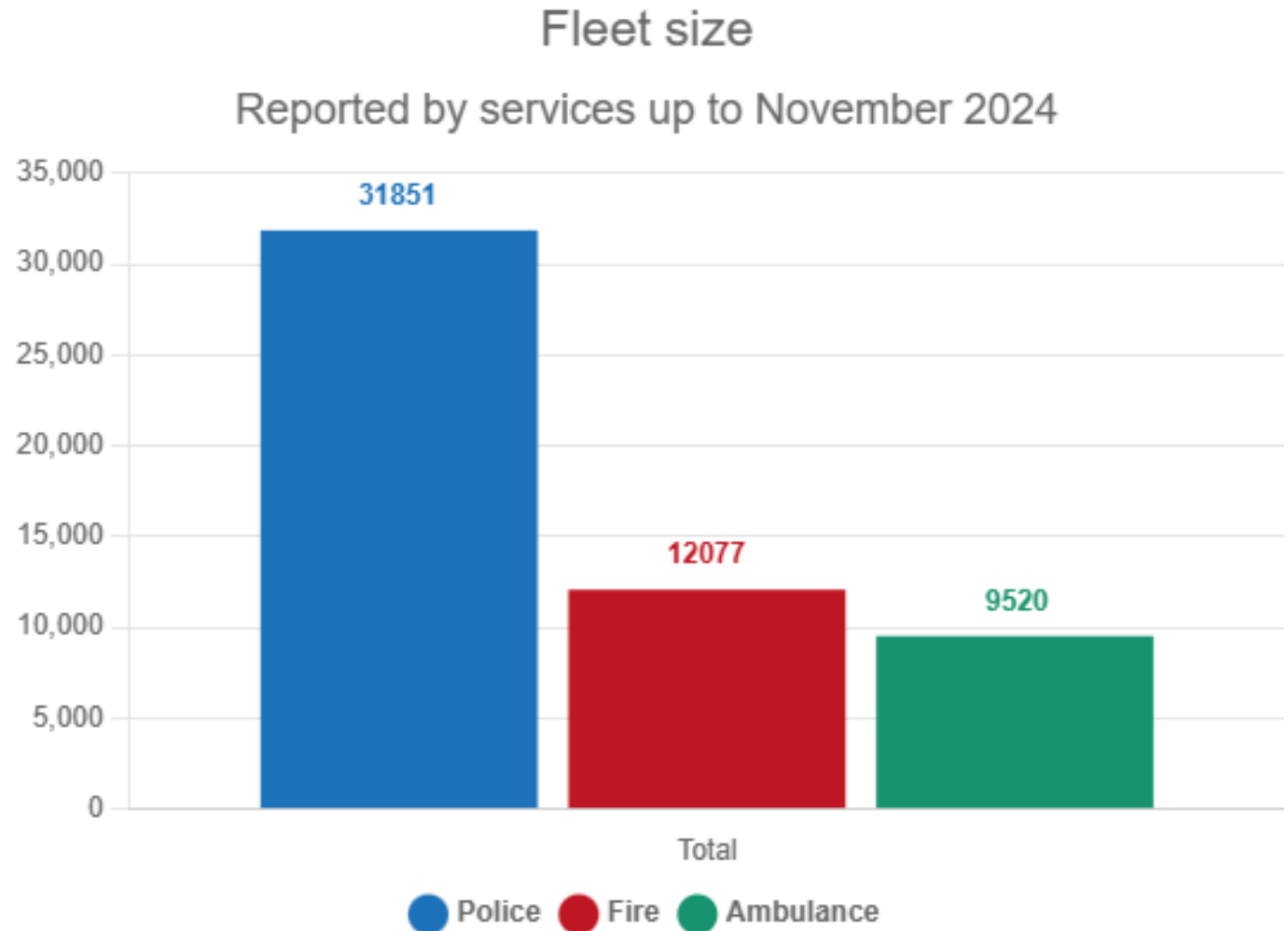
Emergency Services Fleet

Approach

- 108 emergency services contacted
- 95% response rate

Current Fleet

- Total combined fleet of 53,000 vehicles
- Only 13% are hybrid or electric vehicles (7,000 vehicles)



Looking Ahead to 2030

EV Plans

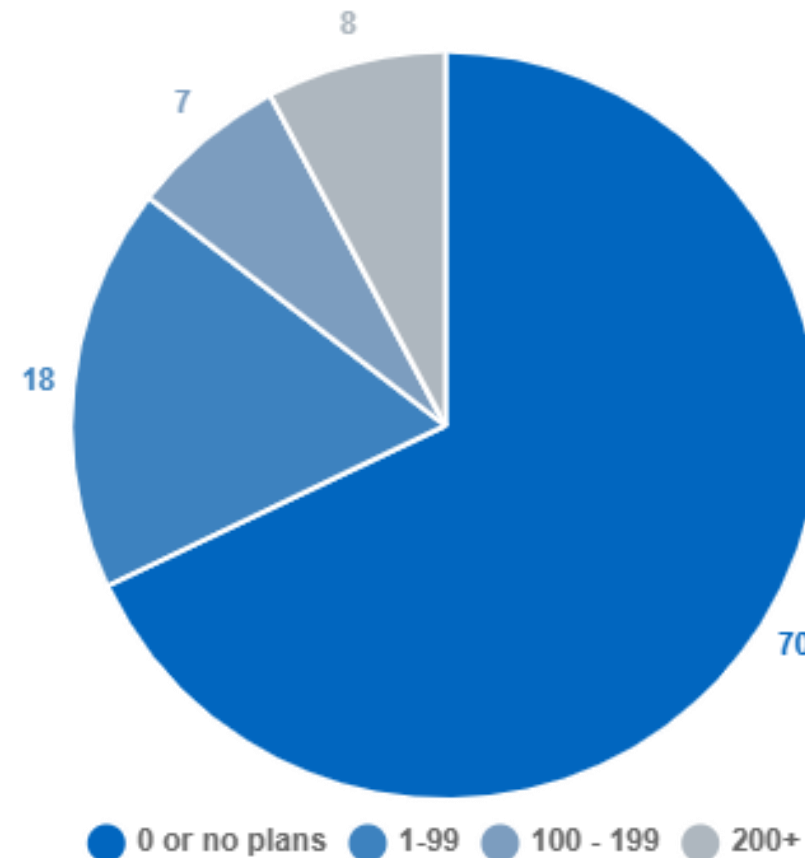
- 67% of emergency services do not know how much they will spend on hybrid or electric vehicles before 2030

Infrastructure

- Infrastructure should be planned jointly and needs funding

Electric / hybrid purchase plans

From 2025 - 2030



Leading the Charge

Non Response

- Emergency services have started with the quick wins and are generally taking a 'slow and steady approach'

Response

- Electric response vehicles are starting to be deployed, but in small numbers



Challenges for Emergency Services

Common Challenges

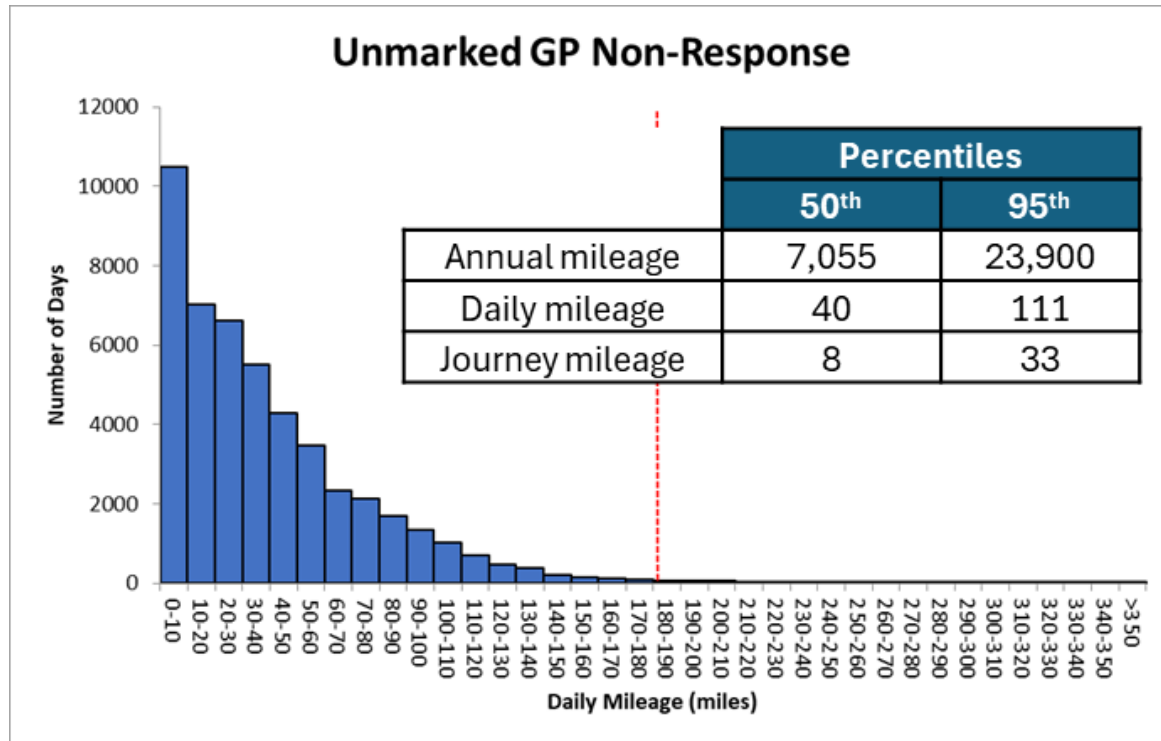
- **Availability of suitable vehicles**
 - Performance e.g. top speed.
 - Payload e.g. for people and equipment
 - On board power e.g. lights, comms, pumps
 - Specialist conversions
- **Real-world range under different conditions**
 - Response and advanced driving conditions
 - Impacts of regen and ADAS on driving style
- **Availability and cost of suitable infrastructure**
 - 24 / 7 operation, 365 days a year
 - Short handovers between shifts
 - Limited charging opportunities



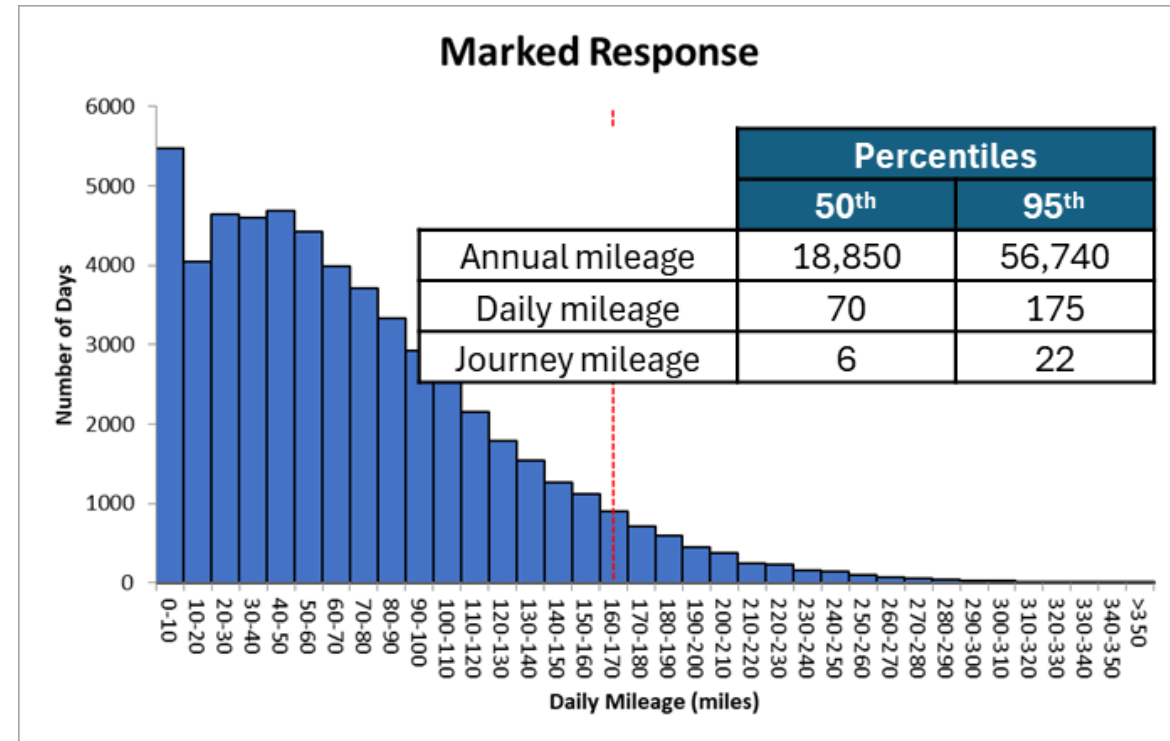
How can data support fleet transition?



Operational Suitability

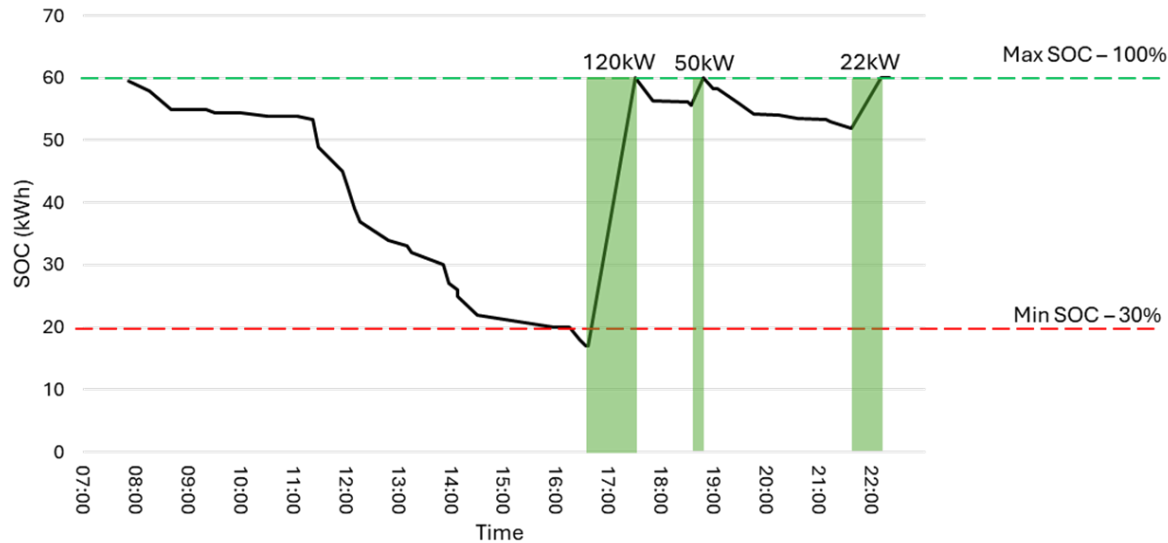


EVs with a 50 kWh battery have a real-world range of ~150 miles, which is enough for most general-purpose cars



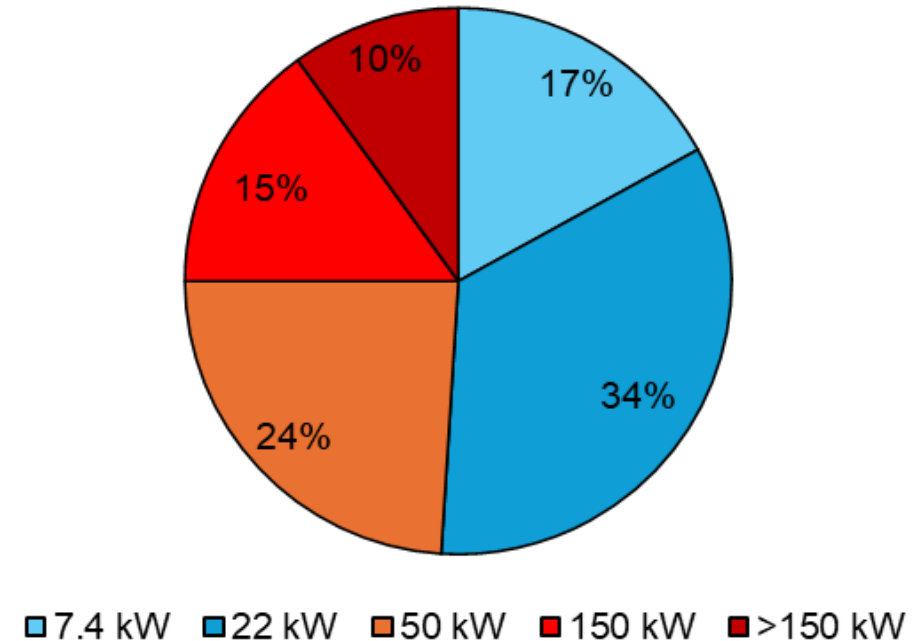
But for response vehicles you need to fully understand drive and duty cycles to be able to identify which vehicles to transition first

Charging Strategy



Typical challenging day for a police vehicle
(away from base until 16:30, SOC <30%)

Minimum Power Required per Charging Event

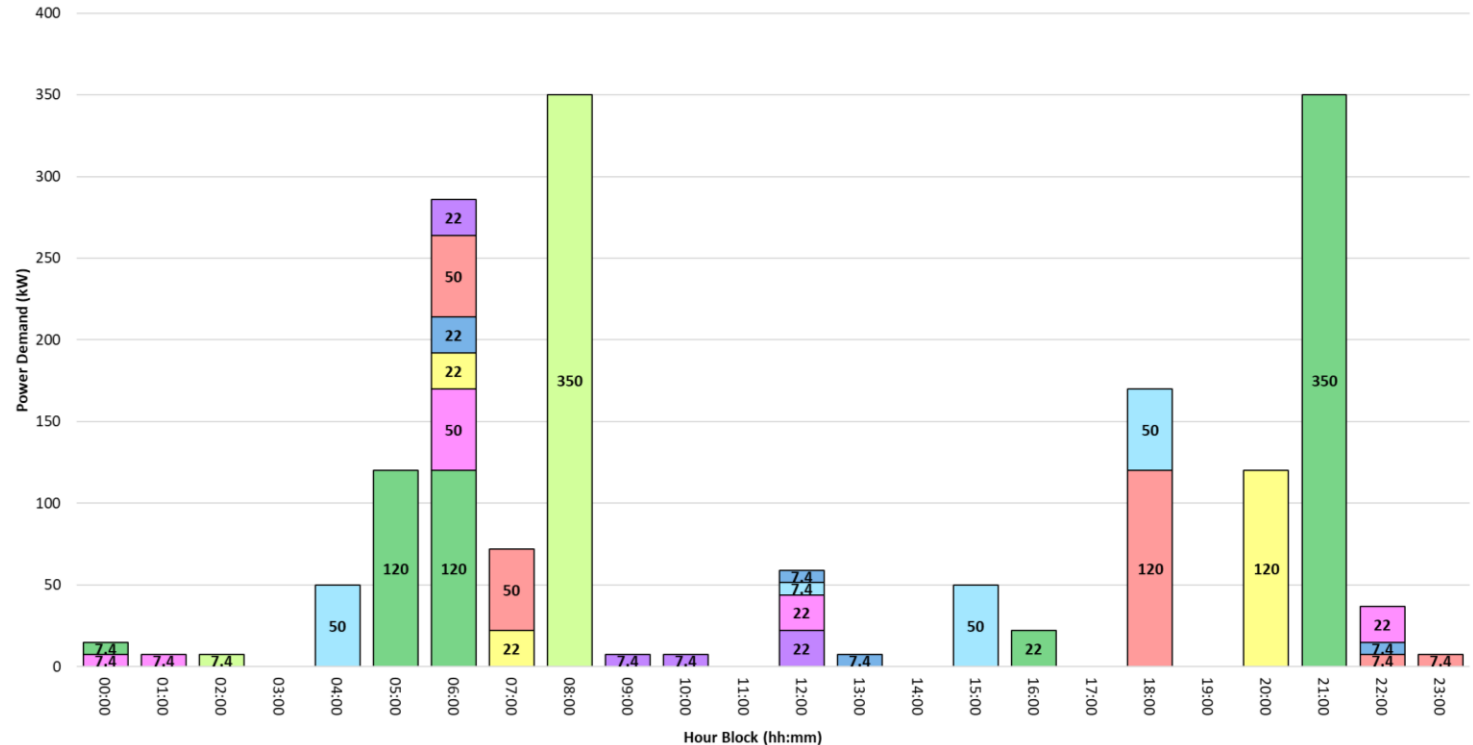


EV charging requirements can be estimated using historic telematics data and advanced simulation models

DC chargepoints are expensive, but an optimised charging strategy can reduce costs and power requirements by $\geq 50\%$

Infrastructure Requirements

- Good data can help fleet and estates managers to understand:
 - When different types of vehicles need charging.
 - How many vehicles need charging at once.
 - How much power is needed on site now and in the future.
 - How best to mitigate potentially expensive grid upgrades.



Infrastructure needs to be planned and optimised on a site-by-site basis

Completing all charging at base can be prohibitively expensive and other solutions should be considered for the worst case

Key Points

- **The transition to zero emission vehicles is happening now** and it is an operational risk that needs to be managed by the emergency services.
- **The availability of suitable response vehicles has limited progress to date**, but infrastructure and funding are quickly becoming the main challenges.
- **Data is key to planning EV fleets and optimising them to reduce costs and de-risk operations.**



Thank you for listening



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