Applied Intelligence

ELECTRONIC VEHICLE CHARGING STATIONS

FEATURES/SOLUTIONS

- Loitering
- Vandalism
- Theft
- Slip Trip
- Person Down
- Climbing on structure
- ICE Blocker
- Parking across 2 bays (audible announcement)
- Parking but not using (audible announcement)
- Free bays
- Customer movement
- Time spent on bay
- Vehicle Registration
- Frequency of use
- Remote reporting

TOTAL PUBLIC CHARGING DEVICES: AS OF JANUARY 1, 2025, THERE WERE 73,334 PUBLIC ELECTRIC VEHICLE CHARGING DEVICES INSTALLED IN THE UK.

LOITERING

Loitering at EV charging stations refers to individuals remaining on-site without a clear purpose, which can raise security concerns, deter legitimate users, or indicate potential criminal activity.

Unauthorised presence around chargers or unattended vehicles may disrupt operations or create discomfort for customers.

VCA Applied Intelligence addresses this by using advanced video analytics to detect and flag unusual dwell times or movement patterns. Its technology can trigger real-time alerts when loitering is identified, allowing swift intervention by security or staff.

By monitoring behaviour proactively, VCA helps improve site safety, deter crime, and ensure EV charging stations remain secure and welcoming for all users.

TARGET: THE UK AIMS TO HAVE 300,000 PUBLIC CHARGE POINTS BY 2030, AND IS CURRENTLY REPORTED TO BE ON TRACK TO ACHIEVE THIS GOAL

VANDALISM

Vandalism at EV charging stations involves the deliberate damage of infrastructure, including chargers, cables, signage, or nearby facilities. Such incidents lead to costly repairs, service disruption, and deter customers from using the site.

VCA Applied Intelligence combats vandalism through real-time video analytics and behavioural detection. By monitoring activity 24/7, the system can identify suspicious movements, forced entry attempts, or loitering before vandalism occurs. VCA's technology provides instant alerts, enabling fast response by security teams or remote operators.

This proactive approach not only reduces damage and downtime but also enhances customer trust and helps maintain a reliable, professional EV charging environment.

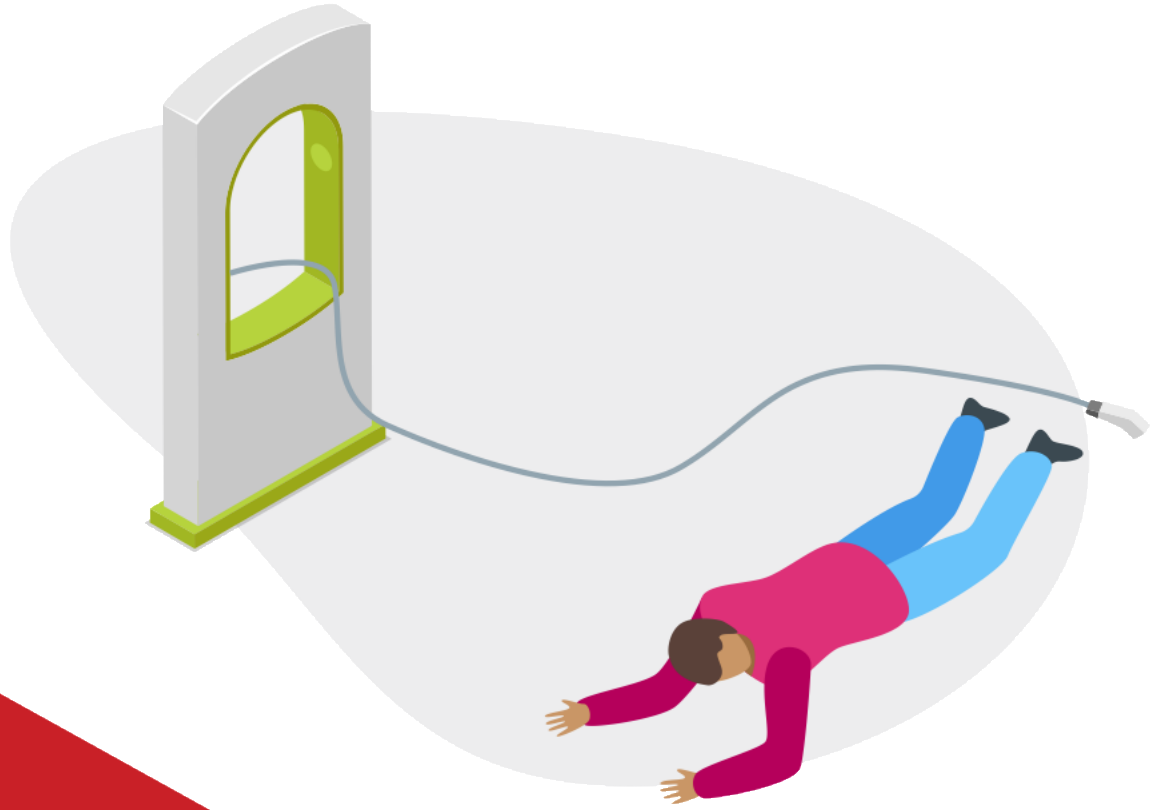
THEFT

Theft at EV charging stations can involve stolen charging cables, vandalised equipment for resale, or theft from nearby vehicles while drivers are occupied. These incidents disrupt service, incur costly repairs, and diminish customer confidence.

VCA Applied Intelligence helps deter and detect theft through its advanced video analytics and real-time alerting systems. By continuously monitoring charging sites, VCA can identify unusual behaviours such as tampering, prolonged loitering, or unauthorised access. Integrated ANPR and facial recognition further support incident investigation.

This proactive surveillance approach allows for rapid response, reduces financial loss, and enhances safety—ensuring EV stations remain secure, efficient, and customer-friendly.

SLIP TRIP



Slip and trip incidents at EV charging stations pose safety risks to customers and can lead to serious injuries, legal claims, and reputational damage.

Common causes include trailing charging cables, uneven surfaces, poor lighting, and environmental factors like rain or ice.

VCA Applied Intelligence addresses these hazards through advanced video analytics that continuously monitor foot traffic areas. The system detects anomalies such as falls, unattended obstacles, or liquid spills and generates real-time alerts for immediate response.

VCA also provides playback footage for incident investigation and liability protection. This proactive approach helps maintain a safe, accessible, and compliant environment for all EV users.

PERSON DOWN

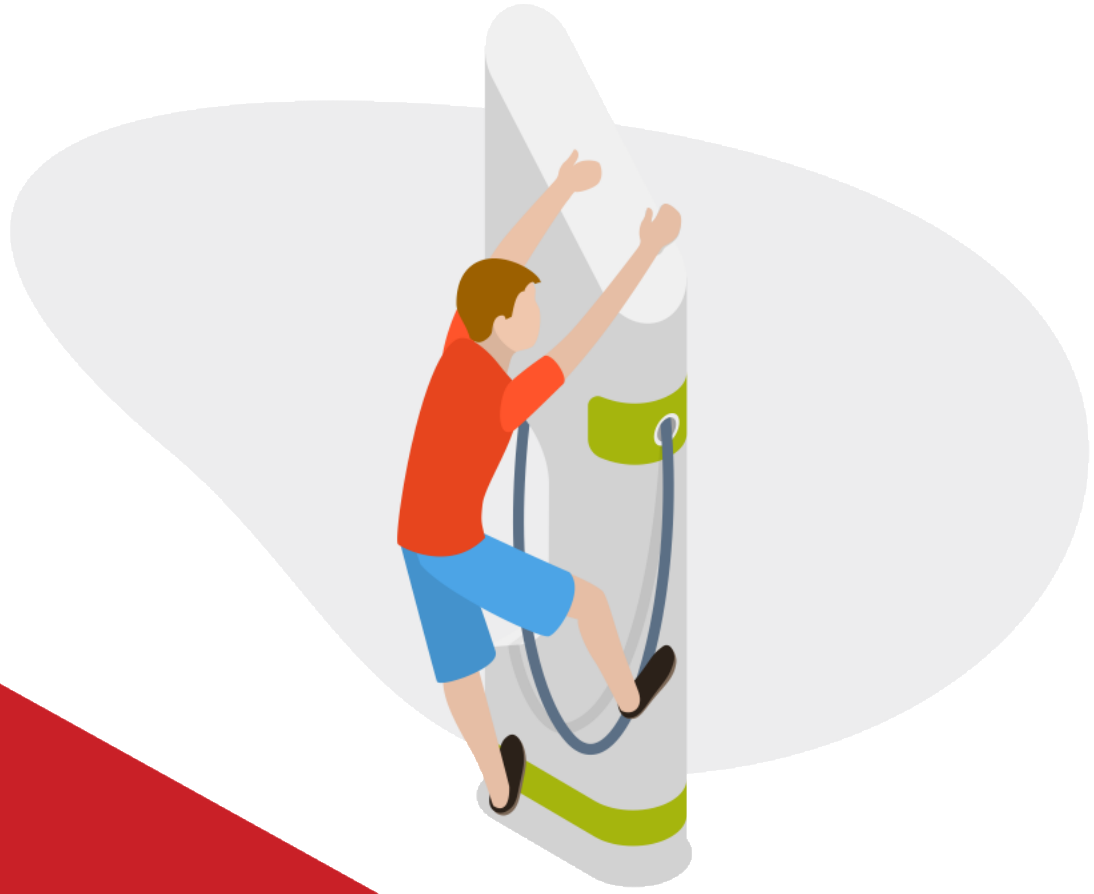
"Person Down" at EV charging stations refers to a situation where an individual collapses, falls, or lies motionless– potentially due to a medical emergency, accident, or assault.

These incidents require immediate attention to prevent further harm and ensure safety.

VCA Applied Intelligence helps by using advanced video analytics with person-down detection algorithms. The system continuously monitors the site and instantly identifies when someone is lying on the ground in an unusual or prolonged way.

It then triggers real-time alerts to notify staff, security teams, or emergency services. This fast response capability supports customer wellbeing, improves site safety, and ensures swift action in critical situations.

CLIMBING ON STRUCTURE



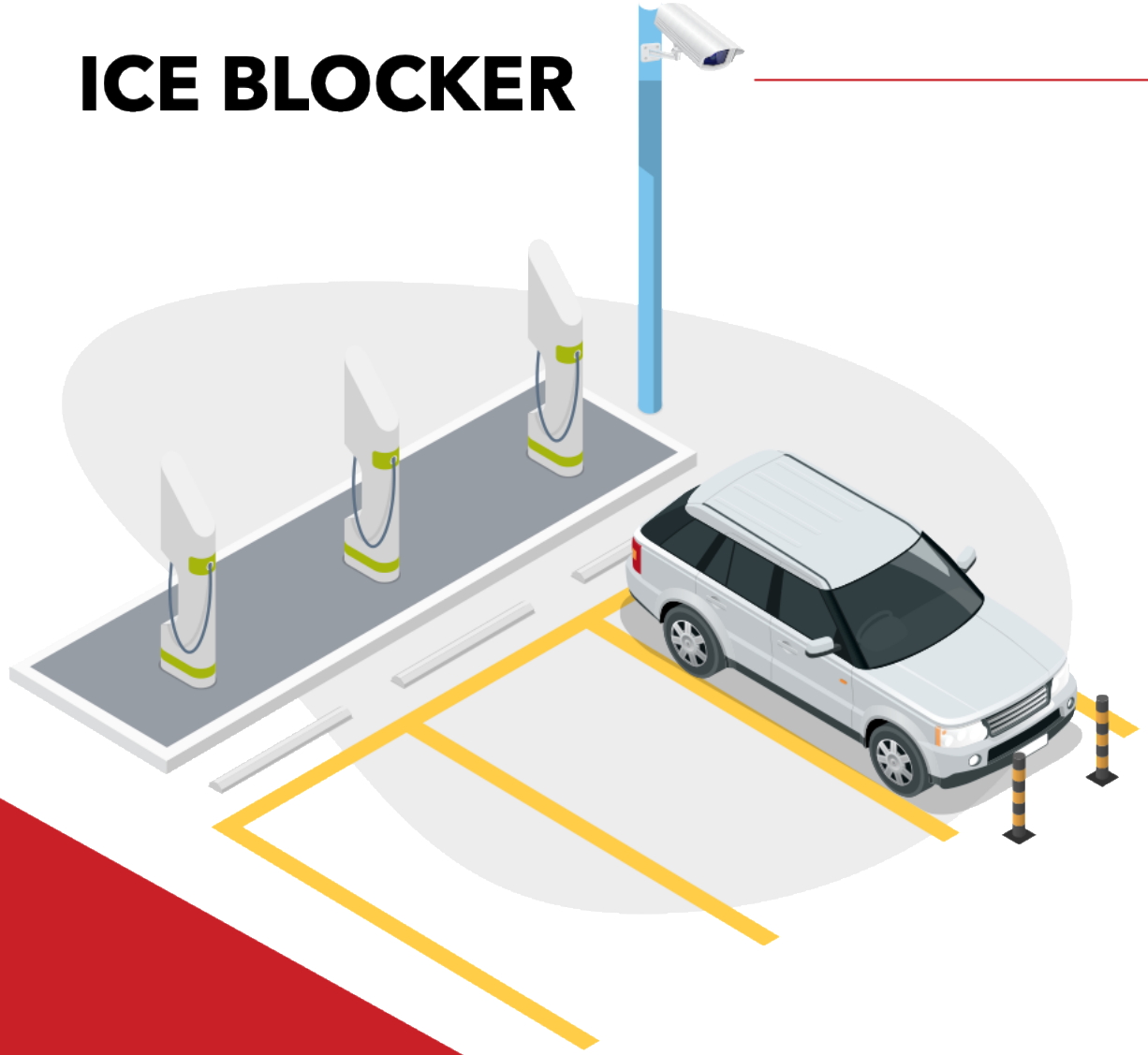
Climbing on structures at EV charging stations poses serious safety hazards and potential damage to infrastructure.

Individuals—whether vandals, trespassers, or curious youths—may attempt to scale canopies, chargers, or fencing, risking injury and disrupting operations.

VCA Applied Intelligence uses powerful video analytics to detect unusual vertical movement and behaviour associated with climbing. When a person attempts to scale equipment or structures, the system triggers real-time alerts, enabling rapid intervention before harm or damage occurs.

Combined with CCTV footage and behavioural tracking, VCA helps deter risky actions, protect assets, and maintain a safe, secure environment for customers and staff alike.

ICE BLOCKER



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ICE blocking at EV charging stations occurs when internal combustion engine (ICE) vehicles park in spaces designated for electric vehicle charging, preventing EV drivers from accessing chargers.

This creates frustration, reduces charging availability, and disrupts the efficient use of infrastructure.

VCA Applied Intelligence combats ICE blocking through its advanced video analytics and licence plate recognition technology. The system automatically detects unauthorised vehicles in charging bays, verifies vehicle type, and sends real-time alerts to site operators or enforcement teams. VCA can also generate usage reports to identify repeat offenders.

This proactive monitoring ensures fair access, improves user experience, and supports efficient EV station management.

A NEW PUBLIC CHARGE POINT IS BEING INSTALLED EVERY 25-29 MINUTES

PARKING ACROSS 2 BAYS (AUDIBLE ANNOUNCEMENT)

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Parking across two bays at EV charging stations reduces the availability of charging spots, leading to congestion and customer dissatisfaction.

This behaviour is often caused by driver negligence or oversized vehicles, disrupting efficient site usage.

VCA Applied Intelligence uses advanced video analytics to automatically detect when a vehicle occupies more than one bay. The system can trigger audible announcements or visual alerts, prompting drivers to reposition their vehicles. In addition, detailed reporting tools allow operators to monitor misuse patterns and take corrective action.

This ensures optimal use of charging infrastructure, improves user experience, and promotes fair access to EV charging facilities.

PARKING BUT NOT USING (AUDIBLE ANNOUNCEMENT)

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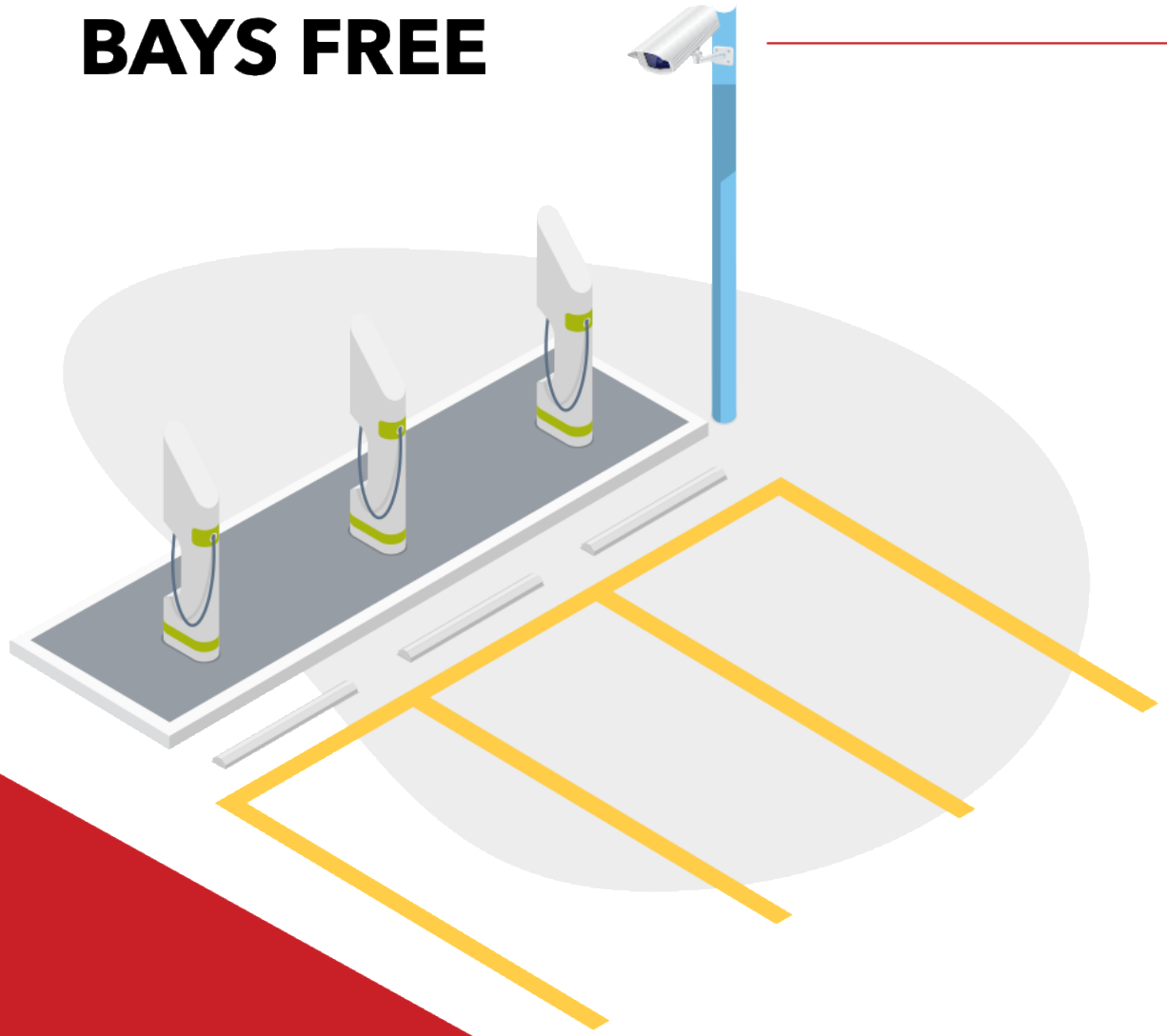
Parking across two bays at EV charging stations without active charging wastes valuable space and restricts access for other EV users.

This misuse can cause frustration, reduce turnover, and negatively affect customer satisfaction.

VCA Applied Intelligence addresses this issue with intelligent video analytics that accurately detect when a vehicle is occupying multiple bays. Without the need for audible announcements, the system silently alerts site operators through real-time notifications or dashboard updates. This enables prompt intervention or automated responses such as digital signage.

VCA's discreet yet effective monitoring helps maintain charging bay availability, encourages responsible behaviour, and supports efficient site management.

BAYS FREE



At EV charging stations, "Free Bays" refers to the number of unoccupied charging spots available for electric vehicles at any given time.

Monitoring Free Bays is essential for optimising driver experience, reducing queuing times, and ensuring efficient use of charging infrastructure.

VCA Applied Intelligence enhances Free Bay monitoring through its advanced video analytics and AI-driven sensors. By integrating real-time occupancy detection and automated alerts, VCA helps site operators identify when bays are free, occupied, blocked, or misused (e.g., by non-EVs).

This data improves user-facing availability displays, supports predictive maintenance, and drives better traffic flow management, maximising station performance and customer satisfaction.

AS OF OCTOBER 2024, PUBLIC EV CHARGING POINTS OUTNUMBER PETROL STATIONS BY MORE THAN EIGHT TIMES

CUSTOMER MOVEMENT

Customer movement at EV charging stations refers to how individuals navigate and interact within the site, including walking patterns, time spent near chargers, and areas of congregation.

Understanding this movement is key to optimising safety, site layout, and user experience.

VCA Applied Intelligence uses advanced video analytics to track and analyse customer behaviour in real time. The system identifies high-traffic zones, detects loitering, and highlights unusual activity without capturing personal data. Insights from this analysis enable operators to improve signage, lighting, and safety protocols.

By monitoring customer movement, VCA helps enhance operational efficiency and ensures a secure, customer-friendly environment.

TIME SPENT ON BAY

Time spent in a bay at EV charging stations refers to the duration a vehicle occupies a charging space, from arrival to departure.

Monitoring this metric is essential for understanding usage patterns, preventing overstay, and improving charging bay availability.

VCA Applied Intelligence technology provides precise, real-time tracking of vehicle dwell time using advanced video analytics. The system can alert staff to vehicles that have exceeded fair usage times or are occupying bays without charging.

These insights help optimise bay turnover, reduce congestion, and improve user satisfaction. VCA's solution supports efficient site management and ensures better access for all EV drivers.

VEHICLE REGISTRATION

Vehicle registration identification at EV charging stations involves capturing and recognising number plates to monitor and manage vehicle access, usage, and compliance.

This capability is vital for identifying repeat visitors, tracking overstays, enforcing usage policies, and deterring unauthorised access or misuse.

VCA Applied Intelligence technology leverages Automatic Number Plate Recognition (ANPR) integrated with its advanced video analytics platform to deliver accurate, real-time identification. This enables seamless data collection for reporting, alerts for restricted or unauthorised vehicles, and enhanced site security.

VCA's system supports smart enforcement, operational efficiency, and customer accountability at EV charging stations, helping operators maximise service availability and safety.

FREQUENCY OF USE

Frequency of use at EV charging stations refers to how often individual users or vehicles return to charge within a given timeframe.

Tracking this metric helps operators understand customer habits, manage demand, and identify peak usage periods or underutilised sites.

VCA Applied Intelligence technology uses intelligent video analytics and ANPR to accurately record and analyse visit patterns. By monitoring repeat visits, VCA provides valuable insights into customer loyalty, infrastructure effectiveness, and potential misuse.

These insights allow operators to optimise station layouts, plan capacity upgrades, and tailor services. VCA's solution empowers smarter, data-driven decisions to improve customer experience and operational efficiency.

REMOTE REPORTING

Remote reporting at EV charging stations enables operators to access real-time data and analytics from multiple locations without being physically present.

This includes insights into bay occupancy, charger usage, vehicle identification, and customer behaviour.

VCA Applied Intelligence technology delivers robust remote reporting through its integrated video analytics platform. By combining ANPR, object tracking, and behavioural analysis, VCA allows operators to monitor activity, generate customised reports, and receive real-time alerts across all sites.

This enhances operational efficiency, improves decision-making, and reduces the need for on-site staff. VCA's remote reporting tools help ensure proactive management, increased uptime, and a better customer charging experience.

ANNUAL GROWTH: IN 2024, OVER 20,000 NEW PUBLIC CHARGE POINTS WERE INSTALLED, MARKING A 38% YEAR-ON-YEAR INCREASE. THE INSTALLATION RATE GREW FROM AN AVERAGE OF 1,400 PER MONTH TO 1,650 PER MONTH.