FUTURE™
FUEL SOLUTIONS

RESIDENTS INFORMATION PACK

EVERYTHING YOU NEED TO KNOW ABOUT EV CHARGING IN RESIDENTIAL BLOCKS

Part of Future Group

CONTENTS

DISCOVER

Future Group is investing into electric vehicle charging infrastructure across residential apartment parking.

The strategy? To increase the uptake of electric vehicle usage, backed by new Government funding and venture capital.

Without our intervention, residents are unable to switch to driving electric cars because of the difficulty of installing a home charging point in their allocated but landlord-owned apartment parking space.

Equally, landlords are unwilling to invest in charging infrastructure until there is evidence of significant electric vehicle adoption by residents.

A significant deadlock, which is only going to become more difficult as the Government's 2030 end of the ICE age deadline draws ever closer.

Our solution? Pre-cable smart electric vehicle charging systems in apartment parking spaces now, immediately encouraging residents to switch to an electric car.

Upon that momentous day, residents can have their own charger installed and connected to the Future Group charging platform.

Electric vehicle charging is overtaking building management. What can you avoid?

- Investment required is circa £2000 per parking space
- Big money building power upgrades will need authorisation with the local network
- OLEV accreditation and grant paperwork is absolutely essential
- You'll be managing cabling, control rooms and multiple charger installations
- You'll need to develop and run the digital charger management platform. The 'back office', if you like.
- Managing resident support lines 24/7
- Arrange 100% six monthly charger safety inspections
- Monthly billing and collection
- You've made it this far. Now, back to the top and start again.

ARMA PARTNER

Office for Low Emission Vehicles

ARE WE AT THE TIPPING POINT FOR ELECTRIC VEHICLES?

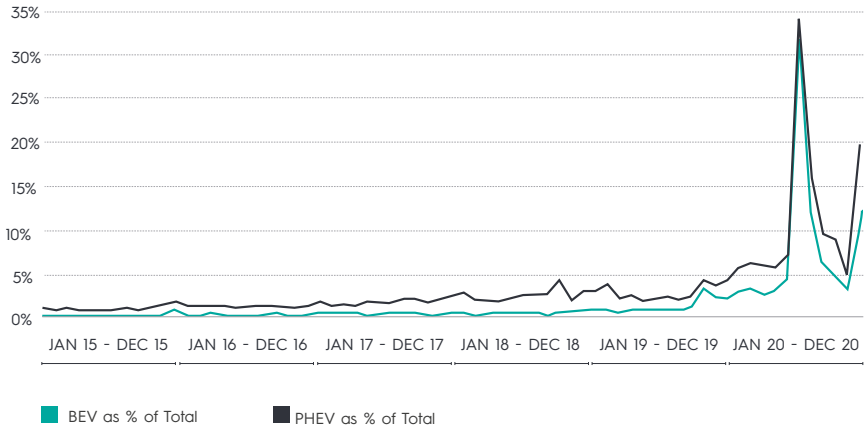
Quite possibly! According to research from YouGov, the public are more ready to ditch petrol and diesel than we might have suspected.

Only 4% of British adults owns an electric vehicle today, but in a poll of 2,000 adults, YouGov found that 1 in 5 of us is thinking about buying an electric vehicle (EV) in the next two years. This would represent a significant increase in the current rate of adoption

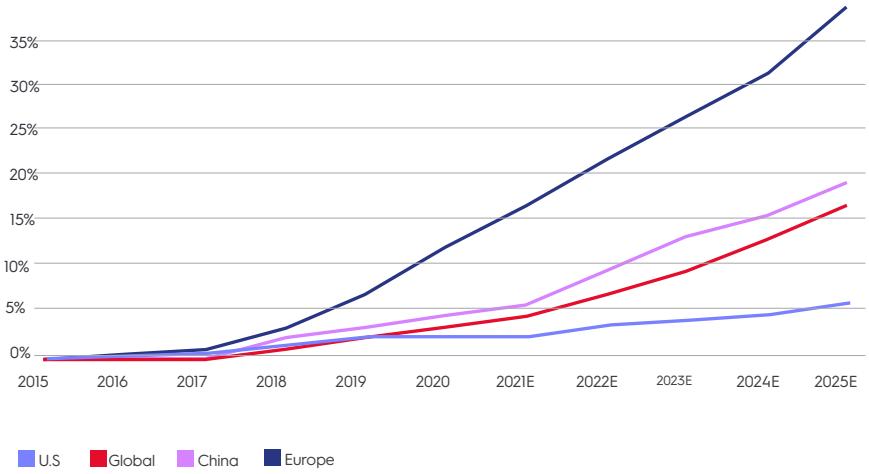
If the EV transport revolution is coming quicker than anyone expected, the infrastructure to support it – both public and private – will need a rapid upgrade!

STATISTICS

BEV AND PHEV VEHICLE SALES
(% OF NEW VEHICLE SALES)



WE ARE ABOUT TO WITNESS RAPID GROWTH IN EV UPTAKE



2030
IT'S COMING

WHAT'S FUELLING THE SHIFT?

GOVERNMENT INTERVENTION

- 2030 Ban on new Petrol & Diesel vehicles
- Government Grants
- Tax Advantages
- Congestion Charge Zones

CAR MANUFACTURERS INVESTING HEAVILY IN EV

- **Volkswagon:** £62 Billion Investment
- **Ford:** 40 EV's by 2022
- **BMW:** Plug in Version of Every Model
- **Volvo:** Now has 100% Plug-in Vehicles

INCREASING CONSUMER CHOICE

There is now a wide range of plug-in vehicles on sale that create more value for drivers than internal combustion engine vehicles.

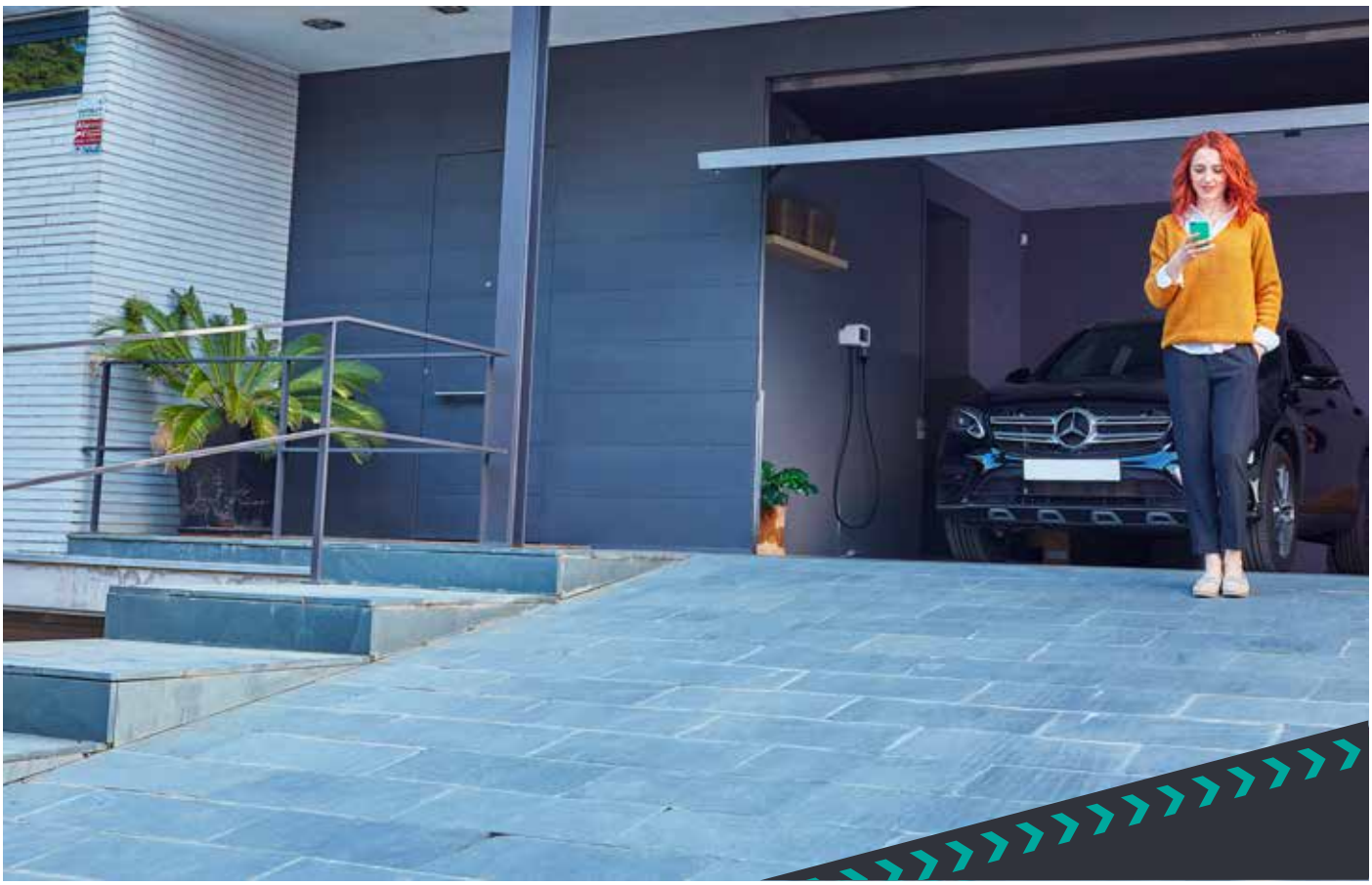
- Choice
- Performance
- Cost

RANGE ANXIETY

Range-apprehension was one of the biggest concerns of drivers. With charge range improving the initial concerns have been addressed

Future editions now offering plus **400+** mile range.

ROAD TO ZERO



2030

Charging cars at home overnight using a dedicated chargepoint is generally cheaper and more convenient for consumers. For these reasons, today the majority (around 70%) of all electric car charging happens at home and we expect the home to be central to the future charging ecosystem.

WHERE ARE EV DRIVERS GOING TO CHARGE?

PRE-PLANNING CONSIDERATIONS

POINTS TO CONSIDER

PRE-PLANNING

- THE INFRASTRUCTURE
- WHO PAYS
- ACTIVE & PASSIVE POINTS
- WHICH BAYS DO WE UTILISE
- MULTIPLE VEHICLE CHARGING
- POWER RESTRICTIONS DUE TO SIMULTANEOUS LOAD
- BILLING
- BACK-END CONTROL
- ONGOING SERVICING & COMPLIANCE TESTING

LEGAL CONSIDERATIONS

- WHO OWNS THE PARKING SPACE?
- WHO OWNS THE SUPPLY?
- DOES ANYONE HAVE ANY EXCLUSIVE RIGHT OVER ANY SPACE?
- DOES ANY LEASE HOLDER HAVE RIGHTS THAT MAY BE INTERFERED WITH?
- WHO'S GOING TO MEET THE COST?
- IS A LICENCE NECESSARY?
- HOW WILL THE SUPPLY BE PAID FOR?
- HOW WILL THE SUPPLY BE RECHARGED?
- IS THIS AN IMPROVEMENT?
- IS THIS A SERVICE?

PLANNING REQUIREMENT

For many developing new property the provision of charging is a requirement in order to fulfil planning obligations.

Tip: Planning requirements for the provision of charging infrastructure vary by region. However, the trend is towards standardising a national requirement for the provision of some configuration of:

- **"Active"** charging infrastructure - i.e. physical charging points; and /or
- **"Passive"** provision of charging infrastructure - defined as "the network of cables and power supply necessary so that at a future date a socket can be added easily".

Future Fuel recommends developers seek to meet planning requirements in a way that provides a useful charging service to future residents while minimising their expenditure costs.

In residential dwellings, it's now widely accepted (by the likes of policy makers, developers and drivers alike) that 'Fast' charging is favourite over 'Rapid', enabling cars to charge at 7.2kw (providing around 30 miles of range received per-hour when a 7kw capable car is connected.

The London Plan (a planning permission guidance in the capital) cites the preference for 'Fast Charging', requiring the installation of 7.2kw Fast Charge points.

- 100% compatibility with every EV available;
- Local power network demand reduction;
- A charge point being 100% available in a demised parking bay;
- Power management systems (Array) enabling the installation of charging points in every parking space
- A dedicated charging area no longer being a requirement (to save space, the charge points can be mounted adjacent to parking bays)

POWER

For any charge point strategy, the availability of power is a key consideration. Sized according to expected electrical loads, the available supply available to a property would be expected to peak demand.

Calculations for the majority of existing buildings were performed before EV charging requirements were a consideration, with many properties lacking the capacity required. A significant additional load is required for a dedicated charging infrastructure, along with pressure being added to the electrical supply in the early evening, when a significant proportion of the charging takes place un-managed.

Therefore, it's critical to ensure the power available is used to its fullest, and wherever possible avoiding the need to upgrade the power supply at all.

The process for upgrading power is a drawn out process, in the application and the acquiring the additional funds to do so.

POWER MANAGEMENT

As installing EV charging with no power remains impossible, installing EV with limited power remains an option, using a load management system, working to 'share' power between devices where power is limited.

CHARGE POINT CONNECTIVITY

WHY IS IT IMPORTANT THAT CHARGE POINTS COMMUNICATE?

There are several key reasons;

Billing - On any residential development, it's essential when a driver users power, they are able to pay in a simple and accurate way. Other residents footing the bill for the power being used is not acceptable.

Updates - A team of software engineers are working around the clock to improve the customer experience, monitoring their usage to ensure you're receiving the latest firmware directly from the developers. Receiving regular updates is crucial to the experience.

Reporting - Being able to report back, citing issues or necessary updates and/or upgrades or advising of the time of any infrastructure expansion is of the utmost importance

Access Control - Enabling the connection of the units allows us to control multiple units at once. This guarantees only those permitted to charge can do so.

SMART Enabled - Following a government ruling, it's now required that all charge points be 'Smart'. This will allow drivers to adjust timings of charges in the future, assisting the national grid and to balance power consumption and assessing the load on the grid.

ENSURING CONNECTIVITY

A 3G/4G phone signal can be used in most outside car parks with a stable phone signal, though it's strongly recommended underground carparks install a Wi-Fi connection.

FREEHOLD VS LEASEHOLD

If an EV charging installation were to proceed in advance of the Freehold acquisition, the Freeholder is required to be consulted. There will likely be little resistance (given the works can be deemed an enhancement).

The Freeholders by all accounts should be granted in accordance with your agreed governance procedures, as is normal with any estate spend, should the Leaseholders have purchased a share of the Freehold.

ALLOCATED VS RIGHT TO PARK

Allocated - A parking space is 'tied' to a dedicated property in the Lease, and only the occupants are authorised to use the parking space (ie, Flat A owns Parking Bay A). Allocated bays are sold at a premium - typically 30% vs unallocated parking bays as they're perceived to be desirable for residents.

As such, it's important each bay in the car park is provided with power, ensuring regardless of where the occupants parking bay is situated, they'll be able to park their EV car and receive power in their personally allocated bay.

Unallocated - Residents own the right to park in a particular parking bay but not a particular spot. The Property Manager may organise the bay on behalf of the buildings tenants and they'll be 'allocated' a bay, but overall tenants have freedom to park wherever a space is free, provided a bay is available and is not exceeding the maximum number a lease allows (typically one vehicle for Flat A).

The flexibility options in unallocated scenarios are of course far more flexible with the parameters of the location and the amount of required charging points.

A 'charging zone' within the car park is then generated, allowing the movement of electric vehicle drivers into this zone, enabling the option to revisit the quantity of charge points should the area become popular.

SURVEY YOUR BLOCK

RESIDENTS SURVEY & CANVASSING YOUR DEVELOPMENT

We strongly advise that any building management company carry out a survey of the block's residents to ascertain their views and uptake on the transition to EV Motoring. Once the data has been harvested, Our team then build the optimum design proposal to deliver a EV Charging solution that meets the blocks current demand and future vision.

Ask one of our team for a copy of our simple "Residents Questionnaire" to begin the smooth transition to EV at your development .

example

TABLE 4A	RESPONSES FROM 58 DWELLINGS	AVERAGE TOTAL BASED ON NON-RESPONSES (EXAMPLE BASED ON 20% RESPONSE)
Number of PHEV/EV Drivers currently using the Car Park	3	3
Drivers considering/planning for an EV within the next year	4	7
Drivers considering/planning for an EV within the next 3-Years		
Drivers considering/planning for an EV in 3-years or more		

THE INFRASTRUCTURE

FUTURE PROOF YOUR SITE

FUTURE PROOFING

While demand is low (either because only a resident or two requests a charger, or there is a limited requirement to fulfil the planning condition) it can be possible to only install the small number of chargers utilising existing electrical capacity. However, the distance from the available power to the relevant bay is likely to make the installations costly, and even if cost is not prohibitive, once a handful of chargers have been provided, the available capacity will be exhausted and the remaining residents are unable to have chargers. If a coherent charging point strategy is not considered at the early stages, ongoing retrofitting costs will rise over time, increasing net expenditure in the long run.

EXAMPLES OF INSTALLATION OPTIONS

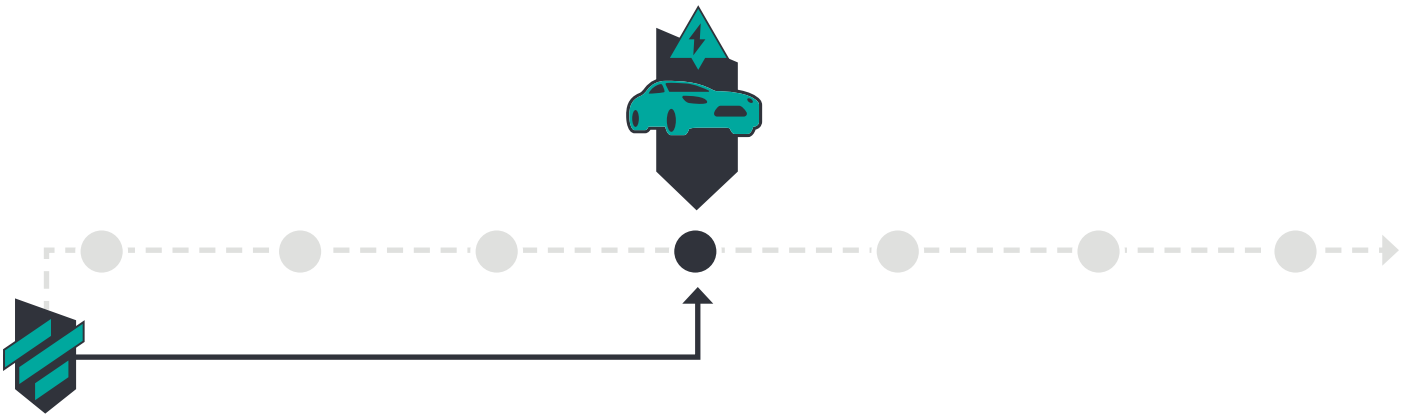
SINGLE TENANT REQUEST

PROS

- Cost effective
- Eradicates section 20
- Satisfies immediate request

CONS

- Who pays?
- What happens if another tenant requests a chargepoint
- Load issues



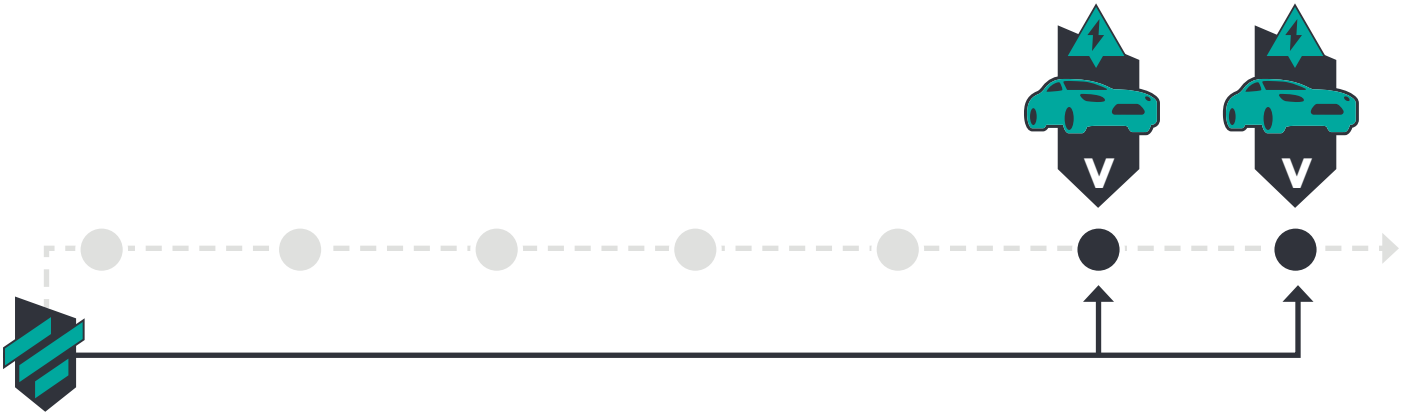
VISITOR PARKING OPTION

PROS

- Satisfies immediate demand
- Cost-effective
- Below section 20 requirement

CONS

- How do you police it?
- Short term solution



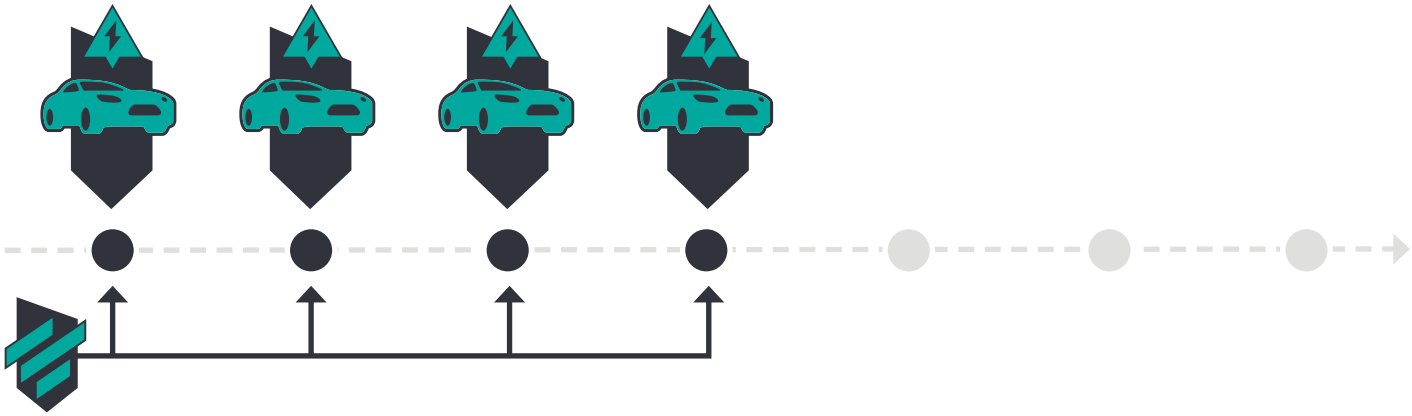
NON-ALLOCATED PARKING

PROS

- Creates a simple EV zone
- Satisfies immediate demand
- Cost-effective
- Below section 20 requirement

CONS

- How do you police it?
- Short term solution



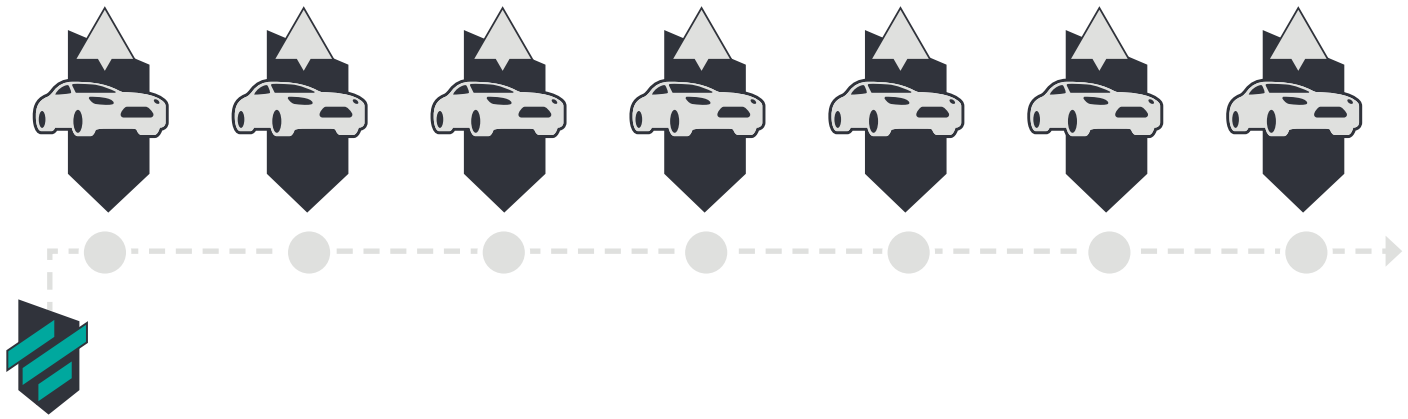
DEMISED PARKING

PROS

- Passive system
- Future proofed
- User buy-in on demand
- No further costs

CONS

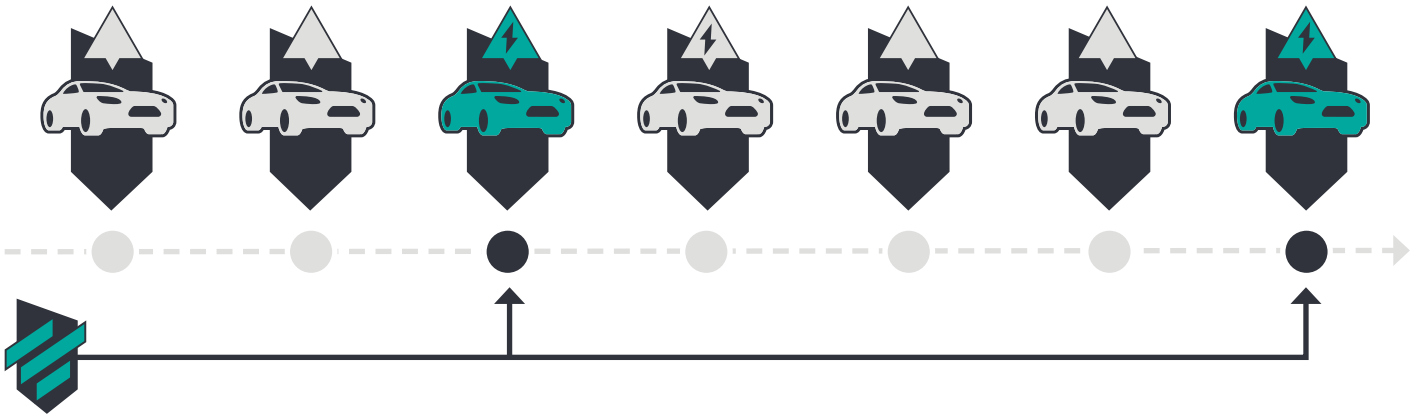
- Cost
- Possible section 20 requirements
- Major works project



RESIDENT BUY-IN & ACTIVATION

PROS

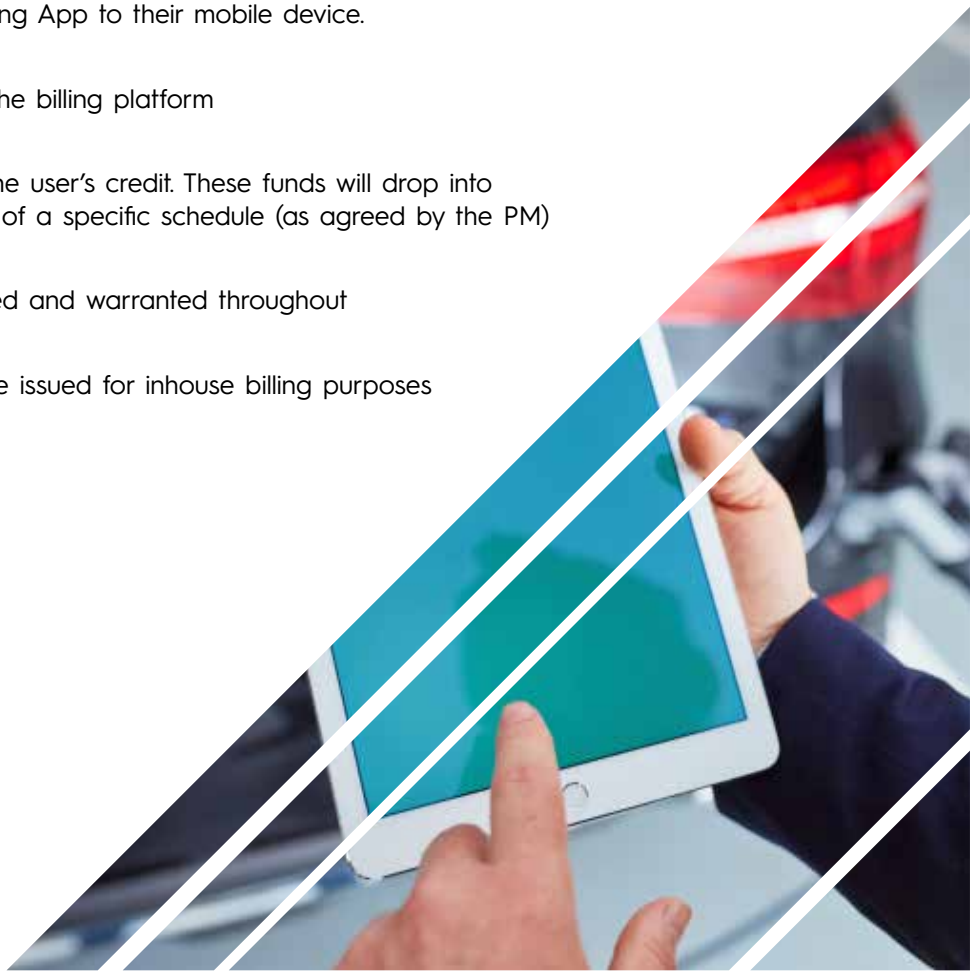
- Passive System
- Future Proofed
- User buy-in
- No further costs



ONCE YOUR PASSIVE SYSTEM IS IN PLACE

LATER BUY-IN GUIDE FOR USERS

- The user would contact Future Group (FG) using a unique site reference code
- FG would arrange a charger to be installed to the specific bay
- FG would bill the resident for the Charger and the installation (Approximate £1000, less the OLEV Grant currently valued at £350)
- FG will arrange the OLEV Grant
- FG will connect the charger to the billing platform and onboard the user
- The user will upload the Billing App to their mobile device.
- The user will add credit to the billing platform
- Funds will be utilised from the user's credit. These funds will drop into the service charge account of a specific schedule (as agreed by the PM)
- The charger will be managed and warranted throughout
- Annual usage reports will be issued for inhouse billing purposes



BILLING & USER PORTAL

BILLING PLATFORM

Charging efficiency and economy go hand in hand, that's why myBilling gives you much more control. It provides information about your charging in real time and keeps a searchable charging history for each user..

The charging management platform is always connected to the internet and can be accessed either with our mobile app or web portal. You can remotely control your charging session and adjust the power. As this is cloud-based, we can add new functionality automatically, which keeps you up to speed with new innovations.

SMART CHARGER BILLING SYSTEM

USER CONNECTED

COVERAGE FOR SERVICE VISITS

USAGE BILLED

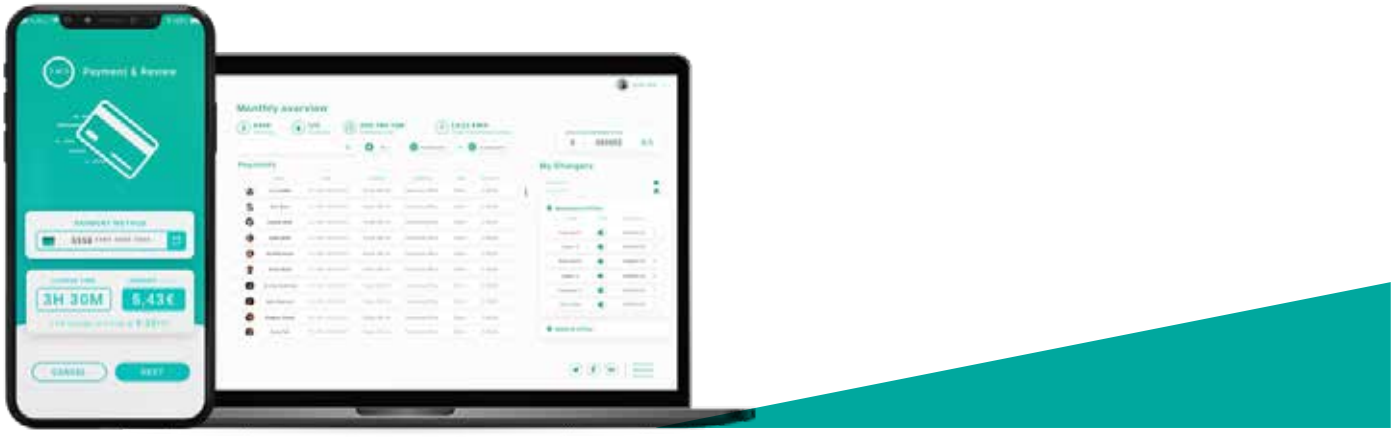
FULL BACK END-CONTROL

FULL REPORTING

USAGE

SWITCH OFF POINTS

REMOTE MANAGEMENT



BILLING FLOW

THE **SMART** BILLING PROCESS

1

TARIFF

Set up tariff

2

ACCESS

A driver accesses charger

3

CHARGES

Driver confirms charge in the app

4

PORTAL

Funds are transferred to billing portal

5

REQUESTS

Property Manager requests for funds to be transferred to service charge fund

6

FUNDS

Funds are transferred to a service charge account

OLEV FUNDING OPTIONS

ELECTRIC VEHICLE HOME-CHARGE SCHEME

Up to £350.00

The Electric Vehicle Home-Charge Scheme (EVHS) provides grant funding of up to 75% towards the cost of installing electric vehicle charge-points at domestic properties across the UK.

WORKPLACE CHARGING SCHEME

Up to £14,000

The Workplace Charging Scheme (WCS) is a voucher-based scheme that provides support towards the up-front costs of the purchase and installation of electric vehicle charge-points, for eligible businesses, charities and public sector organisations.

Workplaces can apply for vouchers using the Workplace Charging Scheme application form found on the Government website: www.gov.uk/government/collections/government-grants-for-low-emission-vehicles

QUESTIONS & ANSWERS

THE **QUESTIONS** WE GET ASKED MOST

The world is undergoing a transport revolution, with environmental concerns, government policy and advances in technology all playing a role in the switch to electric vehicles (EVs). As of the end of December 2018, there were around 202,000 plug-in vehicles on UK roads1, but uptake is increasing rapidly, with industry analysts

WHAT IS A 'PASSIVE SYSTEM'?
This is a parking bay that has the cabling and distribution ready for later connection of a charger. A future-proofed site

WHAT IS A 'ACTIVE SYSTEM'?
This is a parking bay with a charger in place ready to utilise

WHAT DOES 'FUTURE-PROOFED' MEAN?
This is a car park that has had the entire infrastructure installed ready for connection of chargers. It's future-proofed

HAVE I GOT ENOUGH ELECTRICITY IN MY BLOCK?
For everyone to charge simultaneously, Probably not! But there will be a spare capacity for a number of bays (normally 10%) but with a load-balancing system that number can be increased. After that probably a new supply would need to be installed into the block from the electricity supplier.

CAN I CONNECT TO MY (THE FLATS) ELECTRICITY METER?
No, because of isolation, electrical regulations and installations logistics and if every resident did this the block could overload the electricity supply

WHERE DOES THE SYSTEM CONNECT TO? (WHERE DOES IT GET THE POWER FROM)
The communal / Landlords electrical supply

WHAT IS LOAD BALANCING?
This is an automatic system that distributes the spare electricity capacity across active chargers, so the system doesn't overload or seek more electricity than is spare.

WHO PAYS FOR THE INFRASTRUCTURE?
Normally the block service charge. On occasions the freeholder has contributed

WHO PAYS AND OWNS THE CHARGER
The resident is responsible for the purchase of the charger and the cost for the engineer to deliver, connect and commission

HOW DO USERS PAY FOR THEIR USAGE?
Through an app-based platform. Just like when we park in the street.

HOW IS THE MONEY COLLECTED?
Money (credit) is added to the user app' and they pay for the electricity (charge) used. This money is then collected and dropped into the account that pays the landlord/communal electricity bill. Normally the service charge account

HOW QUICK CAN I CHARGE MY CAR?
How long is a piece of string! How flat is your battery and how big is your cars battery? Tesla from flat on a fast charger would charge in approximately in 6-8hrs

Continued ›

HOW DOES MY CHARGER CONNECT TO THE BILLING PORTAL?
Via a 3G Sim if a network is available if not it's connected via wi-fi

WHAT IF WE DON'T HAVE WI-FI IN THE CARPARK/BLOCK?
Future Group can install this as part of the infrastructure

IS THERE A WARRANTY PERIOD?
Yes, 3-Years

CAN ANOTHER USER ACCESS MY CHARGER?
Most certainly - as long as they have been granted access of course

HOW OFTEN SHOULD I CHARGE MY CAR?
If you use it every day, then treat your car like your mobile phone and plug it in at night

HOW MUCH WILL IT COST ME PER MILE?
Approximately 2pence per mile (on average)

ARE THERE ANY GRANTS AVAILABLE?
Yes, approximately £350 per user. Max £14,000 per workplace installation

HOW MUCH WILL IT COST?
It varies so much. A rough guide: Standard infrastructure £1000 per point / 7kw Smart Fast-Charger £700-£1200

DOES IT NEED TO BE MAINTAINED?
Yes, this is a high-powered electrical device and will need an annual testing & inspection carried out.

TALK TO ONE OF OUR TEAM TODAY AND LET US LEAD YOU ON YOUR BLOCKS EV TRANSISTION

Take a look – **www.future-group.uk**

Enquire – **info@future-group.uk**

Chat to us – **0203 826 9999**

For updates follow our social channels

LEADING THE CHARGE WITH RESIDENTIAL
BLOCK EV CHARGING SOLUTIONS.