ELECTRIFYING.COM

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BEGINNERS' GUIDE TO

GOING ELECTRIC

EVERYTHING YOU NEED TO KNOW FROM THE ELECTRIC EXPERTS™

How to charge

What is driving range?

Jargon-free advice

MYTH-BUSTING ⊕ FULLY ELECTRIC OR PHEV? ⊕ CHARGING BATTERY FACTS ⊕ TOP OWNING TIPS ⊕ FIND THE RIGHT CAR

HYUNDAI

Welcome to the guide

At Electrifying.com we're proud to be the electric car experts. But that wasn't always the case and despite the fact that I've driven hundreds of different cars over the years, making the switch from an internal combustion engined car to electric still took quite a bit of getting used to.

But I'm now hooked on electric cars (even though I made a few mistakes along the way!) and it's great to have teamed up with Hyundai to share the knowledge the whole Electrifying.com team has picked up about them in our handy **Beginners' Guide to Going Electric**.

Why do we need one? Well, although electric cars are incredible simple to drive and own, they do require a change of mind-set – especially for those of us who are switching after decades of driving petrol and diesel cars. There's new terminology to master along with a new approach to 'refuelling'. Thankfully, it's all easy to master, and as the number of electric cars on our roads continues to rise, making the switch to electric is easier than ever.

I hope the following pages in this guide help clear the air, but if you have any questions about electric cars then feel free to send them over to us on social media (the links are on the back page of this guide) or through the website and we'll do our best to answer them.

Ginny Buckley
Founder and CEO – Electrifying.com

The switch to electric marks the start of a new era for drivers. Delivering a cleaner, more efficient way to drive is a passion for everyone at Hyundai, and we are incredibly excited to be at the forefront of development and technology as the electric revolution gains momentum.

Of course, Hyundai already has years of experience in the world of electric and alternative fuel vehicles. The original 2016 IONIQ was the first car to offer three different electrified drivetrains (hybrid, plug-in hybrid and full electric) while the original Kona EV introduced affordable electric drive to SUV buyers.

Since then, we've accelerated our electrification plans with models like the IONIQ 5 and IONIQ 6, both of which have won coveted World Car of the Year titles and continue to set sector benchmarks. The all-new KONA Electric delivers more range and space than before while our latest arrival, the IONIQ 5 N is set to create even more headlines thanks to its incredible performance and sporty dynamics.

I am delighted that Hyundai is teaming up with Electrifying.com to create this Beginners' Guide to Going Electric. We know that drivers looking to make the switch to electric often have a lot of questions concerning the practicalities and terminology that come with owning, driving and getting the most from an electric car.

Sylvie Childs
Senior Product Manager – Hyundai Motor UK

IS AN ELECTRIC CAR RIGHT FOR ME?

Making the switch to electric is easy, but you'll need to ask yourself a few questions to ensure that now is the right time to do it

Much as we love electric cars at Electrifying, we know that making the switch is easier for some motorists than others. That's why we advise anyone considering going electric to have a quick look at the sums to see if they can easily make the switch.

Firstly, you'll need to do some maths. Have a look at how you actually use your car, the kinds of miles you do regularly, and your lifestyle – they'll all impact on which car you should buy.

Tot up what you'd usually spend on fuel, road tax, servicing and the usual stuff like insurance, then compare it to the running costs of an electric equivalent.

Included in that should be any tax incentives (such as Benefit in Kind if you have a company car) and the cheapest domestic energy supplies.

If you're only doing a big trip of 150 miles or more once or twice a year, for example, you might not really need a car with a big battery. That means you can save some money on the purchase price and improve efficiency. You might need to top up for half an hour on the odd big trip, but it really isn't that much hassle and will be worth the savings.

The thought of charging concerns a lot of people, but it really isn't that difficult. If you can have a home wallbox, that's the easiest – and cheapest – way to charge. You wake up to a full 'tank' every day if you want and never have to visit a petrol station again.

But all is not lost if you can't have a home charger: most people in the UK only do 20 miles-ish a day, and so car like the all-new Hyundai KONA Electric with a range of up to 319 miles will only need charging at a public charger once a week.

And even if you have to make longer journeys, you soon get used to using public stations and rapid chargers at motorway service stations and other places like supermarkets and restaurants. Smartphone apps like Charge myHyundai, WattsUp and ZapMap give you live information on where the nearest chargers are, and they'll even tell you if they're being used.

We know it sounds a little bit complicated. But once you properly try an electric car, very few people want to switch back! They're quick, quiet, efficient and good for your wallet as well as the environment. Doing a bit of research before you make the switch will make all the difference to your electric car journey – but we are here to help every step of the way.

" Even if you have to make longer journeys, you soon get used to using public stations and rapid chargers."

FULLY ELECTRIC, PLUG-IN HYBRID OR FULL HYBRID?

Electric cars come in various shapes and sizes, from battery only to internal combustion engined models with electric assistance

Choosing a car can be a bit of a minefield. You have to navigate cost, practicality, insurance... and that's even before you start wondering what colour you want, or what style of wheels or trim. You're constantly trying to balance what you want, versus what you actually need.

Just as you start to get your head around all of terms, along come electrified vehicles, with new acronyms and terms which sound like words that wouldn't be allowed in Scrabble. But we're here to clear the air and help you make the right choice for you and the way you drive. So we'll start with how to choose between a pure battery electric BEV, a plug-in hybrid PHEV or a hybrid HEV.

These are three different ways of powering a car, with varying levels of, er... electricness. All three offer some form of electrical assistance that can help improve efficiency, therefore reduce emissions (CO_2 and particulates), and ultimately save you money in the long run. If you're looking to make the switch and want to know which one is right for you, you've come to the right place...

Battery Electric Vehicle

BEV isn't just that nice lady in accounts who brings in cakes every Friday. It stands for Battery Electric Vehicle, which means there is no traditional engine at all. Instead it has a big battery pack and electric motor, so you never have to fill up with fuel again.

Instead, you plug it into a charging point at home or use a public charger. Electric cars can be charged at different speeds, with domestic power at one end of the speed scale and ultra-rapid DC public chargers at the other.

BEVs produce no localised emissions, are almost silent and can be cheaper to run than a petrol or diesel car. If you're able to charge at night and take advantage of cheap rate electricity, a family-sized car like a Hyundai IONIQ 5 will cover around 45 miles on a pound's worth of electricity. That's about a quarter of the cost of running a petrol or diesel.

"BEV stands for battery electric vehicle, which means there is no traditional engine at all."

Plug-in Hybrid Electric Vehicle

A PHEV – or plug-in hybrid electric vehicle – has a smaller battery than you'll find in a BEV and it can be plugged into the grid to charge. That substitutes some of the miles you'd usually be using petrol with electric running, which makes it cheaper to run as electricity costs less than fuel.

In the case of car like the Hyundai TUCSON Plug-in, for example, you can drive for up to 38 miles on pure electric. Most of us drive less than 20 miles a day, so that means you could do the bulk of your journeys in EV mode. And if you're doing a longer trip then the car automatically switches to its petrol engine. But you have to plug them in to make the best use of the technology.

Hybrid Electric Vehicle

Finally, we have a HEV – otherwise known as a hybrid electric vehicle. A HEV, such as the all-new Hyundai KONA Hybrid and larger TUCSON, has a traditional petrol engine, an electric motor and a small battery pack, which work together. When you press the brakes to slow down, the energy is recovered by turning the motor into a generator to top up the battery. Then the power is used by an electric motor to boost the petrol engine when you are moving away from a stop or wanting a bit of extra acceleration.

Generally, a good hybrid will use 20% less fuel than an internal combustion engine. But this is not an electric car in the traditional sense as it never uses power from a plug – it's a petrol or diesel car which has been made more efficient.

Which suits you?

There are pros and cons for each. The one which is best for you will depend on the type of journeys you do most often and if you have access to charge easily. You will also need to check if you can get incentives to go electric, such as company car tax benefits, access to restricted zones in cities and free parking.

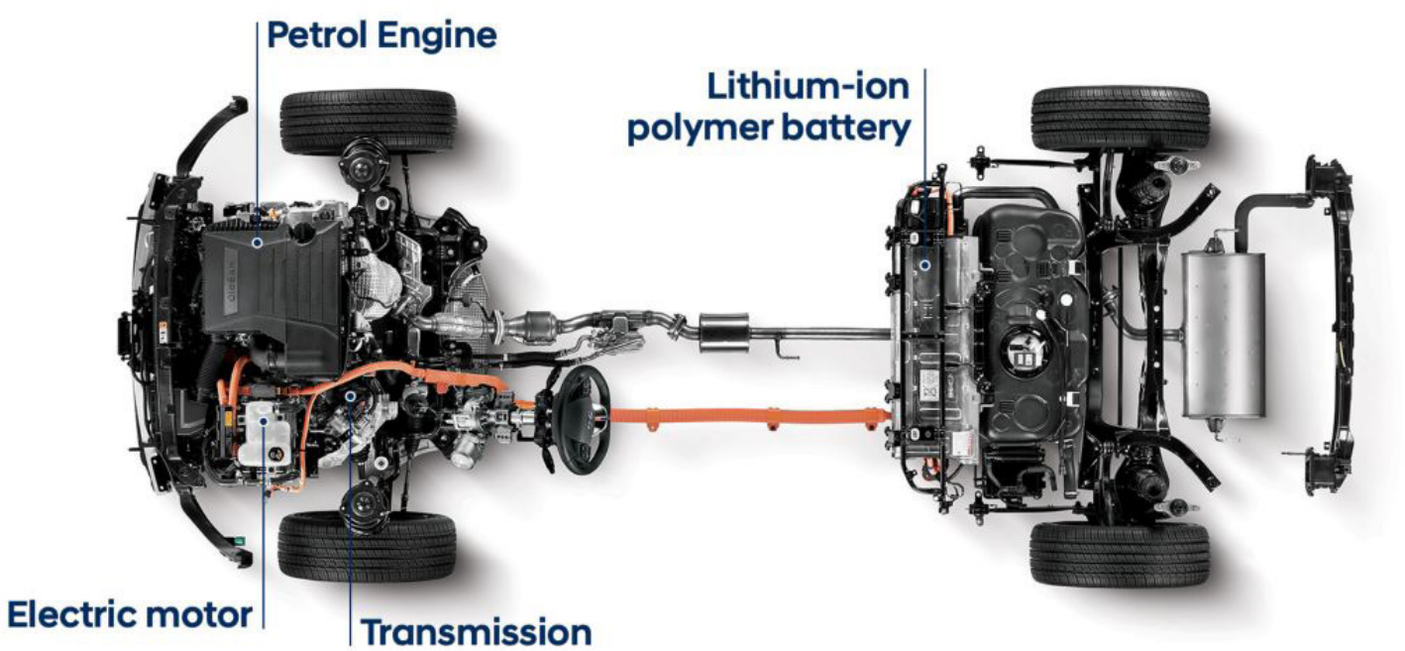
A hybrid is what we're used to, except more efficient. And that's pretty much it. You use it like a petrol or diesel car, can use a normal fuel station and never have to worry about charging, or range anxiety. If you do lots of long journeys to towns across the country, then a hybrid might work for you.

A PHEV is more expensive than a straight hybrid, but it can run for much greater distances on electric-only power. If you're a business user, a PHEV can attract some serious Benefit-in-kind advantages. It's also as convenient as a hybrid, because if you can't charge or are doing longer journeys, it just uses the engine.

A pure electric car is quiet, calm, and quick. If you are on a long journey the charging takes longer than visiting a petrol station, but if you have home charging, you wake up every morning to a full "tank". Bear this in mind if you think a pure electric car won't work for you because you do a long trip a few times a year – the inconvenience of needing to stop for 30 minutes to rapid charge the battery is actually outweighed by the convenience of never having to visit a fuel station again.

And pure electric gets ALL of the tax incentives. You don't pay congestion charges, there's no road tax (until 2025), and company car drivers will currently pay 2% benefit in kind tax (2023-2024), which could save thousands every year.

"Most of us drive less than 20 miles a day, so that means you could do the bulk of your journeys in EV mode. And if you're doing a longer trip then the car automatically switches to its petrol engine."



A plug-in hybrid car (PHEV) like a Hyundai TUCSON Plug-in uses a combination of electric motor and a traditional petrol engine

5 THINGS YOU NEED TO KNOW BEFORE BUYING AN ELECTRIC CAR

If you're considering going electric with your next car, you've probably got a few questions. Are we right? Thought so. Here at Electrifying.com, we're answering questions all the time: from the complicated ones about how much money you could save, to the more surprising ones about whether you can drive an electric car in the rain. Yes, we really do get asked that.

Much as we like answering questions, we also like to stay one step ahead. The Electrifying.com team has been driving electric cars for years now, and during that time we've learned a lot. So if you're planning to go electric any time soon, do not click away because these are the FIVE things you need to know BEFORE you buy an electric car

1 Do your maths

Before you get into the nice parts of ordering a car like choosing the colour and what options you might go for you really need to do your sums first. Yes, we know it sounds boring and about as much fun as sorting your home insurance, but it's really, really important to get on top of your numbers.

First up, work out how many miles you do in a week. You don't need to be ultra precise – we won't be checking. This figure is important, because it will tell you whether an all-electric car is right for you. The average weekly mileage in the UK is around 20 miles a day or just over 140 miles a week. If that sounds like you, then bingo – an electric car is going to be perfect for you. In fact, even if you did six times the UK average, you'd still be perfectly suited to an electric car.

If you've done those sums and you're regularly doing more than a thousand miles a week, then you might be better off choosing a plug-in hybrid which can be better suited to high mileage drivers.

2 Calculate the TOTAL cost, or TCO

You may have heard a term that often comes up when people discuss electric cars: Total Cost of Ownership or TCO as those people who like to talk in code like to call it.

As you will almost certainly have noticed, electric cars usually cost more to buy than the equivalent petrol or diesel cars. The gap is coming down all the time as batteries become cheaper to produce, but right now, you'll still pay more to go electric.

Or will you? That's where total cost of ownership comes in. Because owning a car is more than just the price you pay either outright or every month. The monthly cost of running ANY car includes fuel, road tax and other things like maintenance. If you're driving a company car, you'll also need to add Benefit in Kind tax to your totals too.

By choosing electric, those 'other' costs are usually a lot less. If you're able to charge at home on cheap-rate electricity, you'll be able to fill a car like the all-new Hyundai KONA Electric Standard Range for under six pounds. You'll also pay no road tax as all electric vehicles are zero rated until 2025.

Maintenance? Well, you won't be shelling out for a new exhaust or clutch after a few years because electric cars don't have them. Electric cars have far fewer moving parts than an internal combustion engine car, so there's less to look after.

And there's even better news if you have an electric car as a company car. Currently, you'll pay just 2% benefit in kind tax on a fully electric car - which could save you thousands of pounds over the course of a year. For example, a 40% taxpayer with an all-new Hyundai KONA Electric 48kWh will pay just £280 in BiK tax for 2023/24. With a petrol-powered all-new Hyundai KONA 1.0T Advance 120PS, the BiK tax bill for the same period is £3,151.

3 You REALLY don't need to worry about your battery lasting

One of the questions we get asked on a regular basis here at Electrifying is 'Do I need to worry about how long the will battery last?' Well, the simple answer is no, you really don't need to worry.

That's because electric car batteries are designed to last the lifetime of the car and actually lead a very pampered life. Take the pack that's hidden away under the floor of a Hyundai electric car. It has a heater to keep it warm in cold weather and a cooling system to keep it cool when it gets hot. It also has what's called a battery management system that prevents the likes of you and me doing anything to risk its health. And if you're still concerned, battery packs on all electric cars have much longer warranties than the rest of the car.

The batteries in all Hyundai electric cars come with an eight year, 100,000 mile warranty. If the capacity dips below 70% of its original capacity in that time, it will get repaired.

4 Work out your charging

We'd all admit that the subject of charging can be a little confusing at first. There are different speeds, different connectors and a whole new bunch of acronyms to get your head around. So let's cover off the basics. If you're able to charge at home, we recommend that you have a proper charger fitted. Yes, you can technically charge an electric car from a three-pin plug, but it will take a very long time and you'll need to make sure that the socket you plug in to is up to the task.

A charger has to be fitted by a qualified electrician and is wired directly to your incoming supply for safety. It will take a few weeks to get one ordered and fitted, so make sure you get the ball rolling as soon as you've made the decision to buy the car.

You should also look into switching to a specific electric car energy tariff. These will give you cheap-rate electricity for a few hours every night.

Finally, make use of the connected app that comes with your car. Hyundai's Bluelink app, for example, gives live updates on your car's charging status and can tell you how long it will take for you to top up.

5 Get to grips with public charging

If you don't have off-street parking or can't get a home charger fitted, don't worry because there are plenty of other options. Public charging has advanced in leaps and bounds over the last few years and while there's still room for improvement, the situation across the country is pretty good. There are two kinds of public chargers, destination chargers where you'll need to be plugged in for a few hours to fill up, or rapid chargers where you can top up in minutes.

Destination chargers tend to be in places where you'll leave your car for a longer period of time such as gyms, hotels, offices and stations. Rapid chargers are usually on major routes and are like the petrol stations of the electric world.

Unlike a petrol or a diesel car where you fill up at the same speed, things are a little different when it comes to electric. All electric cars have a maximum charging speed and all rapid chargers have a maximum output. Both are measured in kilowatts (kW). The good news is that you can plug any current Hyundai electric car into any rapid charger and it will work.

The trick to minimising the time you spend charging is to find a charger that can make the most of your car's charging speed. Let's put some figures on this. A Hyundai IONIQ 5 or IONIQ 6 can charge at a maximum rate of 240kW, so if you plugged it into a 50kW charger, you'll be charging at a slower rate than you would be if you were connected to a 350kW unit. If you leave your car while it's charging you can keep track of the charging status using the app that comes with your particular model and brand. For example, Hyundai owners can get charging status updates via the Bluelink app.

How do you know which chargers charge at what speeds in advance? The good news is that you can do it from the comfort of your sofa. There are a number of apps that will show you where the chargers are, what speed they are and also if they're being used. Some of the best ones used by the team are Charge myHyundai, Zap-Map, WattsUp and PlugShare. They are free to download and use and could save you a lot of time. Happy charging.

HOW TO RECHARGE YOUR ELECTRIC CAR

Chargers are the petrol pumps of the electric age. They might look confusing at first, but getting to grips with charging is simple

One of the things we get asked about the most at Electrifying.com is charging. How do you do it, where can you do it, what cables do I need? The good news is that the whole business of charging actually sounds more complicated than it is. Yes, there's some new terminology to get your head around and a few new skills to master, but it's really no more hassle than plugging your phone in every night.

Charging at home

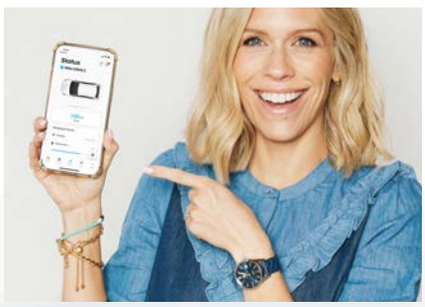
In simple terms, electric cars can be charged at two speeds - slow and rapid. You'll do the former at home workplace or anywhere where you see an AC charge point. If you have a charging point at home, or even a three-pin plug socket, then you can slow charge your car. If you do this overnight you can take advantage of cheaper electricity rates and, of course, wake up to a fully charged car the next morning.

An electric car like the all-new Hyundai KONA Electric 48kWh will take around seven hours to charge from completely empty to full if you have a home charger unit, but less if you are just topping up or charging to 80% (which is best for long-term battery health). You can check the status of your charging via the connected app that comes with your car. Apps like Hyundai Bluelink also allow you to precondition the cabin of your car (heat or cool) and check that it is locked.

1. Locate your charging cable. If you're using a tethered charger (with a built-in cable), find the end that goes into the car

2. Plug the cable into the car - it will obvious where it goes!

3. Once the charge has started, you can lock up and leave your car for as long as you want



4. You don't need to go out to the car to check that it's charged. Just use the connected app, such as Hyundai Bluelink, to check its status

Charging away from home - a step by step guide

Home charging is simple and cheap, but what happens if you aren't able to install a charger at home, or need to fill up mid-journey?

That's when you'll need to use a public rapid charger. These come in all shapes and sizes but they all do the same thing - put a lot of electricity into your battery in a short space of time.

Finding a charger is pretty simple. There are loads of free smartphone apps that not only show where charging points are, they also show you if someone is using it. We'd recommend Charge myHyundai, ZapMap, PlugShare and WattsApp as great places to start.

But there's a catch here. Not a big one, but one every buyer should be aware of. All electric cars have a maximum charging speed. Some older cars, have a maximum of 50kWh while some newer models like the Hyundai IONIQ 5 and 6 can charge at up to 240kW.

The rate a car will charge will also depend on other factors, such as the outside temperature and how many other cars are plugged in at the same time. The speed at which your car will charge fluctuates throughout the charging session. The car controls the rate at which the battery is charged and only allows high levels of charge when the pack is at the perfect temperature. It's usual to see quite low speeds when you first plug in (the battery will be cold) and when you reach capacity (when it will be hot).

Although rapid chargers come in all shapes and sizes, they all work in the same way. You plug in, choose to pay by contactless or through an app and that's basically it. The Hyundai IONIQ 6 and all-new KONA Electric also come with Plug and Charge. Once set up, this allows you to start a charging session by simply plugging the car in to a compatible rapid charger.

1. Find a public rapid charger by using your car's navigation system or by using an app such as Charge myHyundai, ZapMap or WattsUp

2. Once you are parked at a charger follow the instructions on the screens. Most chargers work in the same way

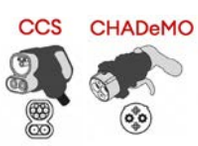
3. You can pay for a charge either with a contactless card or via an app or RFID card. Contactless is the easiest method

4. You'll notice that the connector is bigger and heavier than the one you use for home charging. Plug it into your car to start charging

5. The charger will show you progress, but if you want to check remotely, your car's connected app will tell you when you're fully charged

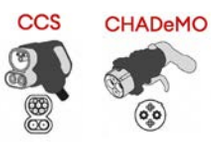
6. When you're done, press stop on the charger (if required), unplug your car and return the connector for the next driver to use. Simple!

What plugs in where? Understanding what cable and connector you'll need (and how long you'll need to plug in for...)



Tethered: cable supplied on the charging unit

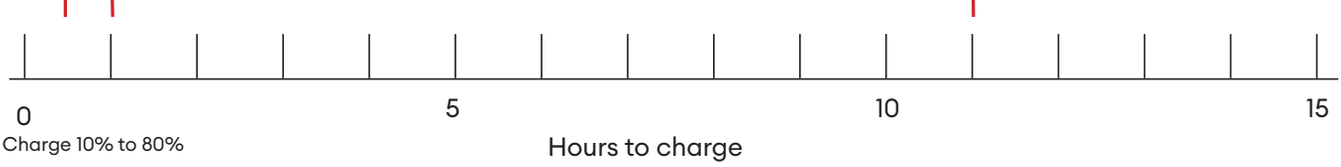
Ultra Rapid Charger
Output: 350kW
Time: 18-36m*



Tethered: cable supplied on the charging unit

Rapid Charger
Output: 50kW
Time: 60m*

Home wallbox or charging post
Output: 7kW
Time: 11hrs



* Charge 10% to 80%

All times shown are for an electric car with a 77kWh battery pack and maximum charging DC speed of upto 240kW

WHAT IS AN ELECTRIC CAR LIKE TO DRIVE?

Forget clutches and gearboxes, electric cars redefine driving simplicity and deliver plenty of fun along the way

We know that electric cars are quiet and efficient. We also know that they produce zero tailpipe emissions and can potentially save you money. But did you know that they are also great fun to drive? Although many 'driving enthusiasts' are often quick to dismiss electric cars as soulless devices, those who have made the switch are often surprised by how much driving pleasure they deliver.

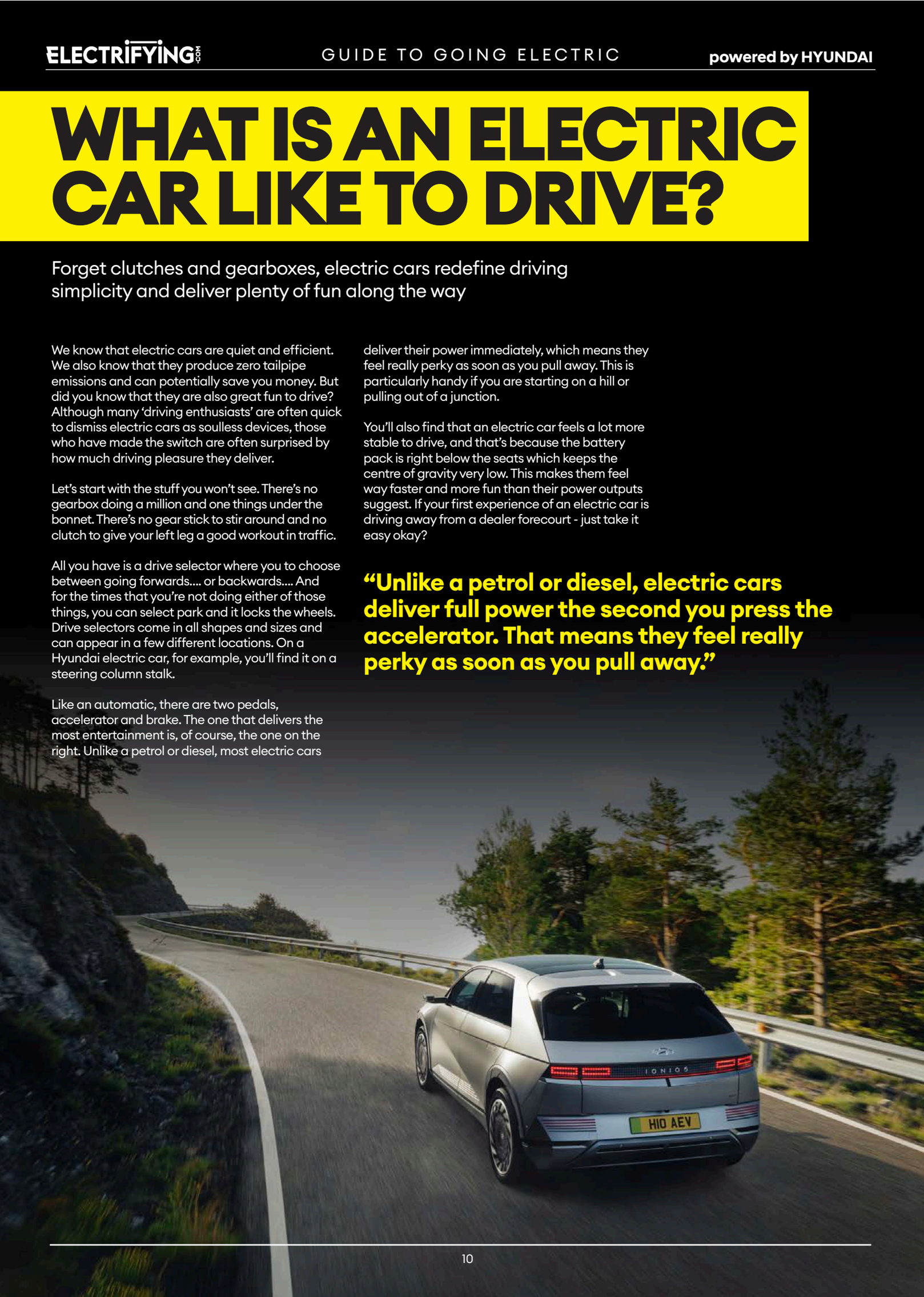
Let's start with the stuff you won't see. There's no gearbox doing a million and one things under the bonnet. There's no gear stick to stir around and no clutch to give your left leg a good workout in traffic.

All you have is a drive selector where you to choose between going forwards.... or backwards.... And for the times that you're not doing either of those things, you can select park and it locks the wheels. Drive selectors come in all shapes and sizes and can appear in a few different locations. On a Hyundai electric car, for example, you'll find it on a steering column stalk.

Like an automatic, there are two pedals, accelerator and brake. The one that delivers the most entertainment is, of course, the one on the right. Unlike a petrol or diesel, most electric cars deliver their power immediately, which means they feel really perky as soon as you pull away. This is particularly handy if you are starting on a hill or pulling out of a junction.

You'll also find that an electric car feels a lot more stable to drive, and that's because the battery pack is right below the seats which keeps the centre of gravity very low. This makes them feel way faster and more fun than their power outputs suggest. If your first experience of an electric car is driving away from a dealer forecourt - just take it easy okay?

"Unlike a petrol or diesel, electric cars deliver full power the second you press the accelerator. That means they feel really perky as soon as you pull away."



What is regenerative braking?

If you want the simple life (and who doesn't?), that's pretty much all you need to know. However, if you want to fine-tune your driving experience to make it more fun or efficient, we're here to help.

First, let's look at regenerative braking, or regen as it's often referred to. Regen puts energy back into the battery when the car is coasting or going downhill. The motor acts as a dynamo, using gravity and your momentum to maximise your range. When you drive an electric car for the first time, you'll notice that you use the brake pedal far less than you used to because the car is always trying to harvest energy into the battery.

It might feel a little odd at first, but once you get used to it and realise that every time it happens you're putting power back into your battery, it does get a bit addictive!

While some cars have fairly basic regen systems, (which can also be called B-mode by some car-makers) some brands such as Hyundai offer more advanced set-ups that allow you to fine-tune the level of regen to suit your driving style. Hyundai models also offer an Auto mode that uses road conditions and your proximity to other vehicles on the road to determine the ideal level of regenerative braking.

Driving modes

Like regen, the names of the various driving modes vary by manufacturer, but generally speaking, they all do the same thing. When you

start the car, it will be in Normal. This gives a good balance between performance and efficiency and will be the mode you'll be using most of the time for your everyday driving.

You might want to change that occasionally though, choosing an Eco setting. This maximises the energy efficiency by reducing the electric motor's power output and in some cases reducing the functions of the heating system. Eco mode is useful if you are doing a longer journey and don't want to stop to charge. And the car still feels plenty fast enough, so it's not a real hardship.

At the opposite end of the scale is Sport. This is for when you want a bit of fun and it allows maximum electric engine power output as well as tightening up the responses from the accelerator pedal and steering. Sport mode does affect the efficiency though, so it's best to use it when you're not trying to stretch your range to the max.

"Regenerative braking means that you'll probably use the brake pedal far less than you would before."

ELECTRIC CAR JARGON-BUSTER

The car industry is famous for its love of acronyms and baffling jargon. We're here to cut through the nonsense

1. Range Anxiety

This is the fear that you will run out of battery power before reaching your destination or a charger. It's an often unfounded state of mind and while understandable, there's no need to panic. In most electric cars, the range is pretty accurate and achievable and most electric cars have built-in sat nav or an app, which will direct you to the nearest charge point before you get in trouble. You'll soon get to know your electric car's capabilities, stop staring at the range meter and start to relax into ownership.

2. CCS and CHAdeMO

The terms CCS and CHAdeMO refer to the two different charging connectors you'll find on a rapid charger. All Nissan LEAF models (plus a very small number of other cars) come with a CHAdeMO connector while almost everything else are fitted with a CCS connector. CCS is now the adopted industry standard in Europe for electric cars, including electric Hyundais, and offers the widest choice of charging locations. Some charging stations such as IONITY and Tesla only have CCS connectors, so if you're considering a model with CHAdeMO, it's worth bearing this in mind.

3. BEV

Otherwise known as a Battery Electric Vehicle, a BEV is a car that gets its power solely from a battery, which is charged by plugging it in. The UK Government has said it will impose a ban on selling new petrol or diesel cars by 2035, which means the only cars you'll be able to buy will be those powered by electricity.

4. Tethered or untethered

When you choose a home charger, the unit you opt for is likely to come in two forms: tethered and untethered. This refers to the cable and how it connects to the charger unit. A tethered connection means that the cable is hard-wired to the charger. An untethered connection means that your charger is fitted with a socket into which you can connect your own cable. There's no right or wrong solution – a tethered connection will be pricier and means that you have a cable to store by the charger. An untethered connection will be neater but you'll need to get your cable out of the car and pack it away every time you charge your car.

5. Range meter

Driving range is important in an electric car because they may not be able to cover the same distances as a petrol or diesel car on a full 'tank' of charge. All electric cars have a display that shows you how many miles you can expect to get before the battery is empty. These are officially called range meter, but owners often refer to them as a 'guess-o-meter'. That's because the mileage displayed is only an estimate based on your current driving style. In the early days of electric cars, range displays were fairly basic, but more modern versions are far more sophisticated. Today, your electric car will take into account a host of variables that may affect your driving range - from outside temperature to your driving style. Hyundai electric models also take into account historical data, so the longer you keep the car, the more accurate the range meter estimate will be.

"Cabin preconditioning allows you to set a departure time for your car. The car will then prepare itself for your chosen time by heating or cooling the cabin to your chosen temperature."

6. Preconditioning

Preconditioning covers two different aspects of electric car ownership. Cabin preconditioning allows you remotely heat or cool the interior of your car before you get in. Most cars allow you to do this via an app, such as Hyundai's Bluelink. You can either trigger cabin preconditioning manually on the app, or set a departure time. Battery preconditioning (which is standard on the IONIQ 5, IONIQ 6 and all-new KONA Electric) ensures that the battery pack is at the perfect temperature to accept a rapid DC charge. If your destination is set in the navigation system as a DC rapid charger, it will gently warm the battery pack as you approach the charger.

7. Miles per kWh

Efficiency and consumption in petrol and diesel cars are measured in miles per gallon or mpg. Which is a little strange given that we've been buying petrol and diesel in litres for around 20 years. The electric equivalent of mpg is miles per kWh and is actually quite easy to understand (for once). Most electric cars will show the current miles per kWh figure on the dashboard. In simple terms, it means that your car will use 1 kWh travel this distance. A standard family hatchback will return between 3.0 and 5.0 miles per kWh. So, if your car has a full 50kWh battery at the start of you journey and you are seeing 4.0 miles per kWh on the display, you can expect to have a driving range of 200 miles.

8. Regen

In a petrol car, you're burning fuel to move forward. When you want to stop moving you press the brakes and pads squeeze against discs to slow the car down. It creates heat and wears away the brake parts. In an electric car, as soon as you lift off the accelerator pedal the motor automatically reverses itself to become a generator and starts harnessing the energy to top up the battery. This is called regenerative braking.

In many modern electric cars you can tailor the amount of regen braking to suit your driving style and preference. In many electric cars, you can drive in what is referred to as 'one pedal mode', which means that the level of regen is as strong as a brake. This means that you'll be using the brake pedal far less.

9. WLTP Range

This is the official figure which should give you an indication of how far an electric car will travel between charges. In theory it should be an accurate indicator of the sort of mileage you'll be able to get, but in reality there are so many different factors which influence the range that you won't really know until you try it yourself. The more you drive your electric car, the more you will get used to what range you can expect from your own driving style

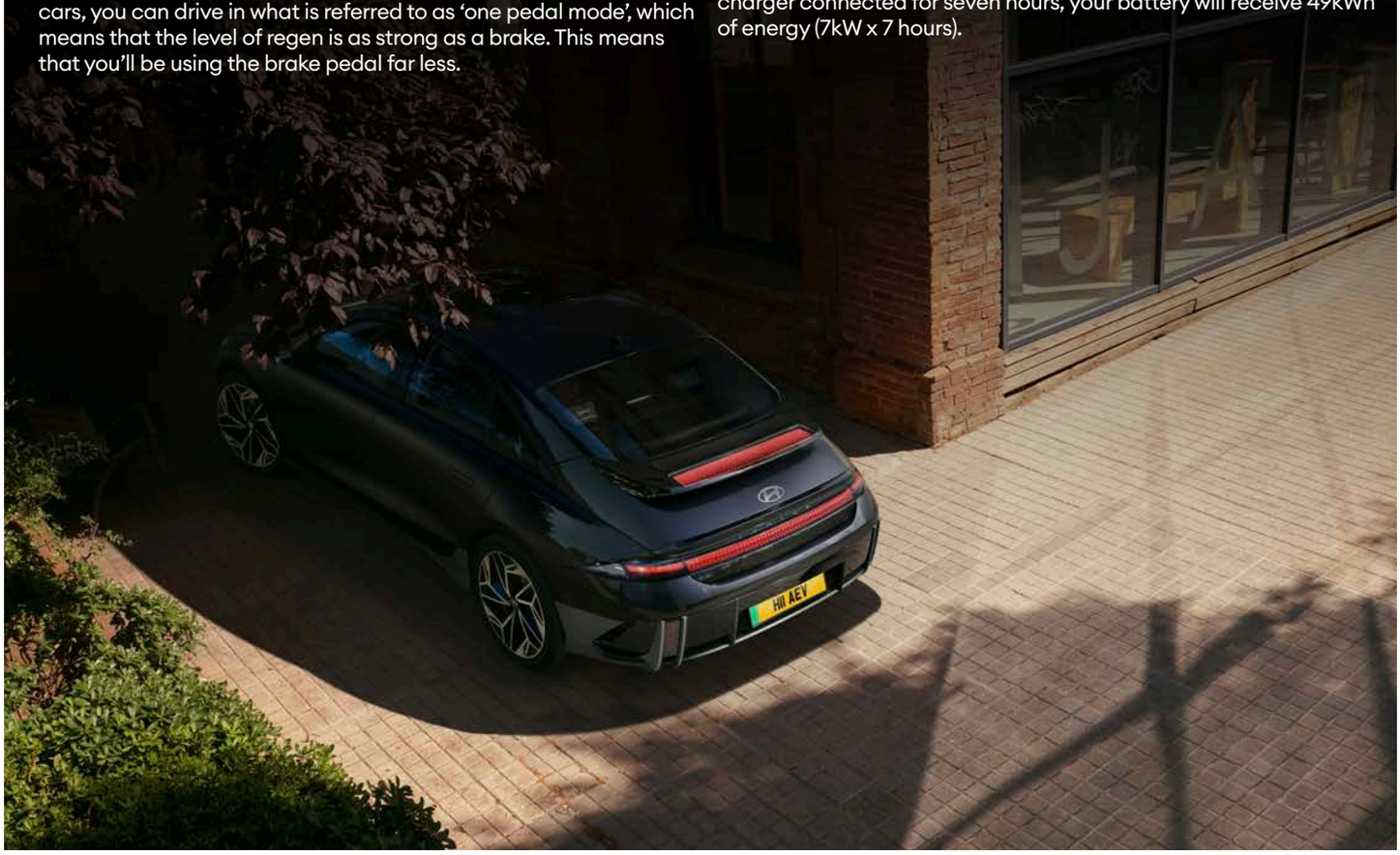
The WLTP part stands for 'Worldwide harmonized Light vehicles Test Procedure' and was introduced after a few car makers were found to be 'creatively' finding ways of getting better fuel consumption and emissions figures in official tests. The law makers decided to introduce a tougher assessment which is closer to real world conditions. As a rule of thumb, we'd knock about 20% off these figures to give you a good idea of the distance you can comfortably cover.

10. kW and kWh

This is something that causes a lot of confusion – even among existing electric car owners. In simple terms, a kilowatt (kW) is a measurement of power. The rate at which a device uses electricity is always measured in kW, whether it's a toaster, a heater, an electric car motor or a charger.

An electric oven, for example, requires 6kW of electricity to work. If you were to run that oven for 1 hour, it will consume 6kWh of energy. If you have it on for 30 minutes, consumption will be 3kWh, and so on.

A kilowatt hour (kWh) is a measurement of the amount the energy an electrical device uses. You pay your home energy bills in kWh because it's a measurement of how much you have used - a quantity. An electric car battery is measured in kWh because it can store a fixed quantity of energy. Confusingly, both terms come into play when we talk about charging an electric car. A charger will always be rated in terms of kW (for example, a home charger will output 7kW) while a battery is measured in kWh. If you have a 7kW charger connected for seven hours, your battery will receive 49kWh of energy (7kW x 7 hours).



MYTH BUSTING

The world of electric cars can be confusing. We'll help you sort the fact from the fiction

The myth	The fact
"The National Grid won't be able to cope if we all switch to electric cars."	The truth is that there will be enough energy to meet future demand and the grid will be fine. Growth in renewable energy will help and smart metering will make our use of power more efficient. According to the National Grid, we're using 16% LESS energy than we were 20 years ago. The National Grid estimates that an overnight switch to electric cars would result in a 10% increase in consumption.
"You can't charge an electric car in the rain."	We know that electricity and water don't mix. But no current flows between the car and the charging station until they have talked to each other and decided that everything is tickety-boo, while the car and cables are shrouded in layers of protection that prevent them getting wet or dirty.
"You can't put an electric car through the car wash."	You can drive through car washes because electric cars are fully waterproof. Unless you leave the windows open, obviously. Which is never a good idea.
"An electric car can't take you as far as a petrol or diesel car."	There's no hiding from the fact that, right now, a petrol or a diesel car will usually go further without needing a top up. However, if you take regular breaks (drivers are advised to take short stops every two hours) and use that time to plug in, the distance you can travel is as long as you want it to be. The rapid charging network is growing all the time while battery ranges are improving with every new model that arrives.
"I don't have off-street parking. An electric car is completely unsuitable for me."	The ability to charge at home with domestic rate electricity is great, but that doesn't mean that an electric car isn't suitable for those who don't have access to this. Many urban electric car owners have small commutes and only need to charge once a week. This can be done at a offices, car parks and hotels - wherever there's a charger.
"The batteries are full of nasty stuff and they won't last."	Electric car batteries contain a complex mix of elements and chemicals. However, almost all the materials found in an electric car battery are recyclable and the batteries are expected to have a life of 20 years or more in various guises. Manufacturers are also working to reduce the environmental impact of production. LFP (lithium iron phosphate) batteries, for example, don't use cobalt.

Say hello to Nicki and Ginny. They spend their time sorting the fact from the fiction when it comes to the world of electric cars

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