



SPECIAL REPORT

# BMW i RANGE LEADS THE WAY ON PLUG-IN EVs

No other manufacturer can match group's  
breadth of eco-friendly choices in the UK

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# Getting right vehicle for the job requires complex calculations

Many factors should be assessed and a 'balanced view' is necessary when choosing the right powertrain



**T**he right car with the right powertrain for the right driver. That's the policy Steve Oliver, general manager corporate sales at BMW Group UK, believes fleet managers should apply to vehicle choice in the wake of the 'demonisation' of diesel.

Negative coverage of diesel in the national media has been "unhelpful" for fleets, according to Oliver, and this, combined with some of the Government direction being "unclear" has created "a lot of indecision" about powertrains, with a number of drivers questioning whether they should make a switch from diesel to alternatives.

Oliver believes fleet managers must take a "balanced view" and consider the profile of miles that drivers do, their job role and their charging capability at home and at the office.

"It can be quite complex because you can have people doing the same jobs technically, but actually covering very different territories," he says.

"One may be suited to a very efficient Euro 6 diesel that delivers 20-30% less CO<sub>2</sub> than a petrol engine equivalent but that's geared towards longer mileage, longer runs.

"If someone is covering a smaller, maybe more urban territory or if they're doing a lot of commuter travelling to and from the office a plug-in hybrid makes real sense."

He adds: "There isn't a mileage cut-off that says 'at that point, 14,000 miles, it's definitely diesel, below that it's definitely petrol'. It's much more down to how the car is used."

Charging capability is also a fundamental consideration.

*"People are surprised at the way the (plug-in hybrid) car is just so drivable"*

*Steve Oliver, general manager corporate sales, BMW Group UK*



"Around 80% of the charging of electric vehicles and plug-in hybrids takes place at home and many fleets want their drivers to have charging capability at home," Oliver says.

"Public charging is getting more commonplace. There are now 14,500 different charging points but the fleet manager has a role to play because one of the things that is significant is the capability to charge at the office.

"Businesses such as Next have included plug-in hybrids as well as diesel variants on their choice list and they've put in a number of charging points at their office in Leicester to rotate how their cars get charged and actually it minimises their inconvenience and it is a straightforward process for those drivers."

A vehicle pilot can help drivers and fleet managers to determine whether a pure electric vehicle or plug-in hybrid is the right choice.

BMW currently has the widest range of plug-in electric vehicles of any manufacturer in the UK.

Its models include the pure battery-powered i3, which has a driving range of up to 195 miles on the official test cycle, the i3 Range Extender which has a small petrol engine and increases the range to 243 miles, and plug-in hybrid vehicles such as the 330e, which has an electric range of up to 25 miles, and the 530e, which has an electric range of up to 29 miles and a bigger, more effective petrol engine (see following pages for more on the model line up).

BMW has successfully run pilots with existing and potential customers to help them understand the benefits of the technology.

"Seeing what the cars are like in the real world is

one of the things we strongly advocate," Oliver says.

"People might look at a plug-in hybrid car and wonder whether the car is still a BMW to drive or a MINI to drive and very much that car is every inch what the BMW or the MINI brand delivers.

"They are thrilling cars to drive. If you took, say, the MINI Countryman Plug-in Hybrid it's quite a quick car, it's sub-seven seconds to 62mph.

"When they experience those plug-in hybrids people are surprised at the way the car is just so drivable and I think that's core to our success."

The BMW Group sold 100,000 electrified vehicles globally last year alone. Prior to that its sales had totalled 100,000, illustrating how the global landscape is changing towards electrified vehicles, in Oliver's view.

"In the UK, of that 100,000 we did around 14,000 so our sales doubled from just in excess of 7,000 across BMW and MINI to 14,000 and what will happen again in 2018 is that the volume will rise again quite significantly," Oliver says.

For BMW alone sales of plug-in hybrids rose by 120% and sales of pure electric vehicles rose by 21% last year.

Oliver says it is the corporate market which has been "embracing these cars", accounting for around 90% of BMW's plug-in hybrid sales.

"Drivers are looking at the amount of benefit-in-kind (BIK) they're paying and on a 330e or 530e they're paying 9% this year so it's not surprising that people are re-evaluating what they're choosing," Oliver says.

He believes there will be greater consumer demand from the retail side, particularly for used

## EVEN THE WAY CARS ARE MADE SHOWS A RESPONSIBLE, GREEN APPROACH

**BMW's environmental approach extends to the way the cars are manufactured.**

**Nearly two-thirds (63%) of all the electricity used to build BMW Group cars globally is renewable and the amount of energy used is forecast to come down by 35% in the next few years.**

**The BMW Group is one of only three automotive brands to be listed in the annual Dow Jones Sustainability Index every year since 1999 and has been the top performing brand 8 times.**

**"That demonstrates that this isn't something we've got into recently," Steve Oliver says.**

**"There were even steps prior to 1999. There was the first electrified BMW in 1972 with the 1602e model so there has been a massive R&D learning curve over a period of time and technology has changed and developed. But, with that comes an ongoing responsibility."**

plug-in hybrids as they become available in three or four years' time.

"I think there will be a real thirst for those cars because they will be in tune still very much with the sort of the environmental approaches people are taking today," he says.

This, in turn, will benefit residual values.

"I see plug-in hybrid residual values have already been improving and I think they will continue on that trajectory," Oliver says.

Longer-term, the BMW Group has made a global commitment that by 2025 it will have launched 25 electrified models, 12 of those of those will be full-electric vehicles and the other 13 will be plug-in hybrids.

"So not only have we got the widest range today but actually we're setting our stall out very clearly for the future. It's really exciting in terms of the pace at which this technology is changing and developing," Oliver says.

However, he is keen to stress that conventional powertrains still have an important place in the BMW Group range and in the wider market.

90% of MINIs will be petrol by quarter one, for instance, and BMW is adding fuel-efficient petrol engines to the X1 and X3. There will be new developments with diesel as well.

The diesel share of the overall new car market is "incredibly significant" and "a far larger number" than electric and hybrid sales, Oliver points out.

"But it comes back to always needing that balanced approach of the right car with the right powertrain for the right driver and that's what we're geared up to," he says.





# THE iPERFORMANCE RANGE



No compromises on the quality of drive on 330e

## 330e

By combining a turbocharged petrol engine with an electric motor, the BMW 330e iPerformance is able to offer the ultimate blend of low fuel consumption and low running costs with high levels of driving pleasure and performance.

When fully charged, its battery delivers emissions-free running for up to 25 miles, reaching speeds of 75mph. The eDrive system can recuperate energy through braking and coasting, like a traditional hybrid, or be charged from a three-pin plug or designated fast-charger.

Using the petrol engine in conjunction with the electric motor gives a total system output to 252PS, enough to allow the BMW 330e to accelerate to 60mph in just 6.1 seconds.

The car can transition seamlessly between petrol and electric power as required automatically or the driver can control the system using a selector switch on the dash. In 'Max E Drive' mode the 330e will run on electric power for as long as possible, while 'Battery Save' will retain electricity for use later on and increase charge if necessary.

Drivers can still expect average fuel consumption to reach 148.7mpg while official CO<sub>2</sub> emissions of between 44g/km and 49g/km (dependent on model) means benefit-in-kind (BIK) tax is significantly cheaper than conventionally-fuelled models.

Available in three trims (SE, Sport and M Sport), the range is priced from just £34,840 on the road. Standard specification includes sat-nav with BMW Online connected services, LED headlights, parking sensors and alloy wheels.

Furthermore, the standard fit auxiliary cooling and heating function enables the user to pre-condition the car to their desired temperature prior to use.

Despite its class-leading efficiency, none of the 3-Series' legendary handling ability is lost with the addition of the hybrid drivetrain. Retaining its rear-wheel-drive layout and with near-perfect weight distribution, the 330e requires no compromise.



530e is the most efficient 5 Series ever

## 225xe



The 225xe has a zero emissions range of 25 miles and an average fuel consumption of 113mpg

Despite its compact exterior dimensions the BMW 225xe Active Tourer offers plenty of space for five passengers with an elevated seating position and commanding view of the road.

Its boot capacity of 468 litres can be expanded to a maximum of 1,350 by sliding the rear seat unit forward and folding down the 40:20:40 split backrests.

With a plug-in hybrid drivetrain the BMW 225xe offers a combination of sportiness, economy and everyday usability unmatched in its segment.

A three-cylinder petrol engine is paired with an electric motor to give a total output of 224PS, meaning the BMW 225xe can accelerate from zero to 62mph in just 6.7 seconds.

The electric drive system also makes it possible to enjoy the virtues of all-electric power on cross-country roads and motorways, thanks to a top speed of 78mph.

Such strong performance is enhanced by a zero emissions range of 25 miles and average fuel consumption of 113mpg. Benefit-in-kind (BIK) tax is significantly lower than conventionally powered rivals, thanks to average CO<sub>2</sub> emissions of 57g/km.

Another benefit of the hybrid drivetrain is its ability to provide power to all four wheels for increased stability. The petrol engine feeds power to the front wheels, while the electric motor drives the rear – providing outstanding traction in adverse weather conditions.

## 530e

With an unrivalled balance of technology and dynamic ability, the BMW 5 Series range continues its reign as the world's most popular business saloon.

The BMW 530e is the most efficient 5 Series ever, emitting just 46g/km of CO<sub>2</sub> and offering a real-world range of more than 400 miles.

A zero-emissions capability of up to 29 miles on a single charge makes the BMW 530e ideal for the daily commute. Its 2.0-litre TwinPower petrol engine can then be called into life whenever extra power or range is required – providing a total system output of 252PS.

The intelligently controlled interaction between the two powertrains gives the BMW 530e rapid acceleration – zero to 62mph takes just 6.2 seconds – while offering a substantial reduction in fuel consumption and emissions.

A high-voltage battery pack is installed under the rear seat meaning the BMW 530e still offers 410 litres of boot capacity and a flat load compartment floor.

Charging the battery takes less than three hours when using a designated high-speed charger. It can also be charged from a three-pin domestic plug in less than five hours.

Drivers can tailor the vehicle using the Driving Experience Control switch with all modes fully utilising the flexibility of the E Drive system. Normal mode provides the most comfortable journey, while 'Sport' enhances the car's dynamic performance. In 'Eco Pro' the BMW 530e operates in its most efficient manner. Active Cruise Control with Speed Limit Assistant brings the BMW 530e a step closer to automated driving.

Available from £43,985, the new BMW 530e can be specified in luxurious SE or dynamic M Sport guise.



The 740e and Le can each accelerate to 62mph in less than 5.5 seconds

## 740e/Le

The BMW 7 Series is the flagship of the BMW range offering the highest levels of refinement, dynamic ability and style.

Such a cutting edge model would not be complete without the latest plug-in hybrid powertrain technology from BMW iPerformance, bringing exceptional efficiency and long-distance comfort for both driver and passenger.

The flexible unit combines a four-cylinder petrol engine with a high-power electric motor. The result is a total output of 326PS – enough to accelerate the BMW 740e from zero to 62mph in 5.4 seconds.

A high voltage battery provides 27 miles of emissions-free running and can assist the engine to achieve an average fuel consumption of 134.5mpg with CO<sub>2</sub> emissions of just 49g/km.

In the long-wheelbase BMW 740Le xDrive the powertrain provides permanent four-wheel-drive, even in electric-only mode. The increased traction means it can reach 62mph in 5.3 seconds yet still achieve 117.7mpg with CO<sub>2</sub> emissions of 54g/km.

The BMW 740e and 740Le benefit from advanced chassis technology, which includes two-axle air suspension with automatic self-levelling and Dynamic Damper Control allowing the driver to select between a sporty or comfortable driving experience.

A high level of standard specification includes LED headlights, the BMW Display Key, the ConnectedDrive navigation package and auxiliary heating and air conditioning – which allows the user to prepare the car's interior temperature in advance.



The X5 xDrive40e can be charged from a variety of sources

## X5 xDrive40e

The BMW X5 xDrive40e combines the superb traction provided by the BMW xDrive intelligent all-wheel-drive system with EfficientDynamics eDrive technology for outstanding efficiency in a versatile and luxurious package.

Benefitting from the technology and know-how from BMW's i brand, the X5 delivers exceptional performance as well as all-electric mobility with zero emissions capability.

Together the TwinPower petrol engine and the electric motor can generate a total system output of 317PS, yet can return a combined fuel consumption of up to 83.1mpg and combined CO<sub>2</sub> emissions of just 78g/km.

The high-voltage battery pack can be recharged from any

standard domestic power socket, or more quickly from a BMW i Wallbox or designated public charging station.

Fully charged, the X5 xDrive40e has a zero-emissions range of 19 miles, while daily commutes of up to 37 miles can be completed with a fuel consumption of up to 43.5mpg.

The combined power of the two drive units is deployed by an eight-speed Steptronic transmission and the BMW xDrive permanent all-wheel-drive system, which ensures superb traction in all weather and road surface conditions, together with excellent stability and increased agility during cornering.

Intelligent packaging of the batteries under the stowage compartment floor means the luggage area is barely compromised and offers 500-to-1,720 litres of space.





# THE i RANGE

## i3 and i3 REX

Designed from the ground up to be powered by an electric drive system, the new BMW i3 range is able to deliver an unrivalled driving experience while offering the highest commitment to sustainability.

The car is produced in a factory that only uses energy from renewable sources and is manufactured using as many renewable materials as possible, some of which make up 80% of its visible interior panels.

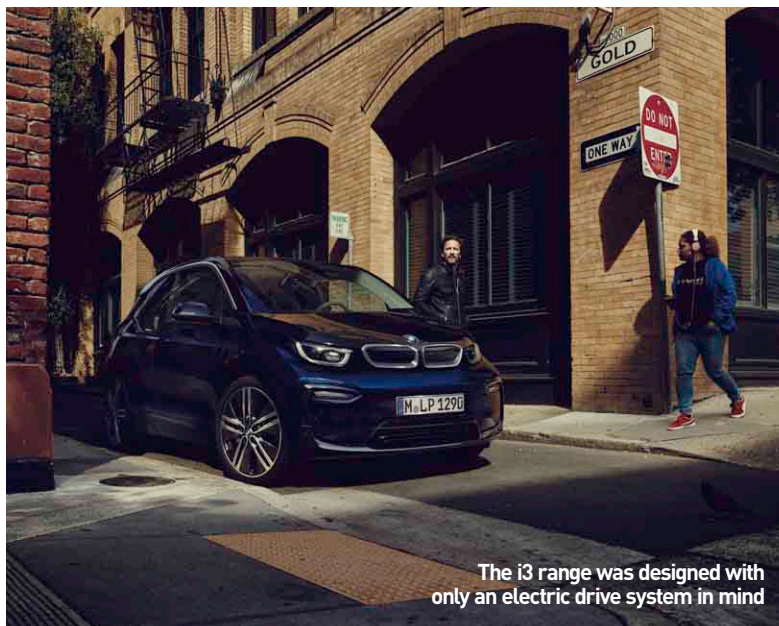
A high-power 94Ah battery gives the BMW i3 a real-world all-electric range of 125 miles and is integrated into the floor to maximise stability and passenger space.

The synchronous electric motor generates a maximum output of 172PS and reaches a peak torque of 250Nm, all of which is available instantly from a standstill. This means that stepping on the accelerator pedal immediately unleashes a burst of speed.

For an even better driving experience the BMW i3s offers an optimised powertrain with 187PS, allowing it to accelerate to 62mph in 6.9 seconds. This is complemented by sports suspension which gives the car greater dynamic ability.

Both models come with all the technology you would expect from a BMW. Driver assistance systems such as Park Assist, Active Cruise Control with Stop&Go function and Traffic Jam Assist help to make every journey as seamless as possible.

BMW i ConnectedDrive ensures intelligent connectivity through services specially tailored to electric mobility. It provides digital On-Street Parking Information alongside Real Time Traffic Information. Public charging stations and information about their availability can also be displayed on the navigation system's map.



The i3 range was designed with only an electric drive system in mind

**124 miles**  
real-world all-electric  
range of the i3

A two-cylinder range extender petrol engine is available as an option for both the BMW i3 and the BMW i3s. This extends the car's overall range in everyday use by 93 miles.

The engine is fed by a nine-litre fuel tank concealed in the front compartment and drives a generator to maintain a constant level of charge in the battery. Its fuel use is the equivalent of achieving 470mpg in a diesel vehicle, therefore its official CO<sub>2</sub> emissions are rated at just 13g/km.

## i8

The pioneering BMW i8 combines the performance and agility of a sports car with the fuel consumption of a compact one.

Engineered to operate as an electrified vehicle from the beginning, the i8 Coupé and new i8 Roadster use innovative technology to deliver exhilarating performance with minimal environmental impact.

The BMW eDrive plug-in hybrid powertrain uses a 1.5-litre three cylinder turbo petrol engine to power the rear wheels, while a 145PS electric motor provides traction at the front.

The high-voltage battery is stored centrally within the chassis for optimal weight distribution while the consistent use of cutting-edge lightweight materials and a focus on aerodynamics further enhances the performance of the car, with the added benefit of even greater efficiency.

With a combined output of 379PS the BMW i8 Coupé can accelerate from zero to 62mph in 4.4 seconds, while the new i8 Roadster takes 4.6 seconds. Both models have an electronically limited top speed of 155mph.

In hybrid mode, the electric motor can provide a power boost to assist the engine when rapid acceleration is required. It is also able to recuperate energy and feed it to the battery when coasting or braking.

Yet, because its electric motor can operate independently – powering the car for up to 34 miles – the i8 can return a combined 148.6mpg (i8 Roadster 134.5mpg) with CO<sub>2</sub> emissions of 42g/km (i8 Roadster 46g/km).

The navigation system can be used to ensure the electric motor is employed as wisely as possible. It analyses the route and prompts the powertrain to run on purely electric power, particularly over low-speed sections of the journey.



The i8 combines sports car performance with the fuel frugality of a compact car