

# The all-new BMW 1 Series. Contents.



## **The all-new BMW 1 Series.**

The perfect synthesis of agility and space. .... 2

## **Exterior.**

Contemporary design with new proportions and clear lines. .... 4

## **Interior.**

More space and high-quality look and feel. ....7

## **Model variants and equipment lines.**

A car for every occasion – with added practicality, luxury or sportiness. .... 11

## **Powertrain and chassis.**

Modern front-wheel drive with sporty BMW character. .... 13

## **Engines.**

Latest generation of power units from the BMW EfficientDynamics family. .. 16

## **Driver assistance systems.**

New, innovative aids for the premium compact class. .... 21

## **BMW ConnectedDrive.**

BMW Digital Key and BMW Intelligent Personal Assistant deliver the latest in smart driver support. .... 23

# The all-new BMW 1 Series. The perfect synthesis of agility and space.



The arrival of the all-new BMW 1 Series (fuel consumption combined: 7.1 – 3.8 l/100 km [39.8 – 74.3 mpg imp]; CO<sub>2</sub> emissions combined: 162 – 100 g/km\*) heralds the dawn of a new era. The third generation of the successful premium compact model draws back the curtain on the new BMW front-wheel-drive architecture, which fuses BMW's signature driving pleasure and dynamic excellence with a significant increase in interior space. Sporty, cool, safe and classy, sprinkled with fresh design and the latest in connectivity, the new BMW 1 Series is a proper BMW with a strong character all its own.

The third generation of the BMW 1 Series will be unveiled to the public for the first time on 25 – 27 June 2019 on the new BMW Group #NEXTGen presentation platform at BMW Welt in Munich. Hosting the show premiere of the new BMW 1 Series, meanwhile, will be the IAA event in Frankfurt am Main in September 2019. The worldwide launch will get underway on 28 September 2019.

Cutting-edge chassis system and innovative technologies, plus the integration of all key driving dynamics components and control systems, imbue the BMW 1 Series with an increase in agility that drivers of cars both with the new front-wheel-drive configuration and BMW xDrive intelligent all-wheel drive will clearly recognise. To this end, a five-year process of development saw BMW channel all the experience amassed over recent years by the BMW Group with front-wheel-drive technology in other models into the new BMW 1 Series. The result is a dynamic sharpness which is unprecedented in front-wheel-drive cars and with which it sets new standards in the premium compact class. In addition, the new BMW front-wheel-drive architecture allows the third-generation 1 Series to offer substantially improved levels of interior space – in particular for passengers in the rear – and a larger load compartment.

\* All figures relating to the performance, fuel/electric power consumption and CO<sub>2</sub> emissions are provisional.

The fuel consumption, CO<sub>2</sub> emissions, electric power consumption and operating range figures were determined based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).

**A success story dating back to 2004.**

The all-new BMW 1 Series continues the success story written by the first two generations of the car. BMW introduced the brand's hallmark dynamics and an elegantly sporty design into the premium compact segment for the first time in 2004. The second generation, launched in 2011, boasted fresh new accents and a more powerful look for the front end, flanks and rear end – which were given further presence in 2015 by a newly designed BMW kidney grille, larger air intakes, slimmer headlight geometry and new rear lights. The second-generation 1 Series enjoyed great popularity, especially in Europe, with 80 per cent of customers in 2018 based in the “old continent”.

Its largest markets were Germany (accounting for around 25 per cent of sales) and Great Britain (over 20 per cent), followed by Italy, France and Japan. At the end of 2018 the BMW 1 Series broke through the 1.3 million customers barrier, strengthening its status as an important volume-selling model for the BMW brand.



## Exterior.

# Contemporary design with new proportions and clear lines.

The changeover to the BMW front-wheel-drive architecture is reflected in the new proportions and flowing, elongated lines of the all-new BMW 1 Series. The shorter bonnet melts into the windscreen, while the long roofline drops away slightly towards the rear. A wide tail with an athletic shoulderline above the rear wheel arches emphasises the car's powerful, sporty presence when viewed from behind. At the same time, the compact body offers significantly more space within a footprint almost identical to the predecessor model's and so makes the car even more versatile in everyday use. At 4,319 millimetres, the new BMW 1 Series is five millimetres shorter than its predecessor. In terms of width (now 1,799 millimetres), this third-generation model has grown by 34 millimetres while its height (1,434 mm) has increased by 13 millimetres. At 2,670 millimetres, the wheelbase is 20 millimetres shorter than that of the predecessor model.

### **A new face with a larger BMW kidney grille.**

Viewed from the front, the BMW 1 Series immediately makes its mark with a new face and a reinterpretation of iconic BMW styling cues. The characteristic BMW kidney grille is larger, has a noticeably stronger presence and, for the first time in this model range, the kidneys merge in the middle. In adopting this look, the new BMW 1 Series is following the trend set by the larger BMW sedans. The sporty, range-topping BMW M135i xDrive (fuel consumption combined: 7.1 – 6.8 l/100 km [39.8 – 41.5 mpg imp]; CO<sub>2</sub> emissions combined: 162 – 155 g/km\*) stands out with a distinctive kidney grille whose pronounced mesh design replaces the classical bars. This three-dimensional element is inspired by racing cars and lends the front end additional depth and stature. Another distinguishing feature of the M135i xDrive is the additional insert fitted in each of the eye-catching outer air intakes. The form and size of the intakes make a statement of sporting intent in even the base version of the new 1 Series.

### **New headlight arrangement.**

Now slanting in design, the headlights give the new BMW 1 Series a fresh, youthful dimension which also sets it apart instantly from BMW models higher up the range. In the base version of the car, halogen headlights and the LED daytime driving lights fitted below them form the customary BMW "four-eyed" face. The optional full-LED lights – which can also be specified with adaptive

\* All figures relating to the performance, fuel/electric power consumption and CO<sub>2</sub> emissions are provisional.

The fuel consumption, CO<sub>2</sub> emissions, electric power consumption and operating range figures were determined based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).

functionality – have a particularly modern appearance. The transparent, hexagonal tubes of the daytime driving lights pull off the characteristic “four-eyed” look with striking technical precision. The “eyebrow” turn-signal indicators emphasise the width of the car, while the set-back headlight tubes exude dynamic performance. A brushed aluminium element occupies the upper part of the headlight unit underneath the glass cover and along the side is “BMW LED” lettering.

### **Pronounced shark nose and distinct wedge shape.**

The most striking features of the new BMW 1 Series when viewed from the side are the pronounced shark nose, a characteristic BMW design cue, and a strong hint of wedge shape. The slim window graphic rises towards the rear and emphasises the car’s dynamic lines. It culminates at the C-pillar in the obligatory Hofmeister kink which visually extends and raises the window line beyond the rear door.

However, it is below the window graphic that the body really comes into its own. The sparing use of precise and clearly defined lines in combination with bold and confidently sculpted surfaces gives the new BMW 1 Series an athletic presence. This technique also creates a defined sense of lightness above the front wheels but also undeniable muscularity in the area around the rear wheels. This impression is enhanced by two character lines. One runs below the door handles from the front wheels to the rear wings, while the other starts in the lower part of the front door and creates a dynamic contrast with an upward sweep towards the rear. In addition, a distinct side taper at the C-pillar injects a feeling of sportiness into the shoulder section above the rear wheel arches. The downward pull of the roof spoiler extends the flowing roofline rearwards.

### **Distinctive shoulder area and reinterpretation of the “L” shape.**

The defining elements of the rear end are its broad-set, athletic lower section and the tapering effect further up. This creates a striking shoulderline, which emphasises the width of the car and gives it a planted stance on the road. This is emphasised by the wide, two-part rear light elements, whose slender, understated design gives them a very modern look.

The full-LED rear lights, available as an option, provide an all-new interpretation of the familiar “L” shape. This takes the form of a single, slim light element with a distinctive side upsweep. Concealed around this element under the red glass cover are the turn-signal indicator, brake and tail lights, reversing lights and rear foglamp. The basic version of the rear lights adopts a similar look using incandescent bulbs. Strikingly shaped surfaces and distinctive exhaust tailpipes in chrome with a diameter

of 90 millimetres (100 mm and angle-cut on the BMW M135i xDrive) complete the sporting picture at the rear end.

**New light-alloy wheels up to 19 inches.**

The new BMW 1 Series is available with a wide range of new light-alloy wheels, including – for the first time – the option of wheels with a diameter of 19 inches. The base model has 16-inch steel or light-alloy wheels. The Luxury Line, Sport Line and M Sport models, meanwhile, are equipped as standard with 17-inch light-alloy wheels. And the BMW M135i xDrive is delivered from the factory with bespoke polished 18-inch light-alloy items. Newly designed 19-inch light-alloy wheels are optionally available for this and the M Sport model.

**Enhanced sense of space with new panoramic roof.**

More light in the interior and therefore a greater sense of space compared with the sunroof-equipped predecessor model are the benefits provided by the panoramic roof available as an option for the BMW 1 Series for the first time. Featuring an infinitely variable outward-opening action and electrically actuated ventilation mode, the panoramic roof has a glass area of some 0.7 square metres. The opening in the headliner measures 74 x 70 centimetres and has an electrically operated roller blind to provide shading. A favourable acoustic environment can be maintained with the roof open thanks to a net wind deflector and a comfort position for the glass roof panel which keeps wind noise to a minimum.

## **Interior.** **More space and high-quality look and feel.**



The interior of the all-new BMW 1 Series combines more actual space and an enhanced impression of roominess with high-quality materials, rigorously driver-focused controls and innovative details, such as backlit trim strips available in a BMW for the first time. Contemporary and clearly structured, the interior creates an impression of dynamism and quality underscored by the interplay of different graining effects and texture elements behind the steering wheel, on the instrument panel and on the doors. Grouped control clusters make for easy operability while comfort is enhanced by practical stowage areas. Access to the optional infotainment offering provided by the new BMW Operating System 7.0 – with optional gesture control – is via a large display grouping whose two large screens are available with a diagonal of up to 10.25 inches (with the BMW Live Cockpit Professional).

### **More kneeroom in the rear and a larger boot.**

The all-new BMW 1 Series has taken a major leap forward in terms of interior spaciousness. The front-wheel-drive architecture with transverse engines and a lower centre tunnel offers the occupants noticeably more space than in the predecessor model. This applies especially to those in the rear seats. Access is easier and there is an extra 33 millimetres of kneeroom available. Rear headroom is up by no less than 19 millimetres when the outward opening panoramic sunroof – a new option for the BMW 1 Series – is fitted. Rear passengers also enjoy 13 millimetres more elbowroom, while the driver and front passenger can look forward to an extra 42 millimetres in this respect. Luggage compartment capacity rises by 20 litres to 380 litres (1,200 litres with the rear seat bench folded down). The minimum width of the luggage compartment has also increased by 67 millimetres. An electrically operated tailgate is now available for the BMW 1 Series for the first time.

### **A consistently driver-oriented cockpit.**

To take the wheel of the all-new BMW 1 Series is to experience the character of a genuine driver's car. Situated immediately in front of you is the instrument cluster with a screen diagonal of up to 10.25 inches. This is also the size of the accompanying central Control Display. Designed for touch operation, it is oriented towards the driver in typical BMW style and positioned optimally in their field of view. Together, the two screens form the BMW Live Cockpit Professional, a large display grouping which the driver can configure to their individual requirements. The optional full-colour 9.2-inch BMW Head-Up

Display allows the driver to receive information without taking their eyes off the road. The driver-focused layout is enhanced visually by trim strips which run towards the driver and by different graining effects and textures on the instrument panel and behind the steering wheel. Technical Orbis graining is used on the driver's side in the cockpit area while leather-like Verona graining features on the passenger side, the two separated by contrast diagonal stitching, depending on the equipment line specified.

### **BMW Live Cockpit with new design.**

The base BMW Live Cockpit and BMW Live Cockpit Plus including navigation system and Apple CarPlay preparation both have two classic analogue dials and a 5.1-inch, 4:3 portrait-format screen which displays information such as the car's speed, the status of the driver assistance systems and navigation instructions.

The digital BMW Live Cockpit Professional has a completely new design, whose form and structure reference the vehicle's redesigned BMW kidney grille. The rev counter runs anti-clockwise and, like the speedometer, has a new design. The space in the centre of the display shows navigation instructions, the current location of the vehicle and relevant information about the surrounding area for the rest of the journey. The displays showing the entertainment and radio station listings, the navigation and orientation maps and the new onboard computer read-out can be configured by the driver according to taste. There is now greater scope for personalising the layout of the central Control Display, which is optimised for touch control but can also be specified with optional gesture control. Where previously there were three tile-style pads, it is now possible to configure two to four pads per page, while the number of pages is no longer limited to two. The pads at the highest level of the display show real-time data, so that the most important information can be absorbed at a glance.

As well as determining the colour and content of the BMW Live Cockpit Professional, the Driving Experience mode selected now repeats the trick for the Control Display, creating a consistent appearance. Among the details benefiting from this change is the personalised Welcome Scenario, with which the BMW Live Cockpit Professional greets the BMW 1 Series driver. This feature can now include the actual colour and equipment line of the car they are driving. The same goes for the display when calling up information on fuel consumption or fuel level via the "Car" menu item.



### **Grouped control clusters.**

The logical grouping of control clusters into functional units is one of the characteristic elements of the new BMW interior design. The intuitive controls for the heating, air conditioning and new hexagonal air vents are grouped together in the centre console below the Control Display. With the Start/Stop button and gear selector lever now also located in the control panel in the lower section of the centre console, all the controls relating to driving functions are clustered together in one area. Situated to the right is the iDrive Controller – or the iDrive Touch Controller if the BMW Live Cockpit Plus or higher is specified – used to control the infotainment system. In front of the selector lever is a practical stowage area which can be specified with the Wireless Charging option for smartphones.

### **New backlit trim strips.**

The BMW 1 Series casts a new light on the trim strips for the instrument panel and door linings, which are finished as standard in matt Quartz Silver and Pearl-effect Chrome. As an option, customers can choose from another three high-quality trim surface designs – one of which is exclusive to the M Sport model and the BMW M135i xDrive. With their compelling translucent properties, these create a distinctive and appealing ambience. The driver can choose from six different colours for the lighting effect. The trim strips retain their normal appearance in daylight, but function as decorative lighting elements with a space-shaping effect in the dark. As well as choosing the colours involved, the driver can adjust the brightness of the ambient lighting to their tastes. The lighting is activated when the vehicle is unlocked or “Living” status is selected. The desired colour and the selected brightness level are stored in the personalised key.

### **Wide choice of seats and upholstery.**

Three different front seat variants and a wide choice of upholstery – from cloth to leather – are available for the BMW 1 Series. In base specification, the seats are upholstered in Anthracite-coloured Grid cloth. Cloth/Sensatec upholstery in Anthracite with grey highlights is available as an option, as is perforated Dakota leather in Black or Magma Red. All these variants are also available for the optional sports seats.

The Sport Line model includes sports seats with cloth/Sensatec upholstery and grey highlights while orange highlights are available as an option. The sports steering wheel in Sport Line cars (also included in the Luxury Line model) has a decorative aluminium-look insert. The standard seats or optional sports seats in this mode variant are upholstered in Dakota leather. The M Sport model and standard specification for the BMW M135i xDrive include the M Sport steering wheel and the Trigon/Sensatec sports seats

in Black. This upholstery variant is enhanced with special BMW M piping and contrast blue stitching. For the sports seats, the Dakota leather is available in Black, Black with blue highlights and Magma Red with grey highlights. And BMW 1 Series customers can now order the M Sport model and BMW M135i xDrive with M Sport seats featuring an integral head restraint and extendable seat cushion. These are also available with upholstery in Trigon cloth and Alcantara, as well as Dakota leather in Black and Magma Red.

# Model variants and equipment lines. A car for every occasion – with added practicality, luxury or sportiness.



From practical via luxurious to sporty, the all-new BMW 1 Series lays on a host of individualisation options for customers. As well as the base Advantage model, the premium compact car can also be ordered in another three equipment lines. The Luxury Line model emphasises the comfort and sophisticated appearance of the new BMW 1 Series, while the Sport Line and M Sport models represent rungs up the dynamic ladder culminating in the flagship BMW M135i xDrive.

## **Below is an overview of the available equipment lines:**

### **Advantage model.**

The base version of the BMW 1 Series already represents a compelling proposition with its powerfully athletic form. The BMW kidney grille surround comes in High-gloss Chrome, while the grille bars have a High-gloss Black painted finish. The front air intakes and window graphic surrounds in matt Black create a sporty contrast. The exterior mirror caps and rear apron are both painted in body colour.

### **Sport Line model.**

Black trim elements in the front apron of the Sport Line model have a visually enlarging effect on the air intakes, which – like the BMW kidney grille bars and exterior mirror caps – are finished in High-gloss Black. This accentuates the width of the car. The BMW kidney grille surround is in gleaming chrome, while the window graphic surrounds feature BMW Individual high-gloss Shadow Line trim. The rear apron has a black finish.

### **Luxury Line model.**

The Luxury Line model uses additional design elements in Aluminium satinated to bring out the car's exclusive character. These include the bars in the BMW kidney grille, special trim elements for the air intakes and an accent strip on the rear apron. The window graphic in Aluminium satinated makes a suitably classy impression, and the central front air intake and mirror caps are both painted in body colour.

### **M Sport model.**

The M Sport model takes the BMW 1 Series another stylistic step closer to the range-topping BMW M135i xDrive. Particularly eye-catching features

include the front apron with specially sculpted air intakes and High-gloss Black trim, plus the BMW M rear apron likewise in High-gloss Black. The rear bumper also incorporates the apertures through which air is channelled out of the rear wheel arches. As on the Luxury Line model, the BMW kidney grille bars have an Aluminium satinated finish and the mirror caps are painted in body colour. The window graphic surrounds have BMW Individual high-gloss Shadow Line trim.

### **BMW M135i xDrive.**

The BMW M135i xDrive underscores its status as the sporting flagship of the range with exclusive looks and colour accents in Cerium Grey. This is the only model variant to feature the BMW kidney grille in a distinctive mesh design. Its surround and three-dimensional elements come in Cerium Grey, likewise the additional model-specific trim of the outer air intakes, the mirror caps and the angle-cut 100-millimetre-diameter exhaust tailpipes tracing the contour of the bumper. Like the BMW M rear apron, the other elements of the exterior mirrors come in High-gloss Black. As with M Sport specification, the window graphic surrounds adopt BMW Individual high-gloss Shadow Line trim, while the M135i xDrive also comes exclusively with a BMW M rear spoiler in body colour, which is longer than the standard spoiler and features a slight upturn to further enhance aerodynamics.

# Powertrain and chassis. Modern front wheel drive with sporty BMW character.



BMW has made a radical change to the technology of the third-generation BMW 1 Series, with the five-door premium compact model now underpinned by BMW's sophisticated front-wheel-drive architecture. Benchmark driving dynamics for the segment and a far more spacious interior are the result. After spending five years in development, the new BMW 1 Series has emerged as a genuine BMW with a character all its own – thanks to the wealth of experience amassed by the BMW Group with its front-wheel-drive models and the transfer of technology from BMW i to the BMW core brand.

## **An array of components working in perfect harmony.**

The all-new BMW 1 Series is endowed with greater agility than its predecessor both in its new front-wheel-drive guise and when BMW xDrive intelligent all-wheel drive is specified. This is down to the perfectly orchestrated interaction between cutting-edge chassis engineering, innovative technologies and all of the integrated components and control systems that impact the car's driving dynamics. The fast, precise responses of the BMW 1 Series are clearly perceptible and elevate the driving experience to new heights.

## **Transfer of technology from the BMW i3.**

One crucial element in the exceptional agility of the new BMW 1 Series is the actuator contiguous wheel slip limitation (ARB) technology familiar from the BMW i3s (electric power consumption combined: 14.6 – 14 kWh/100 km, CO<sub>2</sub> emissions combined: 0 g/km\*\*) and now making its debut in a combustion-engined car. This system has the effect of significantly improving traction when pulling away, cornering or driving in the wet by allowing wheel slip to be controlled much more sensitively and swiftly than before. A standard feature of the BMW 1 Series, ARB technology uses a slip controller that is positioned directly in the engine control unit rather than in the control unit for the DSC (Dynamic Stability Control) system. Eliminating long signal paths means that information is relayed three times quicker, while the driver perceives wheel slip being brought under control up to ten times faster. Actuator contiguous wheel slip limitation works in close tandem with the DSC system to significantly reduce power understeer – a typical drawback of front-wheel-drive cars – without the need for corrective inputs to stabilise lateral dynamics. Added to which, reducing friction improves steering feel, further adding to the sensation of fleet-footed agility.

\*\* The fuel consumption, CO<sub>2</sub> emissions, electric power consumption and operating range figures were determined based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).

### **BMW Performance Control as standard.**

ARB is assisted in its task by BMW Performance Control (yaw moment distribution). This feature, which is also included as standard on the BMW 1 Series, gives it more agile handling by intelligently applying the brakes at the wheels on the inside of the bend before the slip threshold has been reached. This suppresses any initial understeer and gives the car neutral steering behaviour. Drivers have the option of deactivating the DSC system if they wish to take over full control of the car's sporty handling abilities, in which case the EDLC (Electronic Differential Lock Control) function will simulate the effect of a mechanical limited-slip differential using brake applications. Braking an unloaded front wheel prevents it from spinning, resulting in far greater grip when accelerating out of corners.

Alternatively, drivers can engage the DSC system's propulsion-optimised Dynamic Traction Control (DTC) setting, which allows a greater degree of slip at the driven wheels to maximise propulsive power. System intervention to stabilise the car becomes more muted, paving the way for a sportier driving style. This lets the driver control the BMW 1 Series without any assistance until defined limits are reached – and therefore enjoy greater scope for exploring the car's lateral dynamics at lower speeds.

### **Two models with BMW xDrive intelligent all-wheel drive.**

ARB technology and BMW Performance Control also feature on the BMW 120d xDrive (fuel consumption combined: 4.7 – 4.5 l/100 km [60.1 – 62.8 mpg imp]; CO<sub>2</sub> emissions combined: 124 – 117 g/km\*) and the BMW M135i xDrive, which are both equipped with BMW xDrive intelligent all-wheel drive as standard. The BMW xDrive system's intelligent control logic varies the distribution of drive power between the front and rear wheels automatically and dynamically in response to the accelerator pedal position, engine torque, speed and steering angle. It can split drive power 50:50 if necessary and is designed to ensure predictable handling in all driving situations. This applies even if the Driving Experience Control switch is set to Sport mode, DTC is selected or DSC is deactivated. In Comfort or Eco Pro mode, drive is split as required, while keeping fuel consumption as low as possible. Fuel economy is therefore improved without any discernible impact on driving dynamics or traction.

As well as the all-wheel-drive system, standard specification for the sporty BMW M135i xDrive range-topper includes a newly developed mechanical Torsen limited-slip differential, which gives the car an even sportier edge by creating a locking effect between the front wheels.

\* All figures relating to the performance, fuel/electric power consumption and CO<sub>2</sub> emissions are provisional.

The fuel consumption, CO<sub>2</sub> emissions, electric power consumption and operating range figures were determined based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).

The differential is integrated into the standard-fit eight-speed Steptronic Sport transmission on the BMW M135i xDrive and also features a Launch Control mode that already puts the full peak torque of 450 Nm (332 lb-ft) on tap in first and second gear.

### **Increased body rigidity.**

Making intelligent use of aluminium – for the bonnet and tailgate for instance – combined with high-strength steels has enabled BMW to shave as much as 30 kilograms off the weight of the new BMW 1 Series compared to its predecessor, at the same time as further increasing the bending and torsional stiffness of the body structure. Bracing elements such as the standard boomerang-shaped strut in the vehicle's rear section are employed to assist in this process.

### **An extra dose of sportiness for the BMW M135i xDrive.**

The positive dynamic impact of the torsionally rigid body is even more pronounced on the ultra-sporty, range-topping BMW M135i xDrive. In addition to the tower-to-tower strut fitted on all models, it benefits from additional bracing at its front end and in the tunnel area, plus an anti-roll bar mounting with high preload, which provides excellent support for the body and a smooth ride. This all combines with the standard Sport suspension and the M Sport steering with its more direct ratio and even sharper response – whose power assistance is also varied according to road speed and lateral acceleration, reducing the steering effort required – to produce a further noticeable increase in the car's agility and give it an even bigger appetite for corners. Handling poise at high speeds is enhanced by sophisticated aerodynamics that reduce axle lift. Meanwhile, the M Sport brakes offer excellent fade resistance and abundant reserves of stopping power at all times. The M Sport steering and M Sport brakes are also available as optional extras for other BMW 1 Series models.

### **A choice of three suspension options.**

Besides the standard suspension – which already has a dynamically inclined set-up and is specially tuned to the different engine variants – and the M Sport suspension with 10 mm reduction in ride height, the new BMW 1 Series can also be specified with the Adaptive suspension including VDC (Variable Damper Control) as an option. This particular variant lets the driver choose from two different damping response settings. The Driving Experience Control switch can be used to select either Comfort – for better ride comfort in poor road conditions, for instance – or Sport for a very sporty drive. The anti-roll bar mounting with high preload is included with both the Adaptive suspension and M Sport suspension. All new BMW 1 Series models from entry-level upwards have a multi-link rear axle.

# Engines.

## Latest generation of power units from the BMW EfficientDynamics family.



The all-new BMW 1 Series is powered by three-cylinder and four-cylinder engines from the latest generation of the BMW EfficientDynamics family. The new model will be launched with a choice of three diesel and two petrol engines. A raft of individual measures have been implemented to improve the power units' efficiency, resulting in higher fuel economy – also in real-world driving conditions – and lower exhaust emissions. Performance characteristics have likewise been enhanced, and in some cases output has been increased, too. The line-up is spearheaded by the newly developed power unit for the BMW M135i xDrive, the BMW Group's most powerful four-cylinder engine.

### **A wealth of detail improvements for the petrol units.**

The BMW 118i (fuel consumption combined: 5.7 – 5.0 l/100 km [49.6 – 56.5 mpg imp]; CO<sub>2</sub> emissions combined: 129 – 114 g/km\*) is the entry-level model in the updated range of petrol engines. A process known as 'form honing' for machining the coated cylinder bores in the aluminium crankcase reduces piston friction loss. Further improvements are brought about by the opening and closing facility for the oil circuit (allowing on-demand operation of the piston cooling), and the one-piece chain drive for controlling the valve gear. The new belt drive for the generator, water pump, torsional vibration damper and air conditioning compressor has an L-shaped layout. The exhaust manifold is integrated into the aluminium cylinder head, which minimises weight and optimises flow. And the turbocharger's turbine housing is also made from aluminium and is flange-mounted to the manifold package within the cylinder head so the flow dynamics of the recirculated exhaust gases can be utilised to particularly efficient effect.

The fuel pump and system of fuel lines have both been tweaked to enable petrol to be injected at higher pressure. Thermal management is optimised by a new coolant pump with separate outlets for cooling the cylinder head and engine block. This method of 'split cooling' uses a switchable valve to supply coolant to the cylinder head alone when the engine is still cold or operating at part-throttle. The engine reaches its operating temperature faster in this way, improving fuel consumption and exhaust emissions even under partial loads. The re-engineered crankshaft now weighs 1.1 kilograms less than in the previous engine. The petrol engines meet the strict Euro 6d-

\* All figures relating to the performance, fuel/electric power consumption and CO<sub>2</sub> emissions are provisional.

The fuel consumption, CO<sub>2</sub> emissions, electric power consumption and operating range figures were determined based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).



TEMP emissions standard thanks to their gasoline particulate filters.

In the 1.5-litre three-cylinder engine powering the BMW 118i, these measures combine to cut CO<sub>2</sub> emissions by 29 g/km at the same time as boosting maximum power output by 3 kW (4 hp) to 103 kW (140 hp) between 4,600 and 6,500 rpm. The power unit – which is five kilograms lighter than the one it replaces – generates peak torque of 220 Nm (162 lb-ft) from 1,480 rpm all the way up to 4,200 rpm. An overboost function briefly puts an extra 10 Nm (7 lb-ft) on tap in fourth gear or higher. The BMW 118i accelerates from 0 to 100 km/h (62 mph) in 8.5 seconds and goes on to reach a top speed of 213 km/h (132 mph). It posts combined fuel consumption of 5.7 – 5.0 litres per 100 kilometres (49.6 – 56.5 mpg imp) with CO<sub>2</sub> emissions of 129 – 114 grams per kilometre.

### **BMW Group's most powerful four-cylinder engine for the range-topper.**

Of the various engines available for the new BMW 1 Series, it is the newly developed four-cylinder unit under the bonnet of the BMW M135i xDrive that really steals the show. It is the BMW Group's most powerful four-cylinder engine, extracting 225 kW (306 hp) from its 2.0-litre displacement between 5,000 and 6,250 rpm with the help of BMW TwinPower Turbo technology. Its peak torque of 450 Nm (332 lb-ft) comes on stream at 1,750 rpm and stays there up to 4,500 rpm. The flagship model races to 100 km/h (62 mph) from rest in just 4.8 seconds (4.7 seconds with M Performance package, available from 11/2019), while top speed is limited to 250 km/h (155 mph). Despite such breathtaking performance figures, the BMW M135i xDrive makes do with 7.1 – 6.8 litres of fuel per 100 kilometres (39.8 – 41.5 mpg imp) on the combined cycle and emits just 162 – 155 grams of CO<sub>2</sub> per kilometre.

A reinforced crankshaft drive featuring a main bearing with a larger diameter, new pistons with an altered compression ratio and modified con rods with non-bushed ends provides the necessary basis for the formidable power unleashed by the BMW M135i xDrive. A larger turbocharger featuring a built-in exhaust manifold and integral diverter valve increases engine output and is thermodynamically efficient at exhaust temperatures of up to 1,025 degrees Celsius. Modified injectors have also been fitted to increase the flow volume. The capacity of the cooling package has been maximised with an independent transmission oil cooler that is separated from the engine's coolant circuit, an electric 850-watt fan, two remote coolant radiators in the wheel arches and an enlarged expansion tank, ensuring that the BMW M135i xDrive is able to display its performance capabilities even under the most demanding conditions. The range-topping engine is assisted by a newly developed twin-pipe exhaust

\* All figures relating to the performance, fuel/electric power consumption and CO<sub>2</sub> emissions are provisional.

The fuel consumption, CO<sub>2</sub> emissions, electric power consumption and operating range figures were determined based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).

system with minimal exhaust backpressure, which is instantly identifiable by the pair of bespoke angle-cut tailpipes measuring 100 millimetres in diameter. The standard-fitted Active Sound Design (ASD) system amplifies the actual sound from the engine and modulates it so the driver is treated to an exhilarating, wonderfully sporty soundtrack without any increase in external noise emissions.

### **Trio of frugal diesel engines with SCR emission control.**

Three diesel units will be available for the new BMW 1 Series from launch, all of which come with a diesel particulate filter, NO<sub>x</sub> adsorption catalyst and SCR (Selective Catalytic Reduction) technology. Major upgrades to the turbocharger and common-rail direct injection system have brought about a reduction in fuel consumption – and therefore CO<sub>2</sub> emissions – of around five per cent, at the same time as lowering other pollutant emissions. The BMW 116d (fuel consumption combined: 4.2 – 3.8 l/100 km [67.3 – 74.3 mpg imp]; CO<sub>2</sub> emissions combined: 110 – 100 g/km\*) is powered by a 1.5-litre three-cylinder engine that already complies with the stringent Euro 6d emissions standard. The BMW 118d (fuel consumption combined: 4.4 – 4.1 l/100 km [64.2 – 68.9 mpg imp]; CO<sub>2</sub> emissions combined: 116 – 108 g/km\*) and BMW 120d xDrive divide their two-litre displacement between a quartet of cylinders and meet the Euro 6d-TEMP emissions standard.

The four-cylinder engines feature two-stage turbocharging with a pair of turbochargers of different sizes, resulting in even sharper response and a superior efficiency factor. The turbocharging system comprises a low-pressure stage with variable turbine geometry and a high-pressure stage completely integrated into the exhaust manifold. To further enhance responsiveness, both turbochargers are equipped with the latest slide bearing technology. The system is controlled by means of the low-pressure stage's electrically adjustable charger vanes as well as the wastegate valve for the high-pressure stage and a compressor bypass, which are both operated pneumatically. This allows the combustion chambers to be supplied with just the right amount of compressed air for the driving situation and load requirements.

A newly designed system of exhaust gas recirculation (with one stage on four-cylinder engines and two on three-cylinder units) ensures particularly effective reduction of nitrogen oxide emissions (NO<sub>x</sub>). And a refined system of sensors for the injector nozzles enables even more precise metering of the injected diesel fuel. The maximum injection pressure has also been raised to 2,200 bar on the three-cylinder and 2,500 bar on the four-cylinder units. The SCR system effectively lowers nitrogen oxide levels in the exhaust gases by

\* All figures relating to the performance, fuel/electric power consumption and CO<sub>2</sub> emissions are provisional.

The fuel consumption, CO<sub>2</sub> emissions, electric power consumption and operating range figures were determined based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).

injecting a urea solution (AdBlue). The AdBlue tank can be topped up from the AdBlue pumps at filling stations using a nozzle.

The BMW 116d produces 85 kW (116 hp) at 4,000 rpm and makes its maximum torque of 270 Nm (199 lb-ft) available between 1,750 and 2,250 rpm. This is sufficient for a top speed of 200 km/h (124 mph) and a 0 to 100 km/h (62 mph) time of 10.3 seconds (10.1 seconds with the seven-speed Steptronic dual-clutch transmission). Combined fuel consumption stands at 4.2 – 3.8 litres per 100 kilometres (67.3 – 74.3 mpg imp) equating to CO<sub>2</sub> emissions of 110 – 100 grams per kilometre.

The output of the BMW 118d peaks at 110 kW (150 hp), also at 4,000 rpm, while the maximum torque of 350 Nm (258 lb-ft) is on tap from 1,750 to 2,500 rpm. It burns 4.4 – 4.1 litres of diesel for every 100 kilometres (64.2 – 68.9 mpg imp) on the combined cycle and emits 116 – 108 grams of CO<sub>2</sub> per kilometre. The BMW 118d completes the 0 to 100 km/h (62 mph) sprint in 8.5 seconds (8.4 seconds with eight-speed Steptronic transmission) and reaches a top speed of 218 km/h / 135 mph (216 km/h / 134 mph).

The BMW 120d xDrive boasts BMW xDrive intelligent all-wheel drive and the eight-speed Steptronic automatic transmission as standard. Its four-cylinder power unit produces 140 kW (190 hp) at 4,000 rpm and places its peak torque of 400 Nm (295 lb-ft) at the driver's disposal between 1,750 and 2,500 rpm. The car can therefore sprint to 100 km/h (62 mph) from rest in 7.0 seconds, on its way to a top speed of 230 km/h (143 mph). At the same time, it returns combined fuel consumption of 4.7 – 4.5 litres per 100 kilometres (60.1 – 62.8 mpg imp) while emitting 124 – 117 grams of CO<sub>2</sub> per kilometre.

### **First ever deployment of three different transmission technologies.**

The arrival of the new BMW 1 Series marks the first time three different transmission technologies have been employed in the range.

In the BMW 116d, BMW 118d and BMW 118i, the engine's power is relayed as standard via an upgraded six-speed manual gearbox. New to the BMW 1 Series line-up is the highly sophisticated seven-speed Steptronic dual-clutch transmission, which can be specified as an option for the BMW 116d and the BMW 118i. This transfers drive power to the wheels by means of two sub-transmissions (each with its own clutch), one of which is engaged and the other disengaged at all times. This allows the gears to be changed in a fraction of a second without any interruption in the flow of power – either by the automated control system or using the shift paddles on the steering wheel. The quick-shift control has been updated once again

in the interests of rapid manual gear changes. The long seventh gear keeps revs low, helping to lower fuel consumption when out of town or on the motorway. The transmission can also let the car coast in neutral in certain situations, while a special low-viscosity oil brings about a further reduction in CO<sub>2</sub> emissions.

Further improvements have been made to the shift comfort and acoustic properties of both the eight-speed Steptronic transmission fitted as an option in the BMW 118d (and as standard in the BMW 120d xDrive) and the eight-speed Steptronic Sport transmission in the BMW M135i xDrive. Swift, automatic gear changes make sure the car is driving in the highest possible gear, even when travelling at low speeds. The driver can also change gear manually using the shift paddles on the steering wheel.

### **Intelligent connectivity increases efficiency.**

Intelligent connectivity enables the two automatic transmissions to adapt their shift strategy according to the planned route and driving situation. If the BMW 1 Series is equipped with a navigation system and Active Cruise Control with Proactive Driving Assistant, both transmissions will factor in the data from these systems to avoid unnecessary gear changes in a quick succession of bends. When approaching a vehicle ahead, they also shift down early in order to use engine braking to scrub off speed.

The coasting and Auto Start Stop functions also take their cue from the data supplied by the navigation system, the front-mounted camera and the sensors for the optional driving assistance systems. The coasting function is available with the Driving Experience Control switch set to COMFORT mode as well as in ECO Pro mode, and will only decouple the powertrain in situations where performance and comfort are not compromised. If the driver suddenly lifts off the accelerator, the powertrain stays connected so that engine braking can be used to support the ensuing deceleration. For the same reason, powertrain disconnection is also prevented when approaching a junction or a vehicle ahead. Inefficient engine shutdown by the Auto Start Stop function when stopping briefly at junctions or roundabouts is also avoided. Plus, the movement of vehicles ahead is registered in order to determine the ideal moment for stopping and starting the engine.

## Driver assistance systems. New, innovative aids for the premium compact class.



The new, third-generation BMW 1 Series benefits from an array of new, innovative driver assistance systems filtering down to the premium compact BMW from higher model classes for the first time. These systems lend the driver a helping hand both with the task of driving – in complex situations, for instance, or in monotonous driving conditions such as traffic jams and heavy flowing traffic – and with parking. Depending on the system in question, camera images and data gathered by radar and ultrasonic sensors are used to monitor the vehicle's surrounding area and either alert the driver to hazards or minimise the risk of an accident by means of corrective braking and steering.

The optional Cruise Control with braking function makes life easier on long-distance journeys by automatically accelerating or slowing the car to maintain the desired speed set by the driver. The Active Cruise Control system with Stop & Go function goes one step further by not just maintaining the chosen cruising speed, but also automatically keeping a safe distance from vehicles travelling ahead. The cruising speed can be set manually or imported from the traffic sign recognition system. The system is operational at speeds of up to 160 km/h (99 mph) and is able to brake models with an automatic transmission to a stop if necessary – and also pull away again, either by itself or at the driver's request, depending on how long the car is stationary for. On models with a manual gearbox, the system works at speeds between 30 and 160 km/h (19 – 99 mph).

Standard equipment in Europe includes collision and pedestrian warning with city braking function, which also alerts the driver to the presence of cyclists. Depending on the situation, the system can bring the BMW 1 Series to a halt, thereby avoiding a collision or minimising its consequences. Also fitted as standard is the Lane Departure Warning system with active lane return, which is operational from 70 to 210 km/h (44 – 130 mph). The optional Driving Assistant additionally comprises the Lane Change Warning system, which prompts the driver to guide the car back onto the correct path at speeds from 20 to 250 km/h (12 – 155 mph) by means of a visual warning and, if necessary, a steering input. The Driving Assistant's remaining functions include the Proactive Driving Assistant, rear collision warning and crossing traffic warning, which reduces the risk of a collision when reversing into roads obstructed from the driver's view.

### **BMW Head-Up Display makes its BMW 1 Series debut**

The BMW 1 Series is now offered with the option of the BMW Head-Up Display. This system projects driving-related information onto an area of the windscreen measuring 9.2 inches in size, where the full-colour graphics appear directly in the driver's field of vision and the information can be assimilated without the driver diverting their eyes from the road. The information shown by the BMW Head-Up Display includes the car's speed, speed limits and overtaking restrictions, status indicators and warnings from the assistance systems, and route guidance and turn-off instructions. If the Active Cruise Control system is specified, distance warning appears in the BMW Head-Up Display only. An icon appears to alert the driver when they get closer to the vehicle in front than the pre-set minimum distance.

### **Parking Assistant with innovative reversing assistant.**

Comprehensive assistance with parking and manoeuvring is also available as an option in the BMW 1 Series. The optional Park Distance Control (PDC) with sensors at both the front and rear provides visual and acoustic signals to prevent collisions with obstacles located to the side or rear of the vehicle. A rear view camera can also be found on the options list. The optional Parking Assistant goes further still by offering automatic assisted parking in spaces that are either parallel or perpendicular to the road. The system takes care of steering the car, accelerating and braking, plus – on automatic models – making the necessary gear selections. On manual models, it is the driver who controls the direction of travel. The Parking Assistant is also capable of automatically manoeuvring out of parallel parking spaces.

Making its debut in the premium compact class is the innovative reversing assistant, which helps the driver to exit parking spots or manoeuvre when space is limited. Already featured on the BMW 3 Series, this system represents a further step towards automated driving. The reversing assistant offers the highly convenient option of automated reversing in confined spaces or situations where the driver does not have a clear view, such as multi-storey car parks or entrances to courtyards. To do this, it stores the steering movements for any section the car has just driven forward along at no more than 36 km/h (22 mph). The system is then able to reverse the vehicle for distances of up to 50 metres by steering it along exactly the same line it took when moving forward. All the driver has to do is operate the accelerator and brake pedals and monitor the vehicle's surroundings. The reversing assistant can back the car up at a maximum 9 km/h (5.5 mph).

# BMW ConnectedDrive. BMW Digital Key and BMW Intelligent Personal Assistant provide the latest in smart driver support.



The new BMW 1 Series is also making big strides on the connectivity front. It is available with the option of two new smart features that have previously only been seen in BMW models higher up the range and are now set to make day-to-day driving simpler for customers in one of the brand's premium compact models for the first time: the BMW Digital Key and BMW Intelligent Personal Assistant.

## **Turning the smartphone into a car key.**

The smartphone is turning into an increasingly indispensable device in today's world, providing people with a communication and entertainment hub and even a digital payment method they carry around with them at all times. Now, the smartphone is also able to replace a conventional car key for BMW 1 Series drivers. If the Comfort Access option is specified, the BMW Digital Key allows the car to be locked and unlocked from a smartphone using Near Field Communication (NFC) technology. Holding the smartphone up to the door handle opens the car – even if the phone battery is dead. The engine can be started as soon as the phone has been placed in the smartphone tray or wireless charging tray. Accessible via BMW Connected once the owner's identity has been checked, the Digital Key offers unrivalled flexibility, as the driver can share it with up to five other people. The BMW Digital Key is available for top-of-the-range NFC-capable Samsung Galaxy smartphones running Android 8.0 and above. Alternatively, the BMW Key Card can be used. This sophisticated option also features NFC technology and so offers the same functionality as a suitably equipped smartphone. All of which makes it ideal for visits to the workshop or valet parking at a hotel or restaurant.

## **BMW Intelligent Personal Assistant: expert and conversation partner.**

The BMW Intelligent Personal Assistant first seen in the BMW 3 Series Sedan also forms part of the control concept for the new BMW 1 Series. Uttering the short prompt "Hey BMW" allows drivers to operate their car, access its functions and obtain information simply by speaking. And the range of available functions and skills is constantly expanding as part of regular updates, which can be carried out over the air on a smartphone and in-car by Remote Software Upgrade.

The BMW Intelligent Personal Assistant is a digital character with his own personality, who can learn routines and habits and subsequently apply them in the appropriate context or provide casual conversation. He helps the driver, learns their preferences and is familiar with their favoured settings – e.g. for the seat heating or the places they drive to frequently using the navigation system (“Take me home”). Saying “Hey BMW, I’m cold” will prompt him to adjust the temperature inside the car accordingly. One unique feature over other digital assistants is that drivers can give this one a name (for example, “Hey Charlie”).

The BMW Intelligent Personal Assistant is first and foremost a genuine BMW expert. He is familiar with virtually all of the vehicle’s functions and is able to operate them as required or even explain them clearly if necessary (“How does the High Beam Assistant work?”). The assistant can provide current status information (“Is the oil level okay?”) and help answer questions (“What warning messages do I have?” or “Hey BMW, how far can I drive before I need to refuel?”). He can even activate a combination of the driver’s favourite settings to enhance their well-being. For instance, “Hey BMW, I feel tired” triggers the Caring Car vitality programme that adjusts the lighting mood, music and temperature, among other things, in order to make the driver feel more awake. The BMW Intelligent Personal Assistant can also make light work of navigation, as he provides information on traffic jams along the route, searches for cafés in the area and finds free parking spaces at the destination.

### **State-of-the-art infotainment and sound systems.**

Needless to say, the BMW Intelligent Personal Assistant also makes it easy to access the desired music genre and seeks out suitable radio stations (“Play classical music please”). The in-car audio experience required is provided by the standard BMW Stereo sound system with its six speakers and 100-watt amplifier or the optional BMW HiFi sound system with ten speakers and 205 watts. The Harman/Kardon surround sound system with 464 watts of audio power and a total of 16 speakers can also be found on the options list.

### **Connected Navigation for a more relaxed arrival.**

Connected Navigation services allow internal and external information to be factored into route planning. BMW 1 Series drivers will be able to send destinations from various apps straight to their car’s navigation system. The most important destinations will be stored in BMW Connected and synchronised with the car, so that key addresses can be accessed from any device at any time.



The Parking Space Assistant is a smart helper that proposes various parking options to the driver in good time before they reach their destination. This service includes providing information on the nearest multi-storey car park as well as suggesting routes offering a particularly good chance of finding a parking spot close to the destination. The existing On-Street Parking Information and PARK NOW services are incorporated intelligently into the process. It is even possible to pay parking fees automatically in certain cities.

### **Operation by means of iDrive Controller, touch, voice or gestures.**

The new BMW 1 Series allows drivers to use a variety of operating methods, depending on the situation and personal preferences. In addition to the usual buttons on the centre console and steering wheel, other frontline control elements include the iDrive Controller – with touchpad from BMW Live Cockpit Plus upwards – and the standard 8.8-inch Control Display with touchscreen functionality. BMW Live Cockpit Plus also adds a navigation system and intelligent voice control with online speech processing. Finally, the optional BMW Live Cockpit Professional, based on the new BMW Operating System 7.0, brings together the fully-digital display and operating system (including two 10.25-inch displays) with maximum connectivity and customisability. Standout features include an adaptive navigation system and a hard-drive-based multimedia system. There is also the option of gesture control comprising seven different gestures, two of which can be assigned to functions of the customer's choosing. The graphics in the Control Display can also be personalised and are designed to always provide drivers with the right information at the right time.

All figures relating to the performance, fuel/electric power consumption and CO<sub>2</sub> emissions are provisional.

The fuel consumption and CO<sub>2</sub> emission figures are determined according to the European Regulation (EC) 2007/715 in the version applicable. The figures refer to a vehicle with basic configuration in Germany. The range shown considers the different sizes of the selected wheels/tyres and the selected items of optional equipment, and may vary during configuration.

The figures are based on the new WLTP test cycle and have been translated back into NEDC-equivalent values in order to ensure comparability between the vehicles. With respect to these vehicles, for vehicle-related taxes or other data based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ from the values stated here (depending on national legislation).

Further information on official fuel consumption figures and specific CO<sub>2</sub> emission values of new passenger cars is included in the following guideline: 'Leitfaden über den Kraftstoffverbrauch, die CO<sub>2</sub>-Emissionen und den Stromverbrauch neuer Personenkraftwagen' (Guide to the fuel economy, CO<sub>2</sub> emissions and electric power consumption of new passenger cars), which can be obtained free of charge from all dealerships, from Deutsche Automobil Treuhand GmbH (DAT), Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen and at <https://www.dat.de/co2>.