

The BMW ActiveHybrid X6. Contents.



1. Description in Brief.	2
2. Fascinating Efficiency: The BMW ActiveHybrid X6. (Short Version)	6
3. Concept: The World's First Sports Activity Coupé – Now with BMW ActiveHybrid.	18
4. Drivetrain: Superior Technology in a Winning Team.	21
5. Driving Experience: Greater Efficiency and Greater Dynamics Everywhere You Go.	28
6. Design: Clearly Unique.	37
7. Body and Safety: Mature Concept for Reliable Protection.	42
8. Features and Equipment: Exclusive Style, Innovative Details.	47
9. Production: Supreme Competence for the BMW X Models and BMW ActiveHybrid.	52
10. Specifications.	55
11. Output and Torque Diagrams.	57
12. Exterior and Interior Dimensions.	58

1. Description in Brief.

- The BMW ActiveHybrid X6 is the world's first Sports Activity Coupé with full hybrid drive offering a driving experience quite unique both in the segment of BMW X models and in the hybrid segment as a whole. Through its combination of a V8 gasoline engine and electric drive, the BMW ActiveHybrid X6 offers a significant increase in dynamic performance together with a reduction of fuel consumption and emissions by approximately 20 per cent. This joint enhancement of driving pleasure and efficiency clearly proves that the BMW ActiveHybrid X6 is a typical BMW in the hybrid segment.
- BMW ActiveHybrid technology offers the driver three significant options: to drive under electric power alone, to use the power of the combustion engine, or to benefit from the combination of both drive modes. Driving completely free of CO₂ in the electric mode is possible up to a speed of 60 km/h or 37 mph. The combustion engine then cuts in as required (as a function of load conditions) and is automatically switched off when driving in overrun at a speed of less than 65 km/h or 40 mph.
- The drive system featured in the BMW ActiveHybrid X6 consists of a 300 kW/407 hp V8 power unit with BMW TwinPower Turbo Technology and two electric motors developing 67 kW/91 hp and, respectively, 63 kW/86 hp. Maximum system output is 357 kW/485 hp, peak torque is 780 Newton-metres/575 lb-ft. This makes the BMW ActiveHybrid X6 the most powerful hybrid vehicle in the world.
- Through its unique balance of performance and fuel economy the BMW ActiveHybrid X6 sets new standards both in the hybrid vehicle segment and in the overall market of BMW X models. Acceleration from a standstill to 100 km/h comes in 5.6 seconds. Average fuel consumption in the EU5 test cycle is 9.9 litres/100 km (equivalent to 28.5 mpg imp), the CO₂ emission rating is 231 grams/kilometre.
- Integration of the two electric motors in the two-mode active transmission of the BMW ActiveHybrid X6 allows two self-sufficient modes of operation. One mode is for setting off in particularly dynamic style and for driving at low speeds, the second is for driving at a higher speeds under

optimum conditions. This ensures all the benefits of BMW ActiveHybrid technology, with maximum efficiency under all loads and at all speeds. At the same time the seven-speed automatic transmission provided by the electric motors together with three planetary gearsets and four multiple-plate clutches ensures all the supreme driving behaviour, smoothness and performance so typical of BMW.

- When applying the brakes or taking back the gas pedal kinetic energy is converted into electrical energy and stored in the high-performance battery. To provide this benefit either one or both electric motors act as a generator, depending on driving conditions. The recuperation efficiency and output achieved by the system is 25 times greater than with Brake Energy Regeneration featured so far in BMW's production models.
- Electrical energy is stored in an NiMH high-performance battery with a capacity of 2.4 kWh. The temperature of the high-voltage battery is controlled as required and with maximum efficiency by liquid cooling interacting with the air conditioning and an external heat exchanger.
- The central electronic control unit ensures appropriate interaction of the combustion engine and electric drive crucial to the outstanding efficiency and unique qualities of the BMW ActiveHybrid X6. It converts high-voltage direct current from the high-performance battery into three-phase alternating current for the two electric motors in the hybrid transmission. It also coordinates all functions of the hybrid system including the distribution of torque and power between the combustion engine and the electric motors as well as the selection of gears.
- Over and above the electric motors, the high-performance battery also supplies electrical energy to the power-consuming items linked to the 12-volt on-board network. The BMW ActiveHybrid X6 is equipped with electromechanical power steering and an electrical climate compressor both remaining fully functional also when the combustion engine is switched off and enhancing the overall efficiency of the vehicle to an even higher standard through their on-demand consumption and uptake of energy.
- While braking the generator builds up stopping forces in the electric motors acting efficiently on all four wheels and precisely coordinated with the hydraulic brake effect in accordance with the driver's stopping and deceleration requirements. This provides not only optimum stopping power, but also the brake feeling so typical of BMW under all driving conditions including the all-electric mode. A further point is that like the

BMW X6, the BMW ActiveHybrid X6 comes with Dynamic Stability Control incorporating an enhanced range of functions such as Dry Braking and Fading Compensation as well as an electromechanical and hydraulic parking brake complete with an Auto-Hold function.

- In its driving behaviour and motoring comfort, the BMW ActiveHybrid X6 offers all the standards provided by BMW's latest X models, without the slightest difference between the electrical and the combustion drive mode. Intelligent xDrive all-wheel-drive technology with permanent, variable power distribution front-to-rear enhances the unique driving dynamics of the vehicle to an even higher standard.
- The current operating mode and function of the drive system is clearly presented by appropriate displays in the instrument cluster and in the Control Display itself. The charge level of the high-performance battery at the disposal of the driver and the current operating mode are shown by appropriate gauges beneath the rev counter. Being informed of the power uptake when driving in the electric mode, the driver may if he wishes maintain that mode longer in the interest of extra efficiency. And if he wishes the driver may also call up information on the current flow of energy in the Control Display.
- The particularly prominent Powerdome on the engine lid gives the BMW ActiveHybrid X6 a very distinctive look versus the "regular" BMW X6 as a significant visual highlight. "ActiveHybrid" model designations on the tailgate trim bar and on the front doors, the designation "BMW ActiveHybrid" on the door entry covers on either side, 19-inch light-alloy wheels (or, as an option, 20-inch light-alloy wheels in aerodynamically optimised Streamline design), as well as exterior paintwork in exclusive Bluewater metallic for the first time on a BMW X6 serve furthermore to highlight the particular character of this unique car.
- The BMW ActiveHybrid X6 combines innovative drive technology with the unique concept of a Sports Activity Coupé. The very progressive and exclusive character of this outstanding vehicle is further underlined by a particularly wide range of standard features as well as attractive options. The BMW ActiveHybrid X6 comes as standard with features such as comfort seats, automatic air conditioning, cruise control, the BMW Professional navigation system and Park Distance Control. A further important feature is the electrical opening and closing function on the tailgate. Options include an extended range of nappa leather upholstery in an exclusive Ivory White/Black colour combination complete with double blue seams, a glass sliding/vent roof, a trailer

towbar, as well as the complete range of BMW ConnectedDrive including innovative driver assistance systems.

- The safety features offered by the BMW ActiveHybrid X6 include frontal and side airbags, head airbags at the side, crash-activated headrests at the front, runflat tyres as well as a Tyre Defect Indicator enabling the driver to monitor the pressure individually in each tyre. BMW Adaptive Headlights complete with a Bending Light function supplement the bi-xenon headlights with their daytime driving lights featured as standard.

2. Fascinating Efficiency: The BMW ActiveHybrid X6. (Short Version)

BMW ActiveHybrid technology combines superior driving dynamics with equally superior efficiency pointing far into the future, bringing together both of these qualities to offer a truly unique driving experience.

The world's first Sports Activity Coupé with full hybrid drive therefore capitalises on the options offered by combining the combustion engine and the electric motor with a standard of perfection never seen before. BMW ActiveHybrid technology offers a significant increase in driving dynamics and at the same time reduces fuel consumption by approximately 20 per cent versus a comparable vehicle powered by a combustion engine alone. The result is even greater Sheer Driving Pleasure combined with enhanced fuel economy and CO₂ management providing the kind of progress to make the BMW ActiveHybrid X6 a typical BMW in the hybrid market.

The overall drive system featured in the BMW ActiveHybrid X6 consists of a 300 kW/407 hp V8 gasoline engine with BMW TwinPower Turbo Technology and two electric synchronous motors delivering 67 kW/91 hp and, respectively, 63 kW/86 hp. Maximum system output is 357 kW/485 hp, peak torque is 780 Newton-metres/575 lb-ft.

Precisely controlled interaction of the three power units optimises the overall efficiency of the BMW ActiveHybrid X6 at all speeds, with acceleration from a standstill to 100 km/h in 5.6 seconds. Top speed of the BMW ActiveHybrid X6 is limited electronically to 236 km/h or 146 mph (250 km/h or 155 mph with the optional Sports Package, with average fuel consumption in the EU test cycle of 9.9 litres/100 km (equal to 28.5 mpg imp) and a CO₂ emission rating of 231 grams per kilometre.

BMW's first full hybrid model is able to run exclusively on electric power – and that is entirely free of CO₂ – up to a speed of 60 km/h or 37 mph, with the combustion engine being activated automatically whenever required.

Ideal variation of the two drive modes for enhanced efficiency and dynamism is ensured by The two-mode active transmission provides the ideal combination of the two power modes for enhanced efficiency and dynamic performance at all times. With the two electric motors, three planetary gearsets and four multiple-plate clutches, drive power is transmitted through a seven-gear automatic transmission operated by the driver of the

BMW ActiveHybrid X6 via an electronic gear selector lever and, respectively, shift paddles on the steering wheel.

BMW's intelligent xDrive all-wheel-drive system spreads out engine power variably between the front and rear wheels.

The electric motors receive their energy from an NiMH high-performance battery positioned beneath the floor of the luggage compartment and feeding electric power also to the car's on-board network. Luggage compartment capacity is therefore the same as on the "regular" BMW X6 with its combustion engine. When applying the brakes or taking back the gas pedal kinetic energy is converted into electrical energy and is stored in the high-performance battery. To provide this function either one or both of the electric motors acts as a generator, feeding electric power generated without the slightest increase in fuel consumption directly into the high-voltage battery. Subsequent use of this energy to provide extra drive power significantly reduces the consumption of fuel.

Now the introduction of this innovative technology in such an exceptional vehicle concept adds a particularly fascinating motoring experience through the efficiency achieved in this way. Through its size, character and driving dynamics, the world's one and only Sports Activity Coupé is particularly well-suited to combine the progressiveness and the potential of BMW ActiveHybrid technology to a standard never seen before.

Unique efficiency ensured by two-mode active transmission.

BMW ActiveHybrid technology has been developed specifically for use in a particularly dynamic vehicle in this segment and for a broad range of practical use going far beyond city traffic as such. The big advantage, therefore, is the overall optimisation of drivetrain efficiency in all speed ranges and under all conditions.

The two-mode active transmission is based on an ECVT (electric continuously variable transmission) operating in two separate modes. One mode is for setting off with particular power and for driving at low speeds, the second is for optimum motoring at high speeds. The electric motors form one complete transmission system together with the mechanical components, providing the best conceivable transmission ratio under all driving conditions.

The two operating modes of the electric motors are supplemented and enhanced by fixed transmission ratios providing a total of seven gears for full use of the highly efficient hybrid function throughout the vehicle's complete

range of operation and at the same time maintaining the driving performance so typical of BMW.

Conventional but unique all in one: V8 gasoline engine with BMW TwinPower Turbo Technology and High Precision Injection.

The combustion engine is a technically unique eight-cylinder featured for the first time in the BMW X6 xDrive50i. The world's first V8 gasoline engine with two turbochargers in the V-section between the two rows of cylinders excels in particular through its smooth development of power setting in from the start and continuing in an ongoing surge throughout the entire speed range. The exceptionally spontaneous and direct response of this V8 with BMW TwinPower Turbo Technology results directly from the compact configuration of the engine allowing short manifolds as well as large cross-sections on the intake and exhaust side.

Displacing 4.4 litres, this outstanding eight-cylinder delivers maximum output of 300 kW/407 hp consistently maintained between 5,500 and 6,400 rpm. Superior torque of 600 Newton-metres/442 lb-ft is maintained all the way from 1,750 to 4,500 rpm, with High Precision Injection ensuring precise supply of fuel at all times.

Piezo-injectors positioned in the middle between the valves ensure a smooth, efficient and clean combustion process, the V8 naturally fulfilling both the European EU5 standard as well as the ULEV II limits in the USA.

Compared with the power unit featured in the BMW X6 xDrive50i, this new engine has been modified in numerous respects to the specific requirements of the BMW ActiveHybrid X6. The first point is that there is no starter, no alternator and belt drive for the climate compressor and hydraulic pump on the power steering. The main and low-temperature circuits in the cooling system have been modified for all-electric operation, the low-temperature circuit already serving to cool the charge air in the combustion engine being used additionally to cool the power electronics.

A specifically designed hybrid engine cover, finally, marks a clear difference versus the power unit in the BMW X6 xDrive50i.

Electric motors for enhanced performance on no extra fuel.

When accelerating the eight-cylinder power unit of the BMW ActiveHybrid X6, joining forces with the electric motors, ensures optimum efficiency and dynamic performance. As soon as the driver requires more power the two electric motors fed by the high-voltage energy battery supply additional torque for enhanced performance. This boost effect significantly

increases the overall output of the BMW ActiveHybrid X6, without any increase in fuel consumption.

While the two electric motors have almost the same output, they have been modified in their performance characteristics to meet individual requirements. The power delivered is 67 kW/91 hp and, respectively, 63 kW/86 hp, with peak torque of 260 Newton-metres/192 lb-ft and 280 Newton-metres/206 lb-ft.

The electric motors support the combustion engine effectively throughout the entire speed range, the additional electrically generated drive power serving to reduce the power output required on the combustion engine when driving steadily at a higher speed. This shift in load is perfectly controlled at all times to give the overall system enhanced efficiency and its maximum effect under practical driving conditions.

Maximum system output is 357 kW/485 hp, with peak torque of 780 Newton-metres/575 lb-ft. This makes the BMW ActiveHybrid X6 the most powerful hybrid vehicle in the world, with acceleration from a standstill to 100 km/h in just 5.6 seconds and top speed is limited electronically to 236 km/h or 146 mph (or, respectively, 250 km/h or 155 mph with the optional Sports Package).

The unique position of BMW ActiveHybrid X6 within the BMW X segment as a whole follows very clearly and convincingly from the comparison of these performance figures, on the one hand, with the vehicle's fuel consumption and emission ratings, on the other. The BMW ActiveHybrid X6 combines its supreme dynamism with equally fascinating efficiency, with fuel average fuel consumption in the EU test cycle of just 9.9 ltr/100 km (equal to 28.5 mpg imp) and a CO₂ rating of 231 grams per kilometre.

All-electrical driving mode reducing emissions to zero.

With its combination of two-mode active transmission and high-performance battery, the BMW ActiveHybrid X6 is able to run on its electric motors alone. This makes it a zero emission vehicle under such conditions, fulfilling even the strictest requirements foreseen for the future and ensuring the highest conceivable level of mobility.

The BMW ActiveHybrid X6 may run on electric power alone regardless of the ambient temperature, minimum operating temperatures being required only for the engine coolant, transmission fluid and high-voltage battery. A further requirement is that the high-performance battery is adequately charged.

Top speed in the electric mode is 60 km/h or 37 mph, maximum range is 2.5 kilometres (1.6 miles).

While driving electrically, the BMW ActiveHybrid X6 retains all its safety and comfort functions. The brakes remain fully operative thanks to electronic vacuum supply, not requiring the combustion engine to develop their full effect. The same applies to the EPS Electronic Power Steering, with steering assistance being generated as required and with maximum efficiency by an electric motor.

Even the air conditioning remains fully available without any restrictions, running efficiently on an electrical climate compressor. And since the high-performance battery supplies electric power to the complete 12-volt on-board network through a voltage converter regardless of the driving mode, all other power-consuming items such as the lights and the on-board entertainment system remain fully functional at their usual, consistent level.

Recuperation:

electric power generated without additional fuel consumption.

The BMW ActiveHybrid X6 features an enhanced version of Brake Energy Regeneration already used in BMW's current models running on a combustion engine alone, generating the electric power saved in the high-performance battery. In this case the electric motors act as generators in overrun and when applying the brakes in order to feed electric power into the high-voltage battery unit, again in the interest of maximum efficiency.

This uses energy otherwise simply lost in conventional vehicles as heat escaping through the brakes – and depending on road speed, one or both of the electric motors may perform this function.

The power delivered by the generator is approximately 50 kW, about 25 times as much as the power provided so far by Brake Energy Regeneration.

Generator delivering electrical brake power.

In the generator mode the two electric motors supply a lot of the energy required to slow down the vehicle whenever necessary. Indeed, the stopping power generated in this way is up to 3 metres/sec² or, respectively, 0.3 g in a purely recuperative process, significantly reducing the load acting on the mechanical brake system.

Sensotronic Brake Actuation (SBA) in the BMW ActiveHybrid X6 may be used at any time without a direct mechanical connection between the brake pedal and the hydraulic circuit. Pedal movement is recorded by sensors and split up

by a control unit into brake power generated in a regenerating and in a hydraulic process. At the same time an integrated pedal force simulator generates the usual brake feeling for the driver as an additional factor in this brake-by-wire solution.

The overriding task of the SBA system is to split up the brake power required by the driver into a regenerating and a hydraulic brake factor. Via the xDrive powertrain, the hybrid system in the BMW ActiveHybrid X6 is able to transmit brake forces to all four wheels generated by the stopping power of the recuperative electric motors. And whenever the stopping power required exceeds the level of 3 metres/sec², the control unit builds up additional brake force through the mechanical brake by means of the active brake servo.

In braking situations critical to driving stability the control unit receives additional signals from the DSC Dynamic Stability Control, intervening in the brakes and engine management to keep the vehicle safely on course. This ensures safe braking manoeuvres under all conditions, with all driving stability systems developing their complete effect when required regardless of whether the stopping power needed is generated electrically or hydraulically.

A further point is that all driving stability systems are tailored in their operation to the dynamic character of the Sports Activity Coupé also on the BMW ActiveHybrid X6. DTC Dynamic Traction Control selected at the touch of a button, for example, provides maximum traction and drive power on loose surfaces such as snow or sand thanks to its higher slip thresholds. And with the DTC mode activated, the driver may opt for a particularly sporting style of motoring all the way to a controlled power slide in bends.

BMW xDrive: intelligent all-wheel drive for extra performance, optimum driving stability and supreme traction.

The sports-oriented driving behaviour of the BMW ActiveHybrid X6 is also attributable to xDrive all-wheel-drive technology. Permanent all-wheel drive with electronically controlled, variable distribution of drive power front-to-rear gives the BMW ActiveHybrid X6, like all BMW X models, not only superior traction, but also enhanced driving dynamics.

BMW xDrive qualifies as an intelligent all-wheel-drive system in particular through the smooth division of drive power ensured by a power divider with an electronically controlled multiple-plate clutch feeding the appropriate level of power to the right axle with optimum wheel contact and grip on the road.

Under normal conditions BMW xDrive spreads out drive power to the front and rear axle in a 40:60 split, sensors consistently measuring wheel slip both

front and rear. The system is able to vary the balance of drive power within fractions of a second, BMW xDrive, unlike conventional all-wheel-drive systems, thus looking ahead and acting even before a wheel starts spinning.

Benefiting from these abilities, BMW xDrive raises the driving dynamics of the BMW ActiveHybrid X6 to an even higher level by recognising even the slightest tendency to over- or understeer right from the start and taking appropriate counter-action.

EPS Electronic Power Steering for even greater driving comfort.

The BMW ActiveHybrid X6 is the first BMW X model to feature EPS Electronic Power Steering. This allows active steering assistance both when driving with the combustion engine and in the all-electric mode. A further point is that the steering comes with integrated speed-related power assistance (Servotronic).

EPS provides optimum steering assistance under all conditions to give the driver that special feeling so typical of the BMW brand. Another advantage is the further reduction of fuel consumption, EPS significantly reducing the energy required for steering assistance compared with conventional, hydraulic power steering, since Electronic Power Steering only becomes active when steering assistance is actually required or desired by the driver. So when driving straight ahead in a straight line, for example, the electric motor does not consume any energy whatsoever.

Liquid cooling for even greater performance on the high-performance battery.

The high-voltage battery featured in the BMW ActiveHybrid X6 comes in nickel-metal hydride technology (NiMH). Capacity is 2.4 kWh, with 1.4 kWh available actively for practical use. Maximum output, in turn, is 57 kW, with the battery's control unit permanently determining the output level currently available as well as the charge status of the battery.

The high-performance battery comes with its own liquid cooling system incorporating a heat exchanger to cool the battery through the flow of air from the outside and, additionally, through the cooling circuit in the air conditioning. These two circuits are activated either individually or in combination with one another, depending on current requirements, the control unit selecting the most effective and efficient cooling option as a function of ambient temperature and the temperature of the high-voltage storage unit.

Cooling by the air conditioning is activated by an appropriate switch valve, with the electrical climate compressor being switched on automatically

whenever required. The interior and the high-voltage battery being cooled separately of one another, cooling is far more efficient than with a system using air cooling only, raising the energy storage medium to a far higher level of performance and retaining the hybrid functions longer in extreme weather and whenever the driver prefers a very sporting style of motoring. Ultimately, this gives BMW ActiveHybrid X6 an outstanding potential in driving dynamics far superior to other hybrid vehicles in the market.

Intelligent energy management and integral safety concept.

Power electronics developed especially for BMW ActiveHybrid technology ensures energy management on board the BMW ActiveHybrid X6 both very efficient and flexible in use. The electronic control system consistently controls the distribution of energy as a function of ambient conditions, the status of the vehicle, and the demands made by the driver. The most important incoming and control factor for the operating strategy chosen is the charge status of the high-performance battery saving the electrical energy generated through recuperation.

The BMW ActiveHybrid X6 naturally complies in full with the integral safety concepts developed for hybrid vehicles by BMW. With central control functions being integrated both in the power electronics and the energy battery, the system has the ideal starting point for fulfilling all kinds of international crash test standards as well as the demanding internal standards of the BMW Group, in particular guaranteeing the highest level of operating safety on all components in the high-voltage on-board network.

Some of the features of this safety concept are the different colours of cables to avoid any confusion, the presentation of clear safety warnings and the all-round cover on the entire system using extra-large insulation panels and newly developed connectors.

The high-voltage battery is housed in a high load-resistant steel casing and is fitted firmly inside the car, just above the rear axle at an extremely safe point for the event of a collision. The status of the storage modules is constantly supervised by integrated safety electronics, the driver being informed immediately of any malfunction and, wherever necessary, the entire system being automatically discharged and deactivated.

In the event of a collision, the system is switched off automatically within fractions of a second, the car's central safety electronics assessing the severity of an accident and ensuring a safe operating mode as a function of current, individual requirements.

Special hybrid drive Auto Start Stop function.

In city traffic, for example, the BMW ActiveHybrid X6 can be run in the all-electric mode for maximum efficiency. A further advantage is that the vehicle comes with a new generation of Auto Start Stop technology. Tailored specifically to the requirements of a hybrid car, this Auto Start Stop function allows a much higher standard of comfort and is available more often than the conventional system – in the BMW ActiveHybrid X6, for example, Auto Start Stop may be used at all outside temperatures.

As long as the engine is switched off, the electric climate compressor automatically maintains the climate and temperature desired within the passenger compartment. All other electrically operated functions are also maintained, with the on-board network being consistently supplied with power from the high-voltage storage unit.

Additional displays informing the driver of the operating status and efficiency of the hybrid system.

Operation of the hybrid system and current operating conditions are presented clearly and understandably in the displays. The most important information is shown in the central instrument cluster, clearly separated according to the various operating modes. Further information and technical explanations, in turn, are shown in the Info Display in the centre console.

The drive displays are split up into a conventional rev counter for the combustion engine and special displays for electric drive in the lower part of the instrument cluster. Clear visual presentation of these functions shows the driver that the vehicle is ready to go. The electric drive displays relevant to the driver are the charge status of the high-voltage storage unit, the recuperation display, the support provided by the electric motors when accelerating through their boost function, as well as the driving stages in the all-electric mode. In the Control Display this information is supplemented by additional data on current operating conditions and the current flow of energy.

Specific set-up of the suspension and the lightweight brakes.

The chassis and suspension of the BMW ActiveHybrid X6 is largely the same as the technology already featured on the BMW X6 xDrive50i. The front axle is a double track arm configuration ensuring excellent driving dynamics, superior motoring comfort and smooth directional stability. The Integral-IV rear axle has been modified to reflect the specific characteristics of the hybrid model in terms of weight distribution and drive power, guaranteeing absolute supremacy on the road also ensured by self-levelling with air suspension providing a consistent ride height also when carrying a heavy load.

Lightweight brakes decelerate the BMW ActiveHybrid X6 by means of swing-calliper brake discs incorporating covers and pistons made of aluminium. Brake disc diameter is 385 millimetres or 15.2" up front and 345 millimetres or 13.6" at the rear.

Very attractive 19-inch light-alloy rims in V-spoke design come as standard, and 20-inch light-alloy rims in aerodynamically optimised Streamline design have been developed exclusively for the BMW ActiveHybrid X6 as an option. In each case the tyres are runflat tyres enabling the driver to continue to the workshop even after a complete loss of pressure. And it almost goes without saying that the BMW ActiveHybrid X6 comes as standard with a Tyre Defect Indicator incorporating individual tyre pressure control.

Bodyshell and safety: intelligent lightweight construction, optimised occupant safety.

Intelligent lightweight construction and a special structure for maximum solidity also characterise the bodyshell of the BMW ActiveHybrid X6. Apart from frontal and hip thorax airbags, curtain head airbags at the side are also standard within the interior.

The BMW ActiveHybrid X6 comes with three-point inertia-reel seat belts on all seats featuring belt force limiters and belt latch tensioners on the front seats. To protect the occupants from cervical spine injury in the event of a collision at the rear, the front seats feature crash-activated headrests, the rear seats come as standard with ISOFIX child seat fastenings.

All restraint systems are masterminded by central safety electronics, rollover sensors serving to activate the curtain airbags and belt latch tensioners in the event of an impending rollover.

Featured as standard, dual bi-xenon headlights not only ensure optimum illumination of the road ahead in the dark, but also provide a daytime light function through their corona rings. The BMW ActiveHybrid X6 furthermore comes as standard with a light and rain sensor automatically controlling the vehicle's lights and screenwipers as required.

Another feature available as an option is Adaptive Headlights complete with Bending Lights and variable light distribution. As an option, finally, information relevant to the driver may be projected on to the windscreen via the Head-Up Display in a particularly ergonomic position.

Over and above safety-relevant driver assistance systems, BMW ConnectedDrive offers a range of further services enhancing driver

comfort and allowing optimised use of the infotainment systems in the BMW ActiveHybrid X6. This range of mobility services comprises features such as BMW Assist with a telephone enquiry service and an Enhanced Emergency Call function including automatic detection of the vehicle's location, BMW Online, BMW TeleServices as well as unrestricted use of the internet in the vehicle.

Supreme level of standard equipment including the Professional navigation system and comfort seats.

The BMW ActiveHybrid X6 comes as standard with the BMW Professional navigation system masterminded via iDrive likewise featured as standard or, respectively, with enhanced voice control. Using BMW Routes, in turn, BMW ConnectedDrive customers are able to retrieve the most beautiful routes directly in the car via BMW Online at the touch of a button. And apart from navigation data, the user is also able to save his personal music collection on a hard disc within the car offering a capacity of no less than 80 GB.

Other features coming as standard are electrically adjustable comfort seats with a memory function, cruise control and Park Distance Control. A further feature likewise coming as standard is an electrical opening and closing function on the tailgate.

Top View is available as optional extra.

Other options include an extended range of nappa leather upholstery in an exclusive Ivory White/Black colour combination with blue double stitching, a glass sliding/vent roof, and a towbar with a removable ball head.

The BMW ActiveHybrid X6: Sports Activity Coupé of the highest standard, BMW ActiveHybrid with maximum efficiency.

The BMW ActiveHybrid X6 combines an innovative vehicle concept with cutting-edge drivetrain technology to provide a truly unique driving experience. The enhancement of both dynamic performance and all-round efficiency gives BMW's Sports Activity Coupé, as unique as it already is, additional fascination and appeal, BMW ActiveHybrid technology achieving a supreme level of efficiency in this outstanding model, confirming BMW's great competence in the area of drivetrain development.

From outside the BMW ActiveHybrid X6 differs through only a few details from the "regular" models with their conventional drivetrain technology. So apart from the special hybrid displays in the instrument cluster, door entry trim

covers proudly bearing the designation “BMW ActiveHybrid” on the driver’s and front passenger’s doors add a particular highlight and sign of distinction.

Particularly the very impressive Powerdome on the engine compartment lid ensures a clear distinction of this very special vehicle from outside, “ActiveHybrid” model designations on the tailgate trim bar and the front doors as well as body paint in exclusive Bluewater metallic offered for the first time on a BMW X6 likewise alluding to the very special character of this very special vehicle.



3. Concept: The World's First Sports Activity Coupé – Now with BMW ActiveHybrid.

- **First BMW production model with full hybrid drive.**
- **Most dynamic of all hybrid cars, unparalleled efficiency in its performance class.**
- **Truly thrilling: innovative technology in a unique car.**

“BMW offers hybrid technology to thrill the driver in every respect – Sheer Driving Pleasure in a fascinating vehicle.”

Dr. Klaus Draeger, Board Member Development of BMW AG

The BMW ActiveHybrid X6 combines an innovative vehicle concept and future-oriented drivetrain technology to create a truly unique car. With this innovative, high-performance rendition of hybrid drive in the world's first Sports Activity Coupé BMW offers a truly fascinating driving experience.

The BMW ActiveHybrid technology featured in the BMW ActiveHybrid X6 is conceived particularly for use in a highly dynamic vehicle within this special segment and for motoring far beyond the confines of city traffic. In terms of size, character and driving dynamics, the Sports Activity Coupé is indeed particularly well-suited for bringing out the full potential of BMW ActiveHybrid technology.

The specific configuration chosen in this case combines the Sheer Driving Pleasure so typical of the BMW brand with a significant increase in efficiency, the BMW ActiveHybrid X6 thus fulfilling all the objectives of the BMW EfficientDynamics development strategy in a most comprehensive manner. Indeed, BMW's first production model with full hybrid drive is the most efficient vehicle of its kind in its performance class, at the same time offering the most dynamic opportunity to drive a hybrid vehicle.

The outstanding efficiency of BMW ActiveHybrid technology results from the supreme characteristics of the V8 power unit and the hybrid components and from the fact that all features of the drive system are precisely combined with one another. Unlike conventional hybrid cars, this ensures significant benefits in efficiency throughout all speed ranges, at the same time creating a new rendition of that sporting performance so typical of BMW.

Introducing innovative BMW ActiveHybrid technology in an outstanding production vehicle, BMW is at the same time adding very special fascination to the efficiency achieved in this way, the progressive character of the world's first Sports Activity Coupé and the trendsetting efficiency of BMW ActiveHybrid technology supplementing each other in a truly outstanding manner.

Innovative and unique:

BMW ActiveHybrid technology in the Sports Activity Coupé.

BMW's full hybrid production model is based on the BMW X6 which, in itself, has paved the way into a new segment of vehicles, once again confirming the innovative power of the brand. In its design, the world's first Sports Activity Coupé combines the sporting elegance of a large BMW Coupé with the powerful presence of a BMW X Model, its unique driving characteristics resulting from dynamic performance on the road so typical of the brand combined with absolute supremacy on every kind of terrain.

BMW ActiveHybrid technology provides an unprecedented driving experience through which the BMW ActiveHybrid X6 stands out clearly from other vehicles in its segment and from conventional hybrid models. The electric motors offer their qualities right from the start in spontaneously developing power when setting off, the power split provided by the Two-Mode Active Transmission in all further driving situations ensuring absolutely precise interaction of electric drive and the combustion engine in the interest of supreme dynamics and impressive efficiency.

The BMW ActiveHybrid X6 thus combines the outstanding experience of a supreme eight-cylinder at all speeds with a precise and fast-shifting automatic transmission offering no less than seven gears. And if he wishes, the driver may shift gears manually through the electronic gear selector lever as well as shift paddles on the steering wheel.

Best-of-hybrid:

optimum drivetrain technology for different vehicle concepts.

Conventional hybrid systems have been used so far above all in small or medium-sized cars, serving to enhance efficiency in city traffic or at low speeds. To provide greater performance and run at higher speeds, such vehicles would require larger and heavier electric motors detrimental for the overall characteristics of the vehicle. Now the Two-Mode Active Transmission in the BMW ActiveHybrid X6 sets off this fundamental drawback.

The hybrid components featured in the BMW ActiveHybrid X6 are the result of close cooperation in development within the Global Hybrid Cooperation

established jointly by the BMW Group, General Motors, and DaimlerChrysler. Within this joint venture, the equal-ranking partners pool their know-how and resources at a joint Development Center in Troy, Michigan, concentrating in the process on a flexible system concept.

The hybrid components developed in this way are then integrated in the respective vehicles individually by each manufacturer, taking the specific characteristics of each brand into account. On the BMW ActiveHybrid X6, these unique characteristics are ensured by the unprecedented combination of an eight-cylinder power unit and the Two-Mode Active Transmission.

BMW ActiveHybrid technology is based on a modular concept which, following the strategy of “best-of-hybrid”, integrates the optimum components in different vehicle concepts. Hence, the full hybrid concept of BMW ActiveHybrid X6 provides the ideal qualities for the specific character and requirements of this particular vehicle, just like the mild hybrid concept in the BMW ActiveHybrid 7 likewise reaching production level in the year 2009.

The BMW ActiveHybrid X6 represents the pinnacle in hybrid development dating back at BMW all the way to the 1980s and tested, for example, as early as in 1991 in the BMW E1 electric car. This was followed by further vehicle concepts, among them a hybrid-drive BMW 518i in 1995.

Today hybrid technology is a firm highlight of the BMW EfficientDynamics development strategy, the outstanding potential of this drivetrain technology already proven, inter alia, by the BMW X5 EfficientDynamics presented in 2003 and the BMW Concept X3 EfficientDynamics shown to the public for the first time in 2005.

BMW ActiveHybrid raises the development of drive systems enhancing both efficiency and dynamics in a most effective manner to a new and unprecedented level. This innovative vehicle concept proves that even large and dynamic vehicles may well meet the strictest requirements today for environmentally-conscious motoring, at the same time opening up new horizons in terms of driving pleasure and aesthetic design.

4. Drivetrain: Superior Technology in a Winning Team.



- **BMW presents the most powerful hybrid in the world.**
- **V8 power unit with BMW TwinPower Turbo Technology and two electric motors delivering overall system output of 357 kW/485 hp.**
- **Supreme variability and efficiency in generating and transmitting drive power through the Two-Mode Active Transmission and BMW xDrive.**

“Never before have the combustion engine and hybrid components been matched to one another as precisely as in the BMW ActiveHybrid X6.

The V8 power unit with BMW TwinPower Turbo and the Two-Mode Active Transmission form a perfect team.”

Hans-Stefan Braun, Project Manager BMW Drivetrain Development ActiveHybrid X6

The drive system featured in the BMW ActiveHybrid X6 is made up completely of cutting-edge components offering top technology the world over unparalleled in particular in terms of all-round efficiency. This applies to the V8 gasoline power unit with BMW TwinPower Turbo Technology and to the two synchronous electric motors integrated in the innovative Two-Mode Active Transmission developed specifically for the BMW ActiveHybrid X6 and BMW's intelligent xDrive all-wheel-drive system, the high-performance battery with its particularly high capacity, and the power electronics serving among other things to mastermind the highly effective generation of electric power through Brake Energy Regeneration.

Both the individual details and the overall concept clearly bear out BMW's leading competence in the development of drive systems. This superiority is also expressed clearly by the full hybrid technology featured for the first time in a BMW, BMW ActiveHybrid technology capitalising on both the strengths of the combustion engine and the specific qualities of electric drive to offer a truly outstanding combination of these two drive modes.

The BMW ActiveHybrid X6 is the most efficient vehicle in its performance class. At the same time it comes right at the top of all hybrid vehicles worldwide in terms of driving dynamics through its overall system output of 357 kW/485 bhp.

Eight-cylinder power unit with TwinPower Turbo Technology.

The combustion engine is an eight-cylinder absolutely unique in technical terms presented for the first time in the BMW X6 xDrive50i. The world's first V8 gasoline engine with two turbochargers and two catalytic converters in the V-section between the two rows of cylinders develops maximum output of 300 kW/407 hp from engine capacity of 4.4 litres, maintaining this supreme power all the way from 5,500 – 6,400 rpm. Torque peaks at 600 Newton-metres/442 lb-ft in the speed range between 1,750 and 4,500 rpm.

With BMW TwinPower Turbo Technology four cylinders are each supplied with compressed air by one turbocharger for a particularly spontaneous and direct response to the gas pedal. Engine power builds up without the slightest delay, continuing all the way to high engine speeds.

The innovative arrangement of the turbochargers also benefits the response of the engine, the new position of the intake and outlet ducts helping to keep the intake pipes and manifolds shorter and provide larger cross-sections significantly minimising pressure losses on both the intake and exhaust side.

High Precision Injection developed by BMW ensures precise dosage of fuel at all times. In the same process the cooling effect of the fuel injected directly into the engine allows a compression ratio exceptionally high on a turbocharged engine, further enhancing the efficiency of the V8 power unit. Piezo-injectors positioned in the middle between the valves help to make the combustion process particularly smooth, efficient and clean, the V8 power unit therefore fulfilling both the European EU5 standard and the ULEV II standard in the USA.

Compared with the BMW X6 xDrive50i, the power unit has been modified in a number of its features to meet the specific requirements of the BMW ActiveHybrid X6. First, there is no longer a conventional starter, just as the alternator and belt drive for the a/c compressor and the hydraulic pump on the power steering have both been dropped. The main and secondary coolant circuit, in turn, have been modified for all-electric motoring, and a heat insulation plate protects the power electronics additionally from excessive temperatures.

The position of the oil filler manifold has been modified, the conventional torque converter is replaced by a two-mass flywheel, and the exhaust system has been modified for an optimum acoustic effect when the combustion engine fires and cuts in in the all-electric mode. Last but not least, the specially designed engine cover serves to distinguish this unique power unit also in its design and looks.

Two-Mode Active Transmission as the central unit in fully hybrid drive.

The Two-Mode Active Transmission with its fully integrated electric motors is the central unit in the drive system featured in the BMW ActiveHybrid X6. Developed specifically by BMW for the Company's first full hybrid vehicle, the Two-Mode Active Transmission ensures optimum interaction of the combustion engine and electric drive in the interest of maximum power and efficiency at all speeds.

In its dimensions, the transmission is virtually identical to a conventional automatic transmission and is arranged directly behind the combustion engine. Following the principle of an ECVT Electric Continuously Variable Transmission, the Two-Mode Active Transmission provides the mechanical connection between three planetary gearsets and four multiple-plate clutches in a configuration allowing the power split required for the drive power coming from the combustion engine and the electric motors in two transmission ranges and therefore ensuring unique variability in the combination of the two power sources conventional hybrid drive is not able to offer.

One of the two transmission modes is specifically for setting off and accelerating at low speeds, the second is for driving at higher speeds under optimum conditions. When setting off only one electric motor is activated at the beginning, enabling the BMW ActiveHybrid X6 to drive under electric power alone up to a speed of 60 km/h or 37 mph. As soon as the driver requires more power, the second electronic motor automatically fires the eight-cylinder power unit and subsequently acts as a generator providing a permanent flow of electric power. The combustion engine is automatically added to the power flow in accordance with the driver's requirements and the level of performance needed, and is cut off by the electronic control unit when coasting at speeds below 65 km/h or 40 mph.

Power is transmitted by the Two-Mode Active Transmission acting as a seven-speed transmission operated by the driver by means of an electronic gear selector lever on the centre console. As an alternative to the automatic mode, the driver may also opt for manual selection of gears, shifting up and down either sequentially by moving the gear selector lever appropriately or by using the gearshift paddles featured as standard on the steering wheel of the BMW ActiveHybrid X6.

Electric motors increasing system output to 357 kW/485 hp.

The two electric motors offer almost the same degree of power but have been modified in their performance characteristics as a function of their specific purpose and application. Their output is 67 kW/91 hp and,

respectively, 63 kW/86 hp, with peak torque of 260 Newton-metres/192 lb-ft and, respectively, 280 Newton-metres/206 lb-ft.

Maximum system output developed jointly by the combustion engine and the two electric motors is 357 kW/485 hp, with combined torque of 780 Newton-metres/575 lb-ft. This makes the BMW ActiveHybrid X6 the world's most powerful production hybrid, with acceleration from a standstill to 100 km/h in 5.6 seconds. Top speed is limited electronically to 236 km/h (146 mph) or, respectively, 250 km/h (155 mph) in combination with the optional Sports Package.

The outstanding position of the BMW ActiveHybrid X6 within the BMW X Model segment results in particular from the balance of this kind of performance, on the one hand, and the vehicle's fuel economy, on the other. Fuel consumption is a mere 9.9 litres/100 kilometres (equal to 28.5 mpg imp), the CO₂ emission rating is 231 grams per kilometre.

High-performance battery with separate liquid cooling systems.

The electric motors receive their energy from a nickel-metal-hydride (NiMH) high-performance battery fitted beneath the floor of the luggage compartment and feeding power also to the vehicle's on-board network. Even with the combustion engine switched off, this maintains all electrically operated functions including the automatic air conditioning, with electric power generated through the recuperation of brake energy. To perform this function the electric motors serve as a generator in overrun and when applying the brakes in order to feed electric power generated on no extra fuel into the storage units.

The high-performance battery in BMW ActiveHybrid X6 has a capacity of 2.4 kilowatt hours, with 1.4 kWh being used actively for running the vehicle. To provide the power required, the high-voltage direct current coming from the high-performance battery is converted into three-phase alternating current for the two electric motors. The maximum power available for a period of three seconds is 57 kW, the control unit for the NiMH battery serving to permanently measure and determine various data such as the power currently available and the charge level.

The high-performance battery comes with its own liquid cooling system incorporating a heat exchanger to cool the battery both through outside air and, additionally, through the coolant circuit in the air conditioning. Both circuits are activated as required either individually or in an appropriate combination, the control unit choosing the most effective and efficient

cooling option as a function of ambient temperature and the temperature of the high-performance battery.

The cooling function using the vehicle's air conditioning is activated by an appropriate switch valve, the electrical a/c compressor is activated automatically as required, with the interior and the battery being cooled independently of one another.

This ensures much more efficient cooling than with systems cooled by air alone, helping to make the energy storage unit significantly more efficient and maintaining the hybrid functions longer both under extreme weather conditions and whenever the driver prefers a particularly sporting style of motoring. This, in turn, gives the BMW ActiveHybrid X6 a dynamic potential quite unique in comparison with other hybrid vehicle.

Power electronics for highly efficient energy management.

Power electronics developed especially for BMW ActiveHybrid serves to keep energy management on board the BMW ActiveHybrid X6 both efficient and flexible at all times, consistently masterminding the distribution of energy as a function of ambient conditions, the status of the vehicle, and the driver's individual requirements. The most important parameter for determining and controlling the operating strategy is the charge status of the high-performance battery storing electrical energy generated through the recuperation process.

The power electronics also mastermind the charge process of the high-performance battery during recuperation, alternating current generated by the generators through Brake Energy Regeneration being converted into direct current subsequently fed into the battery.

Recuperation using energy released when applying the brakes.

To generate the electric power stored in the high-performance battery, the BMW ActiveHybrid X6 uses an upgraded version of the Brake Energy Regeneration already featured in BMW's current models running on a combustion engine alone. In overrun and when applying the brakes, the electric motors act as generators feeding power into the high-performance battery.

This uses energy lost on conventional vehicles as heat dissipated from the brakes. Depending on the stopping power applied, this task of recuperating brake energy is performed either by one or both of the electric motors. The output generated in the generator mode of approximately 50 kW is about 25 times higher than the energy supplied so far by Brake Energy Regeneration.

Generator mode providing electric brake power.

In addition to these features, the two electric motors provide a major share of the brake power required by the vehicle when operating in the generator mode. Indeed, the electrical brake system is able to provide up to 3 m/sec^2 or, respectively, 0.3 g of brake power in the purely recuperative mode, thus taking a significant burden off the mechanical brake system.

Hybrid technology in the BMW ActiveHybrid X6 serves to convey brake power through the xDrive powertrain to all four wheels, thus benefiting from the stopping power provided by the electric motors in the recuperative mode. And whenever the stopping power required exceeds the level of 3 m/sec^2 , the control unit, interacting with the active brake servo, generates additional brake power through the mechanical brakes.

First BMW X Models with Electronic Power Steering.

The BMW ActiveHybrid X6 is the first BMW X Model to feature EPS Electronic Power Steering for active steering assistance both when running on the combustion engine and in the all-electric mode.

EPS Electronic Power Steering on the BMW ActiveHybrid X6 is combined with integrated steering assistance related to road speed (Servotronic).

EPS significantly reduces the energy required in comparison with conventional, hydraulic power steering, since this electronic system is activated only when power assistance is really required or is desired by the driver. When driving straight ahead, therefore, the electric motor does not take up and consume any energy, thus serving to reduce fuel consumption to an even lower level.

Variable, efficient, superior: intelligent xDrive all-wheel-drive technology.

The sporting performance of the BMW ActiveHybrid X6 is also attributable to xDrive all-wheel-drive technology, permanent all-wheel drive with electronically controlled, variable distribution of drive power front-to-rear giving this new model, like all BMW X Models, not only superior traction, but also enhanced driving dynamics.

BMW xDrive stands out as a particularly "intelligent" all-wheel-drive system by feeding drive power through a power divider with an electronically controlled multiple-plate clutch appropriately under all conditions to the axle and wheels with optimum grip on the surface below.

Under normal driving conditions BMW xDrive subdivides drive power in a 40:60 front-to-rear split. With sensors constantly measuring wheel spin on the front and rear wheels, the system is able within fractions of a second to vary the distribution of drive power, BMW xDrive – contrary to conventional all-wheel drive – therefore responding even before a wheel starts to spin.

Benefiting from these qualities, xDrive further enhances the driving dynamics of the BMW ActiveHybrid X6 by recognising even the slightest tendency to over- or understeer in good time and taking appropriate counteraction.



5. Driving Experience: Greater Efficiency and Greater Dynamics Everywhere You Go.

- **Typical BMW driving experience also in the all-electric mode.**
- **Acceleration from a standstill to 100 km/h in 5.6 seconds.**
- **Regenerative application of the brakes and electronic steering assistance for greater efficiency combined with the superior handling so characteristic of BMW.**

“The BMW ActiveHybrid X6 combines superior dynamics with outstanding efficiency. This makes it the BMW in the hybrid market offering that unique driving experience so typical of the BMW brand in every situation.”

Peter Tünnermann, Project Manager BMW ActiveHybrid X6

The world's first Sports Activity Coupé with full hybrid drive capitalises on the dynamic potential of hybrid technology in a truly unprecedented manner, providing a driving experience quite unique both in the segment of BMW X Models and in the hybrid market as a whole.

The drive system revolving around the unique Two-Mode Active Transmission ensures precise interaction of a high-performance V8 power unit with two electric motors, providing a standard of variability never seen before in a hybrid vehicle: The BMW ActiveHybrid X6 is able to cover short distances exclusively on electric power without the slightest CO₂ emissions, the impressively spontaneous and direct response of the vehicle opening up a new standard of driving dynamics so typical of BMW. At the same time the driver of the BMW ActiveHybrid X6 is also able to use the superior potential of 357 kW/485 hp overall system output for fascinating acceleration up to the electronically limited top speed of 236 km/h (146 mph) or, respectively, in combination with the optional Sports Package, 250 km/h (155 mph).

The drivetrain and suspension technology featured in the BMW ActiveHybrid X6 guarantees maximum safety, precision and driving pleasure under all conditions and in all kinds of terrain. Intelligent BMW xDrive all-wheel-drive technology, DSC Dynamic Stability Control, as well as the suspension incorporating a double-wishbone front axle and an integral-IV rear axle set the foundation for truly outstanding driving dynamics.

With this performance-oriented character, the Sports Activity Coupé conveys the driving pleasure so typical of a BMW X Model into the segment of hybrid vehicles, thus standing out clearly from comparable concepts.

A typical BMW also in the all-electric mode.

The drive system featured in the BMW ActiveHybrid X6 offers no less than three different operating modes: all-electric motoring in the full hybrid mode, exclusive use of the eight-cylinder combustion engine, and an infinitely variable combination of both of these variants. The transition from one to the other operating mode is masterminded almost unnoticeably for the driver by the central power electronics as a function of current load and performance requirements. In the process the Two-Mode Active Transmission feeds drive power to the wheels in the same way as a seven-speed automatic transmission with an extremely fast and precise gearshift.

The Two-Mode Active Transmission and the high-performance battery enable the BMW ActiveHybrid X6 as the first production BMW to drive exclusively on the power of its two electric motors. Maximum speed in the all-electric mode is 60 km/h, with a maximum operating range of 2.5 kilometres or 1.6 miles. While running on electric power, all safety and comfort functions remain fully operative, with the various power-consuming items being fed with electrical energy by the high-performance battery operating through the on-board network.

Overall system output of 357 kW/485 hp for superior dynamics under maximum load.

Setting off from a standstill under normal conditions, the BMW ActiveHybrid X6 starts out under electric power alone. As soon as the first electric motor has reached its power limit, the second electric motor automatically activates the eight-cylinder combustion engine and subsequently acts as a generator supplying electric power to the first electric motor. The transition from all-electric to conventional operation and drive power is absolutely smooth and seamless.

Whenever the vehicle is running under particularly high loads the driver, pressing down the gas pedal all the way, is able to build up appropriate feedback from the V8 power unit for maximum acceleration he will genuinely experience and feel in the vehicle. A mechanical path activated at the same time by the Two-Mode Active Transmission serves furthermore to increase engine torque when setting off for particularly powerful traction and pulling force.

At a steady speed the main supply of power comes from the combustion engine, with one electric motor offering additional boost to provide the drive power desired by the driver on reduced output from the V8 power unit, while the other electric motor serves as a generator to deliver electrical energy. This combination of the two power sources significantly enhances the efficiency of the vehicle also at high speeds, the Two-Mode Active Transmission providing the optimum transmission ratio under all conditions for supreme performance and efficiency in one. The result is that unique supremacy so typical of a BMW, based on the running smoothness and elasticity of a large-capacity V8 power unit.

The drive system in the BMW ActiveHybrid X6 provides its full potential when accelerating all-out from medium or high speeds. With its maximum output of 300 kW/407 hp, the eight-cylinder gasoline engine featuring BMW TwinTurbo Technology serves initially as the only source of drive power for optimum efficiency and superior traction. Then, as soon as the driver requires even more power and performance, the two electric motors cut in for additional output, increasing overall system power to 357 kW/485 hp, with peak torque of 780 Newton-metres/575 lb-ft.

Using this boost effect, the BMW ActiveHybrid X6 offers a dynamic potential for dynamic acceleration and superior overtaking manoeuvres. Flexibility when accelerating from 80 – 120 km/h is up by approximately 5 per cent over the corresponding model with a conventional drive system. And at the same time this enhanced power and performance does not come at the expense of greater fuel consumption, since the boost effect is delivered exclusively by the electric motors fed with energy from the high-performance battery generated without any additional consumption of fuel.

Acceleration from a standstill to 100 km/h comes in 5.6 seconds. This means that the BMW ActiveHybrid X6, despite its inevitably higher weight, offers the same kind of dynamic potential as the BMW X6 xDrive50i running exclusively on an eight-cylinder power unit. Top speed is limited electronically to 236 km/h or 146 mph. And equipped with the optional Sports Package, the BMW ActiveHybrid X6 offers even higher top speed of 250 km/h or 155 mph.

Boost effect for supreme spontaneity in shifting gears and dynamic acceleration without the slightest interruption of power.

The electronic control unit featured on the hybrid drive system ensures an ongoing, continuous surge of power at all times, response boost, as it is called, increasing maximum power to an even higher level when shifting gears. This the driver will feel when accelerating without any noticeable interruption of power and traction during gearshifts.

In a kick-down manoeuvre for maximum acceleration, the electronic control unit generates stationary boost from the beginning when shifting back, then providing this extra power immediately after the driver has chosen a lower gear.

Both of these features give the BMW ActiveHybrid X6 unprecedented spontaneity in responding to every movement of the gas pedal.

Brake system combining recuperative and hydraulic stopping power while retaining the same feeling for the pedal as before.

Matched to the ability of the BMW ActiveHybrid X6 to drive in the full hybrid mode exclusively on the power of the electric motors with the combustion engine switched off, a number of vehicle functions have been modified for all-electric operation. The specific configurations chosen for this purpose nevertheless ensure a harmonious driving experience not deviating in any way from the usual feedback provided by a conventional vehicle running exclusively on combustion power.

A pedal force simulator integrated in the Sensotronic Brake Actuator (SBA), for example, simulates the brake feeling to which the driver is accustomed, even though under normal operating conditions signals are transmitted according to the brake-by-wire principle without a mechanical connection between the pedal and the brake circuit. When applying the brakes the central electronic control unit first activates the recuperation mode using the electric motors as generators, the brake power developed in this way being transmitted by the xDrive powertrain in the BMW ActiveHybrid X6 to all four wheels as a function of current traction conditions.

The electrical brake system is able to generate stopping power of up to 3 m/sec^2 or, respectively, 0.3 g through recuperative energy alone, thus taking a significant load off the mechanical brake system. Only when the driver calls up additional stopping power by kicking down the brake pedal does the mechanical brake system in the BMW ActiveHybrid X6 cut in accordingly.

The split of overall brake power into regenerative and hydraulic power remains quite unnoticeable to the driver and the feedback he receives in terms of pedal forces, brake dosage and fading maintains the usual feeling already offered by the brake system in all BMW cars.

The lightweight brake system featured in the BMW ActiveHybrid X6 incorporates swing-calliper disc brakes with brake shoes and pistons made of aluminium. Brake disc diameter is 385 millimetres/15.2" up front and 345 millimetres/13.6" at the rear. The brakes themselves operate very

smoothly and ensure an extremely high level of resistance to fading, consistent lightweight construction serving to reduce unsprung masses and improve both driving comfort and agility.

To maintain appropriate brake power assistance also in the all-electric mode, the BMW ActiveHybrid X6 comes with an electrical vacuum pump. Should the electrical system suffer a defect or failure of any kind, a mechanical fallback option will maintain the unrestricted function of the brakes – and should driving stability become critical while applying the brakes, the control unit will use additional signals from DSC Dynamic Stability Control to stabilise the vehicle.

Appropriate intervention in the brakes and engine management ensures safe and reliable braking qualities under all conditions, all the electronic driving stability systems in the BMW ActiveHybrid X6 operating smoothly and independently of whether brake power comes from electrical recuperation or mechanical application of the conventional brake system.

**Electronic power steering with Servotronic control:
optimum steering assistance also in the all-electric mode.**

To provide active steering assistance both in the combustion mode and when driving under electric power, the BMW ActiveHybrid X6 is the first BMW X Model equipped with EPS Electronic Power Steering.

This ensures optimum steering assistance in all situations and under all conditions, for the driving experience and feeling so typical of the brand. At the same time EPS reduces impacts conveyed from the road (bumps) to the sports steering wheel, without losing the desired feedback on road conditions required by the driver. A further advantage is that Electronic Power Steering is able to return the steering wheel after a bend actively to the straight-ahead position, reducing the steering effort required particularly at low speeds.

Servotronic speed-related steering assistance is a major feature of Electronic Power Steering in the BMW ActiveHybrid X6. Intentionally reducing power assistance at high speeds, Servotronic not only ensures good directional stability, but also provides greater precision in steering into bends and gives the driver that precise feeling at high speeds so typical of a BMW. At lower speeds, for example when parking, greater steering assistance serves in turn to reduce steering forces significantly.

Electronic gear selector lever and shift paddles on the steering wheel featured as standard.

The Two-Mode Active Transmission enables the driver of the BMW ActiveHybrid X6 to shift gears manually whenever he wishes either through the electronic gear selector lever or through shift paddles on the steering wheel. The paddles operate in roughly the same way as similar systems in motorsport, further accentuating the dynamic driving experience offered by the BMW ActiveHybrid X6. By pressing one of the two paddles, the driver tells the transmission to shift down, by pulling the other paddle he will make the transmission shift up, in each case by one gear.

Multifunction switches integrated in the spokes of the steering wheel allow quick and convenient operation of the audio and telephone system, without distracting the driver from traffic conditions.

Hybrid-specific Auto Start Stop for ongoing operation of the automatic air conditioning even with the combustion engine switched off.

The BMW ActiveHybrid X6 for the first time features a new generation of the Auto Start Stop function adapted to the specific requirements of a hybrid and at the same time operating with a significantly greater level of comfort. The combustion engine is switched off automatically when stopping at a road junction or traffic lights, again without any impairment of the driver's feeling for the vehicle, just as the V8 power unit starts without the slightest delay as soon as the driver calls up more power when accelerating.

During the short periods in which the combustion engine is switched off, and of course while driving under all-electric power, all the electrically operated functions of the vehicle remain fully operative, the on-board network receiving an ongoing supply of power from the high-performance battery. The electrical a/c compressor, for example, maintains full climate control of the passenger compartment and other electrical power-consuming items such as the lights and entertainment systems likewise remain fully available even with the combustion engine switched off.

Graphic presentation of hybrid drive functions.

Two displays in the cockpit of the BMW ActiveHybrid X6 provide information on the current operating status of the hybrid system. The most important information is presented in the central instrument cluster, clearly separated according to the different drive modes. Further information and technical explanations, in turn, are provided in the Control Display on the centre console.

The display in the central instrument is split up into a conventional rev counter for the combustion engine and special indicators for the electrical drive system at the bottom of the instrument. These displays are connected visually by information on the standby status of the vehicle, the indicators covering the electrical drive system relevant to the driver comprising information on the charge status of the high-voltage battery, the recuperation display, the boost effect supporting the electric motors while accelerating, as well as the gears in mesh in the all-electric mode.

**Sophisticated suspension technology,
effective driving stability systems.**

The chassis and suspension of the BMW ActiveHybrid X6 come largely with the same technical features as on the BMW X6 xDrive50i. The front axle is a double-wishbone configuration ensuring excellent driving dynamics, superior driving comfort and very good directional stability. The integral-IV rear axle, in turn, has been adjusted to the specific requirements of the hybrid model in terms of weight distribution and drive power, the rear axle therefore guaranteeing a supreme driving experience also benefiting from self-levelling by means of air suspension for high loads featured as standard.

All functions of DSC Dynamic Stability Control are carefully matched to the particularly dynamic character of the Sports Activity Coupé also on the BMW ActiveHybrid X6. Available at the touch of a button, DTC Dynamic Traction Control increases the slip thresholds for maximum driving power on loose surfaces such as snow or sand. And with the DTC mode in use, the driver is able to enjoy a particularly sporting style of motoring all the way to controlled drifts in a bend.

DSC in the BMW ActiveHybrid X6 comprises a wide range of other functions for safe and dynamic motoring. These include features such as ABS anti-lock brakes, ASC Automatic Stability Control, TSC Trailer Stability Control, HDC Hill Descent Control, DBC Dynamic Brake Control automatically maximising brake pressure for particularly high brake power, as well as CBC Cornering Brake Control and the ABD-X Automatic Differential Brake function automatically applying the brakes on a wheel about to spin and thus taking on the function of a differential lock.

Under extremely high brake temperatures an appropriate increase in brake pressure prevents the usual fading effect with its loss of brake power. Regular Dry Braking the driver will not even feel optimises the performance of the brake system in the wet – and as a further advantage the brake system automatically builds up moderate hydraulic pressure whenever the driver

takes his foot off the gas pedal very quickly, thus ensuring an optimum brake effect even faster in an emergency.

The BMW ActiveHybrid X6 comes with a parking brake using electromechanical or hydraulic power as required and operating without restrictions both in the full hybrid mode and with the combustion engine.

The driver activates or releases the parking brake by means of a button, with the parking brake featuring an on-demand Automatic Hold function automatically keeping the vehicle in position at a standstill without requiring the driver to operate the brake pedal again.

As yet a further helpful feature, the Start-Off Assistant makes it easier for the driver to set off on a gradient by holding the vehicle in position for about 1 ½ seconds after the driver has taken his foot off the brake.

**Intelligent xDrive all-wheel-drive technology:
variable power distribution for maximum supremacy and
the dynamic performance typical of BMW.**

Intelligent xDrive all-wheel-drive technology provides the foundation for the sporty driving behaviour of the BMW ActiveHybrid X6. Permanent all-wheel drive with electronically controlled, variable distribution of drive power between the front and rear axle gives this new vehicle and, indeed, all BMW X Models not only supreme traction, but also enhanced driving dynamics. BMW xDrive is able to vary the distribution of power within fractions of a second as soon as its sensors register any tendency to spin on the front or rear wheels.

Offering these qualities, xDrive supports the driving dynamics of the BMW ActiveHybrid X6 by effectively counteracting even the slightest inclination to over- or understeer right from the start. Should the vehicle show an inclination to oversteer, for example, BMW xDrive will reduce the transmission of power to the rear wheels pushing to the outside in a fast and finely dosed process the driver will not even notice. And at the same time he can still drive the BMW ActiveHybrid X6 with superior precision and in very sporting style.

Conversely, BMW xDrive prevents any tendency to oversteer, reducing the transmission of power to the front wheels pushing to the outside for greater lateral support and stability.

The bottom line is that the BMW ActiveHybrid X6 keeps the driver in control at all times, even under the most demanding conditions. So that intervention

by DSC Dynamic Stability Control connected to xDrive through Integrated Chassis Management is required only in exceptional cases.

6. Design: Clearly Unique.



- **Characteristic design of the world's only Sports Activity Coupé with discreet distinctions on the hybrid model.**
- **Clearly visible Powerdome alluding to innovative drive technology.**
- **Aerodynamically optimised wheel design and exclusive colour combinations.**

"The design of the BMW ActiveHybrid X6 is just as typical of BMW as are the car's driving characteristics. Appropriate distinctions authentically visualise the particular character of this very special model."

Anders Warming, Head of Exterior Design BMW Group

Through its characteristic concept features and drive components, the BMW ActiveHybrid X6 stands out significantly from all hybrid vehicles available so far. This exceptional status is also reflected by the design of BMW's first full hybrid production model, the very concept of the Sports Activity Coupé, through its progressive and truly unique look the world over, being ideally suited to bring out the particular qualities of BMW ActiveHybrid technology.

The special version of this unique four-door powered by BMW ActiveHybrid again combines the elegant and dynamically flowing roofline of a BMW Coupé with the typical features of a BMW X Model interpreted in very sporting style. And at the same time appropriate visual distinctions versus the other versions of the BMW X6 refer clearly to the innovative technology of the drivetrain.

Through its design alone, the BMW ActiveHybrid X6 is the authentic visualisation of outstanding driving qualities. The first Sports Activity Coupé with hybrid technology is clearly recognisable from every angle as a genuine BMW, all design features convincingly presenting that design language so characteristic of the brand.

First and foremost, this distinctive look is ensured by the sculptural shape typical of all BMW X Models, the front section, the side and the rear flowing smoothly into one another, all shapes and surfaces forming one harmonious unit.

The design elements typical of the BMW brand also come out in many details ranging from the BMW kidney grille through the dual round headlights and the powerfully contoured side-line all the way to the horizontal lines at the rear.

Dynamic orientation to the road combined with features typical of a BMW X Model.

The design of the BMW ActiveHybrid X6 is characterised by a range of features symbolising the car's clear orientation to the road. The short front overhang emphasises the dynamics of the car, the long overhang at the rear brings out its stretched and sleek look. The low window areas and the roofline tapering out gently to the spoiler at the rear bear clear reference to the unmistakable proportions of a coupé. The side panel, in turn, is separated by two strikingly contoured lines moving slowly towards each other at the front of the car to create a dynamic wedge look symbolising that forward-pushing motion.

The contour line extending along the side at the same level as the door openers is particularly muscular and smooth in its structure, supporting the dynamic wedge shape created by the shoulder line and the sill-line moving further apart beyond the rear.

The rear view of the BMW ActiveHybrid X6 is characterised by horizontal lines making the car look even wider and emphasising its stable stance on the road.

Four doors and the dynamic coupé-like roofline are combined with a high waistline and striking wheel arches to generate very good balance between the front and rear axle as a clear reference to all-wheel drive. Greater ground clearance, powerful bumpers, underfloor protection all round and a large tailgate are classic elements of a BMW X Model, the design of the vehicle also providing an authentic expression of the dynamic potential offered by the BMW ActiveHybrid X6 not only on the road, but also off the beaten track through its drivetrain and suspension technology.

The range of paintwork colours is largely the same as on the "regular" BMW X6. An additional colour exclusive to the hybrid version of the Sports Activity Coupé is Bluewater metallic, a cool, elegant, steel-like bluish colour emphasising the lightness and three-dimensional character of the body and enhancing the convex/concave interplay of the various body elements.

Front view:

the Powerdome as a clear symbol of innovative hybrid technology.

The front end of the BMW ActiveHybrid X6 is characterised by powerful muscle and presence. The most striking feature on the Sports Activity Coupé with hybrid drive is the clearly visible Powerdome on the engine compartment lid taking up the additional drivetrain technology featured on this special model. Looking beneath the engine lid, in turn, the beholder will immediately notice the special design of the engine cover proudly bearing a “Hybrid” model designation.

Large air intakes positioned far to the outside make clear reference to the superior power and performance of the eight-cylinder combustion engine. Together with the side panels wrapped around far to the inside beyond the headlights, these air scoops offer clear optical orientation to the wheels again emphasising the stability and stance of the vehicle on the road.

The air intakes at the side are subdivided horizontally by aluminium-coloured bars also encompassing the round foglamps. The centre air intake in the front bumper, finally, grows wide to the bottom, with its contours again showing clear visual orientation to the road.

The BMW ActiveHybrid X6 comes as standard with bi-xenon headlights. With their distinct “eyebrows” at the top, these dual round headlights create a particularly sharp and clear focus, an effect further enhanced by the characteristic daytime driving lights formed by light rings. The upright bars in the BMW kidney grille, in turn, come in high-class titanium colour like in the BMW X6 xDrive50i.

Side view: a unique silhouette highlighting a unique concept.

The powerful proportions of the BMW ActiveHybrid X6 come out particularly clearly from the side. The short front overhang emphasises the dynamic character of the vehicle, the roofline gently tapering out to the rear and the long body overhang at the back creating that stretched and sleek coupé silhouette.

The roofline reaches its highest point directly above the first row of seats, giving even greater emphasis to the driver as an effect most befitting for the extravagant design of the BMW ActiveHybrid X6. To the rear the side window frames come with that famous “Hofmeister kick”, the counter-swing at the bottom of the D-pillar so typical of BMW.

As on BMW X Models in general, the wheel arches on the BMW ActiveHybrid X6 show slightly square contours offering adequate space for 19-inch light-

alloy rims in V-spoke design featured as standard. Even larger 20-inch light-alloy rims in aerodynamically optimised Streamline design are also available exclusively for the BMW ActiveHybrid X6. Yet a further sign of distinction is the “ActiveHybrid” model designation in the front doors in brushed aluminium, the door entry strips on the driver’s and front passenger’s doors both bearing the designation “BMW ActiveHybrid”.

As an option the BMW ActiveHybrid X6 is available with newly developed roof railings. Through their extremely low and wide design as well as their attractive finish in powder-coated matt black or painted silver, the railings further emphasise the sporting character of BMW’s Sports Activity Coupé.

Muscular rear end with light graphics typical of BMW.

The BMW ActiveHybrid X6 comes at the rear with a particular rendition of the proportions typical of a coupé, naturally in the special style of a BMW X Model. The powerfully chiselled rear section reaches its full width around the wheel arches, the two tailpipes on the exhaust complete with their high-quality surrounds likewise guiding your eyes to the wheels.

The L-shaped rear light clusters again so typical of a BMW X Model come in this case in a dynamic, sweeping line, the rear lights extending far into the side panels to accentuate the overall width of the vehicle also at night. An aluminium trim bar in the lower section of the tailgate specific to this model proudly bears the designation “ActiveHybrid” at the right, supplemented harmoniously by the model designation “X6” on the tailgate itself.

Interior: sporting ambience with an exclusive touch.

The interior design again emphasises the active driving character of the BMW ActiveHybrid X6, with a sporting touch provided, inter alia, by the kneepads on either side of the centre console and the shift paddles on the sports steering wheel featured as standard.

The higher, semi-command seating position gives the driver and front passenger a particularly clear and good view of the traffic around them. The two occupants at the rear, in turn, enjoy very comfortable single seats separated from one another by a centre console, with good side support and integrated headrests.

High-class materials and elaborately finished surfaces underline the luxurious design of the interior. In addition to the variants available on the “regular” BMW X6, the interior trim is also available in this case in longitudinally polished aluminium.

Optional leather upholstery in exclusive nappa leather and the Ivory/White colour combination complete with blue double stitching, add a particularly exclusive touch to the interior of the BMW ActiveHybrid X6.

7. Body and Safety: Mature Concept for Reliable Protection.



- **All-round occupant protection further enhanced by specific hybrid features.**
- **Safety concept developed by BMW for the hybrid setting new standards.**
- **Generous feeling of space in a luxurious ambience.**

“The strong and stable body structure of the BMW ActiveHybrid X6 offers ideal conditions for a particularly dynamic and safe vehicle. All hybrid components are fully integrated into the comprehensive occupant safety and protection concept.”

Klaus Kompass, Head of Vehicle Safety BMW Group

The superior, dynamic potential of the BMW ActiveHybrid X6 interacts with an exemplary high standard of comfort and safety. At the same time the world's first Sports Activity Coupé with hybrid drive stands out not only through its unmistakable look, but also through its very generous interior dimensions. The construction of the body and the electronic safety features, in turn, ensure maximum occupant safety together with supreme driving dynamics. And when it comes to space and roominess at the rear and in the luggage compartment, this unique four-seater significantly outperforms all other, conventional coupés.

Proceeding from the high safety standard already offered by the BMW X6, the level of occupant safety has been further enhanced by specific hybrid model features. Hence, the BMW ActiveHybrid X6 offers the integral safety concept for hybrid vehicles developed by BMW in every respect, with central control functions integrated both in the power electronics and the energy storage system.

This strategy sets the foundation for fulfilling various international crash test standards as well as the high internal safety standards of the BMW Group, guaranteeing maximum operating safety of all components within the high-voltage on-board network.

Stable body structure and intelligent lightweight technology for enhanced occupant safety and agility.

The BMW ActiveHybrid X6, like the other models in the BMW X range, comes with a particularly strong and stable bodyshell. To optimise the vehicle's passive safety, BMW's engineers and safety specialists focused from the start in developing the body-in-white on making the passenger cell as stable as possible. Forces acting on the vehicle in an accident are therefore spread out on various load paths, for example through the engine supports and the drivetrain, to avoid extreme loads acting on individual structures.

To achieve an extremely high level of stability on minimum weight, the engineers responsible for developing the BMW ActiveHybrid X6 also concentrated consistently on intelligent lightweight technology in the process of development. Both the choice of materials as well as the arrangement and geometry of the support bars, load-bearing elements and trusses are based on an all-round concept ensuring both maximum crash safety as well as superior agility. The extra weight over the BMW X6 xDrive50i resulting from the integration of the wide range of hybrid components is approximately 260 kg or 573 lb.

Hybrid technology protected by an integral safety concept.

The objective in developing the BMW ActiveHybrid X6 was to match the safety concept already proven on the BMW X6 to the particular requirements of the innovative drive system, optimising safety in the process to an even higher standard. The result is the integral safety concept for hybrid vehicles developed specifically for this purpose by BMW.

Some of the features of this safety concept are clearly colour-marked cables, the clear presentation of safety instructions, as well as extra-large insulation covers and newly developed connectors protecting the surface of the entire system. The high-performance battery is fitted in a high load-resistant steel housing and installed firmly within the vehicle. In its position above the rear axle, the battery is very well protected in the event of a collision.

The status of the storage modules is consistently monitored by integral safety electronics, the driver being immediately informed of any malfunction and the modules being automatically discharged and deactivated if necessary.

In the event of a collision the system may be switched off automatically within fractions of a second, the vehicle's central safety electronics assessing the severity of an accident and ensuring safe operation of the system under all conditions. In less severe accidents the system remains fully functional and is switched off only in a really severe collision.

The safety concept of the BMW ActiveHybrid X6 also ensures full functionality of the electromechanical brake system in the event of the electrical brake-by-wire connections failing to operate. In such a case the pedal force simulator opens up a fallback function within fractions of a second, providing a conventional mechanical connection between the brake pedal and the hydraulic circuit for full brake power and lasting safety even without electrical support.

Six airbags, crash-activated headrests, rollover sensors.

Side curtain/head airbags on the front and rear seats come as standard in the new BMW ActiveHybrid X6 over and above the usual frontal and hip thorax airbags. Inflating out of the covers on the A-pillars and the roof lining, the curtain airbags protect the occupants both front and rear from injury in a collision.

It almost goes without saying that the BMW ActiveHybrid X6 comes on all seats with three-point inertia-reel seat belts. The restraint systems feature belt force limiters and pyrotechnical belt latch tensioners on the front seats.

Further standard features in the BMW ActiveHybrid X6 are ISOFIX child seat fastenings at the rear as well as crash-activated headrests on the front seats significantly reducing the risk of cervical spine injury in the event of an impact from behind.

All restraint systems are masterminded by central safety electronics taking the type and severity of a collision into account and activating the most effective safety components in response. The frontal airbags come with a two-stage gas generator, with the two stages being ignited a few milliseconds after each other, depending on the severity of an accident, to always maintain the right level of intensity.

Rollover sensors masterminding the airbags detect critical driving conditions which might possibly lead to a rollover without a side impact in advance. Networked to DSC Dynamic Stability Control, these sensors ensure a quick and early response of the curtain airbags and belt latch tensioners.

Tyre Pressure Control and runflat tyres to keep the driver going at all times.

Featured as standard in the BMW ActiveHybrid X6, Tyre Pressure Control monitors tyre pressure in each wheel. Whenever tyre pressure drops more than 25 per cent below the required level, a display in the instrument cluster warns the driver and helps to prevent damage to the tyres. In an emergency

the special rim contour prevents the tyre from jumping off the rim after a sudden loss of pressure, even at high speeds and in bends.

Reinforced side walls on the tyres, additional reinforcement strips and heat-resistant rubber compounds allow the driver, with the runflat tyres used on the BMW ActiveHybrid X6, to continue on to a workshop even on a completely flat tyre, travelling at a speed of up to 80 km/h or 50 mph and covering a distance of up to 250 kilometres or 155 miles, depending on the load the vehicle is carrying.

**Bi-xenon headlights featured as standard,
Adaptive Headlights as an option.**

Bi-xenon dual headlights featured as standard on the BMW ActiveHybrid X6 ensure optimum illumination of the road ahead almost in the same light as regular daylight not only in the dark, but also as daytime driving illumination provided by the very attractive and practical light rings. This makes the vehicle clearly recognisable also from a distance, the typical daytime driving lights clearly identifying the ActiveHybrid X6 from the start as a BMW.

The BMW ActiveHybrid X6 comes as standard with a light sensor automatically switching on the low-beam headlights as a function of ambient brightness.

The optional High-Beam Assistant ensures additional comfort at night, the system masterminded by a camera at the bottom of the interior mirror automatically switching back to low beam as soon as traffic is approaching the vehicle in the opposite direction or the distance to a vehicle ahead drop below a certain point.

The BMW ActiveHybrid X6 may also be fitted as an option with Adaptive Headlights illuminating the road ahead, following bends and winding contours. In the process the headlights swivel from side to side in accordance with the position of the steering wheel, the yaw rate, and the speed of the car. A further function integrated within the system, finally, is the Bending Light function provided by the foglamps.

Variable light distribution also optimises visibility on a straight stretch of road, innovative control of the lights as a function of road speed automatically enlarging the area of vision by broadening the light beam.

To prevent bumper-to-bumper collisions, the BMW ActiveHybrid X6 comes with a warning system for motorists following from behind: Whenever the driver applies the brakes all-out, with ABS cutting in, drivers following from

behind are prompted, by the brake lights on the BMW flashing on and off, to also apply their brakes all-out. And after the driver has applied the brakes very hard, bringing the car to a standstill, the hazard warning flashers are automatically activated.

Generous space at the rear, variable luggage compartment.

The BMW ActiveHybrid X6 offers generous space as well as a modern and luxurious ambience for up to four occupants. The comfort seats featured a standard for the driver and front passenger offer a wide range of electrically operated adjustment options, together with a memory function. The rear doors opening up wide, in turn, facilitate access to the two rear seats.

Headroom at the rear is particularly generous for a coupé, 944 millimetres or 37.2" of headroom guaranteeing maximum comfort even for tall passengers.

Seen from the rear, the window graphics in the BMW ActiveHybrid X6 provide the feeling of forward-urging openness and, as a result, a truly generous feeling of space.

The passenger and luggage compartments in the BMW ActiveHybrid X6 are clearly separated from one another in the style typical of a coupé. Luggage capacity available directly behind the rear seats is 470 litres or 16.5 cu ft. To increase luggage capacity, the driver and passengers may turn down the rear seat backrest in an asymmetric split, enlarging the capacity available to a maximum of 1,350 litres or 47.3 cu ft.

The BMW ActiveHybrid X6 comes with an automatic opening and closing function on the tailgate, the iDrive control system enabling the user to individually set the top position of the tailgate when open. This helps to avoid the risk of damage, for example when parking in a garage or underground car park with a low ceiling.

8. Features and Equipment: Exclusive Style, Innovative Details.



- **Exclusive features and equipment setting new standards for premium motoring in a hybrid car.**
- **Comfort seats and Professional navigation system featured as standard.**
- **Unique climate comfort thanks to BMW ActiveHybrid technology.**

“The BMW ActiveHybrid X6 combines supreme efficiency with all the creature comforts you wish to enjoy, without requiring any concessions. This applies not only to the vehicle’s dynamic driving qualities, but also to its sophisticated and exclusive equipment further highlighting the premium character of the BMW ActiveHybrid X6.”

Jens Lemon, Product / Launch Manager BMW ActiveHybrid X6

With its innovative features and equipment, the BMW ActiveHybrid X6 naturally comes with the same high standard as the BMW X6 powered exclusively by a combustion engine. In other words, this very special Sports Activity Coupé clearly conveys the premium character of the brand also in this area to the hybrid segment.

Indeed, the BMW ActiveHybrid X6 boasts a particularly broad range of standard features exceeding even the high level already offered on the existing BMW X Models, the outstanding exclusivity of the new vehicle being borne out inter alia by comfort seats for the driver and front passenger, the Professional navigation system, the Lights Package, and Park Distance Control. In addition, various comfort functions come in the direct context of BMW ActiveHybrid technology, one example being the automatic air conditioning remaining in full operation even when the combustion engine is switched off.

Like the other variants of the BMW X6, the Sports Activity Coupé with hybrid drive comes as standard with a high-end entertainment system featuring an MP3-compatible CD player, an AUX-in port and a hard disc memory for the user’s private music collection. Additional comfort when loading is provided by the automatic opening and closing function on the tailgate, while shift paddles on the steering wheel as well as the multifunction steering wheel itself enhance the sporting driving experience in the BMW ActiveHybrid X6.

The highlights in the wide range of optional comfort and safety features include active seat ventilation, Automatic Soft Close on the doors, the Head-Up Display, a back-up camera and the Top View system. Finally, it almost goes without saying that BMW's first full-hybrid models may be equipped with the wide range of mobility services offered by BMW ConnectedDrive.

BMW iDrive control system with direct selection and favourite buttons.

The BMW ActiveHybrid X6 naturally comes with the latest generation of BMW iDrive serving to activate and mastermind all entertainment, information, navigation and telecommunication functions either featured as standard or coming as an option. Around the Controller on the centre console, direct selection buttons enable the user to spontaneously switch among the CD, radio, telephone, and navigation functions, with the buttons themselves being rounded off by the three command buttons MENU, BACK, and OPTION.

The favourite buttons positioned beneath the audio and climate control units allow the user to save and retrieve all menu items available through iDrive. With its clear screen and attractive, easy-to-read graphics, the 8.8-inch high-resolution display sets the standard in the market. Positioned on the same level as the instrument cluster, the display is within clear sight of both the driver and front passenger, at exactly the right distance.

Professional navigation system with optimised voice control.

The BMW ActiveHybrid X6 comes with a hard disc memory for particularly comfortable operation and use of the Professional navigation system featured as standard. Offering a capacity of 80 GB, the memory allows exceptionally fast access to the digitally prepared maps required for navigation, with 12 GB reserved for a large collection of music files.

The user is able to enter his destinations either via the Controller or by voice entry now optimised to an even higher standard for entering the address desired in one single step. The system therefore gathers all information on the place, street and number read out by the user in one single command, then arranging this information automatically as required.

Full-screen presentation of maps by the Professional navigation system provides an incomparably detailed overview of the region the driver is currently travelling through, with maps as well as individual symbols presented whenever required as three-dimensional graphics.

An elevation map is also available to supplement the perspective presentation offered so far, and an assistance window may be opened in the Control Display as an alternative to full-screen presentation providing additional presentation angles and views independent of the main map.

The new High Guiding concept with integrated lane recommendation likewise enhances the efficiency of the control process offered by the Professional navigation system. High Guiding conveys specific detailed views such as the bending and turning rules at a complicated road junction from the display straight to the instrument cluster. Information may also be transferred directly to the optional Head-Up Display, projecting information relevant to the driver to his direct field of vision in the windscreen.

Right from the start, the audio system featured as standard in the BMW ActiveHybrid X6 offers a truly impressive experience in sound. The HiFi loudspeaker system with 12 loudspeakers available as an option, as well as the optional Professional HiFi system with no less than 16 loudspeakers, features digital equalising to adjust the quality of sound individually to each seat and the occupant's seating position. The optionally available USB port, finally, allows convenient integration of MP3 players and other external data media into the entertainment system masterminded by iDrive.

A DVD video system with an eight-inch TFT colour monitor is available as an option on the centre console. The DVD player integrated in the rear console, in turn, comes with its own control functions for playing audio, video and photo DVDs or CDs. And through an AUX-in bush, finally, the user may also connect external video sources such as game consoles or video cameras.

BMW ConnectedDrive with new functions.

BMW ConnectedDrive comes either as standard or as an option with innovative drive assistance systems serving to further enhance motoring comfort and safety in the BMW ActiveHybrid X6. At the same time BMW ConnectedDrive comprises a broad range of innovative offers and technologies networking the occupants with the car and the surrounding world in the interest of maximum comfort and optimised use of the various infotainment options, ultimately ensuring an even higher standard of safety.

The BMW ActiveHybrid X6 is available with the complete range of mobility services comprising features such as BMW Assist including a Telephone Enquiry Service as well as the Enhanced Emergency Call automatically determining and reporting the current location of the vehicle, BMW Online and BMW TeleServices with innovative remote control functions and unrestricted use of the internet in the vehicle.

Using BMW Routes as yet another service, the BMW ConnectedDrive customer may call up the most beautiful routes via BMW Online at the touch of a button and transfer his favourite routes compiled in the internet straight into the vehicle's navigation system.

The Head-Up Display offered as part of BMW ConnectedDrive serves to project data relevant to the driver straight on to the windscreen. Information presented in this way directly in the driver's line of vision obviously comes out very clearly, without in any way distracting the driver from the traffic around him.

Comprising a mobile phone preparation kit complete with a Bluetooth interface, BMW ConnectedDrive ensures safe and convenient use of the telephone also when driving. As an alternative, Smartphones may be integrated via the USB connection and enhanced connection of the music player in a mobile phone may be used to control both the entertainment and communication functions of an external source through BMW iDrive.

**Safe manoeuvring with Park Distance Control,
a back-up camera and Top View.**

PDC Park Distance Control featured as standard in the BMW ActiveHybrid X6 makes parking a lot easier, the PDC sensors precisely determining the distance between the vehicle and obstacles possibly in the way. Acoustic signals increasing in frequency as the distance becomes smaller give the driver clear information on the space still available for manoeuvring.

PDC may be supplemented on the BMW ActiveHybrid X6 by a back-up camera offering extra safety and comfort both when parking and manoeuvring in confined spaces with poor visibility. Positioned discreetly at the back of the vehicle, the camera is activated either at the touch of a button or automatically, together with PDC, as soon as the driver shifts to reverse. The high-resolution images provided by the wide angle lens are shown in colour and with an optimum perspective in the Control Display on the instrument panel, interactive trace lines furthermore presenting the optimum steering angle for parking and the tightest possible turning circle.

The back-up camera is particularly helpful when connecting a trailer, its zoom function serving to enlarge the image area around the trailer hook. Special static lines shown in the picture then help the driver to properly assess the distance to the trailer hook behind the vehicle, an interactive docking line related to the angle of the steering wheel making it easier to approach the towbar with utmost precision.

Top View provides an even more comprehensive overview of surrounding conditions. In this case the back-up camera, a front camera and two additional cameras in the side mirrors project the surrounding area to the right and left of the vehicle to the central Control Display. Taking the images coming from the cameras and the PDC signal, the system then generates a virtual image of the vehicle from a bird's eye view to precisely determine the current position of the vehicle. This then gives the driver the option, for example, to conveniently check the distance to the curb or possible obstacles, for instance when parking.

Towbar coupling with removable ball head.

The BMW ActiveHybrid X6 offers supreme safety also when towing a trailer. In connection with the optional trailer coupling, Trailer Stability Control integrated in DSC Dynamic Stability Control is activated as soon as a trailer is connected to the vehicle's electronics through the socket at the rear.

The ball head on the trailer coupling is removable and the vehicle itself is able to tow a load of up to 2,000 kilograms or 4,410 lb.



9. Production: Supreme Competence for the BMW X Models and BMW ActiveHybrid.

- **Top priority given to supreme quality in production for absolute perfection right from the start.**
- **Full integration of the BMW ActiveHybrid X6 in the BMW Group's flexible production system.**
- **Intense training and qualification of workers for hybrid and high-voltage technology.**

"We are proud that the world's most powerful hybrid vehicle is built at BMW Plant Spartanburg. And our associates are highly motivated to fulfil all the demands of our customers."

Josef Kerscher, Plant Manager BMW Plant Spartanburg / South Carolina (USA)

Like all other variants of the BMW X6, the BMW ActiveHybrid X6 is built at BMW Plant Spartanburg, South Carolina, USA. To ensure supreme precision and quality in production, the production processes applied in Spartanburg naturally fulfil the high standards of the BMW Group's world-embracing production network.

BMW Plant Spartanburg, which also builds the BMW X5 for the world market, is consistently expanding its role as the Competence Centre for BMW X Models. Using the most advanced production technologies, Plant Spartanburg is able to build several model series flexibly and efficiently on one single production line, meeting all the customer's individual requirements. Indeed, production capacities in Spartanburg are even to be increased in the medium term.

Starting production of the BMW ActiveHybrid X6 at BMW Plant Spartanburg, the competence in the integration of hybrid technology acquired in the series development of this model is now being used in practice for the first time. Associates particularly qualified for hybrid and high-voltage components fit the Two-Mode Automatic Transmission, the power electronics, high-performance battery and all other specific components in the various vehicles according to exact standards and requirements. Integration of these components is therefore precisely tailored to the overall production process.

Hence, all hybrid-specific operations are integrated in the production process in terms of the facilities used and the timetable applied, ensuring that the first

Sports Activity Coupé with hybrid drive is produced flexibly on the same assembly line at BMW Plant Spartanburg.

Quick, precise, efficient: robot technology in the Bodyshop.

More than 300 robots are used in building the bodyshell of the BMW ActiveHybrid X6, particularly the welding process being almost fully automated.

With key areas of the body being made of ultra-high-strength steel, ultimate precision is absolutely essential – which is precisely why robot technology is used here to a very great extent. Interacting with optical monitoring systems, high-tech robots apply the glue and bonding materials required for maximum strength and stability, while ultrasound testers are used to check out welded and bonded seams in an efficient, non-destructive process. Inline lasers and measuring cameras serve to monitor the exact dimensions of the body, all this speeding up the production process and guaranteeing a consistently high level of supreme quality.

The windows are fitted into the vehicle in two robot workbays, a camera-guided, high-precision measuring system controlling the application of glue and the exact position of both the windscreen and rear window. Subsequently the side windows are fitted by hand.

Qualified specialists for maximum quality in integrating the hybrid components.

A high degree of automation ensures utmost precision and quality also in the “wedding”, where the body comes together with the engine, transmission and chassis. In addition, a team of 14 specially qualified engineers works on the optimum integration of all hybrid-specific components. Hence, the Two-Mode Active Transmission is connected to the combustion engine and the drivetrain, the power electronics are installed, and the high-performance battery fitted into position in each case at the optimum point in the production cycle.

Hybrid-specific components are integrated in all at five points in the production process, the BMW ActiveHybrid X6 then going through all further steps in production on the same assembly line as all other variants of BMW's Sports Activity Coupé. This close interaction with the proven production process for the BMW X6 guarantees fulfilment of the BMW Group's high quality standards right from the start also on the hybrid version of the Sports Activity Coupé.

BMW Plant Spartanburg: a story of success since 1992.

The founding stone for BMW Plant Spartanburg was laid in 1992, with production of the BMW Z3 Roadster starting here three years later. The first BMW X5 then came off the assembly line in Spartanburg in September 1999, the Plant subsequently delivering the 500,000th BMW X5 not even six years later in June 2005.

So far the BMW Group has invested more than US\$ 3.5 billion in the Plant, with further investments of US\$ 750 million planned up to the year 2012. Further expansion of the Plant is to increase production capacity from 160,000 to 240,000 vehicles a year, creating some 500 additional jobs in the process.

Currently the BMW Group employs some 4,500 associates at Plant Spartanburg.

Less CO₂ emissions thanks to efficient models and sustainable production.

Plant Spartanburg, where BMW's first full-hybrid production car will be built, also sets the standard in the preservation of resources. In May 2006 the Plant switched over the supply of energy in its Paintshop to methane gas recovered from a landfill several miles away. This alone reduces CO₂ emissions by approximately 60,000 tonnes a year, equal to the heating energy consumed by some 15,000 households in the USA. At the same time this improvement cuts the cost of energy at the Plant by a six-digit Euro amount each year.

The generation of energy from methane has been further expanded in 2009, two new, highly efficient gas turbine generators delivering no less than 11,000 kW now catering for 28 per cent of the Plant's electricity demand and approximately 60 per cent of the overall energy requirement.

The BMW Group has invested some US\$ 12 million in this improvement alone.

10. Specifications.

BMW ActiveHybrid X6.



BMW ActiveHybrid X6			
Body			
No of doors/seats			5 / 4
Length/width/height (unladen)	mm		4877 / 1983 / 1697
Wheelbase	mm		2933
Track, front/rear	mm		1644 / 1706
Turning circle	m		12.8
Tank capacity	app ltr		85
Cooling system incl heater	ltr		21.8
Engine oil ¹⁾	ltr		8.5
Weight, unladen, to DIN/EU	kg		2450 / 2525
Max load to DIN	kg		575
Max permissible	kg		3025 / 3100
Max axle load, front/rear	kg		1460 / 1590
Max trailer load (12%), braked/unbraked	kg		2000 / 750
Max roofload/max towbar	kg		100 / 120
Luggage capacity	ltr		470-1350
Air drag	Cd x A		0.36 x 2.82
Gasoline engine			
Config/No of cyls/valves			V / 8 / 4
Engine technology			BMW TwinPower Turbo, High Precision Injection
Capacity, effective	cc		4395
Stroke / bore	mm		88.3 / 89
Compression ratio	:1		10.0
Fuel grade			Min 95 RON
Max output	kW/hp		300 / 407
at	rpm		5500-6400
Max torque	Nm/lb-ft		600/442
at	rpm		1750-4500
Electric motor 1			Electric synchronous motor
Configuration			
Max output	kW/hp		67 / 91
at	rpm		2750
Max torque	Nm/lb-ft		260/192.
at	rpm		0
Electric motor 2			Electric synchronous motor
Configuration			
Max output	kW/hp		63 / 86
at	rpm		2500
Max torque	Nm/lb-ft		280/206
at	rpm		0
Overall system output	KW/hp		357 / 485
Overall system torque	Nm/lb-ft		780/575
Electrical System			
Battery/location	Ah/–		2 x 70 / luggage compartment
High-voltage battery/location	kWh/–		2.4 / luggage compartment
Transmission			
Type			Seven-speed automatic transmission, electronic gear selector lever, shift paddles on steering wheel
Gear ratios	I	:1	3.889
	II	:1	2.619
	III	:1	1.800
	IV	:1	1.300
	V	:1	1.000
	VI	:1	0.825
	VII	:1	0.723
	Reverse	:1	Variable
Final drive		:1	3.640

Specifications.

BMW ActiveHybrid X6.

BMW ActiveHybrid X6		
Driving Dynamics and Safety		
Suspension, front		Double track arm axle
Suspension, rear		Integral-IV axle in lightweight steel, air suspension with automatic self-levelling
Brakes, front		Single-piston frame-calliper disc brakes
Diameter	mm	385 x 36 / vented
Brakes, rear		Single-piston swing-calliper disc brakes
Diameter	mm	345 x 24 / vented
Driving stability systems		Standard: DSC incl ABS, ASC, ADB-X, DTC Dynamic Traction Control, CBC Cornering Brake Control, DBC Brake Assistant, Hill Descent Control, Trailer Stability Control, Dry Braking, Brake Standby, Fading Compensation, Start-Off Assistant, Auto Hold, networked with intelligent xDrive all-wheel drive
Safety equipment		Standard: frontal airbags for driver and front passenger, side airbags for driver and front passenger, head airbags front and rear, crash-activated headrests at the front, three-point inertia-reel belts on all seats at the front with belt stoppers, belt latch tensioners and belt force limiters, crash sensors, rollover sensor system, Tyre Defect Indicator with individual pressure control on each wheel
Steering		Rack-and-pinion steering; 3,1 turns; Electronic Power Steering (EPS)
Steering ratio, overall	:1	19.5
Permanent all-wheel drive/ power distribution		Variable
Tyres, front/rear		255/50 R19 107W XL RSC
Rims, front/rear		9J x 19 light-alloy
BMW ConnectedDrive		
Comfort		Optional: BMW Assist featuring Inquiry Service, remote control functions and V-Info+, BMW TeleServices, integration of mobile terminals
Infotainment		Optional: access to the internet, BMW Online incl Parkinfo, NationalInfo, Google directory, News, real-time weather, Office functions, BMW Routes and music title update online
Safety		Optional: Adaptive Headlights with Bending Lights, High-Beam Assistant, Park Distance Control, Top View, back-up camera, BMW Night Vision, Head-Up Display, cruise control, Automatic/Enhanced Emergency Call
Performance		
Power-to-weight ratio	kg/kW	8.2
Output per litre	kW/ltr	68.3
Acceleration 0–100 km/h	sec	5.6
Standing start	sec	24.9
Top speed	km/h(mph)	236(146)
Top speed, electric	km/h(mph)	60(37)
Fuel consumption in EU		
Urban	ltr/100 km	10.8
Extra-urban	ltr/100 km	9.4
Combined	ltr/100 km	9.9
CO ₂	g/km	231
Emission rating		EU5
Miscellaneous		
Overhang angle, front/rear	°	26.1 / 25.9
Ramp angle	°	19.7
Ground clearance on unladen weight	mm	219

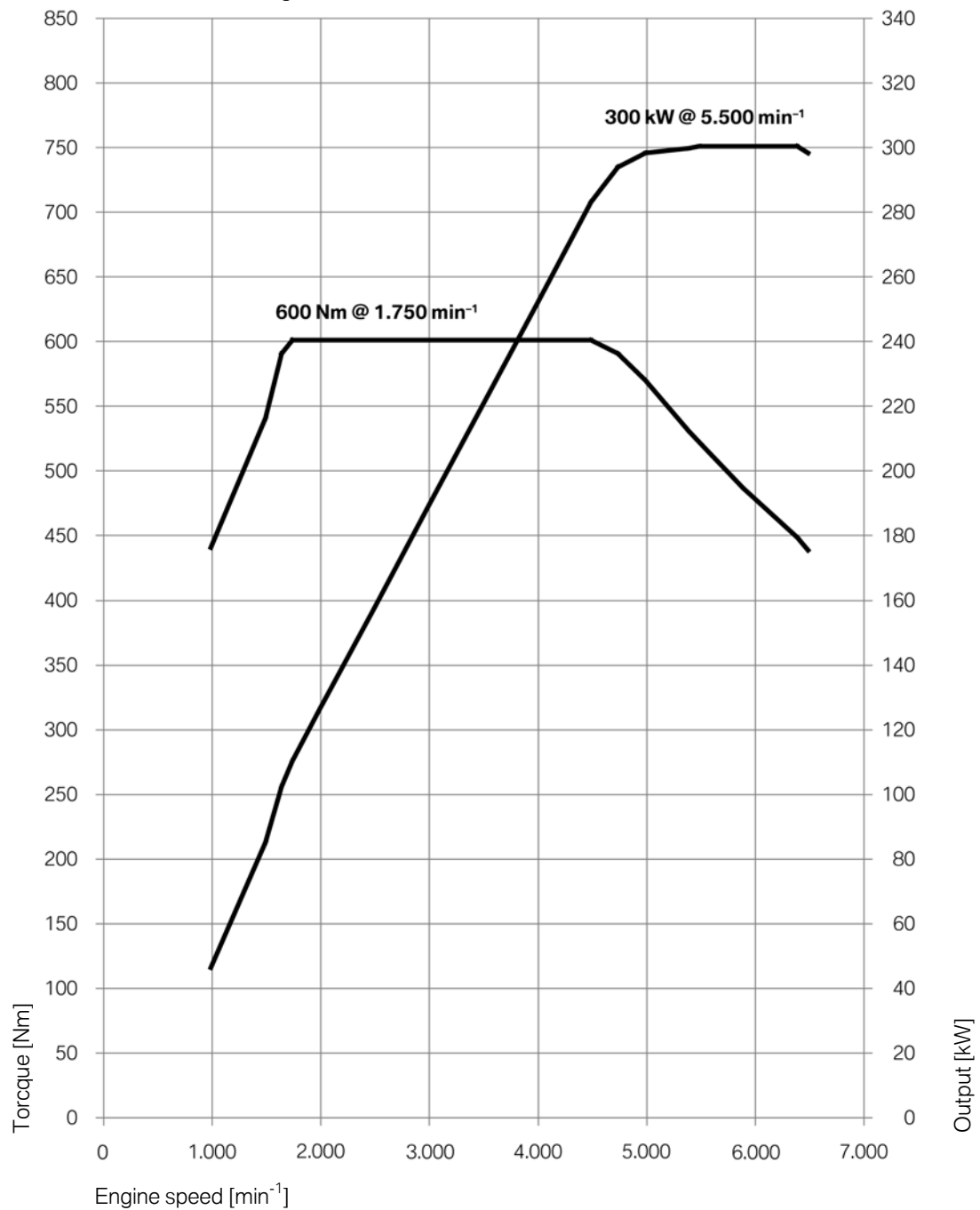
Specifications applicable to ACEA markets/homologation data apply to Germany only in part (weight)

¹⁾ Oil change

11. Output and Torque Diagrams.



BMW ActiveHybrid X6.



12. Exterior and Interior Dimensions.

