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**Worldwide debut of the all-new BMW i3.**

**The Ultimate Driving Machine in a new era of Individual Urban Mobility**

**Woodcliff Lake, N.J. – EMBARGO: July 29, 2013 08:30 Eastern Time . . .** BMW today introduced the all-new BMW i3 electric car, constructed in a revolutionary way from next-generation materials. The BMW i3 will go on sale in the US market in the second quarter of 2014, and starts with a base MSRP of \$41,350, before any federal or state incentives, and before Destination & Handling fee (currently \$925).

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## **1. Highlights: The All-New BMW i3:**

The new all-electric BMW i3 is a landmark in BMW's mission to provide a completely sustainable, electric vehicle that still stays true to the Ultimate Driving Machine moniker. The BMW i3 is the first product of the new BMW i sub-brand, and is a truly purpose built electric car. It's a new era for electro mobility at BMW.

The vehicle concept behind the BMW i3 was designed from the outset to incorporate an all-electric drive system. This has numerous advantages over "conversion" vehicles, in which the original combustion engine is swapped for an electric motor. The engineers can design whatever works best, in terms of construction, dimensions and configuration of the electric drive system's components. The car's development is dictated by the characteristics designed into the car by the development team and not by the constraints imposed by a pre-existing vehicle design. For example, the space in a conversion vehicle set aside for the fuel tank or exhaust system cannot be used. In the BMW i3 there is no need for this kind of compromise.

This leads to the LifeDrive architecture concept, which was purpose-built specifically for the BMW i3. It is comprised of two modules; the Life Module, and the Drive Module. Think of the Life Module as the passenger cabin, or greenhouse. It is the first-ever mass produced Carbon Fiber Reinforced Plastic (CFRP) passenger cell in the automotive business, and is a big factor in the cars efficiency. Carbon Fiber Reinforced Plastic is equally as strong as steel, while being 50% lighter, and 30% lighter than aluminum. The result is an electric car that weighs about 2,700 lbs (preliminary US figures).

Due to the lightweight, high tensile strength of CFRP, the passenger cell has added protection, and the battery has less work to do, which allows for the use of a smaller, lighter battery that saves even more weight, reduces charging time and increases range. The light weight design of the Life Module also lowers the BMW i3's center of gravity, making it a more engaging and dynamic car to drive.

The Drive Module, which is constructed out of 100% aluminum, consists of the 22-kWh, 450 lb. lithium-ion battery, electric drive train, MacPherson strut and 5-link rear suspension system and structural and crash components. The battery mounted in the rear, close to the drive wheels, gives impressive performance characteristics while also providing better traction.

Another benefit of the LifeDrive architecture concept is that there is no space-consuming transmission tunnel running through the center of the car, like in most internal combustion powered cars, because of the separate Drive Module. This gives the BMW i3 the interior space of the BMW 3 Series, while only having the footprint of the much smaller BMW 1 Series.

Even the vehicle's key is sustainably manufactured. The source material of the new bio-polymer key is based on castor oil pressed from castor seeds. The owner's manual is also made from renewable resources.

The interior is made using high quality renewable sources and recycled materials. The BMW i3 has the Next Premium interior, which blends sustainable resources with a premium feel for the same interior quality as the BMW 5 Series Sedan. 25% of the plastics in the interior and 25% of the thermoplastic parts on the exterior are made from either recycled materials or renewable sources.

According to studies carried out as part of BMW's Project i, involving more than 1,000 participants and conducted over some 12.5 million miles, it was revealed that the average daily distance covered was around 30 miles. The BMW i3 will be able to travel 80 to 100 miles on a single charge. This can be increased by up to approximately 12% in ECO PRO mode and by the same amount again in ECO PRO+ mode. It is able to recharge in only 3 hours with the use of a 220V Level 2, 32-amp J1772 charger. The SAE DC Combo Fast Charging, which charges the BMW i3 up to 80% in 20 minutes, and 100% in 30, can be had as an option.

In order to reduce range anxiety, a rear-mounted 650cc, 34 hp, two-cylinder, gasoline-powered Range Extender generator is available, which roughly doubles the vehicle's range. When the battery gets to a certain level, the Range Extender starts and maintains the battery's current state of charge. The Range Extender never directly drives the vehicle's wheels. The Range Extender adds roughly 330 lbs. to the vehicle curb weight and has a fuel capacity of 2.4 gallons.

Since 1999 according to the DOE, average gasoline prices in America have increased from approximately \$1.136 to \$3.618, or about a 218%. In the same time, the pricing of electricity has increased from 6.6 cents to 9.9 cents, a change of only 50%, making electricity a far more attractive commodity from a pricing standpoint.

## **BMW i3 Quick-Reference Highlights.**

- Pricing (before federal or local incentives) starts at \$41,350; \$45,200 for Range Extender model. Destination & Handling Fee not included.
- On Sale: Q2 of 2014 in the USA.
- BMW's 360 Electric electro mobility services.
- BMW i Remote app, which connects with the car.
- BMW Navigation is standard.
- BMW Intelligent Emergency Call ('eCall'), Anti theft alarm and Rear Parking Distance Control are standard.

## **Driving.**

- 170-hp, 184 lb-ft hybrid-synchronous electric motor with max. revs of 11,400 rpm.
- 80-100 mile real-world EV range.
- 22-kWh lithium-ion battery, which weighs 450 lbs.
- 650cc gasoline powered Range Extender optional; holds charge, doesn't power wheels.
- 0-30mph in 3.5 seconds, 0-60mph in approximately 7.0 seconds (preliminary).
- Top speed of 93 mph, electronically limited to preserve efficiency.
- BMW's signature, near-perfect 50-50 weight distribution.
- Ultra-tight turning radius (32.3 ft), which is ideal for city driving.
- Macpherson strut front and 5-link rear suspension set up.
- Single Pedal Driving Concept with Brake Energy Regeneration, which feeds power back into battery.
- 3 drive modes: Comfort, ECO PRO and ECO PRO+.
- 3 hour 220 V @32 amps charging time.
- Optional SAE DC Combo Fast Charging allows for 80% charge in 20mins; 100% in 30 mins.

## **Chassis and Body.**

- Purpose built construction. World's first mass-produced CFRP-constructed electric vehicle.
- Built on innovative LifeDrive architecture composed of two parts: Life Module and Drive Module.
- Life Module is essentially the cabin, constructed from Carbon Fiber Reinforced Plastic (CFRP).
- Drive Module is where all of the powertrain components are housed.
- Drive Module is made from 100% aluminum.
- Magnesium cross-member for instrument panel saves 20% weight vs. steel.

- BMW 1 Series external footprint with BMW 3 Series interior space.
- Adaptive Full LED headlights and LED taillights (standard in US market).
- Weighs in at roughly 2,700 lbs.
- No space-consuming transmission tunnel dividing car's interior.
- Pillar-less design with rear coach doors allow for easy entry and exit to rear seats.
- Driver-oriented super-ergonomic controls.
- Three vehicle Worlds (trim levels): Mega (standard in US), Giga, and Tera.
- Standard 19-inch light alloy wheels with unique 155/70 all-season tires. 20-inch light alloy wheels optional.
- No transmission tunnel and low console allows for Slide-through Experience, which benefits urban driving by the ability to exit from the passenger side.

## **Sustainability.**

- Made with sustainable, renewable materials.
  - Instrument panel surround and door trim use fibers from Kenaf plant.
  - Carbon fiber reinforced plastic (CFRP) roof panel is made partially with recycled CFRP from manufacturing process of other components
  - 25% of plastic used in interior comprised of recycled materials.
- Dashboard wood trim crafted from responsibly-forested eucalyptus.
- CFRP components are sustainably produced in Moses Lake, WA, USA, where the factory uses hydroelectric power.
- The Leipzig, Germany assembly plant uses wind-generated electricity.
- Olive-leaf extract is used to tan interior leather surfaces.

## **2. The Ultimate Drive Machine®.**

BMW makes the Ultimate Driving Machine, and that holds true for the BMW i3. The hybrid synchronous electric motor, which weighs only 110 lbs., is developed and produced specially by the BMW Group for use in the BMW i3, with maximum revs of 11,400 rpm, generates an output of 170 hp and outputs maximum torque of 184 lb-ft on tap from the moment the car pulls away. That's propels the 2,700 lb car from 0-30mph in 3.5 seconds, 0-60mph in approximately 7.2 seconds, and to an electronically limited top speed of 93 mph (preliminary USA figures). Much like engine braking with a manual transmission, but even more effective, the accelerator pedal also acts as a brake when the driver lifts off the accelerator.

The BMW i3 features Brake Energy Regeneration, which, when the driver lifts off, the motor acts as a generator and converts the kinetic energy into electricity, which is fed back into the battery for a range gain. This Regeneration is speed-sensitive, which means that

the car “coasts” for added efficiency at high speeds, and generates the strong braking effect at lower speeds.

The BMW i3’s accelerator pedal has a distinct “neutral” position. Rather than switching straight to energy Regeneration when the driver eases off the accelerator, the electric motor uses zero torque control to separate from the drivetrain and deploy only the available kinetic energy for propulsion. In this mode, the BMW i3 cruises using virtually no energy at all. This is another way anticipatory driving can preserve energy and increase the car’s range.

The impressive electric motor, small turning circle of 32.3 feet, – a major benefit to driving in the city – BMW’s near-perfect 50-50 weight distribution, precise electric power steering and the stable suspension set-up help to make the i3 as satisfying to drive as every other BMW.

The BMW i3’s tires are a unique 155/70/19 size on 19-inch light-alloy wheels, but the contact patch is the same of that of a more conventional 16-inch tire. To improve efficiency, they have low rolling resistance, and the narrow section width is a key factor in the BMW i3’s super-tight turning radius.

The BMW i3 uses the BMW eDrive rear-wheel drive powertrain previously found on the BMW ActiveE. eDrive offers driving dynamics worthy of the Ultimate Driving Machine name and offers zero tailpipe emission driving. Beyond the traditional immediacy of response offered by electric motors when pulling away, power development in the BMW i3 also remains unbroken through higher speeds. Power is sent to the rear wheels through a single-speed transmission, allowing the BMW i3 to accelerate with an uninterrupted flow of power up to its top speed.

### **3. City Friendly: The Future of Urban Mobility.**

The BMW i3 marks the introduction of a new type of megacity vehicle. Its small size allows it to easily maneuver and park on city streets, while the car’s short front and rear overhangs make parking in tight spaces much easier. Its sharp turning radius and nimble handling are the perfect match for city driving. In the front, the Slide Through Experience allows the driver to slide through the car and exit on the passenger side, to avoid exiting into a busy city street. This is made possible because of the absence of the transmission tunnel. The

coach doors make getting into and out of the car much more practical by eliminating the B pillar and creating one large opening to enter and exit.

Not having to fill up on gas is a big advantage while living in the city due to the lack of gas stations. Since electricity is so readily available, recharging is possible almost anywhere, and practically gives the BMW i3 unlimited range due to being able to charge at any and every stop.

Emission-free driving is also a plus in the city. Cities are so congested with cars idling at red lights or stop and go traffic, so having a car that runs on electricity that doesn't pollute is another way that the BMW i3 benefits the environment, and its owner.

On a similar note, the navigation system can take traffic conditions into consideration and help route around any areas of large congestion, which is a huge benefit when living in a city with a lot of traffic. It can help maximize efficiency and cut down commute times in order to save you time.

The same navigation system also remembers the owners driving style and can judge by that and the amount of charge left if a route is too long or if a recharge is necessary for the return journey.

#### **4. Design: Aesthetic Appeal with Elegant, Renewable Interior.**

The BMW i3 is stretching the definitive envelope of what a conventional car can be and how it should look. Its striking appearance is unique to the BMW i sub-brand while still remaining unmistakably a BMW.

##### **Black Band.**

The front end has a clear and simple design. BMW's iconic kidney grilles headlines the front end with the BMW i blue background. Under the kidney grille, silver layers sculpt the front apron. Contrasting black surfaces identify the functional load compartment under the hood and air inlets. Aerodynamic Air Curtains give an aggressive appearance to the BMW i3, while also helping to increase the range by minimizing air resistance and drag. U-shaped, LED headlights, give a fresh take on the BMW light design and give the car character.

At the rear end, the large rear window gives great visibility and easy access to the trunk. The roof lines are optimized to give as much interior space as possible. The LED U-shaped taillights are housed in the rear window and appear to be floating there.

### **Stream flow.**

The rear diffuser is the lowest point on the car and lends to its aerodynamics. Outlined in blue (not available with Solar Orange Metallic exterior color), the diffuser is shaped to show the BMW i3's powerful stance.

Thanks to its LifeDrive architecture, the BMW i3 is a new canvas for BMW interior designers. There is no center tunnel taking up space, which creates an open, roomy cabin. The front and rear bench seats allow for easy movement inside the vehicle and even allow the driver to exit through the passenger door if necessary.

All driving controls are ergonomically placed for easy access to the driver. The instrument panel stretches through the whole interior from the air vents next to the steering wheel to just before the passenger door. It encompasses the radio and climate controls as well. The freestanding steering column is a distinctive element in the light interior. All of the driving controls, such as the instrument cluster, start/stop button and gear shift selector can be found there.

The interior, which is put together using a technique known as layering, – which is the utilization of space through the structuring of lines and surfaces into layers – features Next Premium. It is made of high quality renewable raw materials, in the name of sustainability. The driver's seat is located in a semi-command driving position, set-up higher for a better view of the road. Certain parts of the instrument panel and door panels are made using southern Asia's Kenaf plant natural fibers to save about 10% weight, while the interior leather is tanned using a natural process that uses olive leaf extract to provide protection against fading and wear while giving a unique look.

Using a magnesium supporting structure for the instrument panel saves weight in two ways. Superior material attributes over conventional sheet steel results in a weight reduction of 20%. Also, the high composite rigidity of the magnesium supporting structure allows a reduction in components and lowers weight by a further 10%.



The wood trim used in the dashboard is crafted from eucalyptus which is grown in Europe and certified as 100% sourced from responsible forestry. As the eucalyptus ages, it darkens and changes color. The location of the crafting was selected carefully to ensure short delivery routes to the production stages.

The Carbon Fiber Reinforced Plastic (CFRP), which is produced near Moses Lake, Washington, is made primarily with the use of hydroelectric power, harvested nearby. This is done to minimize the effect that BMW i3 production has on the environment. Since more than 10% of the carbon fiber needed to manufacture the BMW i3 is made from recycled materials, it is another way the BMW i3 is completely sustainable. The roof is made of CFRP scraps to help recycle left over material from other parts.

## **5. Explore the World: Vehicle Trim Levels.**

Due to the unfamiliarity of electric mobility technology in the United States, buying an EV can be a daunting experience for the average customer. BMW sought to make this process as simple as possible in the new BMW i3. The BMW i3 comes in three different worlds: Mega, Giga and Tera, all of which come equipped with a very high level of standard equipment.

The base Mega World comes standard with 19-inch extra-efficient forged aluminum wheels, BMW Navigation, BMW ConnectedDrive with eCall, the BMW i Remote, an alarm, 7.4 kW on board charger and LED headlights, DRLs and tail lights. The interior is donned in bright, lightweight Sensatec and sustainable cloth, which is made from recycled materials. It also features a leather trimmed steering wheel and grained dash trim.

The next level, Giga World, has all the features of the Mega World but with the addition of distinct Giga-specific 19-inch wheels and an interior wrapped in leather and wool cloth. A universal garage door opener is included for easy access to the i3's BMW i Charging Station, which is usually mounted in the garage. It also has Comfort Access, a sunroof, and satellite radio. The leather-trimmed steering wears contrasting stitching to give a classy, sporty look.

The top-of-the-line Tera World, adds unique 19-inch wheels, a luxurious full leather, olive leaf-tanned interior, with textile accents and contrasting stitching, and anthracite floors mats.

Available for every world is the Technology and Driving assist, and the Parking assist packages. The Technology and Driving Assist package adds a host of convenience and safety technologies to the BMW i3. It includes the wide-screen Navigation Professional with advanced real-time traffic and the new touch pad, Traffic Jam Assist, BMW Assist with Enhanced Bluetooth and USB with BMW Apps, Online Information services, Deceleration Assistant, ACC Stop & Go, Speed Limit info, BMW ConnectedDrive services, Forward Collision Warning, Pedestrian Protection and City Collision Mitigation. The Parking Assist package is ideal for living in the city and includes a rearview camera, Park Assistant, which helps take advantage of tight parallel parking opportunities, and Front Auto Park Distance Control.

The BMW i3 full options list for USA will be released Fall 2013.

## **6. BMW ConnectedDrive. Mobility services and new driver assistance systems.**

BMW ConnectedDrive is the interface between the customer, their car, 360 Electric, and the Premium Mobility Service. Connected mobility is the embodiment of an individual, sustainable, efficient and convenient form of urban mobility. It is a crucial part of the BMW i and urban lifestyle.

An embedded SIM card in the BMW i3 is the key that unlocks the BMW ConnectedDrive services, available to the new electric model. A feature of BMW ConnectedDrive is BMW i Navigation, which can search for a nearby charging station, which should give the driver piece of mind, knowing that there is a station nearby. It can also give a real world range estimate and visualization of the estimate with the SpiderMap, Real Time Traffic Information and plan a route that avoids the traffic as best as possible.

The customer has access to personal assistance from a BMW ConnectedDrive agent at any time of the day or night. Concierge Service can help answer almost any of the driver's questions. They can recommend restaurants, give information on destinations or guide the driver to the nearest charging station, among other things.

In the unfortunate situation when an accident occurs, Intelligent Emergency Call ("eCall") sends information like location, number of front-seat occupants, and even crash severity data to the BMW ConnectedDrive Call Center, which quickly informs the appropriate 911-dispatch center.

BMW ConnectedDrive can also connect directly with your iPhone with an original Apple cable that connects to the car and built-in BMW Apps.

The optionally available Driving Assistant Plus for the BMW i3 comprises Collision Warning with brake priming function, which is activated at speeds up to about 35 mph (60 km/h) and is able to respond to both moving and stationary vehicles ahead, as well as to pedestrians. It also comes with Active Cruise Control including Stop & Go function. In addition to visual and audible warnings, the system is capable of braking the vehicle by itself, if required, with up to maximum stopping power. The Parking Assistant can also be found on the option list and performs the steering maneuvers at the same time as controlling accelerator, brake and gear selection, enabling fully automated parallel parking. Another handy optional extra is the Traffic Jam Assistant that allows drivers to delegate the tasks of pulling away, braking and steering to keep the vehicle in lane. Meanwhile, the Speed Limit Info system is also offered.

## **7. 360 Electric: Support and Convenience for Electric Mobility.**

Electric cars differ drastically from their gas-powered counterparts, and the 360 Electric features further that differential. All of the 360 Electric features help to ensure convenient electro mobility in most situations.

If the BMW i3 buyer has a private parking space at their home, BMW i will offer a home charging station, which includes a BMW i charging station for convenient charging. They will even send a representative to install it to any specific need. 360 Electric will also help with public charging by locating the nearest station.

As part of 360 Electric, the BMW i Remote app links to your car and can monitor its battery level, charging status and other charging-related functions, such as heating and air conditioning. The app can also give the cars location, lock or unlock the doors, honk the horn, or flash the lights.

Before driving away in the BMW i3, it is recommended to precondition that battery to the preferred operating temperature of between 60 - 70 degrees Fahrenheit to optimize range. Battery temperature may be monitored through the iDrive system. The battery liquid cooling system keeps the battery at the ideal operating temperature which increases performance and life expectancy. Battery condition is controlled and operated in harmony

by the intelligent energy management system. This, combined with Brake Energy Regeneration system extends the vehicle's range while enhancing its performance.

The Range Assistant is engaged both for route planning and during journeys already under way. Topographical mapping technology helps find the most efficient route to your destination by calculating distance, elevation and other factors, in order to get the best range from your BMW i3. If the destination is beyond the car's range, it can suggest switching to ECO PRO or ECO PRO+ to get more from the battery's charge.

In the unlikely circumstance of a breakdown, the BMW Assist Safety Plan provides contact with a Response Specialist at the touch of a button.

BMW Assist also introduces Navigation services specially-developed to enhance electric mobility alongside familiar features including the Concierge Services information facility and the intelligent BMW Assist eCall. Moreover, drivers may use the BMW i Remote app to share information with their car using a smartphone. The pedestrian navigation function guides the driver from parking place to their final destination and back.

## **8. Safety: Always a true BMW.**

From an efficiency standpoint, the body of the BMW i3 needs to be not only strong but, above all, light. However, from a safety point of view, it has to be not only light but, above all, strong. This apparent conflict of interests highlights the engineers' pioneering work in developing the vehicle architecture of the BMW i3. Here, there is no contradiction between lightweight construction and safety. Quite the opposite, in fact: the LifeDrive concept of the BMW i3, with its combination of aluminum and carbon-fiber-reinforced plastic (CFRP), is on a par with other structures and even performs better in some areas of crash testing despite its lightweight design. The use of CFRP essentially allows the construction of extremely lightweight bodies. Moreover, CFRP possesses an impressive ability to absorb energy and is extremely damage-tolerant. CFRP is the lightest material that can be used in the construction of car bodies without compromising on safety.

The LifeDrive concept is based around two horizontally separate independent modules. The Drive module – the aluminum chassis – gives the car its high-strength foundations and integrates the battery and drive system into a single structure. The Life module, meanwhile, consists principally of a high-strength and extremely lightweight passenger compartment made from CFRP. With this innovative concept, the BMW Group takes the

combination of lightweight design, vehicle architecture and crash safety to an entirely new dimension.

**LifeDrive module offers tremendous safety.**

The crash requirements in automotive manufacture are very strict. Numerous impact criteria stipulated by the stringent guidelines of global consumer protection organizations and legislators have to be taken into account. During the development of the BMW i3 concept, there was close consultation with the international crash test institutes on the innovative car body and safety concept of the BMW i models.

The high-strength passenger compartment teams up with the intelligent distribution of forces within the LifeDrive module to provide the cornerstones for optimum occupant protection. Even after the structurally-debilitating offset front crash at 64 km/h (40 mph), the extremely rigid material maintains an intact survival space for passengers. The crash-activated aluminum structures at the front and rear end of the Drive module provide additional safety, so that less body deformation occurs compared with comparable steel bodies. Furthermore, the “cocoon effect” of the CFRP car body ensures that the doors can be opened without any problem and the interior remains largely free of any intrusions.

Even rescue scenarios have been worked through and checked. In standard cutting tests, the process of rescuing occupants from a BMW i3 involved in an accident was comparable to that for a conventional vehicle. In some respects, indeed, it was more straightforward since the lighter components can be more easily cut than high-strength steels, for example.

Impressive rigidity, combined with its ability to absorb an enormous amount of energy, makes CFRP extremely damage-tolerant. Even at high impact speeds it displays barely any deformation. As in a Formula One cockpit, this exceptionally stiff material provides an extremely strong survival space. Furthermore, the body remains intact in a front or rear-on impact, and the doors still open without a problem after a crash.

In its dry, resin-free state CFRP can be worked almost like a textile, and as such allows a high degree of flexibility in how it is shaped. The composite only gains its rigid, final form after the resin injected into the lattice has hardened. This makes it at least as durable as steel, but it is much more lightweight.

The high tear resistance along the length of the fibers also allows CFRP components to be given a high-strength design by following their direction of loading. To this end, the fibers are arranged within the component according to their load characteristics. By overlaying the fiber alignment, components can also be strengthened against load in several different directions. In this way, the components can be given a significantly more efficient and effective design than is possible with any other material that is equally durable in all directions – such as metal. This, in turn, allows further reductions in terms of both material use and weight, leading to another new wave of savings potential. The lower accelerated mass in the event of a crash means that energy-absorbing structures can be scaled back, cutting the weight of the vehicle.

### **Superior protection in a side impact.**

The ability of CFRP to absorb energy is truly extraordinary. Pole impacts and side-on collisions both highlight the impressive safety-enhancing properties of CFRP. Despite the heavy, in some cases concentrated forces, the material barely sustains a dent, and passengers enjoy nearly unbeatable protection. All of which makes CFRP perfectly suited for use in a vehicle's flanks, where every centimeter of undamaged interior is invaluable. However, there are limits to what CFRP can endure. If the forces applied go beyond the limits of the material's strength, the composite of fibers breaks up into its individual components in a controlled process.

In the Euro NCAP side impact test, in which a pole strikes the side of the vehicle dead-center at 32 km/h (20 mph), the carbon fiber composite also demonstrates its extraordinary energy-absorbing capacity. The Life module absorbs the entire impact with minimal deformation, guaranteeing optimum passenger protection. Even as CFRP dissipates energy, danger to passengers or other road users is substantially mitigated.

### **The best of both worlds: combining aluminum and CFRP.**

The new Drive module has also been carefully designed and structured with these exacting crash requirements in mind. Crash-active aluminum structures in the front and rear sections of the vehicle provide additional safety. In a front or rear-on collision, these absorb a large proportion of the energy generated. The battery, meanwhile, is mounted in the underbody section of the car to give it the best possible degree of protection. Statistically, this is the area that absorbs the least energy in the event of a crash, and the vehicle shows barely any deformation here as a result. Moreover, positioning the battery in the underbody

allows the BMW Group development engineers to give the vehicle an ideal low center of gravity, which makes it extremely agile and unlikely to roll over.

The high-voltage battery also benefits from the excellent deformation properties of the CFRP Life module. In the side crash test, the pole does not penetrate as far as the battery. The mix of materials used and the intelligent power distribution in the LifeDrive module ensure that the high-voltage battery is optimally protected even in the side sill area.

All in all, the high-strength CFRP passenger cell teams up with the intelligent distribution of forces in the LifeDrive module to lay the foundations for optimum occupant protection.

### **Post-crash notification.**

In the unfortunate situation when an accident occurs, Intelligent Emergency Call (“eCall”) sends information like location, number of front-seat occupants, and even crash severity data to the BMW ConnectedDrive Call Center, which quickly informs the appropriate 911-dispatch center.

### **Lithium-ion batteries are safe even in the event of a fire.**

Safety is a key criterion in the development of the BMW i models. A range of systems and measures have been implemented in the vehicle that ensure safety in normal operation and in the event of accidental fires. The high-voltage system is designed to cope with accidents beyond the legal requirements, with the high-voltage battery including features that ensure its safe reaction even in situations such as this.

The latest series of tests conducted by the renowned DEKRA E-Mobility Competence Center were extremely extensive – ranging from how a car might catch fire, how the flames might spread and what would be required to extinguish the fire, to the pollution caused by run-off of the water used for fighting the fire. The experts concluded that electric and hybrid cars with lithium-ion drive system batteries are at least as safe as vehicles with conventional drive systems in the event of fire.

To ensure maximum safety in such a crash scenario, the high-voltage battery is disconnected from the high-voltage system and the connected components discharged when the passenger restraint systems are triggered. This safely prevents the possibility of a short circuit, which could lead to electric shocks or cause a fire.

### **BMW Group In America**

BMW of North America, LLC has been present in the United States since 1975. Rolls-Royce Motor Cars NA, LLC began distributing vehicles in 2003. The BMW Group in the United States has grown to include marketing, sales, and financial service organizations for the BMW brand of motor vehicles, including motorcycles, the MINI brand, and the Rolls-Royce brand of Motor Cars; DesignworksUSA, a strategic design consultancy in California; a technology office in Silicon Valley and various other operations throughout the country. BMW Manufacturing Co., LLC in South Carolina is part of BMW Group's global manufacturing network and is the exclusive manufacturing plant for all X5 and X3 Sports Activity Vehicles and X6 Sports Activity Coupes. The BMW Group sales organization is represented in the U.S. through networks of 338 BMW passenger car and BMW Sports Activity Vehicle centers, 139 BMW motorcycle retailers, 119 MINI passenger car dealers, and 34 Rolls-Royce Motor Car dealers. BMW (US) Holding Corp., the BMW Group's sales headquarters for North America, is located in Woodcliff Lake, New Jersey.

Information about BMW Group products is available to consumers via the Internet at:

[www.bmwgroupna.com](http://www.bmwgroupna.com)

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**Journalist note:** Information about BMW Group and its products in the USA is available to journalists on-line at [www.bmwgroupusanews.com](http://www.bmwgroupusanews.com) and [www.press.bmwna.com](http://www.press.bmwna.com).

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