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The New BMW iX Design

- **BMW's new technological flagship in a Sports Activity Vehicle design.**
- **5th Generation of BMW's eDrive technology producing 500 hp.**
- **Estimated EPA range of 300 miles**
- **New exterior and interior design architecture.**
- **New BMW Charging Powered by EVgo service using 100% renewable energy.**

Woodcliff Lake, NJ – November 11, 2020… A vision is turning into reality, as the BMW Vision iNEXT becomes the BMW iX. With time still to go before its expected U.S. market launch in the early 2022 and with the series development phase ongoing, BMW is providing a first look ahead at the future BMW iX. With its completely newly developed design, the BMW iX is the first representative of a generation of cars poised to redefine the driving experience, the feeling of space inside and the relationship between vehicles and those on board.

The BMW iX is the first model based on a new, modular, scalable architecture on which the future of the BMW Group will be built. Conceived from the outset as purely electric mobility, the iX sees BMW redefining the successful Sports Activity Vehicle (SAV) concept. The BMW iX has been created to provide something beyond just mobility – an exhilarating driving experience combined with a sense of wellbeing for both drivers and passengers all the while enjoying the journey with safety, security, and a new form of luxury in the process.

"The BMW Group is constantly striving to re-invent itself. That is a central element of our corporate strategy," says Oliver Zipse, Chairman of the Board of Management of BMW AG. "The BMW iX expresses this approach in an extremely concentrated form."

Interested U.S. customers can sign up for BMW iX updates at www.bmwusa.com/future-vehicles/ix.html

BMW's new technology flagship – the "workshop for the future"

The design and technology of the BMW iX form an integrated package that lays the foundations for what is in many respects a new kind of driving experience. In so doing, it embodies the character of the BMW i brand, whose mission is to transform personal mobility. BMW i plays a central role at the BMW Group as a "workshop for the future" and as a driver of innovation across the company. The BMW i3 – conceived from day one to be a lightweight and fun to drive electric vehicle– provided a future-focused springboard towards sustainable urban mobility. The visionary design of the plug-in hybrid BMW i8 has come to exemplify leading-edge drivetrain technology in the premium sports car segment.

The BMW iX goes into production at BMW Plant Dingolfing in the second half of 2021 and is scheduled to arrive on U.S. shores in early 2022. The iX will bring together the company's latest developments in the strategic innovation fields of Design, Connectivity, Electrification, Digital Services and Sustainability. This is reflected in areas of the car such as its optimized aerodynamics, intelligent lightweight Carbon Fiber Reinforced Plastic design as well as extensive use of natural and recycled materials.

Fifth-generation BMW eDrive technology delivers efficiency and range

The fifth generation of BMW eDrive technology – which encompasses two electric motors, the power electronics, the charging technology and the high-voltage battery – delivers improved efficiency and performance. The power unit developed by the BMW Group and manufactured sustainably without the use of rare earth raw materials will, by the most recent calculations, develop an output of around 500 hp. That will be enough to propel the BMW iX from 0 to 100 km/h (62 mph) in under 5.0 seconds.

At the same time, the vehicle's aim is to deliver a lower combined electric power consumption figure which equates to a range of 300 miles according to the EPA's FTP-75 test procedure. (All figures relating to performance, energy consumption and range are predicted values based on the car's current stage of development.)

DC fast charging: over 75 miles of range in ten minutes

The new charging technology of the BMW iX enables DC fast charging at up to 200 kW. The battery can be charged from 10 to 80 per cent capacity in under 40 minutes. In just ten minutes, enough energy can be fed into the battery to increase the car's range by around 75 miles. It takes less than eleven hours to charge the high-voltage battery from 0 to 100 per cent at 11 kW Level 2 charging station.

The batteries fitted in the BMW iX are designed as part of a long-term resource cycle and allow for a very high recycling rate. The power used to produce the battery cells and the high-voltage batteries comes exclusively from renewable sources.

"Technology is driving the advances we need to tackle even the greatest challenges. This applies in particular to climate protection," says Oliver Zipse. "We are in no doubt: mobility has to be sustainable if it is to represent a truly outstanding solution. For the BMW Group, premium mobility is not possible without responsibility."

BMW Charging Powered by EVgo

Recognizing the critical importance of public charging infrastructure to EV drivers in the U.S., BMW is partnering with EVgo, the nation's largest public fast charging network and the first in the U.S. to be powered by 100% renewable energy. The new BMW Charging service will provide BMW EV and PHEV drivers with access to EVgo and partner charging network stations via an easy to use mobile app, underscoring BMW's commitment to a high performance and zero emissions driving experience. BMW Charging Powered by EVgo will enable BMW drivers to see the real-time status of chargers, initiate a charging session, check their account status, and more.

EVgo's public fast charging network offers the convenience of charging at more than 800 fast charging locations at retail and grocery stores, shopping malls, entertainment centers and other sites ideal for quick, 20 to 30-minute errands. Plus, for drivers who will be parked for a few hours, EVgo's relationships with partner networks will provide access to more than 35,000 Level 2 chargers for drivers, expanding the variety of charging options. Through the new partnership with

EVgo, buyers and lessees of qualifying fully electric BMW models will receive $100 in EVgo charging credit that can be used through the BMW Charging app at EVgo and partner network stations across all 50 states.

Starting from December 2020, new electrified BMW owners will be able to sign up for the BMW Charging Powered by EVgo program using the Personal Activation Code provided in the Welcome Email of their new electrified BMW. A download of the BMW Charging App will allow them to find available chargers, swipe to start their charging sessions and access account information on their mobile phone.

New iX technology architecture underpins further advances

The new technology architecture making its debut in the BMW iX provides the platform for significant progress in the areas of digital services and future automated driving systems. For example, the level of computing power has been developed to process 20 times the data volume of previous models. As a result, around double the amount of data from vehicle sensors can be processed than was previously possible allowing for more advanced future assist systems.

“All the innovations are impressive on an individual level. But only together can they make a real difference,” explains Oliver Zipse. “We are integrating technological progress – in all its complexity and interdependence – into inspirational and sustainable products.”

“The BMW iX shows how we can give new technologies a very modern and emotional design. The car is technologically complex, but it feels very clear and uncomplicated,” says Adrian van Hooydonk, Senior Vice President BMW Group Design. “The BMW iX offers a mobile living space in which people will feel at ease, where the car’s intelligence is only there when you need it.”

Muscular SAV proportions and intelligent kidney grille

With its exterior dimensions, the BMW iX combines fully electric all-wheel drive with the functionality of the BMW X5, with the sporting nature of the BMW X6 and with the visual impact of the BMW X7. The result is a distinctive re-imagining of the powerful proportions of a large BMW SAV. The BMW iX is comparable with the BMW X5 in length and width and is almost the same height as the BMW X6. The available 20-inch, 21-inch and 22-inch wheels, meanwhile, bring to mind the BMW X7. A wheelbase measuring exactly 118-inches and wide front and rear tracks provide the ideal platform for chassis tuning which combines luxurious long-distance comfort and sporty driving characteristics.

The front-end design of the BMW iX gives it an eye-catching presence. The signature BMW visuals – a distinctive BMW kidney grille and equally familiar twin headlights – have been newly interpreted with a futuristic style. Since the electric drive system of the BMW iX requires only a small amount of cooling air, the kidney grille is completely closed off. Its role has turned digital and here it functions as an intelligence panel. Camera technology, radar functions and other sensors are integrated seamlessly into the grille behind a transparent surface. The heating elements and cleaning system for the sensors are also embedded in the grille front.

In order to guarantee the greatest possible precision when using the radar sensor mounted behind the kidney grille, a nanoscale vacuum-based coating process is employed in its manufacture. Here, the two-color finish and visible 3D effect are produced by vaporization using laser technology and by a plasma-fired application technique in a vacuum. A combination of the laser-based method developed specially for production of the kidney grille on the iX and a precisely defined combination of material and layer thickness optimize radar performance.

An additional polyurethane coating reduces the kidney grille's susceptibility to damage. The self-healing effect of its surface can repair minor scratches, for example – within 24 hours at room temperature or through a five-minute supply of warm air.

Significant computing power, a system of sensors with exceptional capability, and continuous optimization with the help of artificial intelligence and Data-Driven Development provide new ways of improving the driver's experience in the future when it comes to comfort and safety. Further developed and additional functions can be imported into the car via Remote Software Upgrade. This is a convenient way of keeping the car and its software technologically up to date at all times.

Groundbreaking panoramic glass roof with electrochromic shading

The available panoramic glass roof features a large single-piece transparent surface that spans the entire interior, making it the largest glass roof ever fitted in a model from the BMW Group. The panoramic glass roof greatly enhances the sense of spaciousness and the lounge-style ambience inside the BMW iX and maximizes headroom for the occupants by removing the need for an interior shade liner. The new glass roof features electrochromic shading instead, which can be activated at the press of a button to shield the interior from direct sunlight.

The panoramic roof is composed of a steel frame, two laminated glass panels and three layers of film sandwiched in between. This construction offers both optimum protection against ultraviolet rays and an excellent standard of acoustic comfort. The upper glass panel's triple silver low emittance coating is designed to maintain a comfortable cabin climate.

Instead of having an interior shade, the roof is the only one of its kind in the automotive industry to employ PDLC (Polymer Dispersed Liquid Crystal) technology for shading the interior. The panoramic glass roof's transparency is altered by applying a voltage to the middle layer of film. The liquid crystals dispersed as droplets in a polymer matrix are aligned by electrical energy to allow rays of light to pass through into the interior unimpeded. When de-energized, it takes less than a second for the crystals to distribute themselves in a disorderly pattern that creates the effect of shade. This electrochromic shading function can be switched on and off using a button at the front of the panoramic glass roof. Shade mode is also activated automatically once the BMW iX has been parked.

LED headlights and BMW Laserlight

The slimmest headlight units to ever be featured on a series-produced BMW provide a new and minimalist take on BMW's familiar face. Daytime driving lights, with integrated turn signals, have a new design as two-dimensional strips along the upper edge of the headlight units.

The BMW iX is fitted with standard full-LED headlights. The darkened lights are set back into the inner sections of the headlights and only become visible when switched on. The latest generation of BMW Laserlight is available as an option, teaming Adaptive LED Headlights and a new type of Laserlight module. This headlight variant also generates low and high beam from both the outer and inner light sources.

The hood of the BMW iX, with its pronounced three-dimensional sculpting, extends up to the headlights and BMW kidney grille. The hood lines converge on the kidney grille and the BMW logo above it. The roundel has a functional component, serving as the filler neck for the washer fluid. It opens and closes – once the fluid has been topped up – with a gentle push. The hood does not have an opening mechanism for use by the customer; the drive systems and power electronics can only be accessed by workshop technicians.

Doors with integrated flush handles and frameless windows

The BMW iX features electric door handles which fit flush into the door surfaces and are finished in a contrasting color. Indirect illumination of the handle recesses provides them with a premium backdrop. With the latest generation of the Comfort Access system, the doors lock or unlock automatically as the owner approaches or walks away from the car via the signal sent to the car from the remote control or from the BMW Digital Key (via the customer's smartphone).

Doors with frameless windows are making their debut in a large BMW SAV on the iX. Seen previously only on BMW coupés, this design feature underlines the sporting character of the BMW iX and brings a flowing appearance to the side of the vehicle as a whole. The high-gloss black trim for the B-pillars provides an attractive contrast against the body color. Three layers of sealing around the doors provides excellent acoustic comfort.

Aerodynamically optimized exterior mirrors, black body edging

The innovative design of the exterior mirrors on the BMW iX helps to reduce wind noise, optimizes aerodynamics and improves all-round visibility. The super-slim mirror bases attach to the lower edge of the side window surround, removing the need for the classic mirror triangle at the front of the side windows. The mirror caps are painted in body color and bordered at their lower edge by the mirror base in high-gloss black, creating an attractive color contrast. The turn indicators measure only around two millimeters in width and are integrated into the exterior mirrors behind glass covers.

Among the design features familiar from classical BMW X models is the black surround at the lower edge of the body. On the BMW iX, this extends further up and forms a band around the entire car, from the front bumper along the sides into the rear. The charging port is located in the same place as the fuel filler neck on conventionally powered BMW models – behind a flap on the right-rear wheel arch.

Rear end design: modern, minimalist, eye-catching

The character of the BMW iX is also faithfully reflected in the design of the rear of the vehicle. The modern and minimalist design language with a small number of seams and character lines exudes an aura of sophistication. The aerodynamics of the BMW iX are enhanced by the flow of air over the roof all the way to its trailing edge, and by a diffuser element in the rear bumper. The tailgate has no separation seams and extends across the whole of the rear, showcasing the expressive surfacing to a vivid effect. The rear-view camera is integrated into the black ring of the large BMW logo positioned in the center of the tailgate. The camera lens is cleaned automatically by a water spray system which extends from behind the surface of the roundel.

Slim rear lights with striking design

Like the headlights, the rear single-piece LED lights have a slimmer design than on any previous series-produced BMW Group vehicle. The familiar L-shape from other BMW models is used in a modern interpretation. Secondary light units positioned at the outer edges of the car beyond the tailgate opening include turn indicators, rear lights and brake lights, ensuring that the relevant light signals are still visible when the tailgate is open.

Shy tech for the exterior: subtly integrated technology

As well as the intelligence panel in the BMW kidney grille, the BMW iX also has an array of discreetly positioned cameras and sensors – used by the driver assistance systems to make life easier for the driver in monotonous or unclear driving situations – that espouse the principle of

"shy tech". For example, the distance measurement sensors are integrated inconspicuously into the black body edging at the front and rear of the car. The flush-fitted door handles and the rear-view camera with cleaning system integrated into the BMW badge on the tailgate are also examples of shy tech at work. The underlying principle here is that the technology stays in the background and only becomes apparent as and when the relevant functions are called into action.

Accents available in BMW i Blue identify sustainability

The BMW iX's numerous design accents can be ordered in high-gloss black or in signature BMW i blue. As well as the blue circle of the BMW logo on the hood and tailgate, these elements include blue accents in the outer areas of the bumper to emphasize the front end's air ducting. A blue accent strip in the side skirts references the presence of the high-voltage battery positioned low down in the floor of the BMW iX.

In the lower section of the rear bumper, two blue trim elements are positioned at the outer edges to stand out from the standard black surfaces. They border the taillight units, the rear diffuser and highlight both the excellent aerodynamic attributes of the BMW iX and its electric drive system.

Optimized aerodynamics for increased range

For years now, the BMW Group has reduced fuel consumption and emissions to great effect with Efficient Dynamics. In the BMW iX, this strategy is implemented in a new way that defines the vehicle's character, encompassing not just the ultra-efficient electric drive system, but also optimizing its aerodynamic properties and weight. Reduced air resistance and intelligent lightweight design are both important contributory factors to the all-electric SAV's range.

The car's handling qualities and the level of cabin comfort benefit directly from the reduction in drag and the bodywork structure with its aluminum spaceframe and pioneering Carbon Cage. One notable difference compared to conventionally powered BMW X models is the positioning of the A-pillars much further forward. The extremely compact design of the eDrive technology paves the way for the shorter front end and the extra space this brings inside the BMW iX.

Capitalizing on the benefits provided by the all-electric drivetrain and implementing proven measures from the past serves to optimize the aerodynamic properties of the BMW iX, which in turn has a positive impact on both its performance and range. The low aerodynamic drag can be attributed to not only the streamlined body, the tapered glasshouse, flush-fitting door handles, extremely slender exterior mirrors and precisely designed aerodynamic aids, but also to a host of other careful design measures. As a result, the BMW iX boasts outstanding aerodynamics for its class, with a drag coefficient (Cd) of just 0.25.

The aerodynamic elements for the front end, rear end, underbody and wheel areas alone add over 40 miles (WLTP measurement) to the car's overall range. Some 16 miles (WLTP measurement) of this can be attributed to the third-generation active air flap control at the front of the vehicle, which directs cooling air to the drive units and brake system when required.

In normal driving situations, both the BMW kidney grille and the air intakes at the bottom of the front bumper are completely sealed off. This default setting allows the air to flow around the vehicle unhindered, significantly reducing aerodynamic drag. The electronically controlled air flaps are only fully opened in the rare case that the maximum amount of cooling air is required. The flaps can be adjusted gradually, allowing cooling air to be directed efficiently to the brake air ducts and drive components in carefully metered quantities.

On models with the Sport package, the air flaps are complemented by carefully engineered apertures in the outer areas of the front bumper which optimize the airflow along the vehicle.

These vertically arranged Air Curtains divert the airstream in such a way that it flows along the faces of the wheels without generating the customary turbulence. The way in which the glasshouse tapers towards the back combines with specially designed air deflectors to reduce aerodynamic drag at the rear. Here, vertical Air Blades on either side of the rear window and the roof spoiler combine to form a sharp aero edge that minimizes the amount of vacuum produced behind the vehicle and its negative impact on aerodynamics. The combined benefits of the Air Curtains and Air Blades extend the car's range by approximately 9 miles (WLTP measurement).

Another drag-reducing feature on the BMW iX is the sealing measures of the underbody. Spanning the largest area between the front and rear axle is the smooth aluminum casing of the high-voltage battery, which is located low down in the vehicle floor. At the front end, streamlined elements direct the oncoming air past the wheels to prevent adverse turbulence. Airflow along the rear is smoothed by the large rear axle cover and the rear bumper's diffuser. All other underbody components are optimized in terms of their aerodynamic impact. Overall, the aerodynamics measures for the underbody of the BMW iX account for around 6 miles (WLTP measurement) of its long range.

Lower air resistance and weight: Air Performance Wheels

The BMW iX rides on standard 20-inch light-alloy wheels with an aerodynamically optimized design. The mostly enclosed surfaces bring about an effective reduction in the air turbulence produced around the wheels. The optional 21-inch and 22-inch Air Performance Wheels help to reduce drag in a very innovative way. These wheels combine optimized aerodynamic properties with the elegance of a V-spoke aluminum wheel.

The Air Performance Wheels are made of an aluminum base wheel with customized inserts between the spokes that gives them a flat design, especially on the outside of the wheel, resulting in far smoother airflow. They weigh around 15 per cent less than conventional light-alloy wheels. Range is increased by as much as 9 miles (WLTP measurement) courtesy of the Air Performance Wheels.

Intelligent material mix: combining weight reduction and maximum rigidity

The aluminum spaceframe body structure of the BMW iX is a first for its segment. The materials selected and manufacturing processes increase body rigidity and crash safety while keeping weight as low as possible.

Remarkably light yet extremely rigid Carbon Fiber Reinforced Plastic components in the body's side, rear and roof areas form a key element of the safety concept for the BMW iX passenger cell. The CFRP components for the side frame, rain channels, roof frame, cowl panel and rear window frame combine to form a "Carbon Cagep". The BMW Group has employed its many years of experience in working with CFRP – amassed during production of the BMW i models and the current BMW 7 Series – to use CFRP intelligently to reinforce the body while also saving weight and improving vehicle agility. The Carbon Cage has evolved from the Carbon Core used in the 7 Series and allows the beneficial qualities of this high-tech material to be appreciated visually as well.

Fitting a lightweight CFRP side frame instead of a conventional steel part shaves several pounds off the vehicle's weight. The cowl panel and rear window frame components are manufactured from continuous fiber-reinforced thermoplastics (CFRTP) using an all-new method. Together, they constitute an effective lightweight design. The innovative blend of materials forms the basis for an exceptionally slim profile that adds to the sense of spaciousness in the cabin. The CFRP used in the side frame and at the rear end lends an added visual appeal to the BMW iX: the carbon components' recognizable fiber structures clearly stand out in the entrance area and when the

tailgate is open, providing a reminder of the car's high-tech character.

Interior: Where people are center stage and technology fades into the background

"We designed the BMW iX from the inside out," says Domagoj Dukec, Vice President BMW Design. "In the process, we took particular care to create a modern, warm and minimalist interior design with a very spacious feel."

Vast amounts of room, a top-quality selection of materials, newly developed seating and the extraordinary expanse of the single-piece panoramic glass roof combine to immerse all five seats inside the BMW iX in a luxurious lounge-style ambience. The all-new architecture of the BMW iX cabin underpins a straightforward functionality that revolves entirely around the needs and of the driver and fellow occupants. The eDrive concept means there is no center tunnel, adding to the open, airy feel while allowing extra front and rear legroom, sufficient space for storage and a center console crafted to look like a high-quality piece of furniture.

The displays and controls are all stripped down to their essentials, reinforcing the impression of an uncluttered relaxing cabin. The shy tech approach for the interior can be seen in a number of features, including hidden speakers, intricately styled air vents, radiant heated surfaces and the discreet recessing of the BMW Head-Up Display's projector into the instrument panel so it is almost invisible.

The hexagonally shaped steering wheel, a rocker switch for gear selection and the freestanding BMW Curved Display – which forms part of the next-generation of BMW Operating System – advertise the futuristic interaction of driver and vehicle.

Clearly structured surfaces for a generous sense of space.

An ambience of modern luxury sets the tone for the BMW iX interior while the minimalistic design language gives the cabin an exceptionally spacious feel.

The door panel layout features a distinctive diagonal split using different colors and materials. The door pull-handles are sleekly integrated into the diagonal accent strip that houses the button for activating the electric door opening function. Buttons for adjusting the seat position are located on top of the front doors where they are ergonomically arranged in the form of a seat. The memory buttons are positioned directly alongside. The passenger-side armrest incorporates a compartment for holding a mobile phone while the audio system's midrange speakers are embedded beneath the door panels' fabric trim, hidden from sight.

Newly developed seats with integral head restraints

The newly developed seats for the driver and front passenger have integrated head restraints for a distinctly sporting appearance. For the first time in a BMW Group model, there is the option of integrating speakers into the seat structure. The sound sources positioned beneath the surface in the head restraint and lumbar areas enrich the acoustic experience inside the BMW iX and are an example of shy tech at work. The seats feature multi-way electric adjustment as well as seat heating. Also available are seat ventilation and massage functions. The seat belts are available in a choice of black or BMW i Blue.
With the optional Loft trim, the seat surfaces are made with a diagonal pattern of materials and colors combining high-quality textile and microfiber fabrics. The asymmetric styling and quilting composed of triangular, square and pentagonal sections give the seats their very modern look. Contrast stitching on the seat surfaces adds a highly distinctive touch. The remaining equipment variants offer a choice of seat upholsteries in Sensatec and exclusive natural leather.
The surface of the natural leather used for the seats and instrument panel is treated with a natural

olive leaf extract, avoiding any production residue that is harmful to the environment, while also giving the leather a high-quality and natural look. The sustainability approach applied when selecting raw materials and production methods has also resulted in the use of FSC-certified wood and a high proportion of recycled plastics for the surfaces of the door panels, seats, center console and floor.

Lounge-style rear seating ambience

The rear bench seat has been designed for three passengers. The two outer seats feature integral head restraints, while the center seat has a head restraint that can be folded down to improve the view to the rear. The omission of the center tunnel means that everyone in the second row enjoys generous legroom. The open sense of space that this creates combines with the broad bench seat extending into the door areas to reinforce the lounge-style feel and increase passenger comfort. A Travel & Comfort system integrated into the front seats can be used by occupants in the rear to attach coat hooks or hold tablet devices. A pair of USB-C ports can be found in each of the front head restraints. The 40:20:40 split rear seats can be specified with a heating function.

Slim instrument panel with freestanding BMW Curved Display

The BMW iX interior's modern, spacious feel is helped by the slim instrument panel, which is covered in either standard Sensatec or optional microfiber fabric or natural leather tanned with olive leaf extracts.

The instrument panel's geometry rises up towards the front, turning it into a stage for the futuristic, fully digital screen grouping in the iX. The BMW Curved Display, making its production vehicle debut, is held in place by a supporting structure that is concealed from occupants' view, so it appears to be freestanding. It has a magnesium housing and a frameless, single-piece glass surface. The high-definition display technology using anti-reflective glass also makes it possible to eliminate the normal binnacle used for shielding the readouts from sunlight, giving the cockpit area a remarkably tidy and airy appearance.

"The BMW iX is the first model from the BMW Group to feature the impressive high-resolution Curved Display, which is far larger and sharper than the displays in our current models," remarks Frank Weber. "As a result, the BMW iX interior points the way ahead for cockpit design in future BMW models."

The curved, one-piece display that serves as the central screen control element reinterprets the traditional driver-centric design of BMW cockpits in a new way. This has involved bringing together the 12.3-inch driver Information Display and the center 14.9-inch Control Display to form a single unit angled towards the driver. The interlinked, driver-focused display ensemble optimizes how information is shown and makes the display's intuitive touch control even simpler to use. At the same time, the Control Display section can still be clearly seen and easily operated by the front passenger.

The Curved Display in the BMW iX teams up with the next-generation BMW Operating System to deliver a totally new graphics experience. The instrument cluster offers new, completely customizable display options that provide the driver with precise information tailored to the situation at hand. Intuitive operation using voice or touch control enable the driver to interact with the additional intelligent functions aboard the BMW iX easily and safely. This takes the user-friendliness of BMW display and operating systems to the next level.

"There is no user interface anywhere in the automotive industry that can be operated as simply and as safely as ours," explains Frank Weber. "In the BMW iX we have taken this to new heights with a new digital platform and the next-generation BMW Operating

System."

Newly designed center console

The Curved Display's position and presentation are optimized to facilitate the intuitive use of the screen's touch functionality. All iDrive menu elements can also be selected and activated with the familiar center console iDrive controller which forms the main control element on the center console and whose color scheme and design creates the appearance of an elegant piece of furniture between the comfortable front seats.

The iDrive controller is surrounded by a sharply styled high-gloss black frame and features glass-effect surfaces and white backlit buttons. The rest of the control panel design uses shy tech to reduce workload to a minimum. Instead of conventional buttons, a control surface with active haptic inputs subdivided by feeler bars is used to select the iDrive menus, driving modes and other functions. The controller is designed with a glass-effect finish is surrounded by a Gold Bronze bezel. A roller control allows for convenient adjustment of the audio system volume. The Start/Stop button is illuminated in signature BMW i Blue. Nestled between the Start/Stop button and the button for the electromechanical parking brake is a newly devised rocker switch that takes the place of the customary gear selector lever.

The iDrive controller, the rocker switch for gear selection, the audio roller control and the seat adjustment buttons can be specified in a polished crystal finish. An open-pore FSC-certified walnut wood finish to the control surface, incorporating backlit buttons, is available as an option.

The space gained from the absence of a center tunnel is used to create additional storage in the center console area. As a result, the center console's lower level houses two cupholders, a wireless charging smartphone tray, a 12V power connection and two USB-C ports.

The center console armrest – which is available in a heated version as well – doubles as a butterfly lid for the illuminated storage compartment. The rear console is finished in a high-gloss black trim and includes buttons for the available rear seat heating and independent climate control zones.

New hexagonal steering wheel design

The BMW iX is the first model from the BMW Group to be fitted with a hexagonal steering wheel. The rim's unique, track-inspired contour has the additional effect of improving ease of access and seating comfort. The hexagonal shape also affords the driver a better view of the section of the Curved Display positioned directly behind the steering wheel.

New multifunction buttons on control pads in a high-quality glass-effect finish enhance intuitive operation of audio, communications and driver assistance systems. Steering wheel heating, with a new three-stage control system used for the first time.

BMW Head-Up Display with frameless projector integration

For the first time, the latest version of BMW's Head-Up Display projector is flush fitted into the instrument panel without a frame, allowing it to be hidden from sight. The information projected by the BMW Head-Up Display includes the car's speed, speed limits, check control messages, status indicators and warnings from the driver assistance systems, detailed route guidance and turn instructions, as well as telephone and entertainment lists. The display's angle, height and brightness can be adjusted individually.

The combination of the Head-Up Display and the Curved Display's fully digital screen grouping represents an excellent solution for conveying information in any given driving situation. The

projection system in the BMW iX is designed so that the driver perceives the Head-Up Display graphics as being approximately ten feet in front of the vehicle. This projection distance allows information to be absorbed with the greater ease as it enables the driver to assimilate readouts accurately without having to adjust their gaze in normal driving situations.

Automatic climate control with new controls and integral nanofiber filter

The BMW iX comes with either available 2.5-zone or 4-zone automatic climate controls. Cutting-edge nanofiber filter technology is used to purify the air inside the car more effectively. Pre-heating and pre-conditioning functions are standard.

Innovative nanofiber filter technology provides an effective means of helping to keep the air in the BMW iX cabin clean by preventing ultra-fine particles, certain microbial particles and allergens from entering the vehicle's interior. Nanofiber filter technology is more effective than normal filter systems, removing virtually all particles from the interior air in a matter of minutes when air recirculation mode is switched on. Drivers are able to use the My BMW app to activate the air conditioning system's ventilation function before the journey starts in order to purify the air in the cabin quickly and thoroughly.

The BMW iX is the first BMW model to offer optional radiant surface heating for the instrument panel, glove compartment, door panels, center armrest and steering wheel to create a cocoon of warmth for occupants.

LED interior lighting

LED units are used for all interior lighting in the BMW iX. All controls have white backlighting, making it easy to locate them even at night. The harmonious night design of the Curved Display adds to the relaxed lounge-like feel, as does the colored interior lighting, which is also clearly visible in daylight thanks to the large number of LEDs used. The interior lighting accentuates the expansive surfaces and crisp lines of the door panels while also providing indirect illumination of the footwells and entrance areas.

Pioneering Bowers & Wilkins Surround Sound System with 4D Audio

The standard Harman Kardon Surround Sound System delivers an excellent listening experience with a seven-band equalizer, eighteen speakers, 655 watts of audio power and sound adjustment based on the car's dynamic performance level. Four built-in speakers in the rear head restraints complement five midrange and five tweeter speakers. Two central bass speakers and two additional subwoofers located under the rear seat ensure a powerful sound performance. The system's tweeters are housed behind perforated grilles, while the midrange speakers are hidden beneath the door panels' fabric trim.

The latest version of Bowers & Wilkins' optional Surround Sound System takes the listening experience to a whole new dimension. The fully active audio system boasts a seven-band equalizer and microphone-assisted sound control based on the vehicle's dynamic performance and five sound modes. With 30 speakers and an impressive 1,615-watt amplifier output, this advanced system produces an exceptionally clear and wonderfully nuanced sound. Standout features include eight speakers integrated into the front and rear head restraints, two Diamond tweeters, a quartet of 3D speakers, plus two central bass speakers and two subwoofers under the rear seats. In addition to this, the Bowers & Wilkins Surround Sound System also incorporates a 4D Audio function generated using 'shakers' in the front seats. Their precise, magnetically controlled vibrations result in intense perception of bass frequencies, even at low volumes. The midrange units in the Bowers & Wilkins Surround Sound System are installed underneath the fabric door panel trim. The tweeters feature brushed stainless-steel grilles with brand logo etching and a

discreet lighting effect.

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 Rolls-Royce Motor Cars; Designworks, a strategic design consultancy based in California; technology offices in Silicon Valley and Chicago, and various other operations throughout the country. BMW Manufacturing Co., LLC in South Carolina is the BMW Group global center of competence for BMW X models and manufactures the X3, X4, X5, X6 and X7 Sports Activity Vehicles. The BMW Group sales organization is represented in the U.S. through networks of 349 BMW passenger car and BMW Sports Activity Vehicle centers, 145 BMW motorcycle retailers, 117 MINI passenger car dealers, and 38 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.

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2021 Jeep® Wrangler 4xe
SPECIFICATIONS

Specifications are based on the latest product information available at the time of publication.
All dimensions are in inches (millimeters) unless otherwise noted.
All dimensions measured at curb weight with standard tires and wheels.

GENERAL INFORMATION	
Vehicle Type	Sport-utility vehicle
Assembly Plant	Toledo Assembly Complex, Toledo, Ohio
EPA Vehicle Class	Multipurpose vehicle

BODY/CHASSIS	
Layout	Longitudinal, front engine, transfer case, four-wheel drive
Construction	Ladder-type frame, open steel and aluminum body

ENGINE: 2.0-LITER TURBO I-4	
Type and Description	I-4 16-valve with direct injection, turbocharging, with throttled, cooled EGR
Displacement (cu. in. / cc)	121 cu. in. (1,995 cu. cm)
Bore x Stroke	3.31 x 3.54 (84 x 90)
Valve System	Chain-driven DOHC, 16 valves
Fuel Injection	Direct Injection
Construction	Aluminum block, aluminum alloy heads
Compression Ratio	10.0:1
Power (SAE net) (hp / kW@rpm)	270 hp (200 kW) at 5,250 rpm
Torque (SAE net) (lb.-ft. / N•m)	295 lb.-ft. (400 N•m) at 3,000 rpm
Max. Engine Speed (rpm)	5,800 rpm (electronically limited)
Fuel Requirement	Minimum unleaded regular, 87 octane (R + M)/2; 91 octane or higher recommended for optimum fuel economy and performance

Fuel Tank Capacity (gallons)	17.2
Oil Capacity	5 quarts (4.7 liters)
Coolant Capacity	9.9 quarts (9.4 liters)
Emission Controls	GPEC4 engine-management system with close-coupled catalyst and wide range O_2 sensor
Max. Gross Trailer Weight	3,500 lbs.
Assembly Plant	Termoli, Italy, and Trenton South Engine Plant, Trenton, Michigan

eTORQUE BELT-START GENERATOR/MOTOR

Peak power	44 hp (33 kW)
Starting torque	39 lb.-ft. (53 Nm)

TRANSMISSION: 8P75PH PHEV AUTOMATIC, EIGHT-SPEED OVERDRIVE

Description	Plug-in hybrid automatic transmission with AC traction motor with Motor Interrupting Clutch and Integrated Launch Element; adaptive electronic control and Auto Stick driver-interactive manual control
Gear Ratios	
1st	4.71
2nd	3.14
3rd	2.11
4th	1.67
5th	1.28
6th	1.00
7th	0.84
8th	0.67
Reverse	3.32

INTEGRATED TRANSMISSION TRACTION MOTOR

Peak torque	181 lb.-ft. (245 Nm)
Peak power	134 hp (100 kW)

HIGH VOLTAGE BATTERY	
Chemistry	Lithium Ion Li-NMC
Charging Modes	Level 1 — 120V AC, Level 2 — 240V AC
Operating Voltage	260 – 400 VDC
Gross Capacity	17.3 kWh
Maximum Charge Rate	7.2 kW

TOTAL POWERTRAIN OUTPUT	
Peak combined torque	470 lb.-ft. (637 Nm) at 3,000 rpm
Peak combined power	375 hp (280 kW) at 5,250 rpm

TRANSFER CASE: MP3022 SELEC-TRAC (4xe and Sahara 4xe)	
Type	Full-time
Operating Modes	2WD High; 4WD Auto; 4WD High; Neutral; 4WD Low
Low Range Ratio	2.72:1

TRANSFER CASE: MP3022OR ROCK-TRAC (Rubicon 4xe)	
Type	Full-time
Operating Modes	2WD High; 4WD Auto; 4WD High; Neutral; 4WD Low
Low Range Ratio	4.0:1

AXLES	
Front	3rd Generation Dana 44
Differential type	Open (4xe and Sahara 4xe) or Tru-Lock electronic locking (Rubicon 4xe)
Rear	3rd Generation Dana 44
Differential type	Open (4xe and Sahara 4xe) with available Trac-Lock anti-spin Tru-Lok electronic locking (Rubicon 4xe)
Axle ratios	3.73 (4xe and Sahara 4xe) or 4.10 (Rubicon 4xe)

ELECTRICAL SYSTEM	
Architecture	Powernet
DC/DC Converter Capacity	2.5 kW
Low Voltage Battery	600 CCA, maintenance free (Standard) 700 CCA, maintenance free (Optional)

SUSPENSION	
Front	Solid axle, link coil, leading arms, track bar, coil springs, stabilizer bar
Stabilizer bar	Electronic sway-bar disconnect system (Rubicon 4xe)
Shock type	4xe: Gas-charged twin-tube shock absorbers with full displacement Multi-tuned Valve (MTV) technology Sahara 4xe: High-pressure gas-charged monotube shock absorbers with MTV technology Rubicon 4xe: High-press gas-charged monotube shock absorbers with MTV technology and hydraulic rebound stop
Rear	Solid axle, link coil, trailing arms, track bar, coil springs, stabilizer bar
Shock type	4xe: Gas-charged twin-tube shock absorbers with full displacement MTV technology Sahara 4xe: High-pressure gas-charged monotube shock absorbers with MTV technology Rubicon 4xe: High-pressure gas-charged monotube shock absorbers with MTV technology and hydraulic rebound stop

STEERING	
Type	Electro-hydraulic power
Overall ratio	13.7:1
Turning diameter (curb-to-curb) (ft)	39.4
Steering Turns (lock-to-lock)	3.1
P/S pump	Electro-hydraulic

BRAKES	
Type	Hydro-electric anti-lock braking system with fully blended regeneration capacity
Front	
Rotor size and type	12.9 x 1.1 (330 x 28) vented rotor
Caliper size and type	2 (51) twin-piston floating calipers
Rear	
Rotor size and type	13.6 x .86 (345 x 22) vented rotor
Caliper size and type	2 (51) single-piston floating calipers

DIMENSIONS AND CAPACITIES	
Wheelbase	118.4 (3,008)
Overhang — Front	29.5 (749.8)
Overhang — Rear	40.3 (1,023)
Track — Front	64.4 (1,636)
Track — Rear	64.4 (1,636)
Overall Length (includes spare tire)	188.4 (4,786)
Overall Width	73.8 (1,875)
Overall Height	73.5 (1,868)

CLEARANCES	
Approach angle, degrees	42.2 (4xe and Sahara 4xe), 43.8 (Rubicon 4xe)
Breakover angle, degrees	22.0 (4xe and Sahara 4xe), 22.5 (Rubicon 4xe)
Departure angle, degrees	35.2 (4xe and Sahara 4xe), 35.6 (Rubicon 4xe)
Ground clearance, inches	10.1 (4xe and Sahara 4xe), 10.8 (Rubicon 4xe)

CURB WEIGHT (lb.)	5000 (4xe); 5100 (Sahara 4xe); 5222 (Rubicon 4xe)

ACCOMMODATIONS	
Seating Capacity, F/R	2/3
SAE Total Interior Passenger Volume, (cu. ft. / cu. m)	103.3 (2.93)
Front	
Headroom	40.8 (1,036) hardtop / 42.8 (1,087) soft top
Legroom	40.8 (1,038)
Shoulder room	55.8 (1,417)
Hip room	53.9 (1,370)
Seat travel	8.1 (206)
EPA front volume index	54.6 (1.55)

Rear	
Headroom	40.3 (1,023) hardtop, 42.6 (1,082) soft top
Legroom	38.2 (970)
Knee clearance	61.6 (1,565.9)
Shoulder Room	55.8 (1,417)
Hip Room	55.9 (1,421)
EPA rear seat volume index (cu. ft. / cu. m)	48.7 (1.38)
Liftover height	29.7 (756.4)
Maximum cargo width at liftgate opening	47.9 (1,217)
Minimum cargo width at liftgate opening	41.5 (1,054)
Maximum cargo height at liftgate opening	36.0 (942.3)
Minimum cargo height at liftgate opening	35.7 (907.8)
Distance between wheelhouse interior trim	45.0 (1143)

SAE Cargo Volume	
Rear seat folded	67.4 cu. ft. (1.91)
Rear seat upright	27.7 cu. ft. (0.78)
Total passenger plus cargo volume, (cu. ft. / cu. m)	131 / 3.71

WHEELS	
Availability	Standard (4xe, Sahara 4xe)
Type and Material	High-Gloss painted cast aluminum
Size	20 x 8 in.
Availability	Standard (Rubicon 4xe)
Type and Material	Painted pocket with Mid-Gloss paint and polished cast aluminum
Size	17 x 7.5 in.

TIRES	
Availability	Standard (4xe, Sahara 4xe)
Size and Type	275/55R20, on/off-road, black sidewall
Mfr. And Model	Bridgestone Dueler H/L Alenza
Revs per Mile (km)	649 (403)
Availability	Standard (Rubicon 4xe)
Size and Type	LT285/70R17, on/off-road, black sidewall
Mfr. And Model	BF Goodrich KO2 All-Terrain
Revs per Mile (km)	637 (396)

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Additional information and news from FCA US LLC are available at http://media.fcanorthamerica.com

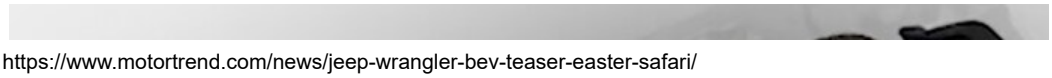
Watch Out, Hummer! Jeep Wrangler BEV Concept Previews Electric 4x4

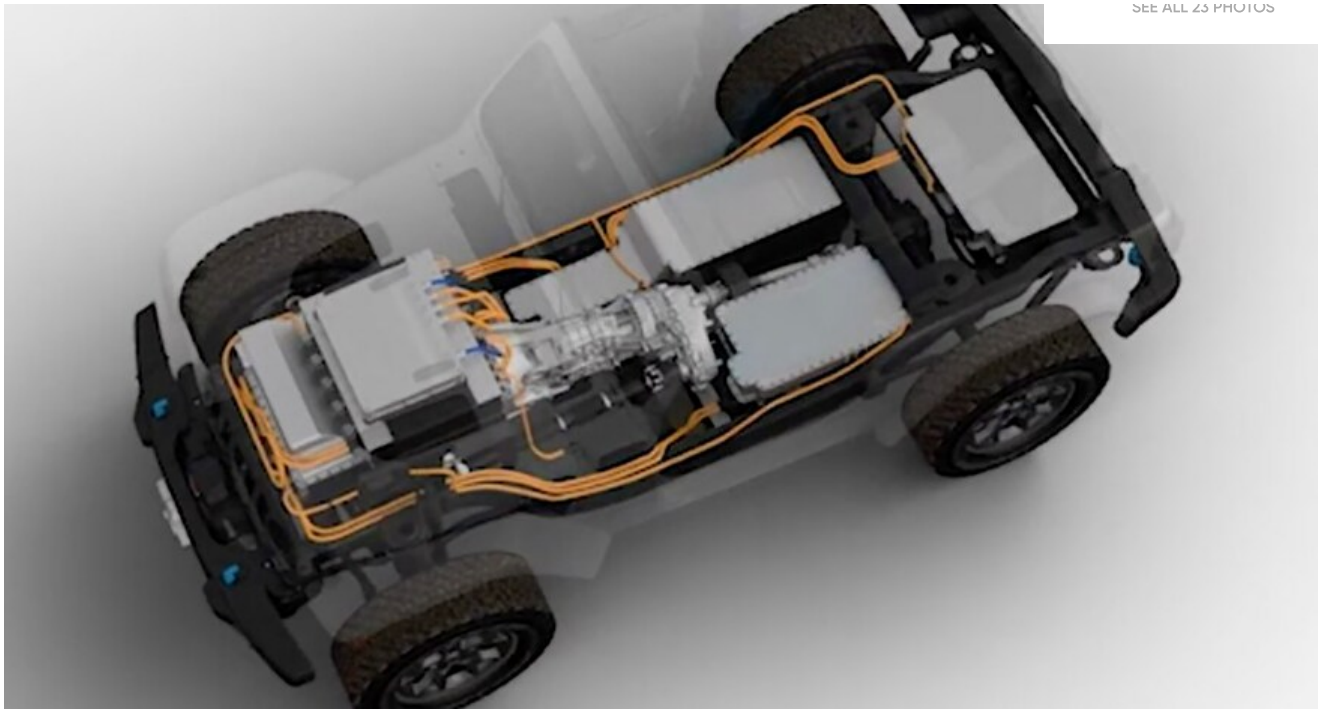
Jeep will pull the covers off the electric Wrangler SUV at this year's Easter Jeep Safari.

Greg Fink - Author | Feb 8, 2021

Jeep has some concept car tricks up its proverbial sleeves for the 2021 Easter Jeep Safari in Moab, Utah, which kicks off March 27. Specifically, the brand plans to reveal an electric variant of its iconic Wrangler, which goes by the rather uncreative name of the Wrangler BEV—or battery-electric vehicle—concept.

Likely one of the many concept vehicles Jeep will presumably bring to the annual off-roading event—or in this age of coronavirus, perhaps just digitally reveal around the event—the Wrangler BEV builds upon the 2021 Jeep Wrangler 4xe plug-in gasoline-electric hybrid. Unlike the Wrangler 4xe, which relies on a pair of electric motors *and* a turbocharged 2.0-liter four-cylinder engine for motivation, the Wrangler BEV concept sheds the gas engine from the equation and carries more batteries.





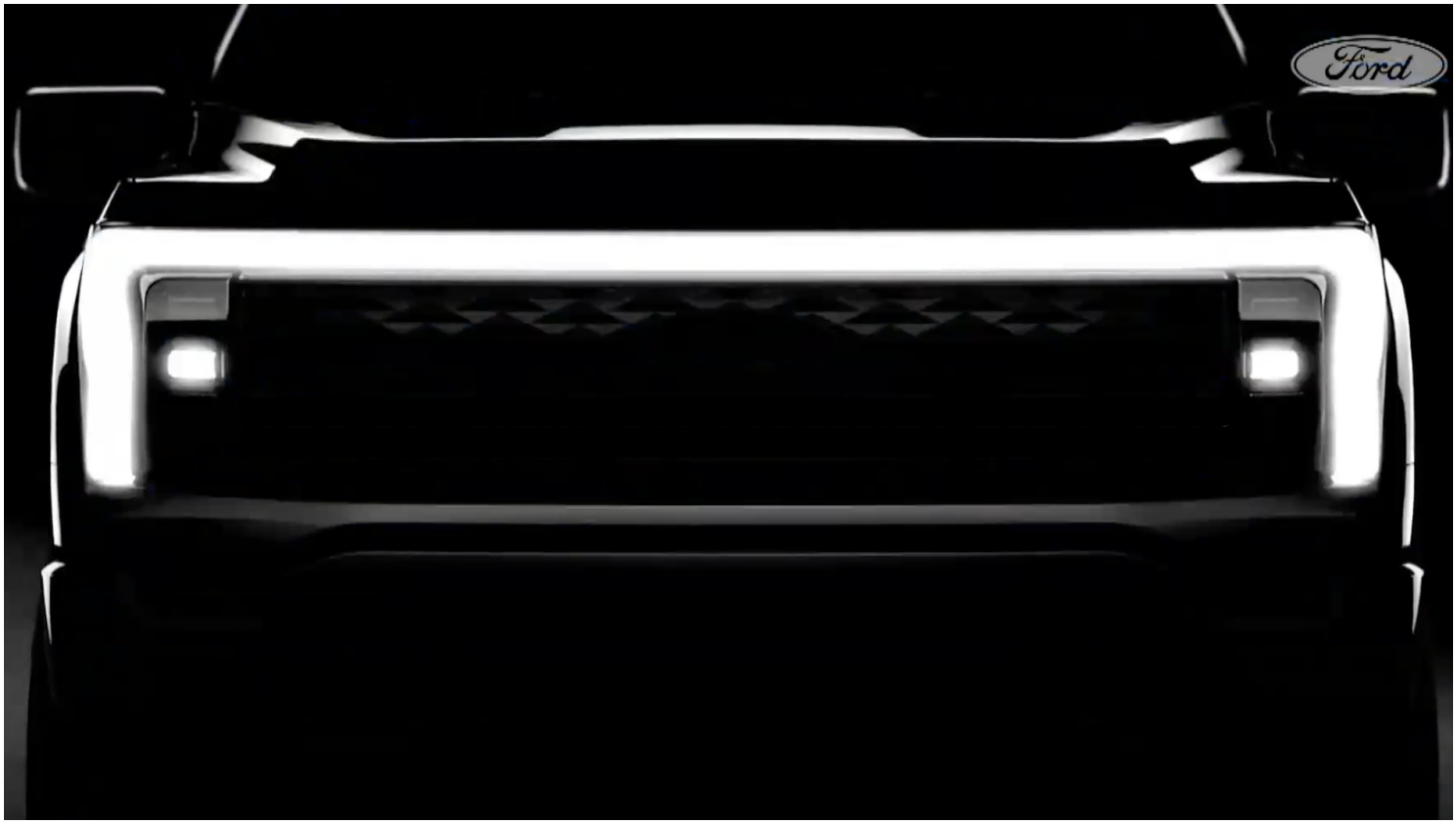
Just how many motors the Wrangler BEV concept employs remains a bit of a mystery. A cutaway of the concept reveals a traditional-looking gearbox and transfer case, the combination of which sends power from the powertrain to the front and rear axles. In other words, the Wrangler BEV concept does not appear to utilize individual front and rear motors as is common among all-wheel-drive electric vehicles, including the upcoming 2022 GMC Hummer EV. Then again, we aren't sure it'd make sense to package electric motors physically *on* the Jeep's solid axles—that'd be a lot of unsprung mass, and, well, the axles would be huge.

A teaser image of the Wrangler BEV concept shows few external differences between it and its gas, diesel, and gasoline-electric Wrangler counterparts. The most notable alteration seems to be the BEV's seven-slot grille, which appears to lack any formal openings and possibly features distinct lighting elements. Likewise, the teaser image looks to show the BEV concept uses the Wrangler's long-wheelbase four-door body style as a base, which makes sense given the physical size of the concept's electric bits.

We are as much in the dark about the details of the Wrangler BEV concept as the SUV itself is in the leading teaser image. Expect Jeep to share more details about its electric Wrangler concept in the days leading up to the Easter Jeep Safari.

2023 Ford F-150 Electric

Starting at $70,000 est



FORD

Select a year

2023

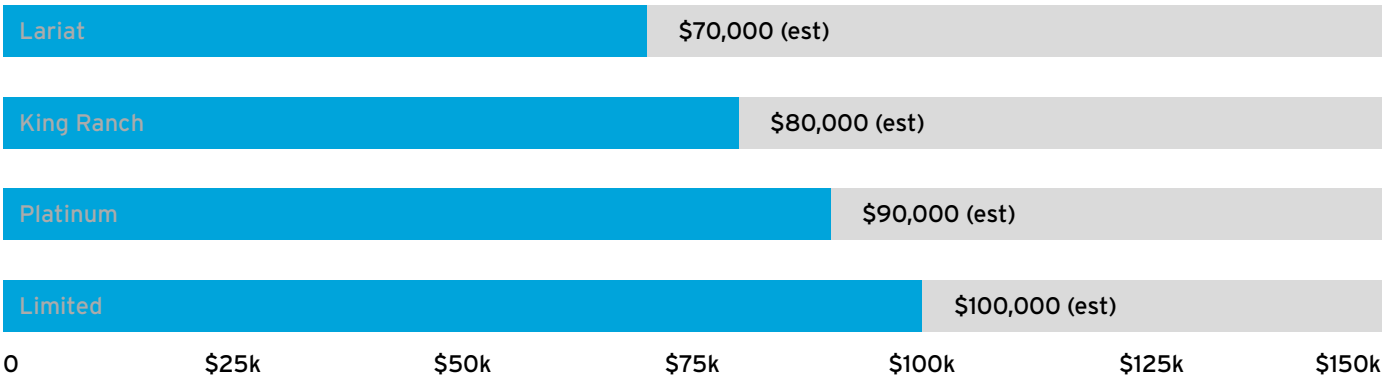
Overview

Ford hasn't kept the upcoming F-150 Electric a secret, evidenced by the company's **million-pound towing stunt** from 2019. But by the time the 2023 F-150 Electric reaches the market, it won't be the only option in the all-electric pickup truck market. **GMC's Hummer EV SUT** is close to its launch, and rival trucks from **Tesla** and **upstart Rivian** may also beat Ford to the punch. None of those trucks, however, have the power of the F-150 name behind them, and the electric version of America's favorite truck will surely be an impressive piece when it goes on sale sometime in mid-2022.

What's New for 2023?

Even though it may share underpinnings with the current gasoline-powered F-150, the F-150 Electric will be an all-new model for the Ford truck lineup. We expect the truck to offer all-wheel drive as standard and boast big towing-capacity numbers. We'll update this story with more information closer to the F-150 Electric's on-sale date.

Pricing and Which One to Buy



It's unclear right now if the F-150 Electric will follow the gasoline-powered F-150's model nomenclature or debut with a set of trims all its own. We think it'd be a better idea to lean into the current truck's traditions, so we're hoping for names like Lariat and King Ranch to carry over to the electrified version. It's unlikely that base-level XL and value-oriented XLT models will make the cut due to the likely high price of the

electric powertrain, but at this point we can't be sure. Expect a starting price of around $70,000 with loaded models going into the six-figure range.

Engine, Transmission, and Performance

Ford hasn't released many details about the F-150 Electric's powertrain so far, but it has said it will feature dual electric motors—presumably one for each axle, making the truck all-wheel drive. Horsepower ratings are unknown, but the F-150 Electric is likely to be one of the more powerful F-150 models available when it goes on sale. Performance should be quite brisk, but we'll have to wait until we can strap our test gear on to find out exactly how quick the new truck will be. Ford has also submitted patents for **a removable range extender motor** disguised as one of those aftermarket, bed-mounted tool boxes. The motor would kick in to recharge the battery in the event there's no charging station nearby.

MORE ON THE FORD F-150 ELECTRIC

2023 Ford F-150 EV Aiming for Big Power, Low Costs

Towing and Payload Capacity

Towing capacity is sure to be nothing short of heroic. Ford **staged an event in July 2019** to prove that its prototype could tow a 1,000,000-pound section of train cars loaded with F-150s. Official capacity will likely be quite a bit lower than that, and it's

unclear yet how Ford intends to retain the truck's electric driving range when pulling a heavy trailer.

Range, Charging, and Battery Life

We don't have details on the F-150 Electric's driving range or charging system yet, but we are hoping for big battery packs capable of at least 300 miles of range per charge. Unlike smaller electric cars, the F-150 Electric should be large enough to accommodate ample battery cells for such a range. We expect buyers will be able to charge their F-150 Electrics at home via 110- and 220-volt outlets; Ford will also likely make DC fast charging capability at least an option, if not a standard feature.

Fuel Economy and Real-World MPG

The EPA has not released fuel economy ratings for the F-150 Electric. The truck is still in development and those estimates are usually released close to when a new vehicle goes on sale. When we get the chance, we'll subject the F-150 Electric to our 75-mph highway fuel economy test and update this story with results. For more information about the F-150 Electric's fuel economy, visit **the EPA's website**.

Interior, Comfort, and Cargo

While we've seen a teaser photo of the F-150's front fascia, we haven't been given a peek inside. However, we expect the F-150 Electric to offer much the same accommodations as the regular gasoline-powered model. A crew-cab body style is likely, but we aren't sure yet if Ford will offer the F-150 Electric in Regular (two-door) or SuperCab (rear half-doors) configurations. Ford could take a high-tech route with the cabin of the F-150 Electric, too, moving to an all-digital control panel and digital

gauge display layout that's popular among EVs such as the Tesla Model X SUV, the Rivian R1T pickup truck, and the Lucid Air sedan.

THE CAR AND DRIVER DIFFERENCE

Here's How We Test Cars

Infotainment and Connectivity

Touchscreen infotainment with Ford's latest Sync 4 software is a given, but we have no idea if it will live on a traditional 8.0- or 12.0-inch display like it does in the current F-150 pickup or if it will grow to a massive size like what we see in Tesla vehicles. Apple CarPlay, Android Auto, a Wi-Fi hotspot, and SiriusXM satellite radio are expected to be standard; in-dash navigation may be optional, and we think Ford will leverage its partnership with Bang & Olufsen to deliver an optional premium stereo system.

Safety and Driver-Assistance Features

A host of driver-assistance features is also expected to be standard, with more high-tech ones being offered as options. For more information about the F-150 Electric's crash-test results, visit the National Highway Traffic Safety Administration (NHTSA) and Insurance Institute for Highway Safety (IIHS) websites. Key safety features are likely to include:

- Standard automated emergency braking with pedestrian detection
- Available lane-departure warning with lane-keeping assist
- Available adaptive cruise control

Warranty and Maintenance Coverage

Ford's basic warranty package will likely need to grow to offer a battery warranty, which we expect will mirror rivals in the electric-vehicle marketplace at eight years or 100,000 miles.

- Limited warranty covers 3 years or 36,000 miles
- Powertrain warranty covers 5 years or 60,000 miles
- Battery components warranty covers 8 years or 100,000 miles
- No complimentary scheduled maintenance

2021 Ford Bronco

2023 Ford F-150 Electric

2022 Ford Bronco Raptor

2022 Ford E-Transit

2022 Ford Maverick

2021 Ford Bronco Sport

2021 Ford EcoSport

2021 Ford Edge

2021 Ford Escape

2021 Ford Expedition

FORD MEDIA CENTER

The Truck of the Future Is Here: All-Electric Ford F-150 Lightning

All-Electric Power to Wow, More Connected Technology, Elevated Drive Experience and Built Ford Tough Capability

Super Powers Only Electric Can Deliver

F-Series, America's best-selling truck for 44 years[1], charges into the future with the F-150 Lightning, elevated by all the advantages of electrification and packed with connected technology. F-150 Lightning is a powerhouse that delivers a targeted 563 horsepower and 775 lb.-ft. of torque – the most torque of any F-150 ever – an exhilarating drive, a high-tech frunk, and the ability to power your home if needed.

Advanced Tech Now – to Guide You into the Future

F-150 Lightning offers an ingenious array of connected, intelligent features that improve over time via over-the-air software updates; FordPass app provides seamless access to charging stations and remote vehicle controls; available BlueCruise offers true hands-free driving on the highway, while enhanced Pro Power Onboard powers job sites or campsites.

No Question: Built Ford Tough Comes Standard

Powered by dual in-board motors and with standard 4x4, F-150 Lightning can take on rough terrain with Built Ford Tough durability and capability. Along with a high-strength, military-grade aluminum alloy body, a new independent rear suspension delivers improved ride comfort, while an all-new frame uses the strongest steel ever put in an F-150 frame and supports a maximum 2,000-pound payload and up to 10,000-pound towing capacity.

- **For the digital magazine release, click here.**

DEARBORN, Mich., May 19, 2021 – The truck of the future is here. The F-150 Lightning is the smartest, most innovative truck Ford has ever built. From near instant torque to intelligent towing, seamless connectivity to software updates, plus power for your home, a power frunk and a digital screen that's larger than any currently offered on a full-size truck – F-150 Lightning is a driving and ownership experience unlike any other.

F-150 Lightning will roll off the line next year at a new high-tech factory using sustainable manufacturing practices at Ford's storied Rouge complex in Dearborn just outside Detroit.

"For both Ford and the American auto industry, F-150 Lightning represents a defining moment as we progress toward a zero-emissions, digitally connected future," said Bill Ford, executive chair, Ford Motor Company. "F-Series is America's best-selling truck for 44 years, the backbone of work across the country, and a trusted icon for generations of customers. Now we are revolutionizing it for a new generation."

F-150 Lightning is a pillar of the company's more than $22 billion global electric vehicle plan to lead electrification in areas of strength. Ford is starting with zero-emissions versions of its most popular and best-loved franchises – Mustang, Transit and F-150 – with much more to come in the years ahead.

Wickedly quick off the mark, quiet and smooth, F-150 Lightning delivers a new experience for truck owners at a starting price on par with today's similarly configured F-150 trucks. The electric platform unlocks new capabilities as well – such as enough energy to power an entire home and a massive lockable frunk with power and charging capabilities to spare. Ford will deploy standard over-the-air software updates – called Ford Power-Up – to improve the technology experience, add new features and fix issues without trips to the dealership.

All this and more is backed by proven Built Ford Tough F-Series durability and capability and the largest public charging network in North America.[2] The commercial-oriented entry model starts at $39,974 MSRP[3] before any federal or state tax credits, while the mid-series XLT model starts at $52,974 MSRP, offering additional comfort and technology.

"The F-150 Lightning is a massive moment for our Ford team. America's No. 1 auto brand is going zero emissions with America's favorite vehicle.It's quicker than a Raptor, with standard 4x4 and independent rear suspension; a power frunk, enough juice to run your house for three days or power an awesome tailgate; and it will forever improve with over-the-air updates," said Ford President and CEO Jim Farley."It will be built at the Rouge factory, where Henry Ford changed the world and my grandfather punched in every day.F-150 Lightning represents all that our country can do when we push for progress."

F-150 Lightning targets 563 horsepower, 775 lb.-ft. of near instantaneous torque[4] – more than any F-150 ever – and a 0-60 mph time in the mid-4-second range when equipped with an extended-range battery, based on typical industry methodology. F-150 Lightning targets a maximum 2,000 pounds of payload in the standard-range model with 18-inch wheels, and a maximum 10,000 pounds of available towing capacity on XLT and Lariat trucks with the extended-range battery and Max Trailer Tow Package. The low center of gravity brings even more confident handling whether traveling along rain-slicked roads or through sand.

"We're not here to make an electric truck for the few – Ford is committed to building one that solves real problems for real people," said Kumar Galhotra, Ford president, Americas and International Markets Group, Ford Motor Company. "F-150 Lightning delivers everything we've said electric vehicles can offer, plus the capability expected from a Built Ford Tough truck – not just near instant torque but powerful towing and hauling customers can depend on."

Smart, Connected – And Better Over Time

Packed with intelligent features, F-150 Lightning epitomizes how Ford combines advanced digital technologies with proven engineering know-how to create a truck that's even smarter and more productive. As part of available Ford Co-Pilot360™ technology, BlueCruise allows for true hands-free driving on more than 100,000 miles of pre-qualified divided highways in the U.S. and Canada – with more Hands-Free Blue Zones to come in the future[5].

Another example is available Onboard Scales, which uses the truck's sensors to estimate payload and tell customers how much they're hauling. And since payload can impact range, Onboard Scales is integrated with Intelligent Range to help ensure F-150 Lightning gives an accurate estimate of how far you can go. F-150 Lightning debuts available Pro Trailer Hitch Assist, which automatically controls steering, throttle and brake inputs to make hitching trailers even easier.

Also making its F-Series debut on select vehicles is available Phone As A Key. When activated, this allows customers to lock, unlock and start their truck without taking their phone out of their pocket or using a key fob.

All these features and more can get even better over time with Ford Power-Up software updates. These can help improve the performance of F-150 Lightning, deliver quality upgrades, update existing features and add all-new functions and capabilities. The majority of updates will be completed in under two minutes and whenever the customer chooses[6].

Advanced Digital Experience

Making its truck debut on F-150 Lightning in the Lariat and Platinum series is SYNC® 4A – a sleek, modern interface supported by a 15.5-inch touch screen and designed to adapt to driver behavior. SYNC 4A employs natural voice control, cloud-connected navigation and wireless access to your favorite services: Apple CarPlay, Android Auto, integrated Amazon Alexa and SYNC AppLink apps.

Elevating the digital experience even further is the 12-inch instrument cluster, featuring a customizable interface that instills confidence by naturally surfacing key information. Animated graphics smoothly relay how the vehicle is performing in hands-free highway driving mode or how well you're bringing power back to your vehicle through regenerative braking, seamlessly providing relevant information as needed.

"It really is the smartest F-150 we've ever made," said Darren Palmer, general manager, Battery Electric Vehicles, Ford Motor Company. "F-150 Lightning offers an immersive touch screen, giving our customers all the info they want in an instant – a real-time view of where they're going, what they're hauling or how much real-world range they've got banked. And with Ford Power-Up software updates, the experience is only going to get better."

Revolutionary Power At Home

Debuting on F-150 Lightning is available Ford Intelligent Backup Power, turning your truck into the ultimate power source for your home. With the ability to offload 9.6 kilowatts of power, Ford Intelligent Backup Power keeps the lights on during an outage while providing security by powering home appliances, security systems and more.

"Whether sheltering during a storm or trying to stay safe in a heat wave, customers can now use their truck to give themselves power when they need it most," said Ryan O'Gorman, electric vehicle manager, Strategic Partnerships. "F-150 Lightning is built for seamless transitions between charging your vehicle and powering your house when needed – and Ford is the first in the U.S. to offer this capability on an electric truck."

With Ford Intelligent Backup Power, enabled by the available 80-amp Ford Charge Station Pro and home management system Ford can help install, F-150 Lightning automatically kicks in to power your house. Once power is restored, the truck automatically reverts to charging its battery. Based on an average 30kWh of use per day, F-150 Lightning with extended-range battery provides full-home power for up to three days, or as long as 10 days if power is rationed, with results varying based on energy usage.

In the future, Ford will introduce Ford Intelligent Power, which can use the truck to power homes during high-cost, peak-energy hours while taking advantage of low-cost overnight rates to charge the vehicle in time for your morning drive. This can help save money on electricity that powers your vehicle and home while also taking pressure off the grid in peak usage times.

Ford is also teaming up with the nation's leading solar company, Sunrun, to facilitate easy installation of the 80-amp Ford Charge Station Pro and home integration system. Through this collaboration, customers will also have the opportunity to install solar energy on their home, enabling them to power their household with clean, affordable energy and charge their F-150 Lightning with the power of the sun.

Stay Plugged in on the Road

Power capability is not limited to the home, either. With enhanced Pro Power Onboard, customers can take advantage of built-in electrical outlets to directly power a variety of tools, electronics and appliances away from home. Standard on base trims is 2.4 kilowatts of power with the option for more, while Lariat and Platinum series come standard with 9.6 kilowatts of power – a combination of up to 2.4 kilowatts available through the frunk and up to 7.2 kilowatts through outlets in the cab and bed.

Smart features make power management easier than ever. Customers receive a FordPass notification if their truck's battery falls below one-third of its total range, and they can even set the truck to stop using Pro Power Onboard if the battery level approaches the distance to the nearest charging station.

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Under the hood is a versatile, high-tech mega power frunk offering dedicated storage space that's secure, lockable and easily accessible by a powered open and close system. This spacious area targets 400 liters of volume and 400 pounds of payload – enough to stow two carry-on bags and one checked bag, or two sets of golf clubs.

Cleverly designed with bumper-height clearance, this water-resistant space comes equipped with four electrical outlets, two USB chargers and a drainable floor that can double as a food and beverage container. It can easily power a mobile work site or an epic tailgate. With 2.4 kilowatts of power, there's enough capability to plug in power tools, TVs, laptops, speakers, crockpots and more.

"The words 'front trunk' don't even begin to describe all the innovation and capability Ford packed into this high-powered space," said Nancy Reppenhagen, supervisor, Global Feature Process. "It will have customers rethinking what their truck is capable of – and enable the kinds of experiences they never would have thought possible before."

Built Ford Tough Comes Standard

F-150 Lightning goes through the same tortuous Built Ford Tough testing as all F-Series trucks. The military-grade aluminum alloy body and upgraded frame support the advanced battery, while the first F-Series independent rear suspension and low center of gravity help improve isolation from the road, provide a more stable ride and reduce steering roll – while maintaining the durability and reliability expected from F-150.

"Whether they're hauling a bed full of firewood through snow or towing a trailer on a road trip, customers need to be able to rely on their truck's performance," said Linda Zhang, chief engineer, F-150 Lightning. "This all-electric truck has been engineered with dual in-board motors, which means it can take on rough terrain. Our team of engineers has run the same arduous test regimen our F-150 customers have learned to expect from Ford."

F-150 Lightning boasts excellent off-road performance, with a 4x4 system featuring four selectable drive modes: Normal, Sport, Off Road and Tow/Haul. Rugged underbody protection keeps the battery safe, with metal skid plates shielding both the battery and inboard motors from tough terrain. The battery itself is secured inside waterproof casing surrounded by crash-absorption protection and has been tested at temperatures as extreme as minus 40 degrees Fahrenheit to ensure Lightning can perform when needed most.

Rigorous endurance testing included running the truck through Iowa Hill, Calif., where it towed massive trailers for long durations up and down steep inclines. As a result, F-150 Lightning sports a state-of-the-art liquid cooling system and

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Ford has your back when it comes to charging. Ford is the only automaker to offer an 80-amp charge station as standard equipment, helping customers easily charge an extended-range truck at home. This system takes advantage of the only dual onboard charging system on an electric truck in the industry for even faster home charging. With this, F-150 Lightning adds an average range of 30 miles per charging hour, fully charging an extended-range truck from 15% to 100% percent in about eight hours[8].

On the road, customers have seamless access to North America's largest public charging network through FordPass, with more than 63,000 charging plugs and growing across the U.S. On a 150-kilowatt DC fast charger, extended-range F-150 Lightning is targeted to get up to 54 miles of range in 10 minutes and charge from 15% to 80% percent in about 41 minutes[8].

F-150 Lightning takes the guesswork out of when and where to re-charge with FordPass Power My Trip, which identifies charging routes before even starting your journey. In the truck, Intelligent Range accurately calculates range while factoring in weather, traffic, payload, towing weights and more. Cloud-connected navigation on SYNC 4 also identifies public charging locations and prompts owners to charge at convenient points on each drive.

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F-150 Lightning is the most aerodynamic F-150 ever[9], with improvements like newly shaped running boards, a sculpted hood to reduce drag, and grilles that replace air intake holes with a smoother, textured surface. Even more functional design delivers available enhanced 360-degree Zone Lighting, which can light up a specific zone or the entire area around the vehicle.

And F-150 Lightning makes no compromises on space, maintaining the same cab and bed dimensions as its gas counterpart, so it remains capable of accommodating thousands of accessories already available. The available fold-out Interior Work Surface makes working inside the vehicle even easier and more productive, while available Max Recline Seats offer nearly 180 degrees of recline to help customers recharge as needed.

Proudly assembled in America, F-150 Lightning will make use of the new, state-of-the-art Rouge Electric Vehicle Center – which will also be a zero-waste-to-landfill site. Ford is investing $700 million into the historic Rouge Complex, adding 500 new jobs and employing advanced sustainable manufacturing technology to build the truck as part of its commitment to becoming carbon neutral by 2050.

Arriving in spring 2022, F-150 Lightning will be available in four series and two battery options at more than 2,300 EV-certified Ford dealers across the country, with the option for fleet customers to access Ford's complete ecosystem of connected data and telematics services via Ford Commercial Solutions.

Reserve your spot in line today with a $100 deposit.

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[9]Based on an equivalent body style/driveline/drivetrain.

Horsepower, torque, payload, towing and targeted EPA-estimated range are independent attributes and may not be achieved simultaneously.

About Ford Motor Company

Ford Motor Company (NYSE: F) is a global company based in Dearborn, Michigan. The company designs, manufactures, markets and services a full line of Ford trucks, utility vehicles, and cars – increasingly including electrified versions – and Lincoln luxury vehicles; provides financial services through Ford Motor Credit Company; and is pursuing leadership positions in electrification; mobility solutions, including self-driving services; and connected vehicle services. Ford employs approximately 186,000 people worldwide. For more information regarding Ford, its products and Ford Motor Credi*t Company, please visit corporate.ford.com.*

FORD MEDIA CENTER

The Truck of the Future Is Here: All-Electric Ford F-150 Lightning

All-Electric Power to Wow, More Connected Technology, Elevated Drive Experience and Built Ford Tough Capability

Super Powers Only Electric Can Deliver

F-Series, America's best-selling truck for 44 years[1], charges into the future with the F-150 Lightning, elevated by all the advantages of electrification and packed with connected technology. F-150 Lightning is a powerhouse that delivers a targeted 563 horsepower and 775 lb.-ft. of torque – the most torque of any F-150 ever – an exhilarating drive, a high-tech frunk, and the ability to power your home if needed.

Advanced Tech Now – to Guide You into the Future

F-150 Lightning offers an ingenious array of connected, intelligent features that improve over time via over-the-air software updates; FordPass app provides seamless access to charging stations and remote vehicle controls; available BlueCruise offers true hands-free driving on the highway, while enhanced Pro Power Onboard powers job sites or campsites.

No Question: Built Ford Tough Comes Standard

Powered by dual in-board motors and with standard 4x4, F-150 Lightning can take on rough terrain with Built Ford Tough durability and capability. Along with a high-strength, military-grade aluminum alloy body, a new independent rear suspension delivers improved ride comfort, while an all-new frame uses the strongest steel ever put in an F-150 frame and supports a maximum 2,000-pound payload and up to 10,000-pound towing capacity.

- **For the digital magazine release, click here.**

DEARBORN, Mich., May 19, 2021 – The truck of the future is here. The F-150 Lightning is the smartest, most innovative truck Ford has ever built. From near instant torque to intelligent towing, seamless connectivity to software updates, plus power for your home, a power frunk and a digital screen that's larger than any currently offered on a full-size truck – F-150 Lightning is a driving and ownership experience unlike any other.

F-150 Lightning will roll off the line next year at a new high-tech factory using sustainable manufacturing practices at Ford's storied Rouge complex in Dearborn just outside Detroit.

"For both Ford and the American auto industry, F-150 Lightning represents a defining moment as we progress toward a zero-emissions, digitally connected future," said Bill Ford, executive chair, Ford Motor Company. "F-Series is America's best-selling truck for 44 years, the backbone of work across the country, and a trusted icon for generations of customers. Now we are revolutionizing it for a new generation."

F-150 Lightning is a pillar of the company's more than $22 billion global electric vehicle plan to lead electrification in areas of strength. Ford is starting with zero-emissions versions of its most popular and best-loved franchises – Mustang, Transit and F-150 – with much more to come in the years ahead.

Wickedly quick off the mark, quiet and smooth, F-150 Lightning delivers a new experience for truck owners at a starting price on par with today's similarly configured F-150 trucks. The electric platform unlocks new capabilities as well – such as enough energy to power an entire home and a massive lockable frunk with power and charging capabilities to spare. Ford will deploy standard over-the-air software updates – called Ford Power-Up – to improve the technology experience, add new features and fix issues without trips to the dealership.

All this and more is backed by proven Built Ford Tough F-Series durability and capability and the largest public charging network in North America.[2] The commercial-oriented entry model starts at $39,974 MSRP[3] before any federal or state tax credits, while the mid-series XLT model starts at $52,974 MSRP, offering additional comfort and technology.

"The F-150 Lightning is a massive moment for our Ford team. America's No. 1 auto brand is going zero emissions with America's favorite vehicle.It's quicker than a Raptor, with standard 4x4 and independent rear suspension; a power frunk, enough juice to run your house for three days or power an awesome tailgate; and it will forever improve with over-the-air updates," said Ford President and CEO Jim Farley."It will be built at the Rouge factory, where Henry Ford changed the world and my grandfather punched in every day.F-150 Lightning represents all that our country can do when we push for progress."

F-150 Lightning targets 563 horsepower, 775 lb.-ft. of near instantaneous torque[4] – more than any F-150 ever – and a 0-60 mph time in the mid-4-second range when equipped with an extended-range battery, based on typical industry methodology. F-150 Lightning targets a maximum 2,000 pounds of payload in the standard-range model with 18-inch wheels, and a maximum 10,000 pounds of available towing capacity on XLT and Lariat trucks with the extended-range battery and Max Trailer Tow Package. The low center of gravity brings even more confident handling whether traveling along rain-slicked roads or through sand.

"We're not here to make an electric truck for the few – Ford is committed to building one that solves real problems for real people," said Kumar Galhotra, Ford president, Americas and International Markets Group, Ford Motor Company. "F-150 Lightning delivers everything we've said electric vehicles can offer, plus the capability expected from a Built Ford Tough truck – not just near instant torque but powerful towing and hauling customers can depend on."

Smart, Connected – And Better Over Time

Packed with intelligent features, F-150 Lightning epitomizes how Ford combines advanced digital technologies with proven engineering know-how to create a truck that's even smarter and more productive. As part of available Ford Co-Pilot360™ technology, BlueCruise allows for true hands-free driving on more than 100,000 miles of pre-qualified divided highways in the U.S. and Canada – with more Hands-Free Blue Zones to come in the future[5].

Another example is available Onboard Scales, which uses the truck's sensors to estimate payload and tell customers how much they're hauling. And since payload can impact range, Onboard Scales is integrated with Intelligent Range to help ensure F-150 Lightning gives an accurate estimate of how far you can go. F-150 Lightning debuts available Pro Trailer Hitch Assist, which automatically controls steering, throttle and brake inputs to make hitching trailers even easier.

Also making its F-Series debut on select vehicles is available Phone As A Key. When activated, this allows customers to lock, unlock and start their truck without taking their phone out of their pocket or using a key fob.

All these features and more can get even better over time with Ford Power-Up software updates. These can help improve the performance of F-150 Lightning, deliver quality upgrades, update existing features and add all-new functions and capabilities. The majority of updates will be completed in under two minutes and whenever the customer chooses[6].

Advanced Digital Experience

Making its truck debut on F-150 Lightning in the Lariat and Platinum series is SYNC® 4A – a sleek, modern interface supported by a 15.5-inch touch screen and designed to adapt to driver behavior. SYNC 4A employs natural voice control, cloud-connected navigation and wireless access to your favorite services: Apple CarPlay, Android Auto, integrated Amazon Alexa and SYNC AppLink apps.

Elevating the digital experience even further is the 12-inch instrument cluster, featuring a customizable interface that instills confidence by naturally surfacing key information. Animated graphics smoothly relay how the vehicle is performing in hands-free highway driving mode or how well you're bringing power back to your vehicle through regenerative braking, seamlessly providing relevant information as needed.

"It really is the smartest F-150 we've ever made," said Darren Palmer, general manager, Battery Electric Vehicles, Ford Motor Company. "F-150 Lightning offers an immersive touch screen, giving our customers all the info they want in an instant – a real-time view of where they're going, what they're hauling or how much real-world range they've got banked. And with Ford Power-Up software updates, the experience is only going to get better."

Revolutionary Power At Home

Debuting on F-150 Lightning is available Ford Intelligent Backup Power, turning your truck into the ultimate power source for your home. With the ability to offload 9.6 kilowatts of power, Ford Intelligent Backup Power keeps the lights on during an outage while providing security by powering home appliances, security systems and more.

"Whether sheltering during a storm or trying to stay safe in a heat wave, customers can now use their truck to give themselves power when they need it most," said Ryan O'Gorman, electric vehicle manager, Strategic Partnerships. "F-150 Lightning is built for seamless transitions between charging your vehicle and powering your house when needed – and Ford is the first in the U.S. to offer this capability on an electric truck."

With Ford Intelligent Backup Power, enabled by the available 80-amp Ford Charge Station Pro and home management system Ford can help install, F-150 Lightning automatically kicks in to power your house. Once power is restored, the truck automatically reverts to charging its battery. Based on an average 30kWh of use per day, F-150 Lightning with extended-range battery provides full-home power for up to three days, or as long as 10 days if power is rationed, with results varying based on energy usage.

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Under the hood is a versatile, high-tech mega power frunk offering dedicated storage space that's secure, lockable and easily accessible by a powered open and close system. This spacious area targets 400 liters of volume and 400 pounds of payload – enough to stow two carry-on bags and one checked bag, or two sets of golf clubs.

Cleverly designed with bumper-height clearance, this water-resistant space comes equipped with four electrical outlets, two USB chargers and a drainable floor that can double as a food and beverage container. It can easily power a mobile work site or an epic tailgate. With 2.4 kilowatts of power, there's enough capability to plug in power tools, TVs, laptops, speakers, crockpots and more.

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F-150 Lightning goes through the same tortuous Built Ford Tough testing as all F-Series trucks. The military-grade aluminum alloy body and upgraded frame support the advanced battery, while the first F-Series independent rear suspension and low center of gravity help improve isolation from the road, provide a more stable ride and reduce steering roll – while maintaining the durability and reliability expected from F-150.

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Development Continues on Built Ford Tough All-Electric F-150; Watch Prototype Tow More Than 1 Million Pounds

- Read a Medium blog from Ted Cannis, Ford's global director of electrification, about the company's future plans by clicking here.

DEARBORN, July 23, 2019 – As America's truck leader, we prefer to let our actions speak louder than words.

Watch as Linda Zhang, chief engineer of the Ford F-150, shows the capability of a prototype all-electric F-150 by towing 10 double-decker rail cars and 42 2019-model year F-150s, weighing more than 1 million pounds.[1]

Ford has confirmed it will bring an all-electric F-150 to market. This will be in addition to the all-new F-150 Hybrid that goes on sale next year. Both electrified models will have the toughness, capability and innovation that F-150 customers have come to expect.

That's Built Ford Tough.

1 *The F-150 prototype is towing far beyond a production truck's capacity in a one-time short event demonstration. Never tow beyond a vehicle's towing capacities. Always consult the Owner's Manual.*

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Jim Farley (left) and Bill Ford Jr. announce plans to produce all-electric F-150 in Dearborn.

VEHICLES

Ford Invests in BEV 'Truck of the Future'

The $700 million investment at Ford's Rouge assembly complex in Dearborn will create 300 jobs and result in a battery-electric F-150 pickup, rolling off the line in mid-2022, as well as an F-150 Power Boost hybrid.

Joseph Szczesny | Sep 18, 2020

Ford plans to spend $700 million for a new plant within the company's fabled Rouge complex in Dearborn, MI for building new battery-electric versions of the F-150.

Ford's first all-electric pickup truck ***(prototype pictured below on 60% grade)*** will roll off the new assembly line in mid-2022, Ford executives note, creating 300 jobs.

"We are proud to once again build and innovate for the future here at the Rouge with the debut of our all-new F-150 and the construction of a modern new manufacturing center to build the first-ever all-electric F-150," says Bill Ford, Ford's executive chairman, adding the Rouge complex has a long and illustrious history.

He recalls how other Ford executives urged him to close the complex in the 1990s, and he instead pushed to rebuild and renovate.

The COVID-19 crisis underscores why it is important for companies like Ford to help keep the U.S. manufacturing base strong and to help the U.S. get back to work – a point seconded by the United Auto Workers – the Ford executive chairman says at a socially distanced event at the Rouge Complex that was live streamed via YouTube.

"When America needs help, Ford responds," he says, noting the Rouge has been part of the American industrial fabric since it first opened in 1917. Ford's willingness to build vehicles in the U.S. supports 1 million jobs domestically, according to a study by the Boston Consulting Group.

Gerald Kariem, the UAW vice president in charge of the Ford Department, says, "We are proud today to announce for our Ford UAW members and our nation that Ford is building this new plant to assemble the truck of the future – a battery-electric Ford F-150.

"Where once the Mustang changed America, UAW members will now build the truck that will change America – Built Ford Tough by UAW members," says Kariem.

Jim Farley, Ford COO who will become CEO Oct. 1, emphasizes the new electric F-150, which will look much like the 2021 F-150, will be a genuine work truck built to haul, tow and travel off road.

"This is not a truck that's going to sit in somebody's garage next to four luxury cars," says Farley. "This is the truck that's going to lead Ford into the future."

The dual electric motors that will power the F-150 also will provide excellent acceleration, the automaker says. The electric F-150 will have a "frunk" where the engine compartment is on a conventional truck, where "several hundred" pounds of cargo and/or tools can be securely stored, Farley says.

The BEV F-150 also will be able to travel "hands free" on the highway and come with the latest connectivity technology, Ford officials note.

Farley says the new truck will be carbon neutral because the new assembly plant will operate only with renewable energy.

The $700 million investment at the Rouge Center ***(see digital schematic above)*** also will support assembly of the first-ever F-150 Power Boost hybrid. The 300 new jobs will support battery assembly and production of the F-150 Power Boost hybrid and fully electric F-150.

Including investments for Bronco and Ranger at the Michigan Assembly Plant in Wayne, MI, announced last year, Ford plans to invest more than $1.45 billion and create approximately 3,000 jobs over the next three years in Michigan alone, the automaker says.

Ford Media Center

FORD MUSTANG EXPANDS FAMILY: ALL-ELECTRIC MUSTANG MACH-E DELIVERS POWER, STYLE AND FREEDOM FOR NEW GENERATION

Nov 17, 2019 | LOS ANGELES

Ford Mustang Mach-E

Click Here to Reserve Your Mustang Mach-E

- For the first time in 55 years, Ford is expanding the Mustang lineup with the all-electric Mustang Mach-E SUV joining the sports coupe, convertible and special editions, featuring an all-new infotainment system and connected vehicle technology
- Mustang Mach-E embodies the Mustang spirit – from its sleek silhouette and muscular curves to exhilarating drive experiences that offer unique driving dynamics and sounds
- Mustang Mach-E GT Performance Edition brings the thrills Mustang is famous for, targeting 0-60 mph in the mid-3-second range and an estimated 342 kW (459 horsepower) and 830 Nm (612 lb.-ft.) of torque
- Mustang Mach-E instills confidence, targeting an EPA-estimated range of at least 300 miles with the available extended-range battery and rear-wheel drive, offering built-in charging solutions that route customers to nearby public charging stations, recommending where to charge on trips, and providing access to over 12,500 public charge stations in the FordPass charging network

LOS ANGELES, Nov. 17, 2019 – For the first time in 55 years, Ford is expanding the Mustang family, bringing the famous pony into the electric age with Mustang Mach-E, an all-new, all-electric SUV born of the same all-American ideals that inspired the best-selling sports coupe in the world.

Ever since the original Mustang took the world by storm in 1964, it quickly came to represent the best of the American spirit: Freedom, progress, fast performance and a touch of rebellion. Now, Mustang is ready to reimagine these ideas for a powerful electric future, with space for customers' growing needs and advanced over-the-air updates that continue to improve the vehicle.

"At the first-ever Detroit auto show, Henry Ford said he was working on something that would strike like forked lightning," said Bill Ford, executive chairman, Ford Motor Company. "That was the Model T. Today, the Ford Motor Company is proud to unveil a car that strikes like forked lightning all over again. The all-new, all-electric Mustang Mach-E. It's fast. It's fun. It's freedom. For a new generation of Mustang owners."

Developed in a century-old brick building a few blocks away from Henry Ford's first factory in Detroit, Ford brought the Mustang Mach-E to life through a development process concentrated entirely on customer needs and desires. The result is a sleek, beautiful SUV that delivers spirited ride and handling, with state-of-the-art connected vehicle technology that makes Mach-E even better over time.

When it arrives in late 2020, Mustang Mach-E will be available with standard and extended-range battery options with either rear-wheel drive or all-wheel drive powered by permanent magnet motors. Equipped with an extended-range battery and rear-wheel drive, Mach-E has a targeted EPA-estimated range of at least 300 miles.[1] In extended-range all-wheel-drive configurations, Mach-E

is targeting 332 horsepower and 417 lb.-ft. of torque[2] – with the standard all-wheel-drive variation targeting quicker times to 60 mph than the base Porsche Macan series.[3]

Ford also will offer two special performance versions. The GT is targeting 0-60 mph in under 4 seconds[2], making it faster off the line than a Porsche Macan Turbo[3]. The GT Performance Edition, meanwhile, is targeting a comparable 0-60 mph in the mid-3-second range to a Porsche 911 GTS.[3] Both GT configurations are targeting an estimated 342 kW (459 horsepower) and 830 Nm (612 lb.-ft.) of torque.[2]

“The Mustang Mach-E wholeheartedly rejects the notion that electric vehicles are only good at reducing gas consumption,” said Hau Thai-Tang, Ford’s chief product development and purchasing officer. “People want a car that’s thrilling to drive, that looks gorgeous and that can easily adapt to their lifestyle – and the Mustang Mach-E delivers all of this in unmatched style.”

Customers can now visit the Mustang Mach-E reservation site to make a $500 reservation deposit.[4] A limited First Edition will be available in extended-range all-wheel drive, with red painted brake calipers, metallic pedal covers, contrasting seat stitching and a scuff plate marked First Edition. Those looking for the thrill of the Mach-E GT can make reservations now for deliveries starting in spring 2021.

In addition to blistering acceleration, Mustang Mach-E will be available with Brembo’s all-new performance Flexira aluminum calipers, which maintain the functionality of a fixed caliper while being designed with the dimensions of a floating caliper. The GT Performance Edition is equipped with a MagneRide® damping system, adaptive suspension technology that lets drivers hug the road while delivering an exciting, comfortable ride.

Performance gives new meaning to the word ‘electrifying’

Mustang Mach-E delivers three unique drive experiences – Whisper, Engage and Unbridled – each offering finely tuned driving dynamics packaged with a distinct sensory experience. Features include custom-designed vehicle responsiveness such as sportier steering controls, ambient lighting, sounds tuned for an authentic all-electric experience, and dynamic cluster animations that are tied to driving behavior.

When the vehicle launches, a new Mach-E 4 all-wheel drive system will be available that can apply torque independently to the front and rear axles to deliver impressive acceleration and improved handling over the rear-wheel drive model. Ford tuned this system to provide excellent traction on the road, rigorously testing the vehicle in wet and snowy terrain to help control for slippery conditions. Mach-E is the first production vehicle to be tuned by the Ford Performance team utilizing Ford’s racing simulator in North Carolina.

“Whether you want to really feel its performance capability or are looking for the quiet atmosphere that electric vehicles can offer, the Mach-E harnesses the power of electrification to create a unique driving experience while retaining that unmistakable Mustang feeling of freedom,” said Ted Cannis, Ford enterprise product line director, global electrification.

Seamless technology that easily adapts to your lifestyle

Making its debut in the Mach-E is the next-generation SYNC® communications and entertainment system, a sleek and modern interface that uses machine learning to quickly learn drivers' preferences, and gets even better over time thanks to advanced over-the-air updates. Next-generation SYNC's 15.5-inch screen and simple interface ditches complicated menus, making it easier to access features with touch, swipe and pinch controls that every smartphone owner will be comfortable using.

"Next-generation SYNC actively starts adapting to you as soon as you start using it, quickly learning your preferences and making personalized suggestions," said Darren Palmer, Ford global director for battery electric vehicles. "It can suggest going to the gym if it learns Mondays are workout days or calling home if you do that every day after work. The result is a cloud-connected assistant and

interface that's intuitive, beautiful and ready for the future thanks to fast over-the-air updates."

As next-generation SYNC evolves to serve customers better over time, Ford has outfitted the Mach-E with the ability to continuously improve through the delivery of secure over-the-air updates that are capable of enhancing vehicle performance, offering maintenance updates and even adding entirely new features.

A new way to look at – and to experience – Mustang

Using Ford's new all-electric architecture that places batteries inside the underbody, Ford engineers and designers were able to create a vehicle that's not only true to Mustang but also maximizes SUV space for five passengers and cargo.

"Thanks to advances in battery technology, the Mustang Mach-E is the kind of car that gets people excited about driving, with a sporty, beautiful silhouette that delivers an incredible shape rarely seen in SUVs," said Ron Heiser, Ford Mustang Mach-E chief program engineer.

The Mach-E is instantly recognizable as a Mustang, thanks to signature elements such as its long, powerful hood, rear haunch design, aggressive headlights and trademark tri-bar taillamps. Clever design and engineering delivers surprising rear seat roominess and ample cargo space.

Along with its all-new propulsion system, the Mach-E holds another surprise under its hood – a drainable front trunk storage unit. Providing 4.8 cubic feet of storage space, the front trunk is large enough to comfortably store the equivalent of a carryon luggage bag. And because it's drainable, customers can easily pack it full of ice and keep their favorite beverages cold – perfect for that pre-game tailgate or trip to the beach.

Inside the Mach-E: A floating world makes you feel light and in command

To truly take advantage of the extra space provided by electrification, Ford designers worked extensively with customers to understand how they would prefer to use the interior of their vehicles. Designed with SUV-size proportions to seat five adults comfortably, the Mach-E leaves plenty of space for friends, kids and cargo.

In addition to the exterior front trunk, the rear trunk offers 29 cubic feet of space. With the rear seats down, the Mach-E boasts 59.6 cubic feet of space – more than enough room for luggage, camping gear or whatever else you may want to move around.[5]

Everywhere inside, the Mach-E represents a fusion of sleek, modern design and smart functionality. Premium available Bang & Olufsen speakers are seamlessly integrated across the front, floating above the air vents like a sound bar. A floating flip-up armrest doubles as a place to store purses or bags.

Traditional Mustang design cues like the double-cowl instrument panel round out the interior.

Even the available panoramic fixed-glass roof has a secret – a special glass coating with infrared protection helps the interior stay cooler in the summer and warmer in the winter. In addition, an inner layer between the glass helps protect against UV rays.

Finally, getting in and starting the vehicle is easy and effortless with Phone As A Key technology[6], which makes its debut in the Ford brand lineup in Mustang Mach-E. Using Bluetooth, the vehicle can detect customers' smartphones as they approach, unlocking the Mach-E and allowing them to start driving without getting their phones out of their pockets or using a key fob. A backup code can be entered on the center touch screen to start and drive the vehicle in the event a phone battery dies.

Battery technology keeps you running with hassle-free charging solutions

Mustang Mach-E will be available in both standard-range (75.7 kWh lithium-ion battery) and extended-range (98.8 kWh battery), which has a targeted EPA-estimated range of at least 300 miles in rear-wheel-drive configuration.[1] These advanced batteries feature 288 lithium-ion cells in the standard-range version and 376 lithium-ion cells in the extended-range. Designed for ease of manufacturing, the battery is located on the floor between the vehicle's two axles – and tested at temperatures as extreme as minus 40 degrees Fahrenheit. The batteries are secured inside a waterproof battery case surrounded by crash-absorption protection. They are liquid-cooled to optimize performance in extreme weather and to improve charging times.

As electric vehicle owners do 80 percent of their charging at home, Ford offers a Ford Connected Charging station that can add an estimated average range of 32 miles per charging hour on a 240V outlet, based on extended-range, rear-wheel-drive configuration.[7] The Ford mobile charger, included with the vehicle, can add an estimated average range of 22 miles per charging hour on a 240V outlet,[7] the same used for a conventional oven. Ford is teaming up with Amazon Home to facilitate easy customer home installation by a licensed electrician.

The connected navigation system will identify up-to-date public charging locations during trips and prompt owners to charge at the most convenient points on each drive – all to help ensure they don't have to be anxious about how much range they have.[7]

Ford also makes charging at home or on the go hassle-free by providing multiple home charging solutions and by giving customers access to the FordPass Charging Network – the largest public charging network in the country with more than 12,500 charging stations (and more than 35,000 charge plugs) and growing, including DC fast chargers.[8] With peak charging rate of 150 kW, the Mustang Mach-E with an extended battery and rear-wheel drive can add an estimated average of 47 miles of range in approximately 10 minutes while charging on a DC fast charging station.[7] The standard-range Mustang Mach-E is estimated to charge from 10 percent to 80 percent in approximately 38 minutes while charging on a DC fast charging station.[9]

Ford has more than 2,100 EV-certified Ford dealers and more than 3,500 EV-trained technicians to support customers nationwide.

# # #

[1]Based on full charge. Actual range varies with conditions such as external elements, driving behaviors, vehicle maintenance and lithium-ion battery age. Final EPA-estimated ratings available in the 2020 calendar year.

[2]Based on manufacturer calculation using computer engineering simulations. Your results may vary.

[3]Targeted performance based on manufacturer calculations using computer engineering simulations versus Porshe.com data. Your results may vary.

[4]Deposit only allows configuration of a vehicle. Reservation process is not an order or purchase of vehicle. Deposit does not guarantee delivery of a vehicle.

[5]Cargo and load capacity limited by weight and weight distribution.

[6]Requires feature activation.

[7]Range and charge time based on manufacturer computer engineering simulations and EPA-estimated range calculation methodology. The charging rate decreases as battery reaches full capacity. Individual results may vary based on peak charging times and battery state of charge. Actual vehicle range varies with conditions such as external elements, driving behaviors, vehicle maintenance and lithium-ion battery age.

[8]Based on original equipment manufacturers (OEM)/automotive manufacturers that sell all-electric vehicles and have publicly announced charging networks. Department of Energy data used. FordPass, compatible with select smartphone platforms, is available via a download. Message and data rates may apply.

[9]Charge time based on manufacturer computer engineering simulations. The charging rate decreases as battery reaches full capacity. Your results may vary based on peak charging times and battery state of charge.

About Ford Motor Company

Ford Motor Company (NYSE: F) is a global company based in Dearborn, Michigan. The company designs, manufactures, markets and services a full line of Ford trucks, utility vehicles, and cars – increasingly including electrified versions – and Lincoln luxury vehicles; provides financial services through Ford Motor Credit Company; and is pursuing leadership positions in electrification; mobility solutions, including self-driving services; and connected vehicle services. Ford employs approximately 186,000 people worldwide. For more information regarding Ford, its products and Ford Motor Credi*t Company, please visit corporate.ford.com.*

FORD MEDIA CENTER

It's Official: Mustang Mach-E Is the Newest Member of the Mustang Family; Reserve Online Starting Sunday, Nov. 17

DEARBORN, Mich., Nov. 14, 2019 – Ford's all-new, all-electric SUV will don the iconic pony badge and the name Mustang Mach-E when reservations for the vehicle open after it is revealed this Sunday.

The all-electric Mustang Mach-E will make its debut Nov. 17 at an event in Los Angeles that will be streamed on YouTube, Facebook, Twitter and Autohome (China). Special guest, actor Idris Elba, will help introduce the latest addition to the Mustang family. Immediately following the broadcast – which ends at approximately 6:30 p.m. PST (9:30 p.m. EST) – reservations will open for the Mustang Mach-E at Ford.com.

Customers can reserve their spot in line for the Mustang Mach-E by making a $500 refundable reservation deposit.[1] Timing will be critical, especially for a limited First Edition, details of which will be announced as part of the Nov. 17 event.

Customers in the U.S. and Europe who wish to reserve a vehicle can select their desired specification of the Mustang Mach-E, create a Ford account, select their preferred Ford dealer, and enter their credit/debit card details and address.

Customers who reserve a vehicle will be able to finalize their configuration next year when the ordering window opens.

Reservation timing for China will be announced at a later date.

Learn more about the Mach-E name by watching this video.

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[1]Deposit only allows configuration of a vehicle. Reservation Process is not an order or purchase of vehicle. Deposit does not guarantee delivery of a vehicle. Refunds will be received in 7-10 business days and will be credited. Terms and conditions apply.

About Ford Motor Company

Ford Motor Company (NYSE: F) is a global company based in Dearborn, Michigan. The company designs, manufactures, markets and services a full line of Ford cars, trucks, SUVs, electrified vehicles and Lincoln luxury vehicles, provides financial services through Ford Motor Credit Company and is pursuing leadership positions in electrification; mobility solutions, including self-driving services; and connected services. Ford employs approximately 187,000 people worldwide. For more information regarding Ford, its products and Ford Motor Credit Company, please visit corporate.ford.com.

Hyundai Motor Announces IONIQ Brand Dedicated to EVs, Opening New Chapter for Customer-Centric EV Experiences

- Hyundai's dedicated EV brand IONIQ embodies company's smart mobility vision
- Company aims to offer connected lifestyle experience to customers with IONIQ brand models
- Hyundai will introduce three innovative IONIQ EV models over the next four years, starting early 2021 with IONIQ 5, a midsize EV CUV based on the concept '45'
- IONIQ EV models will be built on the E-GMP platform
- IONIQ brand embodies Hyundai's commitment to provide connected lifestyle solutions
- Hyundai celebrated the brand launch by turning the London Eye into a giant letter 'Q' with electric lights

SEOUL, August 9, 2020 – Hyundai Motor Company today announced the launch of its new IONIQ brand dedicated to battery electric vehicles, opening a new chapter as a leader in the era of electrified mobility. Under the IONIQ brand, Hyundai will offer customer centric EV experiences centered on connected lifestyle solutions in line with Hyundai's vision of 'Progress for Humanity'.

Under the IONIQ brand, Hyundai Motor will leverage its industry-leading manufacturing know-how in EVs to introduce three new dedicated models over the next four years with more innovative models to follow. The creation of IONIQ brand is in response to fast-growing market demand and accelerates Hyundai's plan to lead the global EV market.

To fulfill IONIQ's brand mission, Hyundai will combine its current EV capabilities – such as ultra-fast charging, spacious interior, and battery-supplied power – with future innovations that combine design, technologies and services to integrate in-car and out-of-car experiences for a seamless journey.

"The IONIQ brand will change the paradigm of EV customer experience," said Wonhong Cho, Executive Vice President and Global Chief Marketing Officer at Hyundai Motor Company. "With a new emphasis on connected living, we will offer electrified experiences integral to an eco-friendly lifestyle."

Rebirth of IONIQ

Hyundai first introduced the term IONIQ, which fuses "ion" and "unique", when it announced Project IONIQ, a long-term research and development project focused on eco-friendly mobility. Based on the project, Hyundai in 2016 introduced a vehicle named IONIQ, the world's first and only model to offer a choice of three electrified powertrain options – hybrid electric, plug-in hybrid and battery electric – within a single body type. Now, IONIQ represents Hyundai's growing commitment to sustainability and innovation and will be instrumental in achieving the company's clean mobility goals.

IONIQ brand was conceived to fuse life changing mobility with environmental performance and has so far been instrumental in delivering progress electrified. IONIQ will continue to create a new balance in clean mobility synchronizing eco-products within an eco-system of lifestyle solutions bringing connected living to a new generation.

IONIQ 5 / IONIQ 6 / IONIQ 7

Hyundai will be launching a range of numerically named EVs under the new brand, with the even numbers used for sedans and the odd numbers for SUVs.

The first model under the IONIQ brand will be the IONIQ 5 midsize CUV that will launch in early 2021. IONIQ 5 is based on the concept EV '45', which Hyundai unveiled at the International Motor Show (IAA) 2019 in Frankfurt as a homage to its very first concept car. IONIQ 5's designers took inspiration from the past and integrated it with cutting-edge parametric pixels, a unique design element that Hyundai designers will continue to incorporate into future IONIQ models.

In 2022, Hyundai will introduce IONIQ 6 sedan, which is based on the company's latest concept EV 'Prophecy', unveiled in March; followed by IONIQ 7, a large SUV in early 2024. Prophecy's iconic exterior design is characterized by its aerodynamic silhouette of perfect proportions.

Likewise, IONIQ vehicles' designs will have a common theme of 'Timeless Value'. The vehicles will be inspired by past models, but they will be a bridge to the future.

E-GMP platform

IONIQ brand models will sit on an Electric Global Modular Platform, known as E-GMP, that will enable fast charging capability and plentiful driving range.

The EV-dedicated platform will allow Hyundai to reimagine the vehicle interior as "smart living space" with highly adjustable seats, wireless connectivity and unique features such as a glove box designed as drawers. The platform paradigm shift will extend into the user interfaces that will be simple, intuitive and ergonomically designed to help occupants feel at ease.

Strategy 2025

Hyundai Motor Group recently announced that the group aims to sell 1 million units of battery electric vehicles and take 10 percent share to become a leader in the global EV field by 2025.

Under Strategy 2025, Hyundai Motor Company itself aims to become the world's third-largest automaker of eco-friendly vehicles by 2025, with 560,000 BEV sales in addition to FCEV sales.

The launch of the IONIQ brand dedicated to EV models reinforces the company's commitment to clean mobility and reflects its ongoing transformation as a Smart Mobility Solution Provider with zero-emissions solutions.

London Eye Event: IONIQ Campaign

Hyundai has celebrated the launch of IONIQ by turning the London Eye into a giant letter "Q" using electric lights just before the official reopening of the famous attraction.

This marks the first event of the 'I'm in Charge' brand campaign, which promotes empowerment of the environment and diverse lifestyles through IONIQ.

With the otherwise bustling city of London having come to a halt during the COVID-19 pandemic, Hyundai is bringing new energy into the city by lighting up and turning on one of its most iconic sights once again.

By announcing the arrival of IONIQ, Hyundai's light installation heralds a new era of electrified mobility that puts customers at the center.

A video of Hyundai turning the globally famous London Eye into a huge 'Q' can be viewed here: https://youtu.be/PL1scZfgrDA.

Information about IONIQ Brand can be found at: www.hyundai.com/worldwide/en/brand/ioniq-launch

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About Hyundai Motor Company
Established in 1967, Hyundai Motor Company offers a range of world-class vehicles and mobility services in more than 200 countries. Hyundai Motor sold more than 4.4 million vehicles globally in 2019, and currently employs some 120,000 personnel worldwide. The company is enhancing its product lineup with vehicles designed to help usher in a more sustainable future, while offering innovative solutions to real-world mobility challenges. Through the process Hyundai aims to facilitate 'Progress for Humanity' with smart mobility solutions that vitalize connections between people and provide quality time to its customers.

More information about Hyundai Motor and its products can be found at:
http://worldwide.hyundai.com or http://globalpr.hyundai.com

Hyundai Motor Company Teases First Image of IONIQ 5

- Image previews fundamental shift in BEV design approach
- IONIQ 5 features signature 'Parametric Pixels' and eco-friendly elements to offer distinctive design experience
- Hyundai's dedicated BEV lineup brand provides all-new enhanced customer experiences through advanced mobility solutions
- New series of teaser videos showcase IONIQ 5's Vehicle-to-Load (V2L) technology that functions as a general power supply and ultra-fast charging

SEOUL, January 12, 2021 — Hyundai Motor Company today unveiled the first teaser image of the highly anticipated IONIQ 5 midsize CUV, the first model in its IONIQ dedicated BEV lineup brand.

IONIQ 5 will be the first vehicle mated with Hyundai Motor Group's Electric-Global Modular Platform (E-GMP), an innovative system made exclusively for next-generation battery electric vehicles that will launch a new era of clean mobility for the company.

IONIQ 5's distinctive and innovative design provides a unique experience that can only be enjoyed in dedicated BEVs, suggesting a fundamental shift in design approach.

IONIQ 5's signature design elements include Parametric Pixels, the smallest unit of digital imaging, as well as its eco-friendly Color Material Finish (CMF) direction that connects the analogue with digital emotions, showcasing the IONIQ brand's timeless design value.

IONIQ 5's front end is adorned with arrays of pixel-inspired lights suggestive of the digital technology within. IONIQ 5 is also the first Hyundai vehicle to feature a clamshell hood that spans the entire width of the car, thus minimizing panel gaps and creating a clean and high-tech overall look.

Aero-optimized wheels further echo the Parametric Pixel design theme, offered in a super-sized 20-inch diameter, the largest rims ever fitted to a Hyundai EV. These complete IONIQ 5's perfected proportions, optimized for Hyundai's new signature dedicated EV architecture.

"IONIQ 5 presents an all-new customer experience through innovative EV design that is evocative of the icon that established Hyundai's design DNA," said SangYup Lee, Senior Vice President and Head of Hyundai Global Design Center. "Beginning with IONIQ 5, our dedicated BEV lineup brand will redefine the relationship between people and their cars, establishing a new standard against which all BEV design experiences will be measured."

Hyundai Motor has also released four teaser videos to spark curiosity about the new model, each presenting viewers with a sneak peek at IONIQ 5's core technologies, raising expectations for the company's dedicated BEV lineup brand and its first entry.

Three 'Ultimate Camping' videos show a camper using various electrical appliances powered by IONIQ 5's Vehicle to Load (V2L) technology that functions as a general power supply (110/220V). In each video, the camper is seen using IONIQ 5's 3.5KW of V2L-supplied power to roast a turkey in a large oven, listen to music on high-end audio speakers, and exercise on a treadmill—all at a camping site.

The '5 Min Challenge' video highlights IONIQ 5's ultra-fast charging capability that enables it to drive more than 100km with only a 5-minute charge (WLTP Standard). To showcase this extraordinary performance, a

movie trailer-style challenge was set up featuring IONIQ 5 and three devices—a smartphone, laptop and action camera—that were each charged for 5 minutes and competed to be the last to survive.

Beginning with these videos, Hyundai Motor plans to release even more engaging content that highlights the enhanced lifestyle that new IONIQ 5 customers will experience.

IONIQ 5 will debut in a virtual world premiere event in February 2021.

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*** Teaser Videos:**

1. IONIQ 5: Ultimate Camping (teaser) - Scene 1. Cooking: **Link**
2. IONIQ 5: Ultimate Camping (teaser) - Scene 2. Sound: **Link**
3. IONIQ 5: Ultimate Camping (teaser) - Scene 3. Running: **Link**
4. IONIQ 5: Ultimate Camping (teaser) - Scene 4. Trailer: **Link**

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2022 Jaguar XJ

Starting at $100,000 est

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Overview

The all-electric 2022 Jaguar XJ sedan is yet another attempt by the revered British automaker to avoid becoming an anachronism. Along with trendy crossovers such as the **subcompact E-Pace** and **compact F-Pace**, the company is turning its attention to electrification—first with the **alluring I-Pace** crossover and now the next-generation XJ sedan. The latter has long sat atop **Jaguar's luxurious lineup**, but now it will rule the throne with electron-fed motors versus gas-burning ones. We expect this new four-door EV to have a driving range of more than 300 miles and to maintain the upscale characteristics that have endeared it to generations of royal families. While we don't have full details on the 2022 XJ, here's what we know so far.

What's New for 2022?

While it has been confirmed that the next-generation XJ will be **powered exclusively by electricity**, there has also been speculation that it could be **some sort of sedan-SUV mashup**. However, the **most recent spy photos** that we've seen all but assure that the XJ will continue the company's tradition of building sumptuous sedans. We also know it'll ride on Jaguar Land Rover's Modular Longitudinal Architecture (MLA) platform that will underpin all Jaguar EV and hybrid models by 2025. We expect the new XJ sedan to be unveiled later this year as a 2022 model.

Pricing and Which One to Buy

Jaguar hasn't said how much the XJ will cost or what trim levels will be offered. We expect it will be significantly more expensive than the outgoing model, which started at around $72,000. We estimate that the 2022 XJ will be priced closer to $100,000 when it eventually goes on sale.

Engine, Transmission, and Performance

The next XJ is expected to be powered by electric motors mounted at the front and the back to create all-wheel drive. If its powertrain is anything like the current setup found on the I-Pace, it'll make somewhere around 394 horsepower and 512 lb-ft of

torque—if not more. The XJ will surely have impressive acceleration in the city and at highway speeds, an enjoyable and typical trait of luxury EVs. Jaguar did a fine job of making the I-Pace satisfying to drive, with nimble handling characteristics and more steering feedback than we expect from electric crossovers. Its standard air suspension provides a smooth and quiet ride, and that'll be of utmost importance on a luxury liner such as the XJ.

KGP PHOTOGRAPHY | CAR AND DRIVER

MORE ON THE JAGUAR XJ

Spy Shots of Jaguar's All-Electric Luxury Sedan

In 2021, Jaguar XJ Goes Electric

Range, Charging, and Battery Life

Although the I-Pace has a modest all-electric driving range, we expect Jaguar to improve upon that with the forthcoming XJ. We suspect the sedan will use a 90.0-kWh battery pack that should provide a range of at least 300 miles. As with the I-Pace, a DC fast-charging port is expected to be standard that allows the XJ to charge its battery to 80 percent of capacity in as little as 40 minutes. Those who have to use the more common 240-volt AC unit should expect to have to wait about 13 hours to fully charge the battery from when juice runs out.

Fuel Economy and Real-World MPG

Neither the EPA nor Jaguar have provided an efficiency rating in MPGe, a miles-per-gallon equivalent for electric vehicles. Once that number is announced, and we get an XJ in for testing, we'll run it through our 200-mile highway route and report its real-world MPGe here. For more information about the XJ's fuel economy, visit the EPA's website.

Interior, Comfort, and Cargo

With the expectation of it being the most luxurious model in the Jaguar portfolio, the next XJ should have an extravagantly appointed interior. That means countless upscale features, spacious accommodations, and top-notch materials. While we still haven't seen so much as a photo of the upcoming sedan's cabin, its design should

introduce a new direction for all Jaguar models, especially its other aging sedans. We would be surprised if the XJ's roster of standard and optional equipment didn't include a head-up display, four-zone climate control, massaging seats, heated and ventilated seat cushions, a panoramic sunroof, wireless charging, and more. Of course, the XJ has also long been used to shuttle royalty, and that requires a roomy back seat with plenty space and creature comforts.

THE CAR AND DRIVER DIFFERENCE

Our Comprehensive Car Testing Explained

Infotainment and Connectivity

Jaguar isn't known for having the most intuitive or responsive infotainment systems, but they are loaded with features and boast attractive interfaces. We expect the XJ to have a large central touchscreen and perhaps a secondary screen below it. Hopefully, the new system will incorporate physical knobs and buttons that help improve functionality and reduce distractions. Every system should come with Apple CarPlay, Android Auto, and a Wi-Fi hotspot. We also expect a standard Meridian audio system as well as a more powerful audio option.

Safety and Driver-Assistance Features

Of course, we expect the electric Jaguar to have an assortment of standard and optional **driver-assistance technologies** that include adaptive cruise control, automated emergency braking, and lane-keeping assist. For more information about the XJ's crash-test results, visit the National Highway Traffic Safety Administration (**NHTSA**) and Insurance Institute for Highway Safety (**IIHS**) websites.

Warranty and Maintenance Coverage

Jaguar provides one of the most comprehensive warranty plans on the market, with lengthy limited and powertrain coverage that is highlighted by one of the best complimentary scheduled maintenance periods.

- Limited warranty covers five years or 60,000 miles
- Powertrain warranty covers five years or 60,000 miles
- Electric components are covered for eight years or 100,000 miles
- Complimentary maintenance is covered for five years or 60,000 miles

2021 Jaguar E-Pace

2021 Jaguar F-Pace

2021 Jaguar F-Pace SVR

2021 Jaguar I-Pace

2021 Jaguar J-Pace

2021 Jaguar XF

2020 Jaguar E-Pace

2020 Jaguar F-Pace

THE VERGE

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20

Jaguar will be an all-electric car brand from 2025

While the first all-electric Land Rover is coming in 2024

By Jon Porter | @JonPorty | Feb 15, 2021, 10:54am EST

Photo by Sean O'Kane / The Verge

UK automaker Jaguar Land Rover (JLR) says its Jaguar luxury brand will be all-electric by 2025. Meanwhile, its Land Rover brand will release its first all-electric vehicle in 2024, the first of six fully electric models planned for release over the next five years. JLR's transition will be funded by a £2.5 billion (around $3.5 billion) a year investment into electrification and related technologies, *Bloomberg* reports.

JLR's plans are ambitious, but the automaker has previously been slow to embrace electrification. It's only fully electric car to date is the Jaguar I-Pace SUV, which *Bloomberg* notes has struggled to make inroads against more established electric carmakers. Even then, the car is built by a contractor, rather than being produced by JLR

in-house. The company had to pay a £35 million (around $48.7 million) fine in the EU for missing emissions targets last year.

> **Jaguar Land Rover** ✓
> @JLR_News
>
> Thierry Bolloré, CEO, launches new Reimagine strategy.
>
> See us reimagine the future of modern luxury. Over the next five years, @LandRover will welcome six all-electric variants and @Jaguar will undergo a renaissance as a pure electric luxury brand.
>
> bddy.me/3jR2lvH
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The advantage JLR has is that Jaguar is still a premium car brand, allowing it to charge the high prices necessary to cover the cost of modern batteries. It also plans to share more technology with parent company Tata Motors to reduce development costs.

If all goes to plan, JLR expects all Jaguars and 60 percent of Land Rovers sold to be zero-emissions vehicles by 2030, the year its home market the UK will ban the sale of new internal combustion engine vehicles. JLR hopes to achieve net zero carbon emissions by 2039. Bans of internal combustion engine vehicles have been announced with a variety of targets around the world, such as in Norway by 2025, France by 2040, and California by 2035.

Land Rover Confirms Range Rover EV, But Delayed Along With Jaguar XJ

Sep 17, 2020 at 10:26pm ET

By: **JACOB OLIVA**

We might see the full-electric Range Rover in a few weeks.

Talks about a full-electric Range Rover have come out as early as last year, with speculation coming out after a patent filing for the name Road Rover was spotted. The report wasn't too far-fetched, though, since Jaguar and Land Rover have both been busy in adding electric motors in their cars – a simultaneous push towards electrification (and better emissions).

While a late 2021 debut for the full-electric models was reported earlier this year, a new report from U.K.'s *Autocar* says otherwise.

Gallery: Rendering Range Rover Rugged Wagon

According to the publication, which has obtained a transcript of a conference call between JLR and its investors, the company's chief financial officer Adrian Mardell said that the Range Rover EV and electric Jaguar XJ will be unveiled in October and November. This is in contrary to the previous reports of a 2021 debut, while still delayed since the planned launches were supposed to be August and September.

The cause of delay is pretty obvious – the coronavirus pandemic. The delay wasn't connected to the engineering work and production, however, since operations weren't hampered during the lockdown. Much of the delay was due to spending cuts employed by the company, according to Mardell.

The Jaguar XJ and the Range Rover EV (which might get a new name) will be based on Jaguar's all-new MLA platform. It has been believed that the electric Range Rover will be lower than its fuel-powered siblings, somehow looking like a wagon rather than an SUV. You can see our speculative rendering through the gallery above.

Whether or not this report holds true or not, we'll know in a few weeks' time as the month of October nears. And of course, we'll have an ear on the ground to catch the latest development and deliver them to you.

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2021 Mazda MX-30

Starting at $35,000 est

MAZDA

VIEW PHOTOS

Select a year

2021

BY DREW DORIAN

Overview

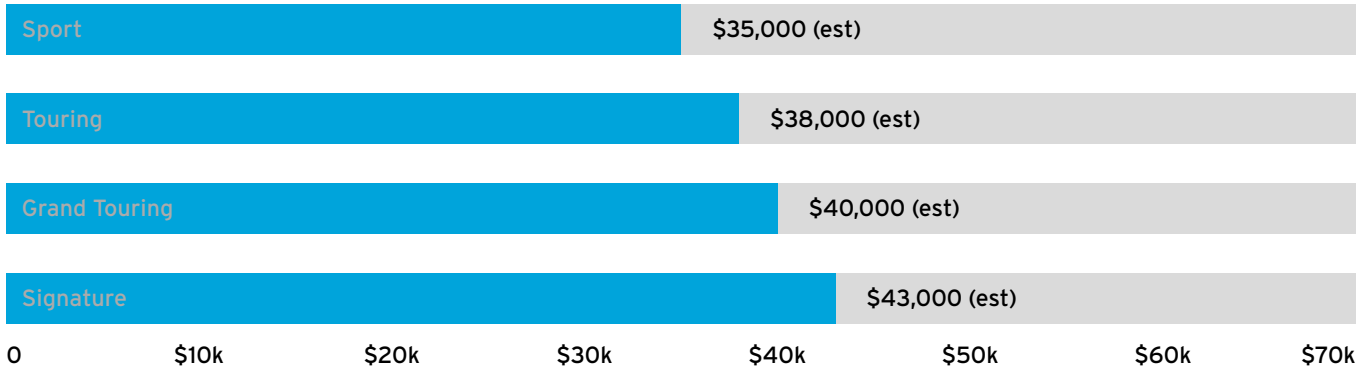
Mazda will be bringing its first all-electric vehicle to market soon in the form of the MX-30 SUV, which will offer a plug-in-hybrid variant, too. The subcompact-sized crossover has a sharp exterior design with a coupe-like roofline and rear-hinged back doors similar to those found on the BMW i3 electric car. Many details are still hazy, but Mazda says the SUV will come with a 35.5-kWh lithium-ion battery pack and a front-mounted electric motor. Pre-orders have already started for European buyers and we expect the MX-30 to go on sale in the United States sometime in early 2021.

What's New for 2021?

Not only is the MX-30 an all-new model for Mazda, it marks the first time the Japanese automaker has experimented with an all-electric powertrain. It's similarly sized to the current CX-3 and the upcoming CX-30

crossovers, but borrows the MX nomenclature of the MX-5 Miata, giving us hope that it will be a performance-oriented option in the electric-SUV marketplace.

Pricing and Which One to Buy



We aren't sure how many trims will be offered on the MX-30 when it eventually hits the market, but if it follows the normal Mazda method, we expect four trims ranging in price from the base Sport model to the loaded and luxurious Signature. Until we know more about the pricing and available equipment, we'll hold off on recommending one trim over the other.

Engine, Transmission, and Performance

Mazda says the MX-30 will have one electric motor and it will be mounted in the front under the SUV's hood. That may mean the MX-30 only will be offered with front-wheel drive. However, we've also learned **that there will be a plug-in-hybrid version** that'll pair an electric motor with a rotary gasoline engine, so perhaps all-wheel drive is still on the table. Mazda hasn't released info on the MX-30's official power ratings, either, but in our experience with electric cars, even the lower-powered ones like the **Nissan Leaf** still provide peppy acceleration.

From The Brand

Provided by VOLVO

For Everyone's Safety

The SUV made for people in and around cars. For Everyone's Safety.

Learn More

MORE ON THE MAZDA MX-30

Mazda Says MX-30 EV is Even With Diesel on CO2

Mazda MX-30 Electric Crossover Has RX-8 Doors

View Photos of the Mazda MX-30

Range, Charging, and Battery Life

The MX-30 will be capable of charging on standard AC power as well as more modern and faster DC chargers. Driving range is still a mystery, but in order to be competitive with the likes of the Chevrolet Bolt EV and the Hyundai Kona Electric, the MX-30 will need to offer around 250 miles of range.

Fuel Economy and Real-World MPG

The EPA hasn't released fuel-economy estimates for the MX-30, but similar electric vehicles such as the Kona Electric and Bolt EV carry ratings of 120 and 119 MPGe, respectively. We expect the MX-30 to earn a similar rating.

Interior, Comfort, and Cargo

The MX-30's cabin uses natural and sustainable materials such as cork and breathable fabric upholstery made from recycled plastic bottles. Front-seat space looks like it will easily fit two adult Americans, but the rear seat appears to be far more cramped, both in head- and legroom. A floating center console is right on trend and frees up space for storage behind a digitized screen that adjusts the car's climate-control system. We're not sure how much cargo space will be available behind the MX-30's rear seats, but if the similarly sized CX-3 is anything to go by, Costco runs may require folding flat the rear seats.

VIEW PHOTOS

MAZDA

THE CAR AND DRIVER DIFFERENCE

Our Comprehensive Car Testing Explained

Infotainment and Connectivity

In addition to the digital panel for the MX-30's climate controls and vehicle settings, a secondary display sprouts from the dashboard to cover infotainment features such as the audio system, navigation, and backup camera. We expect it will use Mazda's latest infotainment system, which launched on the **3 sedan and hatchback**, as well as Apple CarPlay and Android Auto connectivity.

Safety and Driver-Assistance Features

The National Highway Traffic Safety Administrations and the Insurance Institute for Highway Safety have not performed crash tests on the MX-30, but we expect Mazda will make its suite of **driver-assistance features** standard. Called I-Activsense, the bundle of features provides collision-mitigation and lane-keeping features to help reduce the risk of an accident. Key safety features include:

- Available automated emergency braking with pedestrian detection
- Available lane-departure warning with lane-keeping assist
- Available blind-spot monitoring with rear cross-traffic alert

Warranty and Maintenance Coverage

Assuming the MX-30 doesn't receive special warranty coverage, it should come with the same set of policies as its stable mates, such as the CX-3, the **CX-5**, and the **CX-9**.

- Limited warranty covers three years or 36,000 miles
- Powertrain warranty covers five years or 60,000 miles
- No complimentary scheduled maintenance

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FUTURE CARS: WHAT WE KNOW SO FAR

Future Cars Worth Waiting For: 2021-2025

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2022 Mitsubishi Outlander

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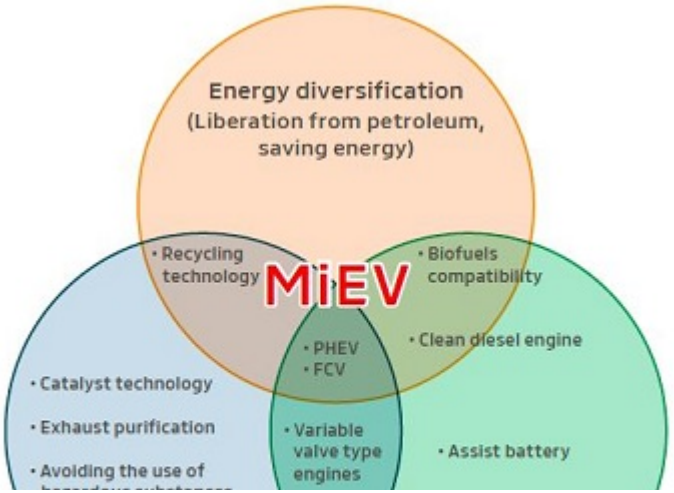
Products and Technologies / Development of Electric Vehicle Technologies

Vehicles are expected to be environmentally-friendly. This includes preventing environmental pollution and global warming, as well as diversifying energy sources from petroleum in recent years. Mitsubishi Motors strives to address these issues through initiatives such as improving the fuel economy of conventional engine-driven vehicles and developing clean diesel vehicles.

In particular, we position the electric vehicle technology incorporated in the MiEV[*1] series as our core technology for environmental friendliness, and we are committed to developing it further.



Electric Vehicle *i-MiEV*

The Electric Vehicle *i-MiEV* is powered by an electric motor, and so it emits no exhaust gases such as CO_2 while being driven. In 2009, Mitsubishi Motors released *i-MiEV* as the world's first mass-produced Electric Vehicle.
i-MiEV has built up a remarkable reputation among customers for its many advantages over conventional gasoline engine vehicles, including environmental performance, acceleration starting with maximum torque, reduced noise by the electric motor, and stability with the battery unit beneath the floor.

Electric Vehicle *i-MiEV*

Plug-in Hybrid Electric Vehicle *Outlander PHEV*

Plug-in hybrid electric vehicles are powered by electricity stored in drive batteries. They use the engine to generate electric power when the battery level is low.
The Plug-in Hybrid EV System for the *Outlander PHEV* automatically shifts to the optimum driving mode for each running condition. "EV Drive Mode" uses electric power from the drive battery and is suitable for low to medium speeds in residential and urban areas. When the battery level is low, it shifts to "Series Hybrid Mode," which generates electric power using the engine. During high-speed

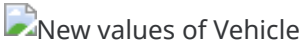
Plug-in Hybrid Electric Vehicle
Outlander PHEV

Plug-in Hybrid Electric Vehicle
Outlander PHEV

Concern over insufficient power is no longer an issue with the *Outlander PHEV*. It offers the advantages of EVs: powerful driving, superb quietness, and high stability.

New Values of Vehicle

Our EV/PHEVs are fitted with a large-capacity battery, which means that customers can connect their electrical appliances to use them even while on holiday or traveling. The batteries can also serve as an emergency source of electrical power in the event of disaster.[*2] (For the *Outlander PHEV*, a maximum of 10 days[*3] of electrical power can be provided, including electricity generated by the engine[*4].)
In addition, by adopting Vehicle to Home (V2H) technologies, which connect vehicles to the electrical supply of homes, batteries can be used for energy management or serve as an alternate power supply during power outages.
These types of electric-powered vehicles are becoming more widely adopted as vehicles that have value even when they are not being driven.


New values of Vehicle

*1: Mitsubishi innovative Electric Vehicle

*2: Please follow the instructions for each vehicle when connecting appliances.

*3: Calculated based on an approximate daily electric power consumption of 10 kWh for an average household (excluding conversion efficiency such as from V2H equipment)

Embargoed for July 15, 2020 at 1:15 a.m. (EDT)

Nissan Ariya EV Crossover Key Specifications

The Nissan Ariya will go on sale in Japan from mid-2021, with U.S. availability to follow later in 2021. Full specifications will be released closer to that time.

Nissan Ariya Key Specifications	
Passenger configuration	2-row, 5-passenger
Drive configuration	Front-wheel drive or e-4ORCE all-wheel drive
Platform	Newly developed Alliance CMF-EV
Powertrain	Single (FWD) / dual (e-4ORCE AWD) electric motor, Externally Excited Synchronous Motor (EESM)
Battery capacity	63 kWh / 87 kWh usable (total 65 kWh / 90 kWh)
Thermal management	Active battery management system
Estimated range	Up to approximately 300 miles (preliminary Nissan estimate)
Level 2 charging	Up to 7.2 kW
DC charging type	CCS standard up to 130 kW
Output	160 kW – 290 kW
Torque	221 lb-ft – 443 lb-ft
Wheelbase	109.3 in.
Overall length	182.9 in.
Overall width	74.8 in.
Overall height	65.4 in. – 65.7 (depending on roof rack)
Cargo volume	22.8 cu ft (rear seat up) 59.7 cu. ft (rear seat down)
Wheel size	19-inch or 20-inch
Tire size	235/55R19 or 255/45R20
Available interior features	Lounge-like space created by flat, open floor and slim-profile Zero Gravity seats; large, minimalist instrument panel with integrated capacitive haptic switches; innovative center storage box with fold-out tray, adjustable center console
Available Advanced Driver Assist (ADAS) Technology	ProPILOT Assist 2.0 featuring hands-off highway operation with Driver Monitoring System
Available safety technology	Nissan Safety Shield® 360 with Automatic Emergency Braking with Pedestrian Detection, Blind Spot Warning, Rear Cross Traffic Alert, Lane Departure Warning, High Beam Assist and Rear Automatic Braking
Model configurations	Ariya standard and long range (FWD) Ariya standard range e-4ORCE and long range e-4ORCE (AWD)

* NOTE: All specifications are as of July 2020 and are subject to homologation. Model names, features and specifications may vary by market. Subject to final validation.

Embargoed for July 15, 2020 at 1:15 a.m. (EDT)

Nissan Ariya world debut: an all-electric crossover for a new era

– A stylish SUV packed with the latest connectivity, convenience, driver assistance and safety technology –

NASHVILLE, Tenn. (July 15, 2020) – Nissan today revealed the all-new Nissan Ariya electric crossover, marking a new chapter for Nissan electric vehicles. The EV premiered globally through a virtual event hosted at the soon-to-open Nissan Pavilion in Yokohama, Japan.

Ariya – Nissan's first all-electric crossover SUV – offers powerful acceleration and smooth, quiet operation, as well as an interior with a welcoming, luxurious lounge-like atmosphere. Its stress-free advanced driver assistance features, concierge-like assistance and seamless connectivity heightens on-road confidence and provides a welcoming environment for the driver and passengers.

The all-new Ariya offers an estimated range of up to approximately 300 miles (preliminary Nissan estimate range for long range 2WD model), making Ariya the perfect partner for daily commutes and road trips alike.

Ariya is based on the similarly-named concept vehicle displayed at the 2019 Tokyo Motor Show and first hinted at with the IMx at the 2017 Tokyo Motor Show. It's the first production model to represent Nissan's new electrified brand identity, forging a path toward a new automotive era where electrification, optimized platform packaging and seamless vehicle Artificial Intelligence technology will become standard.

The all-new Ariya also builds on Nissan's strength as an EV pioneer and innovator, including global sales of more than 475,000 Nissan LEAF electric vehicles since its introduction a decade ago. Ariya takes the powerful performance and capabilities of zero-emission vehicles to a new level.

Design: a completely reimagined appearance

The all-new Ariya is Nissan's ultimate expression of style and technology, with each complimenting the other in aesthetics and function. Its 100% electric vehicle platform removed fundamental limitations and allowed designers to take new approaches to existing components.

Ariya styling represents a significant redefinition of Nissan's design philosophy. This new philosophy is based on what Nissan calls "Timeless Japanese Futurism," which is characterized by a distinctive Japanese approach conveyed in a simple-yet-powerfully modern way. Designers embraced this with the key concepts of sleek, sexy and seamless to communicate how an EV paired with advanced driving capabilities can offer a new perspective to design, function and the ownership experience.

Embracing the Japanese term *iki*, which characterizes the Ariya's chic, cutting-edge nature, the front of the vehicle appears seamless, elegant and fresh. It's highlighted by a shield – a reimagined grille for the EV era. The shield incorporates a 3-D traditional Japanese *kumiko* pattern just under the smooth surface, while protecting sensing equipment used for driver assistance functions without the aesthetics interrupting operation. Nissan's redesigned brand logo is prominently placed at the center of the aerodynamic shield, beaming with crisp definition from the 20 LEDs that compose it.

The new brand logo represents Nissan's passion and dedication towards innovation by challenging conventional approaches. In keeping both sun and bar design elements, the logo signals a respect for the company's heritage, while moving towards a future of mobility services and electrification.

The lower section of the shield is bordered by subtle lighting that illuminates, along with the logo, when the Ariya is ready for operation. Thin LED headlamps, constructed with four 20-millimeter mini-projectors to reinvent Nissan's signature V-motion design.

A single, uninterrupted horizon line stretches across the side profile, linking the front fascia and the rear and conveys linear movement, creating architectural beauty in tension and drama from every angle.

The rear of Ariya is equally striking, characterized by a steeply raked C-pillar that blends flawlessly into the rear deck. The one-piece light blade, representing the rear combination lamps, has been engineered to give a blackout effect when parked, and a consistent red illumination, day or night, when in use. Rear fender flares and a high-mounted rear wing signal Ariya's powerful EV capabilities.

Ariya is offered with six two-tone exterior paint combinations, each sporting a black roof, and three striking full-body colors. A unique exterior Copper and Black two-tone color package, called *Akatsuki*, expresses the moment just before dawn, as the sun marks the beginning of a new day.

The striking Ariya interior is defined by the Japanese term *ma* – referring to its spatiotemporal qualities of belonging to both space and time. The interior is more akin to a sleek café lounge on a starship, evoking performance and intrigue, rather than a traditional automotive cabin.

The advantages provided by the company's all-new EV platform have enabled the Ariya to offer a spacious cabin. For example, the compact nature of the powertrain components made it possible for Nissan's engineers to install the climate control system under the hood (where a traditional gasoline engine would be), allowing the designers to utilize the whole length of the cabin without traditional obstructions such as a transmission tunnel.

The flat, open floor – made possible by the location of the battery at the base of the chassis – and the slim-profile Zero Gravity seats – result in vast amounts of legroom and easy interaction between front- and rear-seat passengers. The EV drivetrain and the generous use of sound-absorbing materials result in a quiet cabin, allowing occupants to relax and enjoy the stress-free, lounge-like space.

Ariya's minimalist instrument panel blends seamlessly with the shape of the cabin and transitions into the doors. It's devoid of buttons and switches found in conventional vehicles. Primary climate control functions are integrated into the wooden center dash in the form of capacitive haptic switches that offer the same feeling as mechanical switches by vibrating when touched.

Tucked under the center of the instrument panel is an innovative center storage box and fold-out tray. The innovative slide out table design transforms the cabin space into a mobile office or on-the-go picnic table, helping to make sure your time parked is productive.

The adjustable center console can be moved to suit the driver's personal preference and saved as part of the driver's profile for automatic adjustment in future outings. The surface hosts a new shifter that fits in the palm of the hand to encourage a relaxed driving position, with haptic drive mode controls within easy reach.

Rear-seat passengers are treated to an abundance of headroom and legroom, with the flat cabin floor allowing them to easily cross their legs and relax. Accents and ornamentation are carried into the rear space to give all the same sense of sophistication and comfort. The sleek front seats are positioned to obscure the B-pillar, offering occupants an outward panoramic view.

Intelligent Power: Formidable EV performance for a wide range of needs
Built on an all-new Alliance-developed EV platform, Ariya is the ultimate expression of Nissan Intelligent Mobility, Nissan's vision to further improve the appeal of its vehicles and achieve its ultimate goal of a future with zero tailpipe emissions and virtually zero vehicle fatalities.

The Nissan Ariya's all-electric drivetrain is an example of seamless integration of advanced EV technology, integrating excellent power delivery, charging capabilities and extended range. With four core models offered, including two-wheel-drive and all-wheel-drive versions, Ariya is designed to meet the driving needs of a wide range of customers.

Both Ariya front-wheel drive and all-wheel drive models offer a choice of 63 kWh of usable battery capacity – ideal for urban commuters and first time EV owners looking for quality and style in their next-generation EV – or 87 kWh. The 87 kWh models' additional battery capacity delivers the additional range for those looking to venture on longer journeys.

The twin electric motor, all-wheel-drive Ariya models feature Nissan's most advanced all-wheel control technology, e-4ORCE. The "e" in e-4ORCE stands for Nissan's 100% electric motor drive system. "4ORCE" (pronounced *force*) refers to the vehicle's physical power and energy, with "4" representing all-wheel control.

Born from the company's rich history of developing memorable all-terrain vehicles and sports cars, e-4ORCE is the spiritual offspring of the Nissan GT-R's ATTESA E-TS torque split system and the intelligent all-wheel-drive systems found in Nissan's lineup of crossovers and SUVs.

By specifically managing power output and braking performance for smoothness and stability, e-4ORCE enhances driver confidence by tracing the steered driving line over almost any road surface.

In addition to optimizing front and rear torque allocation, the system applies independent brake control at each of the four wheels to maximize the cornering force generated by each one. This delivers cornering that faithfully follows driver inputs with minimal steering adjustments.

A smooth, powerful on-road presence

Staying true to Nissan's heritage of producing fun-to-drive, exciting cars, Ariya's all-new EV platform has been optimized to deliver exceptional handling. The battery pack sits under the center of the vehicle to ensure a low center of gravity and near-equal weight distribution, front and rear.

The battery pack's flat design and integrated cross-member in the battery case, allow the Ariya to have a flat floor and impressive structural rigidity. Suspension components are optimized to take advantage of this, creating stable handling and a comfortable ride while also suppressing vibrations and noise from entering the cabin space.

In the rear, the suspension packaging, including the multi-link system and rear electric motor (if equipped), create an exceptional balance of ride comfort, handling and performance.

Ariya's highly rigid body structure and super responsive rack-and-pinion steering system provide the vehicle with crisp turn-in response, while its near 50:50 front/rear weight distribution – made possible by the battery positioned under the floor in the middle of the vehicle – helps Ariya behave in a predictable manner through all types of corners.

The Nissan Ariya also features driver assistance features that have been enjoyed by hundreds of thousands of drivers around the globe. e-Pedal, first introduced in the Nissan LEAF, allows the driver to launch, accelerate and decelerate using only the accelerator pedal. On models equipped with e-4ORCE, regenerative torque is distributed not only to the front wheels, but also the rear.

Intelligent Driving: a high-tech, low-stress driving experience

The Ariya ensures high levels of comfort and confidence by providing occupants with the latest Nissan technologies, including the next-generation ProPILOT Assist advanced driver assistance

ProPILOT Assist 2.0 is the newest iteration of Nissan's driver assistance technology. Available on the Nissan LEAF, Altima, Rogue and Rogue Sport, ProPILOT Assist is a hands-on assistance system that helps drivers stay centered in their lane, navigate stop-and-go highway traffic and maintain a set vehicle speed and distance to the vehicle ahead.

ProPILOT Assist 2.0 expands on this, allowing attentive drivers to take their hands off the steering wheel under certain conditions, helping reduce the driver's workload and stress in single-lane highway traffic.[1,2] In addition, ProPILOT Assist 2.0 also supports multi-lane highway driving tasks such as lane changes, passing and highway exiting.

ProPILOT Assist 2.0 uses the navigation system and high-definition 3-D map data to detect the roadway type, direction and speed limits, and can adjust vehicle speed accordingly for a relaxed and enjoyable journey. A Driver Monitoring System mounted on the steering column monitors that the driver is attentive to the road ahead when using the hands-off feature.

When driving in hands-on mode, ProPILOT Assist 2.0 takes advantage of the extensive 3-D map data to help keep the vehicle centered in the lane with increased accuracy.

The Nissan Ariya is also equipped with standard Nissan Safety Shield® 360, a suite of six active safety features that includes Automatic Emergency Braking with Pedestrian Detection, Blind Spot Warning, Rear Cross Traffic Alert, Lane Departure Warning, High Beam Assist and Rear Automatic Braking.

Intelligent Integration: keeping the Nissan Ariya up-to-date and at maximum potential

The Ariya embodies Nissan's philosophy of designing vehicles around the driver that is both intuitive and exciting. This includes equipping it with the latest in connectivity, including a new human-machine interface and firmware updates over the air.

Nissan's intelligent personal assistance technology features a hybrid voice recognition system with advanced natural language understanding technology to handle in-vehicle assistance without the driver taking their eyes off the road.

The vehicle also includes Amazon Alexa to help customers simplify and organize their lives. Alexa can play music, place calls, listen to audiobooks, control smart home devices, and more, with just voice commands. Both systems work hand-in-hand to provide a seamless, tailored user experience, whether during a daily commute or weekend trip.

Ariya will also feature wireless Apple CarPlay® and Android Auto™ standard to help drivers seamlessly integrate their smartphone into their vehicle experience.

The connectivity display interface features both a 12.3-inch instrument monitor and 12.3-inch center display along a single horizon. By displaying multiple facets of information on one horizontal plane, information can be quickly digested. The two displays are oriented in a wave-like shape to ensure important vehicle information, such as battery information, range and navigation, can be easily reached and scrolled through with the simple swipe.

Further information can be swiped between the displays to customize and prioritize the information displayed just behind the steering wheel for an unparalleled bespoke experience. Ariya's head-up display boasts one of the largest full-color displays in the segment. The projected display shows similar information found in the meter display, providing crisp, driving information within the driver's field of vision without being distracting.

The Ariya is also the first Nissan model with firmware updates over the air, called "Remote Software Upgrade." The technology automatically updates various software inside the vehicle – specifically, software that controls the multimedia system, electric and electronic architecture, chassis, climate system and EV settings.

The future of the electric vehicle is now

The Nissan Ariya crossover marks a new era for electric vehicles, promising an incredibly powerful and smooth ride thanks to the full strength of Nissan Intelligent Mobility delivered by the latest assistance technologies designed to support, respond and respect the driver's intentions. A sleek, sexy, seamless design inspired by Timeless Japanese Futurism gives all occupants a welcome, personal impression aimed to surpass expectations. The Nissan Ariya will go on sale in Japan from mid-2021, with U.S. availability to follow later in 2021. Suggested retail pricing in the U.S. will start around $40,000.

For more information about our products, services and commitment to sustainable mobility, visit nissanusa.com. You can also follow us on Facebook, Instagram, Twitter and LinkedIn and see all our latest videos on YouTube.

1. Hands-off driving is possible when driving in a single lane, on the condition that the driver remains attentive to the road ahead and is prepared to immediately take manual control of the steering wheel when conditions of the road, traffic and vehicle require it.
2. The hands-off feature is not available in tunnels where a GPS signal cannot be established, on expressways without a physical separation that divides the traffic moving in opposite directions, on winding roads, in tollgate areas or merging lanes. When entering a road section where hands-off driving is not available, the system will alert in advance so the driver can take manual control of vehicle steering.

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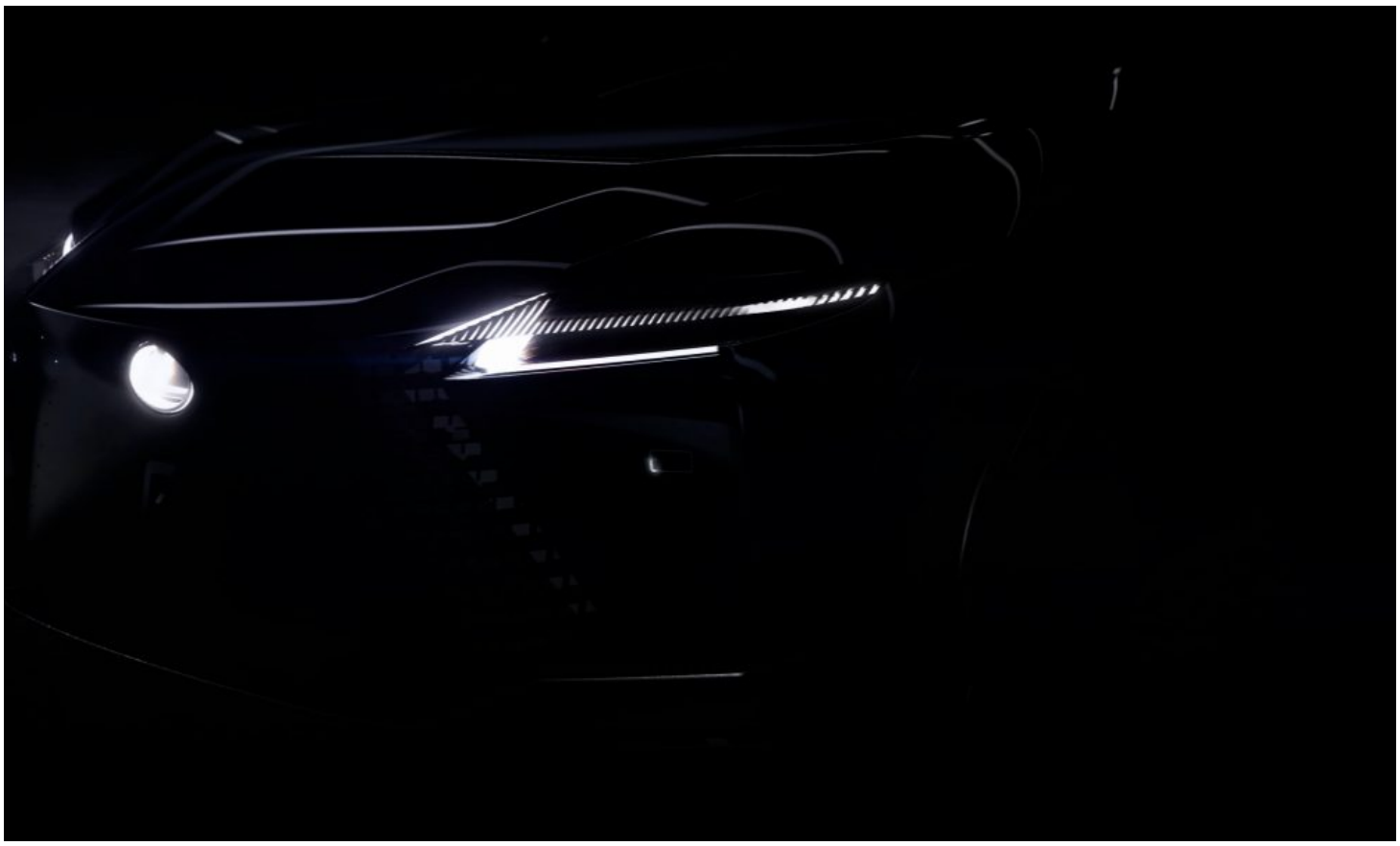
LEXUS REVEALS DIRECT4 NEXT-GENERATION ELECTRIC DRIVE CONTROL TECHNOLOGY

December 11, 2020



Last year as part of its new global electrification strategy, Lexus debuted the futuristic LF-30 concept car at the Tokyo Motor Show, which thrilled attendees with its visionary design and imaginative technologies. The new strategy, called ‘Lexus Electrified’, targets a fundamental leap in vehicle performance, handling, control and driver enjoyment.

Today, Lexus reveals a core Lexus Electrified technology supporting this vision: DIRECT4, a new electric drive control system designed for its next generation of battery electric and hybrid electric vehicles.

DIRECT4 precisely controls the delivery of drive torque from front and rear electric motors and braking force to all four wheels. By automatically adjusting the balance of front and rear-wheel drive, the system adapts the driving conditions to the driver's intentions, changing the driving feel and giving the car the best driving posture. The system uses a front and rear e-axle, each featuring a high-torque electric motor and transaxle, focusing on optimum drive force distribution. As the motor is directly connected to the wheels by a single driveshaft, it operates without delay.

Its operation is intuitive and highly responsive, giving the driver a genuine sense of being fully connected with the vehicle. Moreover, it provides an ideal balance of predictability and excitement, with powerful, linear acceleration and exhilarating cornering.

At the same time, the system is engineered for quietness and comfort, true to Lexus' DNA.

https://toyota-cms-media.s3.amazonaws.com/toyota-videos/kf2lexus-newsroom5mbps.mp4

The new technology is introduced by Takashi Watanabe, Lexus Electrified Chief Engineer, in a short film interview. The film includes a practical demonstration of the benefits of DIRECT4 with track drives by prototype vehicles.

Watanabe explains that one of the key aims of the Lexus Electrified vision is to utilise new electric technologies to enhance the driving qualities that human senses react to.

In developing DIRECT4, Lexus has been able to draw on its unmatched experience in electrified vehicle technologies. This expertise supports the development of 'Lexus Driving Signature', a unique standard that will define the dynamic performance of Lexus' next-generation vehicles. Lexus Driving Signature aims to provide drivers with a natural driving feel, a sense of unity with their vehicle, and the true comfort that comes from confidence, in a thoughtfully designed vehicle with the right balance of excitement and predictability.

The new film also provides a glimpse of Lexus' future design thinking, revealing sketches and images of a new concept car to be revealed in the first quarter of 2021.

Chief Designer Koichi Suga explains how electrification technologies will impact on vehicle design as well as performance, for example with no requirement to provide front cooling for an engine and radiator. This will present exciting new opportunities to express technological advances in the car's three-dimensional form.

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Toyota plots late arrival to electric vehicle party

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While many of its peers release a glut of battery electric vehicle models, Toyota will not enter the mark earnest until 2025.
Source: Toyota

Toyota Motor Corp. takes pride in being the pioneer of the hybrid powertrain, introducing the emissions-reducing technology with its first-generation Prius in 1997. But the Japanese carmaker is taking a much different approach when it comes to the next great evolution in the industry, the battery-electric vehicle.

Except an electric C-HR crossover in China launched earlier this year and a Lexus SUV coming in 2021, Toyota has no plans to produce a mass-market battery-electric vehicle, or BEV, until 2025. In contrast, Volkswagen AG has said it intends to produce 1.5 million BEVs by the same year, a goal that will require some €33 billion of investment to achieve, and General Motors Co. has committed to bringing no fewer than 20 electric models to market by 2023.

While its competitors push out a slew of fully electric cars, Toyota has said it will move in tandem with customer demand for the technology, which remains considerably more expensive than gasoline-powered engines. The company is also under less pressure than many of its peers to introduce BEVs in order to meet emissions regulations as the prevalence of hybrid technology across its range has made it one of the greenest carmakers.

But as momentum builds behind BEVs with each passing year and Tesla Inc.'s rapidly improving fortunes unsettle rival automakers, Toyota's patient strategy brings both potential risks and rewards.

"The jury is still out concerning whether it is vital for traditional automakers to create a large EV market presence as quickly as possible, or whether a more cautious approach will pay out in the end," said Julie Boote, analyst at Pelham Smithers, in a research note.

Hare and the tortoise

Toyota is by no means standing still when it comes to electrification. "BEVs are growing much faster than original expectations," said COO Shigeki Terashi in a 2019 presentation. "It is a matter of death or survival. Unless we work on this in a very accelerated manner, we will not be able to ensure our future survival so that is why we are focused so much on BEVs and building this model now."

The company's stated aim is for 1 million battery-electric and hydrogen fuel cell car sales by 2030 but executives have said this could be achieved several years earlier. Still, it equates only to about one-tenth of its global car sales in 2019. A simultaneous goal for 4.5 million annual hybrid sales by the end of the decade would make more than half its cars electrified, albeit not fully electric. By comparison, Volkswagen's 2030 BEV target is 40%.

Behind the scenes, it is working with Kyoto University on an energy-dense fluorine battery with a targeted 1,000-kilometer range, which would not only banish the "range anxiety" that keeps many motorists loyal to gasoline but also reduce fire hazards. It has established a supply contract with China's

Contemporary Amperex Technology Co. Ltd. for packs to power the BEV now on sale there and a joint venture with Panasonic Corp. to equip Toyota cars and those of other manufacturers.

Like Volkswagen's I.D and Hyundai Motor Co.'s Ioniq sub-brand, Toyota has shown off a line-up of sharp-looking SUV and crossover-style BEV prototypes based on a common platform dubbed the e-TNGA.

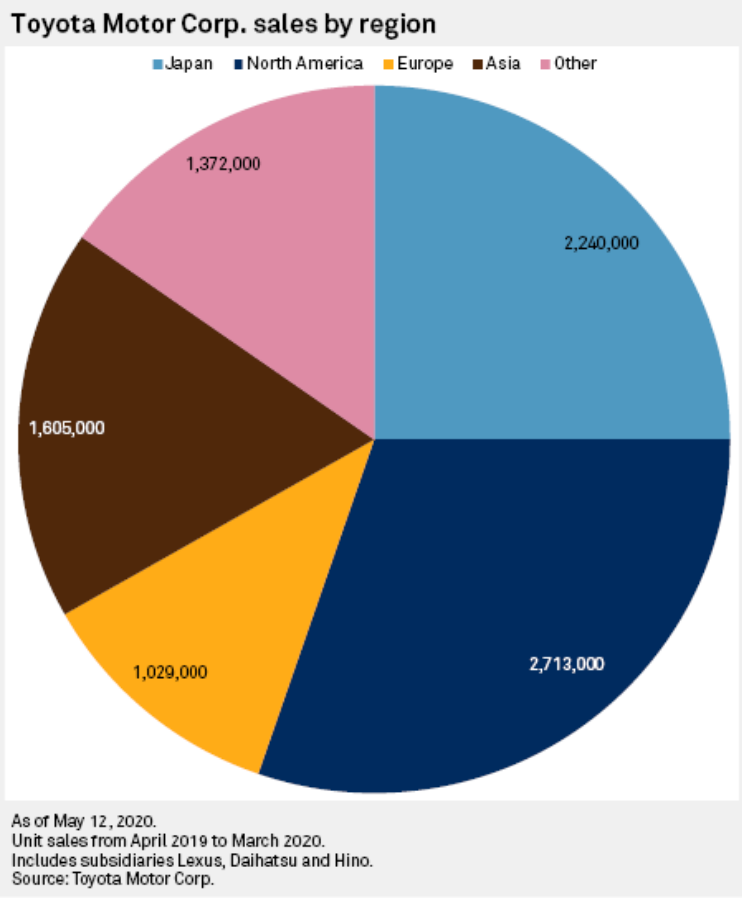
"Toyota is betting on seeing a quantum leap in its EV development and EV success from 2025 on, when its solid-state battery will arrive, and be ready for a more aggressive approach by then," said Boote.

Arriving later to the party might enable Toyota to offer BEVs that are more affordable and, unlike many now on the market, profitable. Battery prices fell to $156 per kilowatt-hour in 2019 from $1,100 in 2010 as scale and demand has grown, according to Bloomberg New Energy Finance, or BNEF. Prices could reach $100 per kilowatt-hour by about 2023, BNEF said, a level that would make a BEV a straight swap from many gasoline cars financially.

That is one reason Toyota's Terashi has said there may be no need for its EV roll-out to be rushed.

"We will have ready all sorts of vehicles that can satisfy various regulations as those regulations change but the final decision will be up to the customers and whether the customers are ready to buy or not."

With BNEF forecasting BEVs to account for 10% of global vehicle sales by 2025, Toyota would still have ample opportunity to join and even grow the market by the middle of the decade. But its rivals' progress in the field while it remains focused on hybrids could leave investors anxious.



"One risk would be consumers in developed markets don't think of them as a BEV firm but Toyota has plenty of marketing dollars to catch up fast," said David Whiston, analyst at Morningstar.

"BEVs are still a small part of the market but I wouldn't mind if they accelerated their plans to more like 2022 to be more in line with GM. By not being first or second they will likely learn from other firm's efforts and come to market immediately with strong competitive products."

Horses for courses

Toyota sells about two of every three of its vehicles in developed markets, but it also has a significant presence in many developing regions. With access to power and reliability of supply an issue for millions, hybrid cars are likely to have much more relevance in the coming decades in these countries, leaving Toyota well-positioned.

But Macquarie analyst James Hong raises doubts about the regular hybrid's longevity in developed economies. If plug-ins, either hybrid or full electric, get cheap enough, their lower running costs could make redundant the plug-less hybrids Toyota has made the core of its offering.

"Contrary to Toyota bulls' thoughts on HEV [hybrids], we see growing risk in pricing and profitability of HEV. Even in terms of vehicle performance, HEV loses its merit," Hong said. Morningstar's Whiston said he was optimistic that in such a scenario Toyota would be able to increase plug-in hybrid output with relative ease to follow the market.

Toyota will grow increasingly conspicuous by its near-complete absence from battery-electric vehicles for several more years, and it may only find out with the benefit of hindsight the merits of its delay tactic. Rapid shifts in technological, economic, geographic and societal factors make it harder to predict the industry's speed and direction of travel.

"You don't have to be in BEVs to do well right now but you will eventually, and I think Toyota will be ready," Whiston said.