

Details of All-New bZ4X BEV Announced

- Contribution to SDGs based on the concept of "home planet"
Toyota's approach to carbon neutrality is "practical and sustainable," aiming to reduce CO₂ with products that are easy to use and highly appealing.
- The TOYOTA bZ series adopts a BEV-dedicated platform that aims for a value greater than zero ("beyond Zero"). The bZ4X has the excitement of an SUV-style BEV, driving appeal, and is the first model of the Toyota's bZ series, which emphasizes safety and peace of mind. It will be launched worldwide in the middle of 2022.
- Toyota is promoting the deployment of BEVs in its full lineup, starting with the bZ4X.

Toyota City, Japan, October 29, 2021—Toyota has announced the details of bZ4X, its all-new model BEV*1.



bZ4X (Prototype vehicle)

*1 Battery Electric Vehicle

Toyota's Approach to Carbon Neutrality is "Practical and Sustainable"

Toyota Motor Corporation (Toyota) is striving to resolve various issues to realize a sustainable society, with the aim of passing down this beautiful Earth, our home planet, to future generations. We leverage strengths fostered through manufacturing, producing technological innovation in application to CASE to expand the potential of cars, striving to provide services that provide freedom of mobility to all, in an effort to contribute to the achievement of the SDGs.

In particular, reduction of CO₂ emissions is an urgent challenge on a global scale, and Toyota is tackling initiatives towards achieving carbon neutrality (CN) by 2050. It is significant that the popularization of eco-friendly vehicles will contribute to reductions in CO₂.

For this reason, Toyota believes in the idea of "introducing sustainable vehicles practically" and is developing a full line-up of electrified vehicles—comprising HEVs, PHEVs, BEVs, and FCEVs—in preparation to offer its customers a wide range of choices. Toyota aims to reduce CO₂ with products that are easy to use and highly appealing.

The new BEV series, Toyota bZ, is also based on this policy. We aim to gain acceptance from many customers in regions with great demand for BEVs and plentiful supply of electricity from renewable energy, such as China, the U.S., Europe, and Japan, and plan to introduce seven Toyota bZ models by 2025.

"bZ" is New Value Provided by "beyond Zero"

With the introduction of its new bZ series, Toyota established the following four target values.

1) You & Others

In addition to comfortable cabins, Toyota bZ offers a new lifestyle and the opportunity to spend precious time with family and friends.

2) You & Your Car

Toyota bZ delivers the BEV's unique joy of driving and excitement at anticipated possibilities.

3) You & the Environment

Toyota bZ will not only reduce CO₂ and other emissions—it aims to contribute positively to the environment.

4) You & Society

Toyota bZ aims to create a safer society where everyone enjoys greater peace of mind.

The bZ4X was developed on this basis, as a medium-segment SUV-type BEV, the first model in the Toyota bZ series. Toyota will promote the deployment of BEVs in its full lineup starting with this bZ4X.

bZ4X Vehicle Overview

1. Cars that are more than just a means of transport, able to provide enjoyable time and space for passengers, with the "activity hub" concept

Toyota developed the "activity hub" concept for cars that will usher in a new era, incorporating the intent to play a role in building "bonds" by being able to provide enjoyable time and space for driver and passengers alike.

We are striving after innovation in all areas, including interior, styling, driving sensation and performance, aiming to create exciting cars.

2. Toyota bZ4X adopts a BEV-dedicated platform (first for Toyota) based on e-TNGA philosophy, to achieve impressive driving performance through a low center of gravity and greater rigidity.

The BEV-dedicated platform (first for Toyota) which is the basis of all systems was jointly developed with Subaru Corporation (Subaru).

Through this platform, which incorporates the unique requirements of BEVs with a low center of gravity and greater rigidity, we pursued off-road performance required for SUVs, with attractive, smooth, intuitive driving performance, not just for a BEV, but for any car.

3. Performance Focused on Safety and Peace of Mind

Toyota was determined to offer performance focused on safety and peace of mind for new owners, as with all Toyota vehicles.

In practical terms, we aimed for a BEV that can be driven safely and conveniently for many years, considering securing cruising range*², particularly in winter settings, and targeting a top-class battery capacity retention ratio (90%*³ after 10 years). In terms of safety, in addition to pursuing a high degree of battery cell safety, we adopted the latest Toyota Safety Sense active safety package, used a body structure adapted to collision from any direction, and a battery pack that contributes to ensuring protective performance in a collision, aiming to create a BEV that provides driving safety.

*² Cruising range per charge (WLTC, FWD Vehicle, in-house measurements) is approximately 500 km

*³ Target values under development. The period of use and mileage is assumed to be 10 years, or 240,000 km (150,000 miles), whichever is shorter

Details of the bZ4X are listed below:

bZ4X Details

1) You & Others

In addition to comfortable cabins, Toyota bZ4X offers a new lifestyle and the opportunity to spend precious time with family and friends.

(1) A spacious, quiet and relaxing space in any seat

- An extra wide cabin space thanks to the BEV-dedicated platform
 - Ensuring a tandem distance equivalent of a D-segment sedan (1,000 mm)
 - Medium Segment SUV Class-leading legroom for front and rear seats
- Home-like comfort
 - A liberating sensation owing to the low instrument panel and large panoramic roof (specially equipped vehicles)
 - An upholstered instrument panel to create a calm interior
- A quiet space that stimulates conversation
 - High soundproofing glass and wind-noise reduction provides a quietness that enables clear conversation while driving



(2) BEV performance for safe and convenient driving, despite being a completely new car

- Ensuring improved energy-saving performance and cruising range during driving for practical use (particularly in winter settings)

Pursuing aerodynamic performance, in addition to lightening of the body unit, the following systems and equipment were adopted to reduce energy consumption other than for driving, especially power used for heating in winter settings

- Heat pump-type air-conditioning
- Seat and steering wheel heaters, and front-seat radiant foot-heating (first for Toyota)

- Short charging time

Compatible with high-output chargers worldwide

(compatible with 150 kW direct current quick charging; capable of 80% charge in 30 minutes)

2) You & Your Car

Toyota bZ4X delivers the BEV's unique joy of driving and excitement.

(1) Appealing and competent driving perfected through joint development with Subaru:

Overturning the common idea that electrified vehicles are tedious, achieving smooth, intuitive driving performance and an off-road performance in genuine SUVs

- Adopts a BEV-dedicated platform (first for Toyota) based on e-TNGA philosophy

Advancing a low center of gravity and greater rigidity

<Low center of gravity innovations>

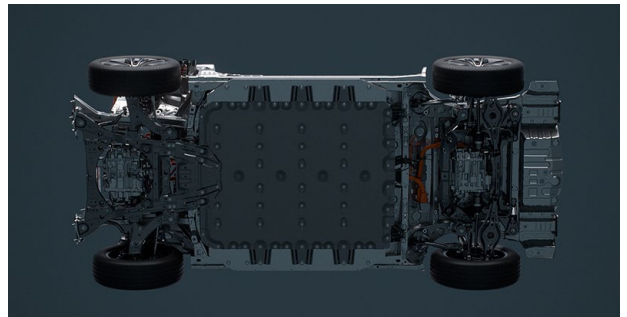
- Thin high-capacity battery pack placed flat under the floor
- E-axle, integrating motor, transaxle and inverter (a Toyota first)
- Electricity Supply Unit (ESU) consolidating charging and power distribution functions (a first for Toyota)

<Greater rigidity innovations>

- Hot stamp materials used in key framework parts, adoption of a lightweight, high-rigidity body structure partially made of high tensile steel
- Enhancement of rigidity of various parts including around the battery pack, areas where the BEV unit and radiator are installed, and around forward and rear suspension

- Driving that leverages motor drive characteristics

- Agile response, sense of linear acceleration, high-precision output control (Lightening of acceleration/deceleration control and driver pedal operation, slip suppression control on slippery roads, etc.)
- Improved turning and stability through independent control of front and rear motors (AWD)
- Adoption of Subaru's AWD technology and X-MODE (AWD vehicle, a first for Toyota). Also, Grip-Control was newly developed and installed as a new feature for X-MODE. By leveraging motor drive characteristics, it is suited to everything from everyday driving to light off-road driving and more, achieving off-road performance exceeding expectations in BEVs



(2) Cockpit (meters and operating system) supporting a new driving experience

● Cockpit that emphasizes meter visibility

- Meters are positioned to be visible through the upper part of the steering wheel (top-mounted meters, a first for Toyota)

Emphasizes ease of viewing by reducing eye movement and enabling a distance point of focus

- Modularized driving controls including a steering column, adopting a wing-shape that promotes eye guidance from hands to meters



● One-motion grip^{*4} combining steer-by-wire system and uniquely shaped steering wheel (A Toyota first)

Some models adopt the steer-by-wire system, where there is no mechanical connection between the steering wheel and tires. Characteristics of this are listed below:

- Lock-to-lock is set at around 150 degrees, eliminating the need to change grips when steering, greatly reducing the burden on the driver for U-turn, garage parking and on winding roads
- The steering feeling is improved through independently controlling the steering torque that the driver feels and the steering angle of the tires. Steering characteristics can be changed with drive mode select
- Blocks unnecessary vibrations from tires and only transmits necessary vibrations such as road information.

System controls tire movement to ensure vehicle stability when driving on uneven surfaces or when Lane Tracing Assist is activated

- One-motion grip provides more legroom, improving driving position freedom and ease of entry and exit

^{*4} For the Chinese market, thereafter, for other markets, it will steadily be fitted on vehicles launched from 2022 onwards

● Dial type shift (a first for Toyota)

Pursuing a simple and easy-to-operate impression

(3) Styling that expresses the innovation of BEV and the impact of SUV

Based on the design theme "Hi-Tech and Emotion," we strived to create a form combining an advanced BEV feel with the inherent beauty of cars, aiming to create advanced and sleek, powerful styling unique to SUVs.

- Side view

Aiming for sleek proportions and expressing an unconstrained silhouette that takes advantage of the long wheelbase with the tires placed at the four corners

- Front view

The corners with aero dynamic items and the thin shape of the bumper expresses the uniqueness of the BEV. Also, the large hammerhead shark-like shape running from the hood to the top of the headlamps is uniquely iconic

- Rear view

The rear combination lamps, back door, and bumper, which have the trapezoidal theme heading to tires, creates a powerful stance



(4) Latest infotainment system

- Multimedia system

The bZ4X adopts cloud navigation that uses map information on the cloud to obtain traffic information and parking space availability information in a timely manner. Additionally, BEV specialized services such as driving support, charging station display, driving support display, and driving range display are available

- Enhanced voice-recognition function

Also able to operate wipers and air-conditioning

- Over-the-air (OTA = wireless) software updates

Software updates to improve performance are possible for the latest preventive safety package, Toyota Safety Sense, and the multimedia system without needing to visit a dealership

- Digital Key (specially equipped vehicles)

With a smartphone, users can lock, unlock and start the system without screen operation. Digital keys can be handed over between smartphones, making it easy for family and friends to borrow and lend vehicles remotely

3) You & the Environment

Toyota bZ will not only reduce CO₂ and other emissions—it will contribute positively to the environment.

(1) Energy-generating BEVs

- Roof solar panel (specially equipped vehicles)
Generates electricity equivalent to 1,800 km of driving distance per year (in-house estimate), contributing to superb cruising range. Can charge in parking lots where there are no charging stations, and solar power can be used to charge in disasters or other emergencies



(2) More proactive initiatives—such as recycling—for reducing CO₂

- Battery 3R (Rebuilt, Reuse, Recycle)
Ensures a worldwide top-class battery capacity retention ratio, as well as proactively undertakes battery rebuilt (inspection and reassembly) and reuse. Also promotes initiatives for battery recycling
- Proactive adoption of recycled materials

4) You & Society

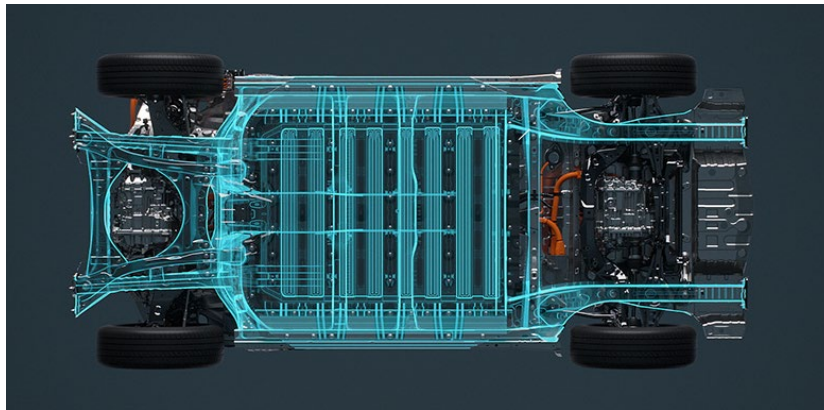
Toyota bZ4X creates a safer society where everyone enjoys greater peace of mind.

(1) Latest preventive safety performances

- Latest Toyota Safety Sense
In order to realize the ultimate wish of the mobility society—"zero fatalities and injuries in traffic accidents"—the bZ4X adopts the evolved Toyota Safety Sense. By expanding the detection range of the millimeter wave radar and monocular camera, we have enhanced the performance of each function and added new functions to assist on ordinary roads. The aim is to prevent accidents, further reduce traffic fatalities and injuries, and ease the burden on drivers.
- Adopts the Toyota Advanced Park advanced driver assistance technology (with remote function) (specially equipped vehicles)

(2) Pursues Collision safety performance expected of BEVs

- ⦿ An omni-directional crash-response structure to protect passengers, batteries, and the other vehicle
 - BEV unit compartment is fitted with a cross framework firmly connecting left and right front-side members to boost collision energy absorption
 - Two cross-members are located in front of the vehicle to reduce harm to the other vehicle
 - Strong framework created at the cabin front to achieve full under-floor mounting of the battery pack
 - Adopts a structure that distributes input load over multiple routes in a collision to stabilize and protect the cabin and battery pack in frontal or side collisions



(3) Battery safety

- ⦿ **By strengthening measures to prevent and detect signs of battery failure, and introducing new technologies, have adopted a design and multiple monitoring system that ensures safety and security in case of emergency,**
 - Thorough production process that eliminates contamination, which is a cause of abnormal heating
 - Redundant monitoring of battery voltage, current, and temperature to detect signs and occurrence of abnormal heating to prevent overheating
 - Newly introduced the use of high-resistance coolant, which prevents fire from short circuits even if there is leakage of the battery's liquid coolant
 - Newly introduced the use of a high-capacity battery pack integrated with the body to ensure protection in the event of a collision

(4) External power supply function

- ⦿ DC external power supply function (Japanese specifications)
 - Can connect to a power feeder to supply high-output electricity to homes and home appliances for outdoor activities, and during disasters and other emergencies
 - When used with home solar power generation, solar power can supply electricity to the house in the daytime, surplus electricity can be used to recharge the vehicle via a power feeder, and electricity stored in the vehicle can be used to power the home at night

The bZ4X is scheduled for launch in all regions from mid-2022.

Main Specifications (Models in Japan, in-house measurements)

		bZ4X (FWD)	bZ4X (4WD)
Vehicle weight and performance			
Vehicle weight	kg	1,920-	2,005-
Gross vehicle weight	kg	2,195-	2,275-
Minimum turning radius	m	5.7	
Cruising range per charge (WLTC)	km	Approx. 500	Approx. 460
Measurements			
Length	mm	4,690	4,690
Width	mm	1,860	
Height	mm	1,650 (antenna)	1,650 (antenna)
Wheelbase	mm	2,850	
Cabin length	mm	1,940	1,940
Cabin width	mm	1,515	1,515
Cabin height	mm	1,160 (Normal / Solar roof) 1,145 (Panorama roof)	1,160 (Normal / Solar roof) 1,145 (Panorama roof)
Seating capacity		5	
Motor			
Type		AC synchronous electric generator	
Maximum output (front motor)	kW	150	80
Maximum output (rear motor)	kW	—	80
Maximum output (system)	kW	150	160
Main drive battery			
Type		Lithium-ion battery	
Total voltage	V	355	355
Total power	kWh	71.4	71.4
Change function			
AC charger maximum output	kW	6.6	6.6
DC charging maximum output	kW	150	150
Driving equipment			
Steering		Rack Assist Type electric Power Steering (EPS)	
Suspension (Front / Rear)		Strut-type coil spring / Double wishbone-type coil spring	
Brakes (Front / Rear)		Ventilated disc / Ventilated disc	
Driveline		Front-wheel drive	Four-wheel drive
Driving performance			
Acceleration performance (0-100 km/h)	seconds	8.4	7.7

SUSTAINABLE DEVELOPMENT GOALS

Toyota Motor Corporation works to develop and manufacture innovative, safe and high-quality products and services that create happiness by providing mobility for all. We believe that true achievement comes from supporting our customers, partners, employees, and the communities in which we operate. Since our founding over 80 years ago in 1937, we have applied our Guiding Principles in pursuit of a safer, greener and more inclusive society. Today, as we transform into a mobility company developing connected, automated, shared and electrified technologies, we also remain true to our Guiding Principles and many of the United Nations'

Sustainable Development Goals to help realize an ever-better world, where everyone is free to move.

SDGs Initiatives: <https://global.toyota/en/sustainability/sdgs/>

SDGs goals that this project makes particular contribution to:

