

Media information  
6 September 2021

## **The BMW i Vision Circular.**

### **Highlights**

- The four-seat BMW i Vision Circular looks ahead to a compact, all-electric vehicle for the year 2040 that is focused squarely on sustainability and luxury.
- This Vision Vehicle has been designed according to circular economy principles across the board. The aim is to achieve 100% recycled materials use/ 100% recyclability.
- The all-solid-state battery in the BMW i Vision Circular is likewise 100 per cent recyclable and manufactured almost entirely using materials from the recycling loop. It will achieve much higher energy density with significantly reduced use of the most valuable resources.
- The BMW i Vision Circular therefore illustrates the BMW Group's all-encompassing, meticulous way of thinking when it comes to sustainable mobility. It seeks to be a pioneering force in the development of a circular economy and also extend its leading status for resource efficiency in production to all stages of the vehicle life cycle.
- Consequently, the BMW Group's overriding aim is to reduce CO<sub>2</sub> emissions throughout a vehicle's entire life cycle. Besides electrifying the product portfolio and switching to renewable energy for manufacturing, the company is focusing particularly on circular economy principles and the use of secondary materials.
- The BMW i Vision Circular does not offer a foretaste of the 'Neue Klasse'. On a sustainability level though, the 'Neue Klasse' is being developed with the same mindset applied for the Vision Vehicle.
- Circularity was a factor in the design, development and manufacturing process for the BMW i Vision Circular from the outset as part of the 'circular design' approach.
- When it comes to the materials used, the focus with the BMW i Vision Circular is on recycled materials ("secondary first" principle) which can be disassembled quickly and easily at the end of the product life cycle.

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- The deliberate spotlight on disassembly is therefore an important aspect. The quick-release fastener for the wheels, seats and instrument panel, and a cord tie in the rear seat bench do most to showcase the detachability of material connections in aesthetically appealing form, creating a “joyful fusion”.
- The rigorously applied circular design approach lends the BMW i Vision Circular a totally new and engaging aesthetic. At the same time, it shows that a high level of sustainability can go hand in hand with a luxurious appearance.
- At the front end, the kidneys and headlights have been newly interpreted as a digital surface. In the future, digital design could make geometric variations in lights and bumpers redundant, helping to reduce the quantity of materials and tools required.
- Instead of additive trim elements, or badging of the sort currently used to signify quality, the brand logo is engraved on the front end and the vehicle badge is lasered on to avoid using extra add-on parts.
- The bumper area further down is manufactured from recycled plastic with a sophisticated marbled surface.
- The clear design language takes the car’s proportions in a new direction for a BMW. The Vision Vehicle extends in an unbroken volume from the front to rear axle. Together with its electrified architecture, the vehicle offers a luxury-class interior on a small car footprint.
- Instead of being given a paint finish, the surfaces of the BMW i Vision Circular are presented in light-gold anodised secondary aluminium. The frame at the rear of the car displays an alluring interplay of bluish purple surfaces created by the heat treatment process used for the steel.
- The refinement processes employed for the individual surfaces give them significant visual impact, while optimal reusability is maintained.
- The slightly transparent tires are made from certified, sustainably cultivated natural rubber. Coloured, recycled rubber particles are added to the tyre compound for strengthening and create an intriguing terrazzo effect which purposefully highlights the reuse of materials.

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- The wheel rims are designed for minimal materials use. Rim centres with maximum permeability provide brake cooling, while the more enclosed surfaces to the outer reaches of the wheels ensure the greatest possible aerodynamic efficiency.
- All the display surfaces and light functions at the rear are integrated invisibly into the dark glass tailgate, replicating the approach taken at the front end. When the car is switched off, only the two-dimensional BMW logo in the dark glass surface is visible.
- The minimalist and aerodynamically optimised black bumper – likewise made from visibly recycled plastic – rounds off the rear-end design at its point lowest to the road.
- The interior of the BMW i Vision Circular shows what could be possible in the future when it comes to circularity and purposeful selection of materials – and the kind of intriguing aesthetics that might emerge as a result.
- Mono-materials and clever new joining techniques for them which avoid the use of glue ensure optimum suitability for dismantling and sorting at a later stage. In order to minimise the amount of waste and offcuts, all components and materials will be manufactured to fit exactly using processes such as 3D printing. Any surplus material will be systematically fed back into the materials cycle.
- The bright and welcoming interior greets the driver and front passenger with an open sense of space. The glass roof with pronounced rearward placement of the windscreen header gives those in the front the impression they are sitting in the open air.
- Two separate lounge seats with integral head restraints create an exclusive ambience. The upholstery is made from recycled plastic and is held within a light-gold aluminium frame.
- The back of the slim front seat shells is made of recycled plastics with a terrazzo-look finish. The circular ‘joyful fusion’ quick-release fastener allows the metal and fabric to be easily separated and sorted, and then reused.
- The global user experience in the BMW i Vision Circular, like its material qualities, deliberately showcases a more distant future with greater in-car intelligence and more sensors that react to the user.

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- The classical instrument panel is turned into a next-generation user interface. At its heart is a 3D-printed, crystal body, which reacts to hand movements with an enthralling lighting effect.
- The crystal body is bordered on both sides by naturally treated wood from externally certified sources. Gold-bronze metal elements made from anodised secondary aluminium connect the instrument panel to the A-pillars. Here too, the 'joyful fusion' quick-release fasteners provide straightforward dismantling.
- The information area you would normally expect to find in a central information display is located above the instrument panel at the bottom of the windscreen. The existing windscreen is transformed into an information source and eliminates the need for any other displays in the interior.
- The steering wheel rim has been 3D-printed from wood powder and feels natural and warm to the touch. The unconventional, central positioning of the vertical spoke in gold-bronze adds a modern twist. It incorporates another crystal interface area featuring backlighting and displays similar to those of the instrument panel.
- The large, slightly raised rear bench seat offers exceptional comfort for two with its softly padded side bolsters. The head restraints look like cushions, and audio speakers located beneath them give each seat its own dedicated sound zone.
- The woven fabric with elaborate Jacquard design for the rear seats is made from 100 per cent recycled material. The rear bench seat is bordered by an anodised aluminium frame in gold-bronze. The fabric and frame are held in place by a cord, which can be released again easily when it is time to dismantle the seat.
- The deep-pile carpet used throughout the vehicle is manufactured from 100 per cent recycled plastic.
- In the C-pillar, a glass iDrive Controller from a BMW iX enjoys a second life with a new function as a lamp.
- The sound design for the BMW i Vision Circular is the work of the composer Hans Zimmer and Renzo Vitale, Creative Director Sound BMW Group. It makes the car's circularity audible. Each and every tone featured

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captures the movements of the exterior structures, the interior areas, the materials, the lights and the visual animations.

- Alongside all its material and design innovations, the BMW i Vision Circular also offers the possibility of usage in a vehicle-to-grid scenario. Here, the vehicle would act as a mobile energy storage device and feed power back to its surroundings, e.g. buildings and infrastructure.
- Another key measure in the drive towards sustainable urban mobility involves making intelligent use of the available real-time and long-term traffic data in order to maximise efficiency. If the sensor data and information gathered by the individual vehicles is shared with the entire fleet (with the users' consent), all vehicles will benefit from the resulting swarm intelligence.
- Speed recommendations could be optimised to make better use of traffic light phases ("green wave"), traffic flows forecasted more accurately and periods of congestion minimised as a result of vehicles communicating with each other and with their environment. CO<sub>2</sub> emissions caused by stop-start traffic or even searching for a parking spot would be reduced significantly across a large number of users.
- The BMW i Insights Vision app uses augmented reality to visually showcase the wealth of individual solutions offered by the BMW i Vision Circular and its positive overall contribution directly on the Vision Vehicle.

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**The BMW Group**

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises 31 production and assembly facilities in 15 countries; the company has a global sales network in more than 140 countries.

In 2020, the BMW Group sold over 2.3 million passenger vehicles and more than 169,000 motorcycles worldwide. The profit before tax in the financial year 2020 was € 5.222 billion on revenues amounting to € 98.990 billion. As of 31 December 2020, the BMW Group had a workforce of 120,726 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company set the course for the future at an early stage and consistently makes sustainability and efficient resource management central to its strategic direction, from the supply chain through production to the end of the use phase of all products.

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