

Media information
05 January 2022

New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

BMW presents drive system sounds from the collaboration with film score composer and Academy Award winner Hans Zimmer. +++ Individually configurable soundscapes are fundamental to a vehicle's character and to creating an emotionally engaging driving experience. +++ Premiere in the BMW i4 and BMW iX. +++ Specific aural character for BMW M models.

Munich. The spread of driving experiences offered by the fully electric models from BMW ranges from hushed pleasure to enthusiastic exploration of their dynamic limits. And now a brand-typical drive sound fed into the interior of these models adds even further depth to the pleasure of locally emission-free driving. BMW IconicSounds Electric will bring new and emotionally rich soundscapes into the brand's model line-up. They have been created as part of a collaboration between the BMW Group and Grammy and Academy Award-winning film score composer Hans Zimmer. The new sounds reflect the specific performance characteristics of the drive system on board and the signature attributes of an electrified BMW in a completely new yet wholly authentic way. "Sound is a fundamental part of the emotional driving experience in a BMW," says Adrian van Hooydonk, Head of BMW Group Design. "With the unparalleled experience and creativity of Hans Zimmer to count on, we are creating a unique acoustic character to our electric vehicles." The BMW IconicSounds Electric will be available for the first time in the BMW i4 in the first half of 2022 and then also for the BMW iX in the second half of 2022. They can be imported into suitably equipped vehicles via Remote Software Upgrade.

The worlds of sound created by BMW IconicSounds Electric will vary according to the driver's My Modes selection. The Personal, Sport and Efficient settings already available in current BMW models are now being joined for the first time by the new My Modes Expressive and Relax, with distinctive soundscapes to match. Electrified BMW M models, meanwhile, come with BMW IconicSounds Electric variants developed especially for them.

Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 2

Innovative sounds for electrified BMW models.

The acoustic perception of its vehicles has always been high up the priority list for BMW. The company's acoustic engineers have been working on artificially generated sounds for electric models since 2009 to ensure that pedestrians and cyclists are alerted to approaching electric vehicles. In the BMW i8 launched in 2014, this pedestrian protection was joined by an artificially generated sound inside the cabin. When the car was running in its all-electric mode, this created an audible connection between the car and its driver, who would have been more accustomed to the noise produced by conventional drive systems. The electric drive sound of the BMW i8 was inspired primarily by the functioning of its electric motor. The journey to a whole new sound composition has since progressed via the acoustic pedestrian protection system introduced in 2019 for the plug-in hybrid variants of the BMW 7 Series luxury sedan all the way to the BMW IconicSounds Electric.

BMW IconicSounds Electric started out as a collaboration between the BMW Group and Grammy and Academy Award-winning composer Hans Zimmer with the objective of developing a revolutionary sound design and concepts for the fleet of BMW electric vehicles and ultimately creating the sounds of the future. This development results in the practical and innovative use of sound for future production vehicles, creating an emotional bond between driver and car. "We create sounds which celebrate the beauty and complexity of our vehicles and which move people," says Renzo Vitale, Creative Director Sound der BMW Group.

The partnership with Hans Zimmer.

In Hans Zimmer, the BMW Group has gained an experienced and multi-award-winning partner whose many accolades now stretch back over four decades. Zimmer's passion for BMW cars started when he was very young, as he recalls: "I've always been a BMW enthusiast. As a child, I would recognise the sound of my mother's BMW when she came home. I am delighted to have the opportunity to design the sound of future electric BMW models and create emotions for the electric driving experience of tomorrow." As a long-standing friend of the brand, Zimmer felt a need to keep getting closely involved in the area of sound design for BMW.

Hans Zimmer has since contributed his expertise to sound design for electrified BMW vehicles, both as composer and curator of BMW IconicSounds Electric and through his work on various related projects. In November 2019, Zimmer and Vitale

Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 3

jointly presented the new start/stop sound for purely electrically powered and plug-in hybrid models from BMW. At the start of every journey, this ready-to-drive sound builds anticipation for the all-electric and therefore locally emission-free driving experience to come.

The BMW IconicSounds Electric project is based on a wide-ranging international collaboration, with recordings taken from Zimmer's studios in Los Angeles and London, BMW's sound lab in Munich and a host of virtual sessions. "It is an honour to be able to work together with BMW," says Hans Zimmer. "This is a unique opportunity to not just help design the sound of future electric vehicles, but also have an impact on the soundtrack of tomorrow's cities." The composer was clearly delighted to be part of the project, saying: "For the first time since the industrial revolution, we have a unique opportunity to redesign and redefine the sounds of our cities. And we are not restricted in any way by mechanical limits."

Electric mobility spawns the reinvention of drive system sounds.

The progression into electric mobility has also heralded a paradigm shift in terms of drive system acoustics. Unlike conventionally powered vehicles, in which the combustion process in the engine is accompanied by a sound, the drive systems of electric vehicles work almost silently. Their understated aural output varies very little from motor to motor.

Consequently, the transformation from combustion engines to electric mobility offers sound designers an extraordinary opportunity to completely reinvent the acoustic perception of a vehicle. They can create soundscapes which help make the sustainable mobility experience even more intense, even more present and even more distinctive. BMW IconicSounds Electric and the collaboration with Hans Zimmer utilise this potential in a unique way.

In its essence, the quietness of electric driving generates a whole new level of comfort. However, the absence of sound also takes something away from the driving experience. Acoustic feedback to movements of the accelerator is a fundamental element in the emotional experience on board a vehicle.

And a vehicle's acoustics also have a role to play in terms of safety. That is why manufacturers have a legal obligation to equip their electric vehicles with an Acoustic Vehicle Alert System. The sound this emits in the area around the vehicle

Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 4

is designed to alert pedestrians and cyclists to an electric vehicle approaching. The audible pedestrian protection system fitted on electrified vehicles from BMW generates a sound which has a powerful signalling effect but does not detract from the acoustic comfort of those on board.

The BMW IconicSounds Electric were developed with the driver's reaction to them in mind and also with just the right subtlety and elegance to offer the driver an authentic and emotionally engaging experience based on their relationship with their car and how they interact with it. While developing the sounds that can be heard in the cabin of electrified BMW models, care was taken to ensure that the driver is guided by the soundtrack rather than being overwhelmed by it.

The My Modes: sound as part of an all-encompassing user experience.

Within the aural spectrum defined for each specific model, the drive sound emitted by the purely electric vehicles from BMW varies depending on the selected My Mode. The My Modes create an all-encompassing user experience in the cabin that is geared towards the driver's personal preferences. The interior experience appeals to multiple senses at the same time, conjuring up very special moments for the driver and their passengers to enjoy. Activated using a button on the centre console, the My Modes combine and orchestrate numerous vehicle functions, among them the drive soundtrack.

With BMW IconicSounds Electric, the difference between the drive sounds in the individual My Modes is even more clearly perceptible. "Each My Mode places the emphasis on different facets of the car's character and this can also be heard in the sound it makes," explains Renzo Vitale. In the My Mode Personal – the default setting in the BMW iX (the BMW i4 defaults to Comfort) – BMW IconicSounds Electric use a spherical sound pattern and many tonal components to convey a basic acoustic mood that voices the vehicle's progressive and independent character. At the same time, the transparent timbre captures the design's high-quality aesthetic appeal in acoustic form. The sound variant heard in the cabin when Personal or Comfort mode is selected also forms the basis for the drive sound transmitted externally by the acoustic pedestrian warning system.

The soundscapes devised for the My Modes are a composition of various forms of sound generation, some of which are more traditional while others are completely new creations. The foundation is provided by human voices and classical

Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 5

instruments, but mechanical sounds and unusual combinations are also used to produce various tones. Female voices and the sound of a guitar string being made to vibrate using a glass cylinder were just some of the elements incorporated into the sound for the My Mode Comfort in the BMW i4, for instance, as Renzo Vitale explains: “In this way, we transpose the characteristics of the electric drive system into an individual and distinctively BMW soundscape.”

The harmonious and elegant sound produced in the My Mode Personal or Comfort contrasts with acoustic perception in the Sport setting, which focuses far more strongly on the active driving experience. With a distinct aural presence and extremely dynamic modulation, the soundscape in this mode provides the driver with unequivocal acoustic feedback on the motor’s power delivery and the current driving state. The exhilarating experience of sporty driving is therefore enhanced by the appropriate acoustic accompaniment.

It is only in the My Mode Efficient that acoustic feedback is suppressed altogether, with the drive system’s silent operation seemingly proclaiming the driver’s decision to adopt an exceptionally efficient driving style. The driver also has the option of deactivating the drive sound in the other My Modes via the corresponding iDrive menu.

Two new My Modes with their own soundscapes.

The arrival of BMW IconicSounds Electric coincides with the presentation of two further My Modes. The new Expressive and Relax settings also encompass their own individual worlds of sound and they have a particularly notable impact on the overall emotional experience during the journey.

The sound in the My Mode Expressive is accompanied by high-contrast neon colours and abstract patterns on the BMW Curved Display. Its underlying tonality consists of a violin tone. Another higher-pitched sound structure is superimposed on top of this when accelerating, altering the harmony in a number of stages as the vehicle’s speed increases. The first full chord is heard when the vehicle reaches 60 km/h (37 mph), followed by a second complete chord at 120 km/h (75 mph). When driving at a constant speed, on the other hand, the pitch stays the same while the volume is dialled down significantly to focus acoustic perception on the drive system’s hushed smoothness.

Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 6

This acoustic experience forms a stark contrast to the basic interior mood produced by the soundtrack in the Relax My Mode, with the focus switching to well-being, harmony and relaxation as soon as this setting is selected. In keeping with the graphics that appear on the BMW Curved Display – inspired by coastlines, rivers and lakes – this produces a soft, subtle and harmonious composition of sounds that lends itself to a calm and relaxed drive. “This soundscape relieves any tension the driver is feeling and helps them to actively leave stress behind them,” describes Renzo Vitale.

Bespoke soundtracks for the BMW i4 and BMW iX.

The launch of BMW IconicSounds Electric means the palette of sounds for purely electric BMW models that has been developed in collaboration with Hans Zimmer can now be experienced in full for the first time. The ready-to-drive sound, which is emitted for about two seconds when the Start/Stop button is pressed, signals that the sustainable mobility experience is about to commence. During the journey, the driver’s inputs are accompanied by the drive sound for the specific model. This encompasses not only acoustic feedback in response to every movement of the accelerator, but also an authentic backing track that clearly indicates the vehicle’s current operating state.

In its role as the BMW Group’s new technology flagship the BMW iX symbolises a remarkably progressive and also exceptionally comfortable and spacious form of driving pleasure. The BMW i4, on the other hand, brings all-electric mobility to the very heart of the brand. Its positioning in the premium midsize segment means it is very closely entwined with BMW tradition. In both cases, the vehicle characteristics are reflected in the respective soundscapes.

Electrically powered BMW M cars with a sound of their own.

A bespoke sound composition likewise accompanies the driving experience in electrically powered BMW M models. Consequently, the world of sound devised for the BMW i4 M50 (electric power consumption combined as per WLTP: 22.5 – 18.0 kWh/100 km [62 miles], CO₂ emissions: 0 g/km) is bursting with energy. “We are seeking to transfer the traditional elements of the BMW M brand into the future,” comments Renzo Vitale.

A powerful and imposing – yet never obtrusive – drive sound succeeds in authentically conveying the hallmark agility, precision and poise that characterises

Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 7

the handling of BMW M cars. The sound intensifies sharply when accelerating, lending aural expression to the vehicle's powerful character. As a result, the stunning performance that is a defining feature of the electrified models in the BMW M GmbH range can be experienced with even greater intensity.

The creative process of sound development.

The process of creating these innovative sounds starts with Hans Zimmer and the BMW Group developing a shared understanding of the technological and emotional goals for the new soundscapes. Zimmer and Renzo Vitale then reimagine these emotions as melodic elements. Together they consider what emotions could be aroused by each sound. They often use traditional instruments but in a novel way, allowing them to redefine the potential offered by certain musical resources.

Once the newly designed sounds are ready, they are integrated into a BMW by the sound design team and tested to obtain real-time feedback. The finished soundtrack is road tested in the respective model so that the emotions generated by the acoustic composition can be precisely matched to the various My Modes and the driving situations.

Although Zimmer and Vitale frequently use traditional instruments when developing new sounds, they do so in an unconventional way, creating sounds that would not normally be expected from these instruments. The sound designers snap guitar strings instead of strumming them, for example, or hurl objects against a wall and seek inspiration in the unpredictable sound this makes. In another phase of development, Hans Zimmer first creates a three-minute suite. He and Vitale then proceed to extract elements from it in order to focus on something entirely unexpected that provides the basis for a completely new composition and way of expressing sound.

Sound reinforces the relationship between driver and car.

Drivers don't identify with their BMW based purely on the performance characteristics of its power unit and the driving qualities – its soundtrack has always played a key role too. BMW IconicSounds Electric now open up even greater scope for reinforcing this emotional bond by turning it into a distinctive overall experience. For the first time, the soundscapes devised for the purely electrically powered models and their different variants depending on the selected My Mode also take



Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 8

into account the driver's personal preferences and their basic mood in the situation at hand.

This means the interaction between driver and vehicle can be perceived in the cabin more intensely than ever. "Acoustic feedback when accelerating has been fine-tuned to the changing pedal gradient," explains Renzo Vitale. Modulation of the sound is therefore matched to the angle of the accelerator and, by extension, the driver's inputs with high precision. "When the driver interacts with the pedal, it's more than just a mechanical contact point – it's a performative element," says Hans Zimmer. "Accelerating is turned into an experience that takes the driver through a whole series of gradually changing sound textures."

Media information

Date 05 January 2022

Subject New soundscapes for pure-electric driving pleasure: BMW IconicSounds Electric.

Page 9

The fuel consumption, CO₂ emissions, electric power consumption and operating range figures are determined according to the European Regulation (EC) 715/2007 in the version applicable. They refer to vehicles in the German market. Where a range is shown, WLTP figures take into account the impact of any optional extras.

All values were calculated based on the new WLTP test cycle. WLTP values are taken as the basis for determining vehicle-related taxes or other duties based (at least inter alia) on CO₂ emissions as well as eligibility for any applicable vehicle-specific subsidies. Further information on the WLTP and NEDC measurement procedures can also be found at www.bmw.de/wltp.

Further information on official fuel consumption figures and specific CO₂ emission values of new passenger cars is included in the following guideline: 'Leitfaden über den Kraftstoffverbrauch, die CO₂-Emissionen und den Stromverbrauch neuer Personenkraftwagen' (Guide to the fuel economy, CO₂ emissions and electric power consumption of new passenger cars), which can be obtained free of charge from all dealerships, from Deutsche Automobil Treuhand GmbH (DAT), Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen and at <https://www.dat.de/co2>.

In the event of enquiries please contact:

Corporate Communications

Laura-Marie Gaßner, Press Spokesperson BMW Group Design
Telephone: +49-89-382-98114
E-mail: laura.gassner@bmwgroup.com

Almut Stollberg, Head of Communication Innovation, Design, Technology, Digital Car
Telephone: +49 89 382 96543
E-mail: Almut.Stollberg@bmw.de,

Internet: www.press.bmwgroup.com/global
E-mail: presse@bmwgroup.com

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.

www.bmwgroup.com

Facebook: <http://www.facebook.com/BMWGroup>

Twitter: <http://twitter.com/BMWGroup>

YouTube: <http://www.youtube.com/BMWGroupView>

Instagram: <https://www.instagram.com/bmwgroup>

LinkedIn: <https://www.linkedin.com/company/bmw-group/>