

Media Information
02 September 2021

BMW Group accelerates CO2 reduction and focuses consistently on a circular economy with the Neue Klasse

- Zipse: “We are committed to a clear course to achieve the 1.5 degree target”
- 50% reduction in global CO2 use-phase emissions by 2030
- Over 40% reduction in CO2 emissions during life cycle
- Ten million all-electric vehicles within ten years
- Secondary first: Up to 50% use of secondary material planned – initiatives to develop the market are required
- Cooperation with BASF and ALBA on plastic recycling
- Resource scarcity and social responsibility: BMW Group focussed on circular economy for sustainable materials
- RE:BMW – circular economy at the IAA Mobility in Munich

Munich. The BMW Group is increasing the pace of its efforts to combat climate change. Looking ahead to the introduction of the Neue Klasse, the company is further strengthening its self-defined objectives, announced in summer last year, to significantly **reduce CO2 emissions**, whilst also committing itself to a clear course that supports the **1.5 degree target** for the limitation of global warming. The Neue Klasse will also see the BMW Group hugely increase its use of **secondary materials** with a firm focus on the principles of the **circular economy**, whilst also promoting better framework conditions for establishing a market for secondary materials.

To achieve a further **reduction in CO2 emissions**, the focus is on the **utilisation phase** of vehicles, which account for 70% of the BMW Group's CO2 footprint. **By 2030**, the CO2 emissions per vehicle and kilometre driven will be **at least halved** from 2019 levels. The commitment of all manufacturers when it comes to combatting climate change can best be compared when looking at the **entire life cycle** of a vehicle, including production and upstream supply chain. Here, the BMW Group is planning a **reduction of CO2 emission per vehicle of at least 40%**.

Company
Bayerische
Motoren Werke
Aktiengesellschaft

Postal address
BMW AG
80788 Munich
Germany

Telephone
+49-89-382-24118
Internet
www.bmwgroup.com

“How companies are dealing with CO2 emissions has become a major factor when it comes to judging corporate action. The decisive factor in the fight against global warming is how strongly we can improve the carbon footprint of vehicles over their entire life span.



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This is why we are setting ourselves transparent and ambitious goals for the substantial reduction of CO2 emissions; these are validated by the Science Based Targets Initiative and will deliver an effective and measurable contribution,” said **Oliver Zipse**, Chairman of the Board of Management of BMW AG, in Munich on Thursday. “With the Neue Klasse we are significantly sharpening our commitment and also committing ourselves to a clear course for achieving the 1.5 degree target.”

The BMW Group is the first German carmaker to join the **Business Ambition for 1.5°C** of the **Science Based Targets Initiative** and is committed to the goal of full climate neutrality over the entire value-added chain by 2050 at the latest. This means that the company is also part of the **international Race to Zero Initiative**. The company is convinced that this can be achieved using innovation, rather than any overall ban on individual technologies.

The most powerful driver on this path to climate neutrality is electric mobility, with the BMW Group’s Neue Klasse set to provide significant further momentum to the market. During the next ten years or so, the company will be putting around **ten million all-electric vehicles on the road**. As early as **2030, at least half** of global BMW Group sales will be **all-electric vehicles**, with the **MINI** brand offering **exclusively all-electric vehicles** from 2030.

The BMW Group continues to comply with the **stringent criteria** of the Science Based Targets Initiative, when it comes to measuring the reduction of worldwide CO2 emissions of the company’s vehicles whilst they are being driven on the roads. For example, emissions from the production of fuel or electricity are included in the calculation and consumption is based on the WLTP cycle plus ten percent. With its current product and electrification strategy, the company is on track to meet the EU fleet target for 2030.

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Beyond green electricity: Stronger focus on use of resources in future

BMW Group is clear that simply increasing the number of electric vehicles on the road does not automatically lead to climate-friendly mobility. The company understands that it is also crucial to reduce the use of primary material and the related environmentally harmful **exploitation of resources** and their often CO2-intensive processing – especially when it comes to car manufacturing, one of the most resource-intensive industries.

“2017 was the first time the world’s population consumed more than 100 billion tons of resources within a single year - a trend which we in the automotive industry must also counteract,” **Zipse** demanded. “This is a strategic issue, concerning not only ecological but also economic sustainability; the current development of commodity prices demonstrates the impact an industry that is dependent on limited resources must expect.”

With the number of battery-powered vehicles growing, there is **increasing demand for many commodities such as cobalt, nickel and aluminium**, which are required for the vehicles’ high-voltage batteries. However there is great potential for the reuse of materials in the sense of a circular economy and together with specialist partners, the BMW Group has already demonstrated that it’s technological feasible to achieve a recycling efficiency of over 90 percent.

The amount of **secondary nickel** used for the high-voltage battery in the **BMW iX** is already as high as 50 percent, with the battery housing containing up to 30 percent **secondary aluminium**. The BMW Group aims to improve these figures even further for future product generations.

In addition to the increasingly scarce availability of primary materials and resulting commodity price increases, there are many **sustainability reasons** to use more secondary materials and move towards a circular economy.

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The **supply** of secondary materials is considerably **less CO2-intensive** than is the case with primary materials and can significantly improve the CO2 footprint, especially within the supply chain. In the case of secondary aluminium, the CO2 saving compared with primary material constitutes a factor of approximately 4 to 6, whilst steel and thermoplastics lie between around 2 and 5.

The extraction of resources for primary materials – particularly through mining – has a significant impact on the basic **regenerative capacity of ecosystems**. This impact can be greatly reduced by increasing the use of secondary materials.

The mining and trading of **conflict materials** carries the possible risk of associated infringements of environmental and social standards. The BMW Group has established numerous measures to counteract this risk, including membership of the Responsible Minerals Initiative. However, the most efficient strategy for avoiding risks is to **minimise the mining of such primary materials**.

'Secondary First': Crucial vehicle materials with high secondary content

As part of its holistic approach to sustainability, the BMW Group aims to increase significantly the percentage of secondary materials in its vehicles. On average, current vehicles are manufactured using almost **30 percent** recycled and reusable materials. With the '**Secondary First**' approach, BMW Group plans to successively **raise this figure to 50 percent**.

Of course it's crucial that the quality, safety and reliability of the materials comply with the same high standards as those existing for primary materials – and so it's essential that the market availability of such high-quality materials increases considerably. In order to achieve this, cross-industry approaches and political initiatives are necessary.

Based on the four principles **RE:THINK, RE:DUCE, RE:USE, RE:CYCLE**, the BMW Group is boosting its activities in the field of circular economy, an area where it's carrying out pioneering work. For instance, vehicle production now involves the increased

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separation and recycling of crucial material groups, so these can be reused by the industry within the framework of 'closed loops'.

Cooperation with BASF and the ALBA Group

Within the supply chain and depending on market availability, secondary materials are increasingly being used in BMW Group vehicles. Moreover, together with its partners, the company is providing important impetus when it comes to developing secondary materials. One example is the company's pilot project with **BASF** and the **ALBA Group** for the increased recycling of plastics used in cars.

The aim of the project is to reduce the use of primary plastics by means of a comprehensive **recycling system**. To this end, the ALBA Group analyses end-of-life BMW Group vehicles to establish whether a car-to-car reuse of the plastic is possible. In a second step, BASF assesses whether **chemical recycling** of the pre-sorted waste can be used in order to obtain pyrolysis oil. This can be then used as a basis for new products made of plastic. In the future, a new door trim or other components could be manufactured from a used instrument panel, for example.

Closed loop rather than downcycling: 'Circular Design' as the basis of a circular economy

In order to achieve **higher recycling rates** and whilst also guaranteeing the **high quality of secondary materials**, the materials must be extracted in their purest form as early as possibly during the **recycling process**. For example, the onboard wiring systems must be easy to remove, in order to avoid mixing steel with copper from the cable harnesses in the vehicles. If this mixing does take place, the secondary steel loses its essential material properties and therefore no longer meets the **high safety requirements** of the automotive industry. To support this early and easy extraction of materials, the interior of a car must increasingly be made of **monomaterials**, so that at the end of the car's lifecycle, as much as possible can be transferred back into the usable material cycle. Basically, reducing the number of

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materials can help to improve the quality of recycled materials. Currently, vehicles consist of about 8,000 to 10,000 different materials.

To achieve this, the BMW Group is now focusing on a '**Circular Design**' concept, which is designed to guarantee the **economical dismantling capacity** of vehicles. It is essential that disassembly of the vehicle and its individual components is fast and cost-efficient to ensure that prices of **secondary materials** are competitive. It all starts with the **construction of the vehicle**, which must be done in such a way that allows materials to be removed at the end of the vehicle's service life without different types of material being mixed with each other.

RE:BMW at the IAA Mobility – a visionary outlook on circular economy

The BMW Group is putting circular economy at the centre of its presence at the IAA Mobility 2021 in Munich, where the company will offer a visionary outlook on the potentials of a circular economy and sustainable mobility. The **BMW i Vision Circular** embodies the company's ambitious claim to be the most sustainable manufacturer for individual premium mobility.

This visionary vehicle, designed according to the four principles of the circular economy RE:THINK, RE:DUCE, RE:USE, RE:CYCLE, shows how individual, sustainable and luxurious urban mobility could look in 2040. The BMW i Vision Circular is manufactured from 100 percent secondary materials or renewable raw materials, and is 100 percent recyclable.

This car demonstrates that climate protection and individual mobility do not necessarily contradict each other. On the contrary, it shows that using new technologies and innovation, the BMW Group can fulfill the planet's requirements for greater sustainability without customers having to forgo individual mobility.



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In case of queries please refer to:

Corporate Communications

Max-Morten Borgmann, Communications Corporate
Telephone: +49 89 382-24118, Max-Morten.Borgmann@bmwgroup.com

Kai Zöbelein, Communications Sustainability
Telephone: +49 89 382-21170, Kai.Zoebelein@bmwgroup.com

Eckhard Wannieck, Head of Communications Corporate, Finance, Sales
Telephone: +49 89 382-24544, Eckhard.Wannieck@bmwgroup.com

Bernd Eckstein, Head of Communications Purchasing, Supplier Network, Sustainability
Telephone: +49 89 382-59490, Bernd.Eckstein@bmw.de

Internet: www.press.bmwgroup.com
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.

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