

Media Information
17 June 2021

BMW Group creates closed-loop material cycle for tungsten production tools to protect valuable resources

- Recycling tools at plants in Germany and Austria saves seven tonnes of tungsten per year
- Lowers energy consumption by 70% and CO₂ emissions by more than 60% compared to primary tungsten
- Wendt: “We will significantly increase the percentage of recycled raw materials by 2030 and use raw materials multiple times in a circular economy”

Munich. The BMW Group is making raw materials considered to be so-called conflict minerals a special focus of its sustainability strategy. This includes ores where mining or trading is often associated with violations of environmental and social standards. Tungsten is an example of this: Once considered an irritating by-product of tin mining, since it “ate up” the tin ore, it took a few hundred years for carbide’s unique properties to be recognised: heavy like gold, hard as a diamond and dozens of times more heat-resistant than iron. Today, it can be found in the vibration alarm of mobile phones and light bulb filaments, as well as drill and milling bits for industrial machinery used in producing cars.

The BMW Group has now created a closed-loop material cycle for this unique metal and is collecting old drill and milling bits at its plants in Germany and Austria for recycling. The secondary tungsten obtained in this way will then be used to manufacture new milling and drilling tools. This reduces the amount of tungsten required by seven tonnes per year. Compared to using primary tungsten, this also reduces energy consumption by 70% and CO₂ emissions by more than 60%.

“Responsible management of natural resources plays a key role in our sustainability goals. We plan to increase the percentage of recycled raw materials significantly by 2030 and use raw materials multiple times in a circular economy. This applies not only to their use in the vehicle, but also in value creation overall,” said Dr Andreas Wendt, member of the Board of Management of BMW AG responsible for Purchasing and Supplier Network. He added:

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“Every gram that conserves natural resources and doesn’t contribute to violations of environmental and social standards counts.”

The European Union has already implemented corresponding measures: At the start of 2021, a new “Conflict Minerals Regulation” came into effect that tightens the rules for importing the four conflict minerals: gold, tin, tantalum and tungsten.

Scrap turned into new tools

Carbide tools are mainly made of tungsten and are used, for example, at the BMW Group plant in Steyr for the high-precision machining of e-drive housings. The tools are usually resold as scrap at the end of their useful life. In June 2021, the BMW Group will gradually begin collecting this tool scrap from its plants in Germany and Austria for recycling by the Austrian mining company Wolfram Bergbau und Hütten AG. Tool scrap contains an average of more than 80% tungsten. This is then treated using a special method to produce secondary tungsten in powdered form; the electricity required for this comes from 100% renewable, local energy sources.

This dark grey tungsten powder can then be used to produce new tools. The BMW Group already demonstrated this material cycle with a small quantity of tool scrap as part of a pilot project in which tool manufacturer Gühring KG in Berlin produced new drill and milling bits from the recycled tungsten. These drill and milling bits are already being used at BMW Group plants. Following successful implementation of the pilot project, this material cycle is now being expanded to include carbide tool scrap at all plants in Germany and Austria. These plants generate almost nine tonnes of scrap from carbide tools every year: On average, this contains more than seven tonnes of recyclable tungsten. About half of this comes from the BMW Group plant in Steyr, Austria.

Virtually full transparency over “3TG” supply chain

The BMW Group already identified a number of raw materials and other materials that were especially critical from a sustainability perspective in its materials strategy back in 2012. The

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BMW Group analyses the impact of these priority raw materials on the environment and society throughout the supply chain on an ongoing basis.

The conflict minerals **t**in, **t**antalum, **t**ungsten and **g**old – also referred to by their initials as “3TG” – play a special role here. The BMW Group is aiming for full transparency for the 3TG supply chain and, together with its suppliers, already achieved virtually 100% traceability of the 3TG minerals used in components and tools back in 2019.

The BMW Group is also working to steadily increase the percentage of certified smelting plants in the supply chain. The BMW Group’s conflict minerals team offers suppliers training, information and support in this area.

The BMW Group is a member of the Responsible Minerals Initiative (RMI) and a driving force for sustainable management of conflict minerals. To improve its understanding of the processes involved in mineral processing, BMW Group Purchasing conducts on-site visits to selected European smelting plants every year. Wolfram Bergbau und Hütten AG is also a member of the Responsible Minerals Initiative.

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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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