



Battery recycling as an integral part
of a closed material loop

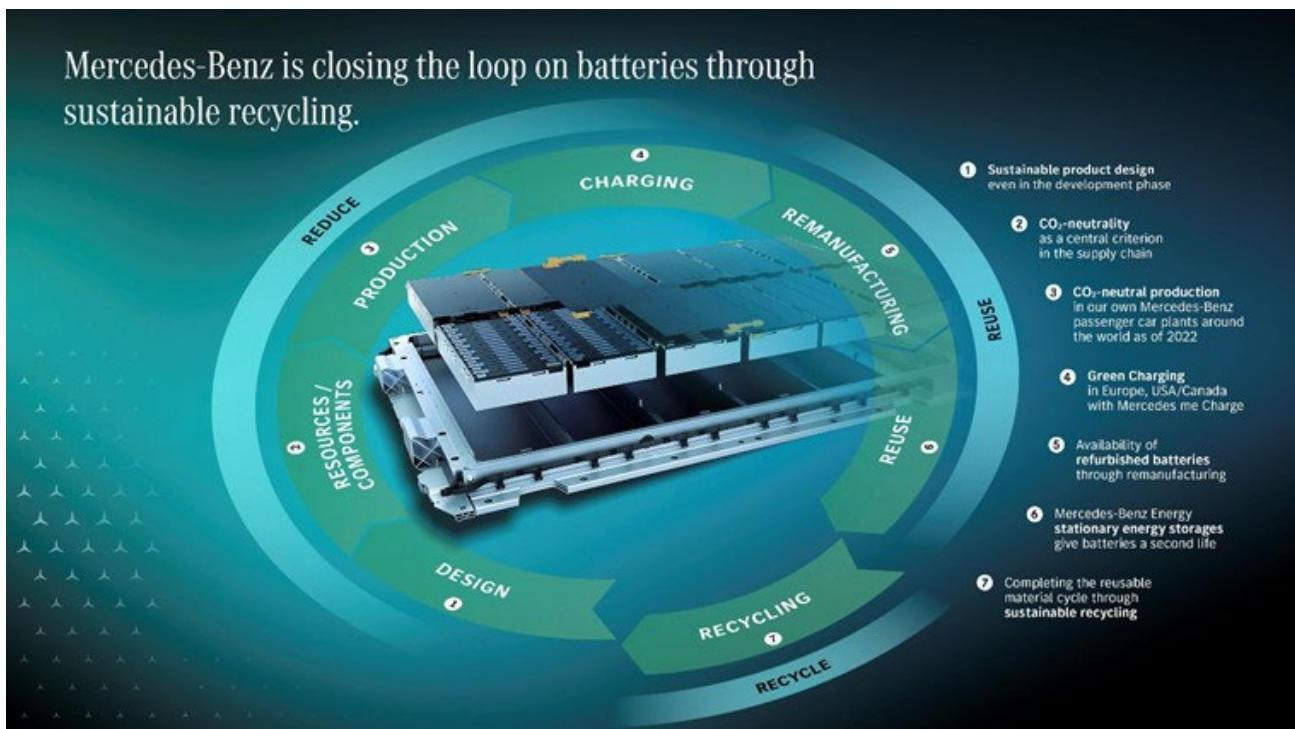
Mercedes-Benz



Mercedes-Benz has firmly anchored the principle of sustainability in its corporate strategy. The Group has set itself the goal of reconciling responsible economic growth and sustainability. In addition to a net carbon-neutral production and the switch to an all-electric vehicle portfolio¹, a closed material loop to reduce resource consumption is fundamental. One measure to ensure success in this is the circular design of battery recycling.

Global resource consumption is increasing - with negative consequences for the environment and society. That's why the goal of Mercedes-Benz in order to [establish a circular economy](#), is to increasingly decouple the consumption of resources from the growth of the production volume. The objective here is to help promote both economic growth and sustainability. This plan can only succeed if we systematically conserve resources. For example, the Group is increasingly using secondary materials and renewable raw materials in its vehicles. In addition to [circular design](#) and value retention, Mercedes-Benz also focuses on recycling. The battery recycling strategy plays a special role here.

With a view to the future returning lithium-ion battery systems from battery-electric vehicles, Mercedes-Benz announced in March 2022 the expansion of its global battery recycling strategy. In March 2023, the Group started setting up its [own battery recycling plant in Germany](#). Analogous to this technology, it is planned to establish a closed material loop for battery recycling in China and the USA together with high-tech partners.



Mercedes-Benz strives to reuse batteries before they are recycled. Used Mercedes-Benz genuine parts are remanufactured according to the Group's remanufacturing approach and used in a second automotive life cycle. Refurbishing a used battery consumes significantly less energy and raw materials than new production. In addition, each remanufactured battery reduces the amount

of waste. [Mercedes-Benz Energy GmbH](#), a Mercedes-Benz subsidiary, offers innovative stationary energy storage solutions for batteries that are no longer suitable for reuse in a vehicle. Material recycling concludes the end of a battery's life and is the key to closing the material loop. This makes battery recycling a prerequisite for a sustainable business model and the electromobility of the future.

Mercedes-Benz recycling plant in Kuppenheim, Southern Germany

An important milestone in the global Mercedes-Benz battery recycling strategy is the establishment of its own [pilot plant for the recycling of lithium-ion battery systems](#). In the design and construction of the plants, the company works together with partners from industry and science.

The project aims to set standards in terms of battery recycling from an ecological and technical point of view: The process design of the hydrometallurgy² with recovery rates of more than 96 percent is intended to enable a holistic circular economy of battery materials. Mercedes-Benz is investing a double-digit million sum in research and development as well as the construction of the net carbon-neutral pilot plant at the Mercedes-Benz site in Kuppenheim in Southern Germany. The project has received funding as part of the Battery Innovation Support Program of the German Federal Ministry for Economics and Climate Protection.

In the future, the new project will cover the entire process chain of battery recycling: from the development of new logistics concepts to the sustainable recycling of valuable raw materials and the reintegration of recycled material into the production of new batteries. The direct integration of hydrometallurgy into the overall concept of a recycling plant is unprecedented in Europe and serves as a core element in the realization of sustainable battery recycling in the sense of a true circular economy.

[all-electric vehicle portfolio¹: wherever market conditions allow]

[hydrometallurgy²: Totality of metal extraction and refining processes that exploit the solubility and wettability of the elements and their compounds at low temperatures.]