

Press Release, 25th August 2025

NRW and EU provide €30 million in funding for ESK-SiC

Economics Minister Neubaur presents funding approval for new silicon carbide factory.

On Monday, North Rhine-Westphalia's Minister for Economic Affairs and Climate Protection, Mona Neubaur, presented the funding approval for the RECOSiC project – a milestone for sustainable key technologies and also for structural change in the Rhineland mining region. In Frechen, ESK-SiC GmbH, a subsidiary of the Schunk Group, is building the world's first silicon carbide factory that operates entirely according to the principles of the circular economy. This European flagship project for sustainable industry in North Rhine-Westphalia is being funded with €30 million from the European Union's Just Transition Fund (JTF).

Silicon carbide (SiC) is an indispensable material in the semiconductor industry and is also used in solar systems, technical ceramics, and abrasive production. With the innovative RECOSiC process from ESK-SiC GmbH and Fraunhofer IKTS, it is now possible to recycle silicon carbide to a very high degree of purity – an environmentally friendly alternative to climate-damaging imports. Up to 6,000 tons of raw SiC can be produced per year in this way – in an energy-efficient and resource-saving manner.

“Cleverly recycling raw materials”

Minister Mona Neubaur emphasized the importance of the project: "NRW is leading the way! Here, the circular economy is becoming a reality – we are showing how to cleverly recycle raw materials. This is not only good for the climate, but also makes economic sense and makes us less dependent on raw material imports.

Our support for ESK-SiC GmbH together with the EU is a strong signal for a modern, competitive, and resilient industrial location in North Rhine-Westphalia in the heart of Europe.

“The energetic, uncomplicated, and rapid support from politicians and authorities is a real locational advantage in North Rhine-Westphalia – not only for Schunk. That is why we will continue to invest in the future of our North Rhine-Westphalia locations.”

Matthias Hausmann, Managing Director of ESK-SiC, says: "The funding of our innovative RECOSiC process shows that when it comes to good technological developments, the joint efforts of business and politics work. And in an extremely cooperative and reliable way! Thanks to this support, we can now implement our pioneering RECOSiC process on an industrial scale."

RECOSiC: Recycling the high-tech material silicon carbide

For over 100 years, silicon carbide (SiC), an important material for industry, has been produced using a very energy-intensive process known as the Acheson process. This process not only consumes a large amount of electricity per ton of SiC (roughly as much as an average household consumes in two years), but also produces around 4.2 tons of CO₂. Part of this is caused by chemical reactions, the rest by electricity generation – and in many countries this is even more harmful to the climate than in Europe.

To solve this problem, ESK and Fraunhofer IKTS have developed a new process: the RECOSiC process. This process reuses by-products from previous SiC production to produce new, high-quality SiC with a purity of over 98%. This not only saves raw materials, but also significantly reduces CO₂ emissions: instead of over four tons of CO₂, less than one ton is now produced when manufacturing one ton of SiC.

The recycled material is just as good as or even better than conventional SiC and can be further processed in existing production processes. The RECOSiC process thus contributes to a more sustainable and resource-efficient industry.

With the support of funding from the state of North Rhine-Westphalia and the European Union, ESK-SiC aims to implement the RECOSiC process on an industrial scale. Final preparations are currently underway for the start of construction of the new RECOSiC factory in Frechen. The project won the Produktives.NRW funding competition for strategic key technologies in the EFRE/JTF program NRW and is being funded as part of the EU initiative STEP (Strategic Technologies for Europe Platform).



Image: NRW Minister of Economic Affairs Mona Neubaur (center) presents the funding decision to representatives of ESK-SiC and its parent company Schunk. (© MWIKE NRW)