



PRESS RELEASE

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InvestEU: EIB invests in PBT's eco-friendly battery material production in Germany

- The EIB is providing a loan of €36.7 million to PBT's fully-owned subsidiary Königswarter & Ebell in Hagen.
- Australian startup PBT has developed an innovative processing technology for refining precursor cathode active material (pCAM).
- With its technology, PBT can produce pCAM from primary and recycled feed material, reducing emissions and costs.
- The agreement is supported by the InvestEU programme

The European Investment Bank (EIB), backed by the InvestEU programme, is granting a €36.7 million loan to Königswarter & Ebell, a fully-owned German subsidiary of Australia's Pure Battery Technologies (PBT). The project concerns an innovative first-of-its-kind commercial demonstration plant for the manufacturing of precursor cathode active material (pCAM). pCAM is used in the production of advanced lithium-ion cells with nickel, manganese and cobalt (NMC) chemistry. The project relies on an environmentally friendly processing technology developed at the University of Queensland in Australia that leads to reduced costs and lower carbon emissions.

The commercialisation of PBT's technology will strengthen the European Union's battery production capacities, which are required for the transition to a low-carbon economy. The PBT process can use recycled battery material known as black mass as feedstock, thus reducing the need for primary nickel, manganese and cobalt, in line with the European Union's circular economy approach. In the near future, larger volumes of end-of-life and off-spec batteries will become available following an increased uptake of electric vehicles and the expanding battery manufacturing industry. Battery recycling will also make the European Union more autonomous regarding the need for cobalt, a critical raw material in the battery supply chain.

The EIB financing comes in the form of a venture debt loan, supported by the InvestEU Green Transition programme, which is the successor of the Energy Demonstration Projects Facility under Innovfin.

Founded in 2017 and headquartered in Brisbane, Australia, PBT is commercialising a technology developed by the University of Queensland in 2011. The company currently has approximately 50 employees globally, 35 of which are based in Germany.

PBT plans to convert a brownfield industrial site owned by Königswarter & Ebell in Hagen into its first commercial production plant. Its patented processing technologies make it possible to produce pCAM in a cost-effective way and with a low level of emissions from both primary and recycled materials. The NMC Direct™ approach utilises PBT's Selective Acid Leaching and Combined Leach processes for the production of NMC precursor cathode material.

The main difference between this process and conventional processes is its simplicity. PBT's NMC Direct™ approach avoids the conventional energy-intensive, complicated, costly and emissive steps of separating the nickel, cobalt and manganese to produce metals and metal salts before recombining them to produce pCAM. The technology instead uses an innovative combination of selective leaching and purification processes to produce pCAM directly from the primary or recycled feed material. As a result, carbon emissions in the pCAM production process are reduced by 70% when compared to the current industry average.

EIB Vice-President Ambroise Fayolle, who has oversight of lending operations in Germany, said: "With its resource-friendly and innovative approach, the PBT refinery in Germany is well positioned to become a key player in the electric vehicle battery market in Europe. As it stands, the skyrocketing demand for electric vehicle batteries is likely to cause a major pCAM supply bottleneck. We are proud

to support a technology that will provide environmentally friendly pCAM in the European Union using a high proportion of recycled materials.”

European Commissioner for Economy Paolo Gentiloni added: “By investing in an innovative, environmentally friendly and cost-effective technology, we can truly accelerate the mass production of electric vehicle car batteries. This project is an excellent example of how InvestEU can contribute to achieving our shared climate objectives.”

CEO of PBT Bjorn Zikarsky said the EIB loan was an important confirmation that Europe’s business and investment community could see the value of PBT’s simple, smart and clean technology. “We are bringing important technology to market and provide a solution for electric vehicle manufacturers wanting cleaner battery materials for their cars. I am excited the EIB sees the potential of our technology for the industry and the European Union as a whole,” he said.

Background information

The [InvestEU programme](#) provides the European Union with crucial long-term funding by leveraging substantial private and public funds in support of a sustainable recovery. It also helps mobilise private investments for EU policy priorities, such as the European Green Deal and the digital transition. The InvestEU programme brings together the multitude of EU financial instruments currently available to support investment in the European Union, making funding for investment projects in Europe simpler, more efficient and more flexible. The programme consists of three components: the InvestEU Fund, the InvestEU Advisory Hub and the InvestEU Portal. The InvestEU Fund is implemented through financial partners that will invest in projects using the EU budget guarantee of €26.2 billion. The entire budgetary guarantee will back the investment projects of the implementing partners, increase their risk-bearing capacity and thus mobilise at least €372 billion in additional investment.

The **European Investment Bank (EIB)** is the long-term lending institution of the European Union owned by its Member States. It makes long-term finance available for sound investment in order to contribute towards EU policy goals. The EIB’s activities focus on the following priority areas: climate and environment, development, innovation and skills, small and medium-sized businesses, infrastructure and cohesion. The EIB works closely with other EU institutions to foster European integration, promote the development of the European Union and support EU policies in over 140 countries around the world.

Pure Battery Technologies (PBT), headquartered in Brisbane, Australia, with a German subsidiary in Ettlingen, produces the precursor for nickel-based active cathode material (CAM), which is used in lithium-ion batteries required for electric cars. The company offers two environmentally friendly, cost-effective processes for the production of active precursor cathode material (pCAM). The processes developed together with the University of Queensland produce high-quality battery materials with a much lower environmental impact and are much more cost-effective than the processes currently in use. Together with cooperation partners, the company aims to establish a closed material cycle for cathode material in the European Union in recycling. For 2023/2024, the company plans to generate sales of €150 million in Germany, and more than €1 billion globally from 2025. More at <https://purebatterytech.com>

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