



# Joint News Release

September 11, 2023

## **Partnership between BASF and Nanotech Energy will enable production of lithium-ion batteries in North America with locally recycled content and low CO<sub>2</sub> footprint**

- **BASF to produce cathode active materials from recycled metals in Battle Creek, Michigan for use in Nanotech Energy's lithium-ion battery cells**
- **BASF will be the first company in North America to provide cathode active materials produced with recycled metals on a commercial scale starting in 2024 with support from American Battery Technology Company**
- **Nanotech will be able to offer cells produced with recycled metals to its customers in North America, ensuring a fully regional supply chain**

Ludwigshafen, Germany and Chico, California – BASF, a globally leading battery materials producer, and Nanotech Energy, a worldwide leader in the field of graphene-based energy storage products, have agreed to partner to significantly reduce the CO<sub>2</sub> footprint of Nanotech's lithium-ion batteries for the North American market. The agreement aims to close the loop for lithium-ion batteries in North America, with BASF producing cathode active materials from recycled metals in Battle Creek, Michigan, for the usage in lithium-ion battery cells produced by Nanotech Energy. Feeding recycled metals into the production of new lithium-ion batteries can reduce the CO<sub>2</sub> impact of batteries by about 25 percent compared to the use of primary metals from mines.

Both companies will additionally partner with American Battery Technology Company (ABTC), a lithium-ion battery recycling company in Reno, Nevada, and TODA Advanced Materials Inc. (TODA) with decades of experience in manufacturing specialized pCAM (precursor for Cathode Active Material) and metal hydroxide material located in Ontario, Canada, to establish such a localized battery value chain for the North American consumer electronics and automotive industries. Along that chain, battery scrap and off-spec material from Nanotech's pilot operation in Chico, California, as well as from its planned commercial facility will be recycled by ABTC. The battery-grade metals as recovered by ABTC – such as nickel, cobalt, manganese, and lithium – will be subsequently used by TODA and BASF

to produce new precursors and cathode active materials, respectively. Nanotech will then use these materials again in its battery cell production – overall, a truly circular economy in North America.

BASF recently announced battery recycling capacity in Europe and is already providing recycling services and cathode active material based on recycled metals as a closed-loop solution in Asia for years.

Daniel Schönfelder, Senior Vice President Battery Base Metals and Recycling at BASF, summarized: “Our partnership with Nanotech, ABTC, and TODA marks an important step for BASF’s global battery recycling business. Now, we are establishing the first closed-loop system in North America. This enables BASF and Nanotech to produce lithium-ion batteries with locally recycled content.”

Curtis Collar, Chief Marketing and Sales Officer at Nanotech Energy, said: “By working together, our four companies can pool their expertise and drive better and more sustainable outcomes for the entire North American electric vehicle and consumer electronics industries. This is a major milestone among the ongoing advances and growth of the lithium-ion battery market, and we are proud playing such a key role in the reduction of CO<sub>2</sub> emissions along the battery value chain.”

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### **About BASF Battery Materials and Recycling**

BASF is a leading global supplier of advanced cathode active materials (CAM) for the lithium-ion batteries market, providing high performance CAM to the world’s largest cell producers and for leading platforms of OEMs. In addition, we offer base metals sourcing and management as well as closed-loop battery recycling solutions. By leveraging our industry-leading R&D platforms and passion for innovation, BASF’s Battery Materials and Recycling unit develops unique, proprietary solutions that drive customer success.

BASF Battery Materials and Recycling is part of BASF’s Catalysts division. The division’s portfolio also includes Environmental Catalysts and Metal Solutions, as well as process catalysts. Customers from a variety of industries including Automotive & Transportation, Chemicals, Plastics or Energy &

Resources benefit from our innovative solutions. Further information on BASF's Catalysts division is available on the Internet at [www.catalysts.basf.com](http://www.catalysts.basf.com).

### **About BASF**

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 111,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €87.3 billion in 2022. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the United States. Further information at [www.basf.com](http://www.basf.com).

### **About Nanotech Energy**

Nanotech Energy is on a mission to bring transformative, graphene-based, energy storage products from the research lab to the mass market. Our very high surface area, single layer graphene material is already being used in multiple applications, including non-flammable lithium-ion batteries, transparent conducting electrodes, conductive inks, printed electronics, conductive epoxy, antistatic coatings and EMI (electromagnetic interference) shielding.

Founded in 2014 by Dr. Jack Kavanaugh and noted UCLA scientists, Dr. Richard Kaner and Dr. Maher El-Kady, Nanotech Energy is headquartered in Los Angeles and is a privately held company backed by Multiverse Investment Fund, Fubon Financial Group and other strategic investors. Learn more at <https://nanotechenergy.com>.