



Joint News Release

March 6, 2020

Finnish battery industry intensifies cooperation: Fortum, BASF, and Nornickel sign cooperation agreement on battery recycling

Ludwigshafen, Germany and Harjavalta, Finland – Fortum, BASF, and Nornickel have signed a letter of intent to plan a battery recycling cluster in Harjavalta, Finland, serving the electric vehicle market. This would enable a successful “closed loop” cycle to re-use the critical metals present in used batteries.

Using metals from recycled batteries to produce battery materials offers significant CO₂ reduction in the production of electric vehicles. Additional CO₂ reduction can be achieved by using electricity from renewable sources in Finland for the recycling process.

“By recycling valuable metals in lithium-ion batteries we reduce the environmental impact of electric car batteries by complementing the supply of cobalt, nickel and other critical metals from primary sources. Through our previous acquisition of a Finnish growth company Crisolteq, an expert in low CO₂ hydrometallurgical processing, we are very proud that Fortum is now able to increase the recovery rate of valuable materials in lithium-ion batteries from 50% to over 80%”, says Tero Holländer, Head of Business Development, Fortum Recycling and Waste.

BASF intends to use recycled materials from the processes developed by the companies within this cooperation in its planned battery materials precursor plant in Harjavalta, Finland.

“The combination of battery materials production and recycling enables the circular economy by closing the loop,” says Tim Ingle, Vice President, Precious Metals Refining, Chemicals & Battery Recycling, at BASF. “To drive electrification, we are focused on bringing solutions for high energy density cathode active materials and high efficiency lithium extraction for battery recycling.”

The parties aim to foster the production and use of responsibly produced recycled raw materials in the battery market.

“A modern recycling unit next to Nornickel Harjavalta would further strengthen its position as one of the most sustainable nickel refineries in the world. This setup is ideal for sustainable processing of two of the main metals used in Li-ion batteries. Development of recycling solutions will not only support Nornickel’s strategy of further lowering its CO₂ footprint and improving sustainability, but it is also essential to enable the industry to meet the growing demand of critical metals in the electric vehicle sector,” says Joni Hautojärvi, Managing Director, Nornickel Harjavalta.

Media contacts:

Fortum	BASF	Nornickel
Tero Holländer Head of Business Development, Fortum Recycling & Waste Phone : +358 40 861 5071 tero.hollander@fortum.com	Sarah Engeßer Communications Specialist BASF SE Phone : +49 621 60-79819 sarah.engesser@basf.com	Joni Hautojärvi Managing Director Norilsk Nickel Harjavalta Oy Phone : +358 50 384 3608 joni.hautojarvi@nornickel.fi

About BASF’s Catalysts Division

BASF’s Catalysts division is the world’s leading supplier of environmental and process catalysts. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world, and ensure efficient production of a wide variety of chemicals, plastics and other products, including advanced battery materials. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF’s Catalysts division develops unique, proprietary solutions that drive customer success. Further information on BASF’s Catalysts division is available on the Internet at 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 117,000 employees in the BASF Group

work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €59 billion in 2019. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information at www.basf.com.

About Fortum

Fortum is a leading clean energy company providing customers with electricity, heat and cooling and intelligent solutions to improve resource efficiency. We want to work with our customers and society to move towards a cleaner world. We employ around 9,000 professionals in the Nordic, Baltic, Russia, Poland and India. In 2018, we had net sales of EUR 5.2 billion and 57% of our electricity production was CO₂-free. Fortum's share is listed on the Nasdaq Helsinki. www.fortum.com/batterysolutions

About Nor Nickel

PJSC «MMC «NORILSK NICKEL» is a diversified mining and metallurgical company, the world's largest producer of palladium and high-grade metal nickel and a major producer of platinum and copper. The company also produces cobalt, rhodium, silver, gold, iridium, ruthenium, selenium, tellurium, sulphur and other products.

The production units of «NORILSK NICKEL» Group are located at the Norilsk Industrial District, on the Kola Peninsula and Zabaykalsky Krai in Russia as well as in Finland and South Africa.

PJSC «MMC «NORILSK NICKEL» shares are listed on the Moscow and on the Saint-Petersburg Stock Exchanges. PJSC «MMC «NORILSK NICKEL» ADRs are traded over the counter in the US and on the London, Berlin and Frankfurt Stock Exchanges.

www.nornickel.com