OUR APPROACH

Intrinsic sustainability for long-term success

We are leveraging our long history of innovation and industry leadership to bring customers the materials they need to produce cutting-edge products that meet changing social and regulatory expectations.

Building on over 150 years of success dating back to the former RÜTGERS Group, we are working to accelerate the transformation of our industry in a world that's increasingly inclining towards cleaner, lighter and faster products as well as manufacturing applications. Our essential materials for sustainable 21st century applications provide the dual benefit of creating new market opportunities for our Company and driving long-term value.

Our Distillation and Advanced Materials businesses in Belgium and Germany have been awarded gold medals by EcoVadis for achieving an advanced level of corporate social responsibility (CSR), while our Calcination business in the US received a silver medal.

Our commitment to sustainability and CSR is built on maximising the positives and minimising the negatives across People, Planet and Profit fronts. This approach includes:

- Responsible use of resources
- Activities to minimise environmental impact
- Safety and employee well-being
- Enhancing the quality of life in our local communities

Circular economy

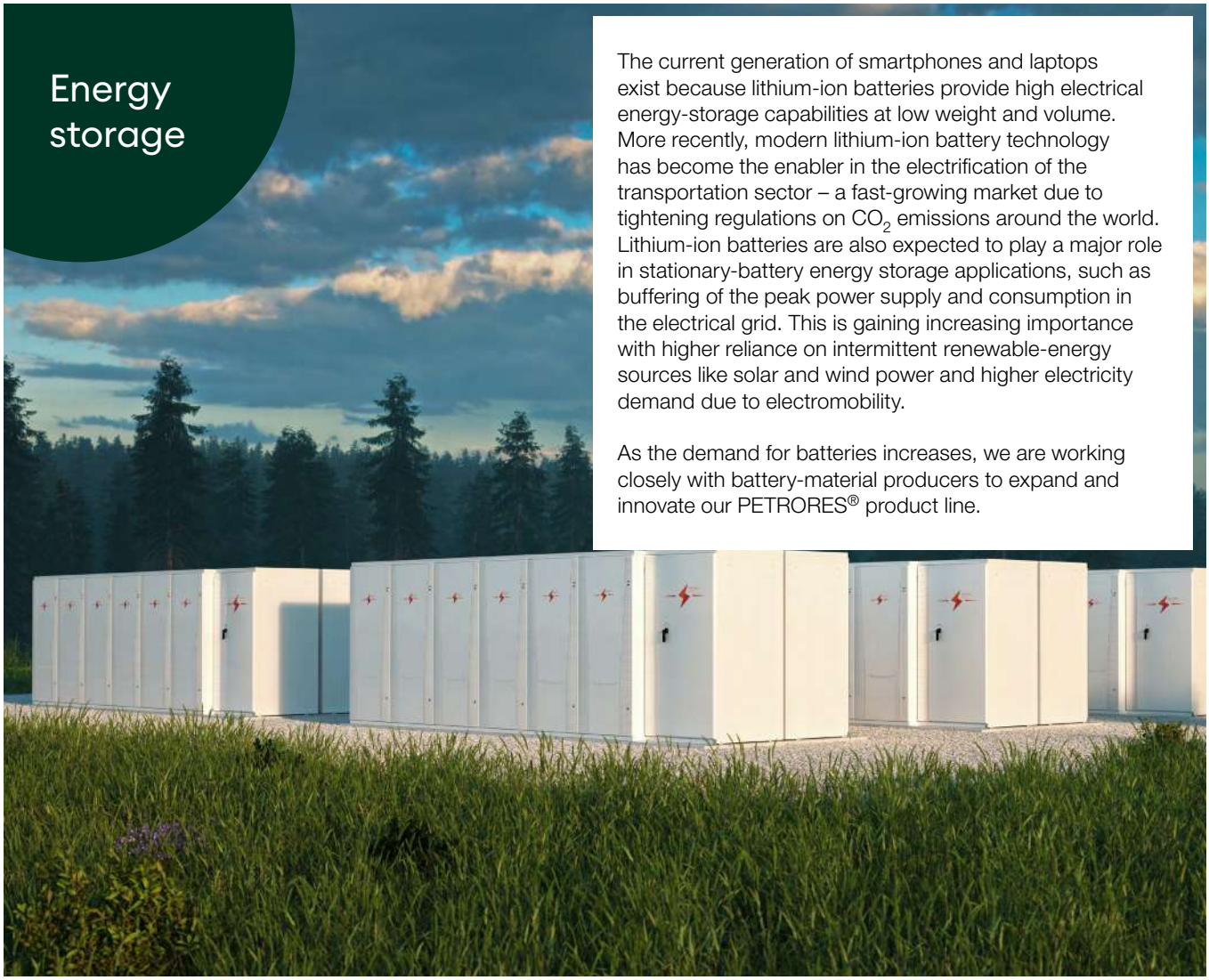
The essential component of a circular economy is keeping products and materials in productive use for as long as possible – ideally in closed material cycles -- to minimise landfilling and incineration of waste.

We are supporting circularity in different ways:

- Our business model links linear value chains by converting industrial by-products and ensuring that these are used in the most productive ways.
- Reusing fly ash in cement production contributes to a circular economy through resource efficiency.
- Some of our products are critical elements in well-established process technologies for producing materials that can be recycled in closed loops. By converting carbon by-products of certain industries into essential raw materials for other industries, we serve as a critical carbon link between diverse and linear business models.

OUR APPROACH

Energy storage



The current generation of smartphones and laptops exist because lithium-ion batteries provide high electrical energy-storage capabilities at low weight and volume. More recently, modern lithium-ion battery technology has become the enabler in the electrification of the transportation sector – a fast-growing market due to tightening regulations on CO_2 emissions around the world. Lithium-ion batteries are also expected to play a major role in stationary-battery energy storage applications, such as buffering of the peak power supply and consumption in the electrical grid. This is gaining increasing importance with higher reliance on intermittent renewable-energy sources like solar and wind power and higher electricity demand due to electromobility.

As the demand for batteries increases, we are working closely with battery-material producers to expand and innovate our PETRORES® product line.

Electric Vehicles

The International Energy Agency predicts that by 2030, 26 Mn electric vehicles (EVs) will be sold annually – compared with 2.1 Mn in 2019 – representing 28% of the world's new car sales. Since EVs use ~25% more aluminium than automobiles with internal combustion engines, that would require smelters to increase their production capacity to meet rising demand, thereby requiring more CPC and coal tar pitch for anodes.

Carbon-free Aluminium

In recent years, there has been increasing interest in the production and use of low-carbon aluminium. This is generally defined as aluminium with a CO_2 footprint of <4 tonnes CO_2/tonne of aluminium (scope 1 and 2 emissions). The industry achieves this by producing primary aluminium at smelters with carbon-free energy sources such as nuclear or hydroelectric power. The use of recycled aluminium is also growing rapidly and provides another route for aluminium producers to dramatically lower their carbon footprint.

The market has responded positively to these efforts with new indexes to track quotations highlight pricing differentials. The LME (London Metals Exchange) has also introduced an LME passport system, which generates electronic certificates of analysis allowing digital labelling and tracking of low-carbon aluminium. Today, a portion of the market is willing to pay a premium for low-carbon aluminium, and the demand and price differential for low-carbon aluminium is expected to grow rapidly in the future.

Additionally, several major aluminium producers are investing in so-called inert anodes, which are carbon-free alternatives to anodes made from CPC and CPT. While commercial application of this technology is still some time away, it highlights the growing drive towards low-carbon aluminium.

Aluminium will be a key enabler of the electric-vehicle revolution. At the same time, the primary aluminium industry is coming under increasing pressure to reduce its CO_2 footprint.

RAIN is contributing to the effort to produce lower-carbon aluminium. Our contribution includes the capture of waste heat to cogenerate clean electricity or steam for use in our own production processes or for export to other industries including local power grids as a form of renewable energy. RAIN received a ‘Best Paper’ award recently for a technical paper that quantifies the CO_2 reduction potential for smelters using CPC produced at calciners with waste-heat recovery.

RAIN has also recently completed a detailed carbon-footprint study with a major low-carbon, primary aluminium producer, and the results of this collaborative study will be published in 2022. More recently, we have focused on the commercialisation of our proprietary anhydrous carbon pellets technology, which not only further reduces the carbon footprint of our CPC but offers the potential for smelters to lower their energy consumption and greenhouse gas emissions, thus moving them closer to their goal of producing low-carbon aluminium.