TITLE
EU Policy for a sustainable battery industry

DATE
April 2022

northvolt
Position paper

EU Policy for a sustainable battery industry

With the rise of a European battery industry, our region has the unique opportunity to take the lead on setting the global standard for sustainability of this sector.

But without speedy adoption of the EU Battery Regulation with ambitious timelines for sustainability-related requirements, this opportunity is at risk of being lost.

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A clean European battery industry

Europe is well on its way to building a domestic lithium-ion battery industry. Despite the challenges of the task, Europe will soon be a fixture on the global battery map – accounting for one fifth of global cell production by the mid-2020s, second only to China.

This provides the European economy with an unparalleled opportunity – already today, the new European battery value chain is estimated by the European Commission to be worth over €250 billion by 2025.

The economic value aside, the growth of this industry represents a strategic necessity, one which is key to the future of the European automotive industry and a cornerstone to the wider energy transition.

The new battery industry has an obligation to ensure that it takes responsibility for the social, ethical and environmental risks of its activities. There should be no misunderstanding: there is a sustainable way to produce batteries, and it is not the way which dominates the market today.

While producing a battery unavoidably requires the consumption of large amounts of raw materials and considerable amounts of energy, what is entirely controllable is how we source these materials and energy.

With the appropriate legislation, we can ensure that the environmental footprint of the industry is kept to a minimum and standards for individual and social welfare are upheld. While this will have a tremendous positive impact in lowering the overall societal cost of the energy transition, the benefits run much deeper.

Legislation provides a route to assuring the key differentiation between the European and traditional battery industries, thereby boosting the competitiveness of Europe as we gear up to compete with traditional battery manufacturers in other parts of the world.

In December 2020, the European Commission proposed a landmark battery regulation aimed at embedding resilience, sustainability and competitiveness into the European battery industry. The proposal includes mandatory carbon footprint declarations, mandated recycling levels, supply chain due diligence requirements and more – all of which would position the industry to set a new standard for sustainability and ethics within the global battery industry.

PART 1

Carbon footprint transparency

The difference we can make

We must encourage the use of clean energy in battery production in Europe. The reason is simple: if battery manufacturing expands based upon fossil-fuelled energy sources, the associated carbon costs will be tremendous.

By 2030, we expect some 1,000 GWh of lithium-ion battery demand in Europe. If this volume of batteries were produced on a fossil-fuel powered grid – comparable to those powering most existing battery factories – we can expect a CO_2 footprint of some 100 million tons per year. In contrast, through embracing renewable energy and circularity, that same footprint would be only one tenth of that.

A simple yet effective means of encouraging adoption of renewable energy for battery manufacturing is through carbon footprint labelling and a subsequent ban on batteries with the highest carbon intensities. The European Commission has proposed exactly this.

Transparency on this crucial aspect to a battery's environmental impact will shift the industry towards sustainability through encouraging activities which reduce the carbon footprint, including adoption of renewable energy for production, efficient recycling, use of recycled materials in battery production and improved practices for raw materials sourcing.

The CO_2 emissions we can avoid

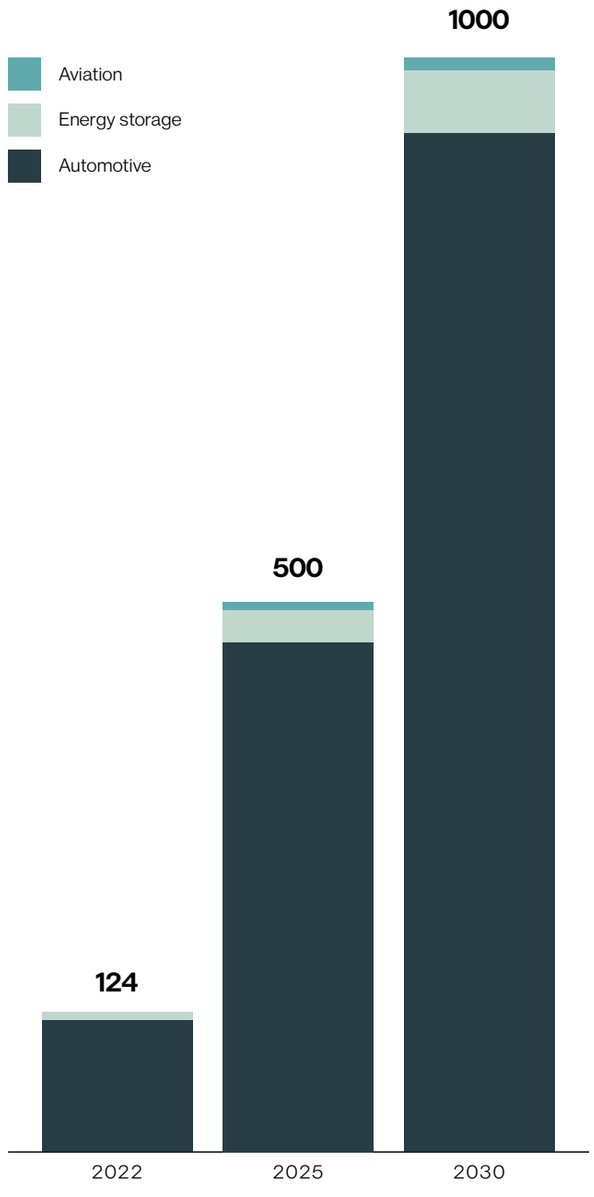
Today's battery industry consumes massive amounts of power generated from the burning of fossil-fuels.

The industry standard is expected to result in 100 kg CO_2e per kWh of lithium-ion batteries produced in 2030.

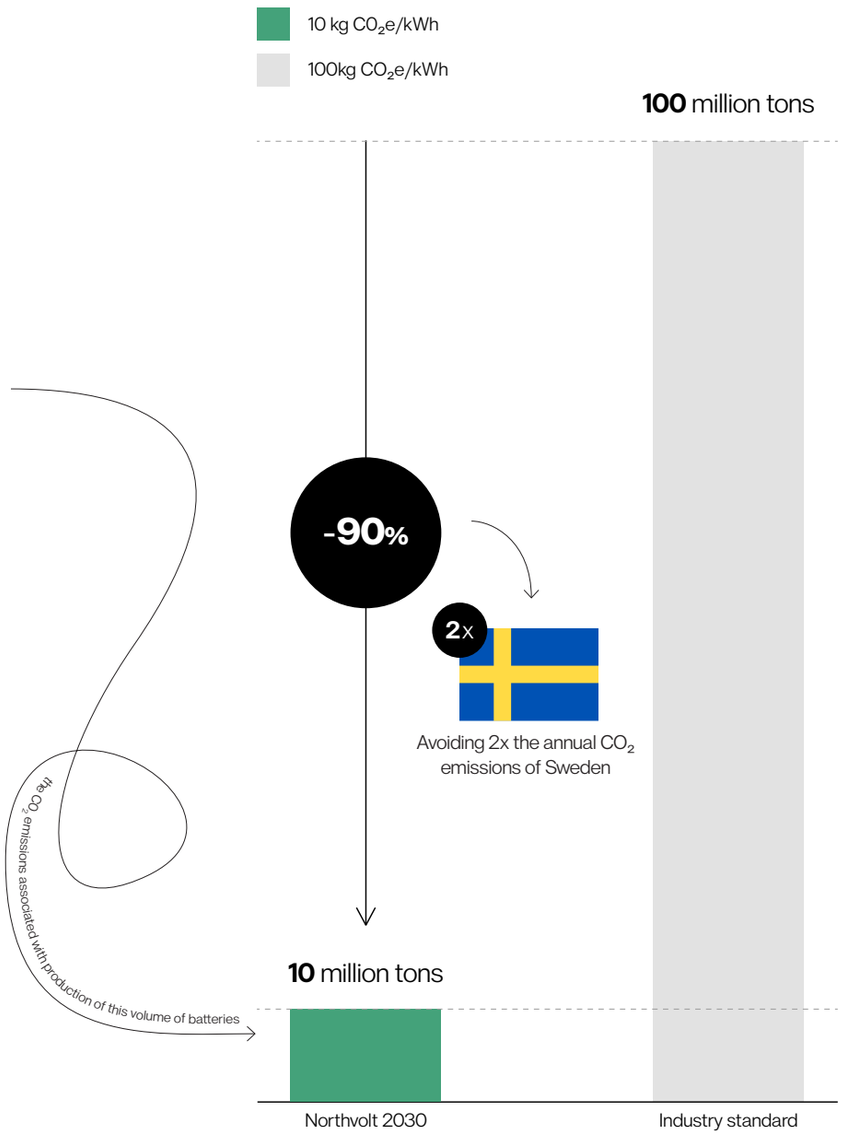
Powering lithium-ion battery manufacturing with renewable energy, and embracing other sustainable practices, we can reduce emissions to 10 kg CO_2e per kWh in 2030.

If Europe's demand for batteries in 2030 were produced at this level, we would avoid the carbon emissions equivalent to twice the annual CO_2 emissions of Sweden.

Annual lithium-ion battery demand in Europe (GWh)



Carbon emissions of producing lithium-ion batteries to meet European demand in 2030



*Forecasts based on analysis from Northvolt's third-party consultants

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What's needed

The European Commission proposes introducing requirements in three steps for batteries placed on the European Union market, irrespective of where batteries have been produced:

I. **Carbon footprint declaration requirements**
from 1 July 2024

II. **Carbon footprint performance class labels**
from 1 January 2026

III. **A ban on the worst performing batteries**
from 1 July 2027

Proposed dates of implementation from the European Commission

The Council of the European Union and the European Parliament have diverged on timeframes for the implementation of the requirement.

Northvolt urges both EU Member States and European Parliament to adopt the earliest possible dates for implementation in all instances.

Transparency for energy consumption

Methodologies behind carbon labeling must be evidence-based. Acknowledgment of carbon offsets or green certificates (such as Guarantees of Origin in the current Renewable Energy Directive), cannot continue in their present form if carbon labeling is to be meaningful. It is crucial that energy must be required to come from local sources with a temporal connection between time of production and consumption. It is welcomed that the European Parliament has proposals favoring this direction.

PART 2

Raw material sourcing

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Sustainable sourcing for a new industry

The decarbonization of society implies a fundamental shift from dependence on fossil-fuels to dependence on minerals. This matter cannot be treated lightly: Europe must commit to a determined approach to sourcing raw materials sustainably, encompassing environmental, ethical and social aspects.

This initiative is especially relevant to the European battery industry, which is heavily reliant on raw materials – in particular, lithium, nickel, graphite and cobalt.

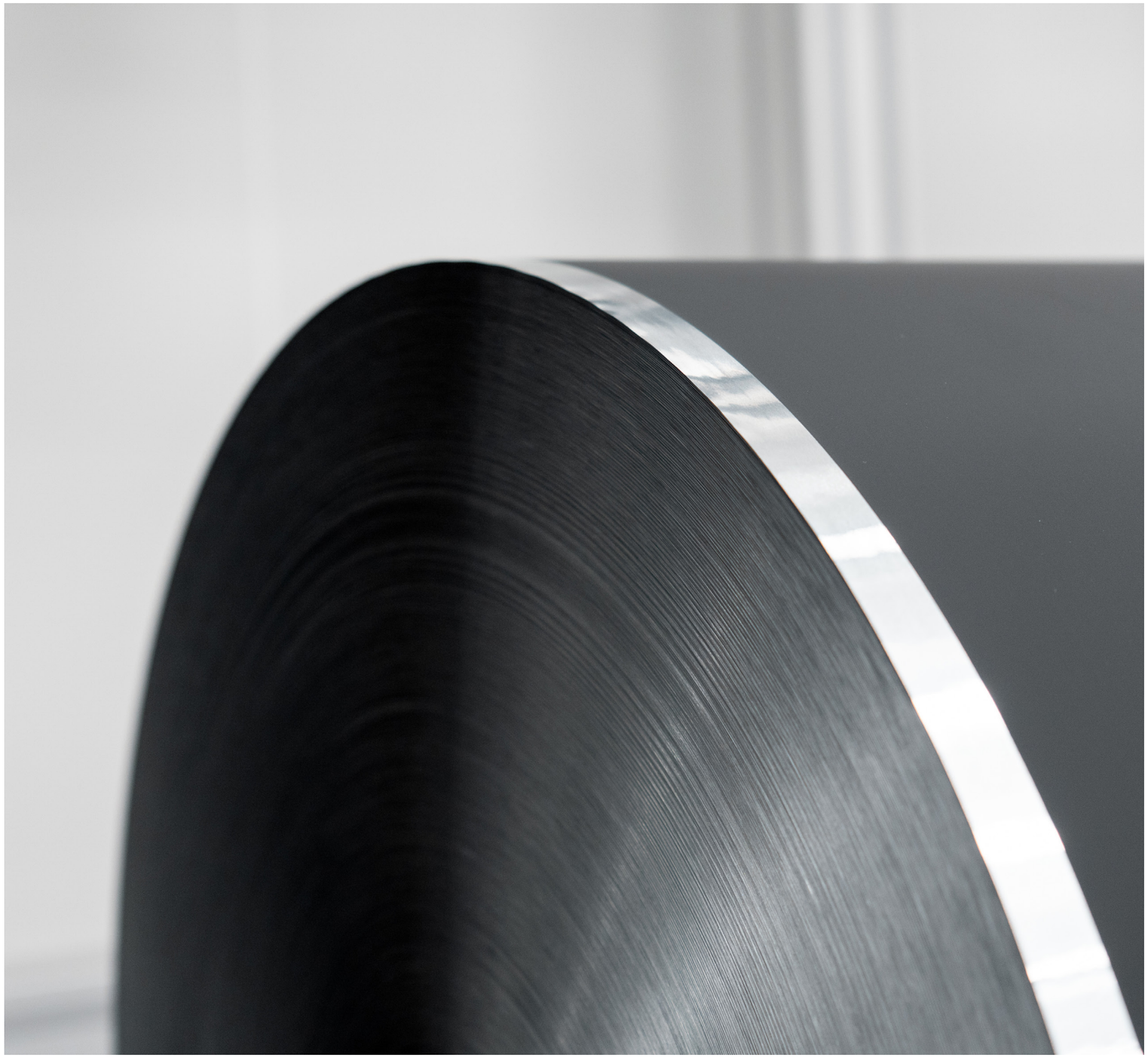
What we see in today's battery industry is far from ideal. Raw material sourcing is opaque, complex, and carries a high environmental and societal footprint. Europe has the chance to do things differently.

What's needed

Private industry and public bodies alike share a collective responsibility to ensure that the environmental and ethical values held by Europe are embedded into its emerging battery industry.

To date, the European Commission has proposed due diligence policies for batteries placed on the EU market covering several social and environmental risk categories for four raw materials carrying some of the largest environmental, social and ethical risk factors: cobalt, natural graphite, lithium and nickel.

This is a solid foundation, however, the policies should be extended to include additional raw materials such as bauxite, iron and copper, and extend risk categories to include climate change.



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We cannot afford to undervalue the significance of swift, meaningful legislation.

The consequences of failing to adopt a sustainable approach within Europe's new battery industry would be profound, both from societal and environmental perspectives. We have the opportunity and obligation to do things differently.