

TOWARDS A SUSTAINABLE BATTERY BUSINESS: FORTUM CALLS FOR THE EU TO ENSURE USED BATTERIES ARE RECYCLED FOR THE RAW MATERIALS SUPPLY IN EUROPE

Fortum welcomes the Strategic Action Plan on Batteries and the European Commission's work to set minimum sustainability requirements for batteries. Europe has a great opportunity to capture a share of the global market for batteries manufacturing and become an important player. Currently, only a minor share of the batteries manufacturing takes place in Europe (3% of global production). In this paper we give our opinion on industrial batteries, in particular batteries of the Li-ion type. Batteries are likely to be a key to sustainable mobility and to the integration of renewable electricity generation in the grids. **Having a strong battery value chain is of strategic value and importance for Europe as well as for our industry.**

Fortum is involved in several parts of the batteries value chain

Fortum is active in several parts of the value chain: we use batteries for energy storage, we provide charging stations for Electric Vehicles (EV), and we are currently developing a larger scale recycling solution for Li-ion batteries. The aim is to be an important supplier of secondary raw materials in batteries manufacturing.

We use a non-thermal, low-carbon emission recovery process to recover scarce materials from Li-ion batteries. The non-thermal recovery process makes it possible to reduce CO2 emissions compared to traditional thermal recovery.

EU has so far endeavoured policy developments supporting the establishment of battery manufacturing in the EU and in securing the supply of critical raw materials in Europe. Less attention has been put on the role of safe logistics and the recycling of worn-out batteries in the circular economy. With this position paper we want to give this aspect more visibility by proposing actions that we believe would support the development of the battery life cycle services in the circular economy in Europe.

Key messages

- Batteries are likely to be a key to sustainable mobility and to the integration of renewable electricity generation in the grids. Having a strong battery value chain is of strategic value and importance for Europe as well as for our industry.
- The EU should consider developing legislation that supports a low environmental footprint throughout the batteries value chain, including recycling.
- The EU should take measures to prevent used batteries from leaking out from the EU by setting up an effective control mechanism for the exports of used batteries in order to secure the future supply of critical raw materials.
- EU legislation must support improved design for reuse and recycling, including safety precautions, information about battery chemistries, and health status¹
- The EU needs to address the inconsistencies in the classification of Li-ion batteries in the EU Waste Directive, the Battery Directive and the Waste Shipment Regulation, and issue guidance in order to avoid different practices of the regulations, which hampers the movement of waste batteries aimed for recycling within EU.
- The EU should increase the recycling rate target for industrial Li-ion batteries. The current general recycling target rate of 50% is far too low for industrial Li-ion batteries. In order to eliminate the waste of any resources, the European Commission should consider increasing the recycling target rate for industrial Li-ion batteries to about 80% in the near future.
- The EU should consider targets for the uptake of recycled raw materials in the manufacturing of new batteries.

More detailed comments relating to different aspects of batteries

Manufacturing and sourcing of raw materials

It is important to have regulatory requirements on the ethical sourcing of raw materials and the social protection of workers, as well as on limiting unfair competition from third countries that do not comply with the strict European sustainability requirements. Batteries for electro-mobility applications and batteries designed for stationary use have very much in common in terms of technology and use of raw materials; hence common regulatory sustainability requirements, such as the ethical sourcing of raw materials, would be needed.

The use of raw materials and climate change are considered to be among the most relevant social and environmental impacts in the production of batteries. Promoting low-carbon emissions technologies in batteries manufacturing is as important as the low emissions from electricity itself. **Therefore, reporting obligations and thresholds could be a tool to support the control of the impact from production, in particular**

¹ Health status means the condition of the capacity of the battery, i.e when it is new the available capacity is 100 % but as the state of health (SOH) decreases also the available capacity decreases.

the responsible sourcing of raw materials and some environmental impact categories, including climate change.

Some raw materials in the manufacturing of batteries are considered to be critical from the supply point of view. Specific criteria to facilitate the recovery of the critical raw materials should be established (e.g. design for recycling) **to ensure the future supply of materials derived from recycled batteries.** The EU should also prevent used batteries from leaking out from the EU with an effective control mechanism on the export of batteries.

Design for recycling, labelling and recycling targets for Li-ion batteries

The current Battery Directive 2006/66/EC sets out minimum recycling efficiency targets by average weight. Design requirements ensuring the easy dismantling of batteries when recycling them in dedicated plants could help Europe achieve higher recycling efficiency rates. Design for recycling is important to keep the recycling costs low and to be able to keep the recycling rate high. Design for recycling should aim for high-quality batteries that are easy to recycle. **Design for recycling should take safety into consideration, such as ease in maintaining and dismantling, clear labelling and information about the chemistry and the manufacturer of the battery, ability to discharge the battery without prior pack-disassembly, and easy access to a hole for the fire-hose.** Li-ion batteries are currently not covered by the Ecodesign Directive. The Ecodesign Directive or other relevant EU legislation should support the design for safe recycling.

Access to information about the composition of the End of Life (EoL) batteries is essential for the recyclers for safety as well as for environmental and human health protection. Systems to ensure that the information doesn't get lost in the value chain are important. The information should also support the use in second life and make reuse more affordable and sustainable. The tracing technology to be used could be optional.

The current general target recycling rate of 50% is too low for industrial Li-ion batteries. **There should be a separate target rate for industrial Li-ion batteries in the near future, a rate approaching 80%.** Low carbon footprint recovery processes should be supported. **Targets for the use of secondary raw materials in the manufacturing of batteries should be considered.**

Cross-border shipments of batteries within Europe

Once the batteries have become waste, waste regulations are applied and the Waste Shipment Regulation (WSR) is applied for the shipment of waste batteries across borders. There are inconsistencies in the classification of Li-ion batteries in the EU Waste Directive, the Battery Directive and the WSR, and that hampers the movement of batteries for recycling between EU member states. There are currently inconsistencies in the classification practices and notification procedures in the different member states, and some member states are struggling to interpret how the WSR should be applied in terms of Li-ion batteries. In order to achieve the overall EU objectives on sustainable batteries in a circular economy in Europe, it is crucial to enable a safe approach for the transportation of waste batteries destined for recycling within Europe. **Consistency in the classification of batteries in the different pieces of legislation and equal practices are of utmost importance. Fortum calls for the European Commission to issue guidance.**

Second life for batteries

The emerging market for second-life applications for batteries after their first use is still in its infancy; Fortum considers it too early for us to say if the generalisation of second-life batteries would have positive economic and environmental impacts. If there were easy access to data about the condition of the batteries, it would help the operators more effectively determine when the batteries are suitable for second life or when they should be recycled.

Conclusion

Fortum underlines the importance of addressing the safe logistics and the recycling of worn-out batteries in the context of the Circular Economy 2.0 strategy and related legislation as safe, sustainable and long-lasting batteries will play an important role in the transition towards a low-carbon circular economy. We believe that developing a strong battery value chain that includes ensuring availability of critical materials, battery manufacturing and safe logistics of worn-out batteries and their recycling would contribute greatly to the competitiveness of Europe.

Don't hesitate to contact us for more information about our views.

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