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## PRESS RELEASE

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### **Italtvolt partners with Politecnico di Milano to create Italy's first 'closed-loop' battery development process**

*Politecnico will help Italtvolt create a 'closed loop' battery development process, which includes supply of primary as well as secondary raw materials from spent lithium-ion batteries*

Italtvolt Spa, Italtvolt S.p.A., the company founded by Lars Carlstrom, today announces its partnership with leading Italian university, Politecnico di Milano, to create a closed-loop, circular economy for battery development. Under the partnership, Politecnico's newly established inter-departmental laboratory, CIRC-eV, Circular Factory for the Electrified Vehicles of the Future, will identify primary supply of raw materials, and analyse opportunities to recover key materials from recycled, secondary sources, such as spent batteries.

The establishment of this partnership follows on from Italtvolt's recently signed partnership with AECOM, which aims to optimise production and increase the resiliency of lithium-ion batteries, while minimising waste across the project lifecycle.

Under this new partnership, Politecnico di Milano, Italy's oldest, and largest technical university, will map supply chains to help Italtvolt source raw materials from primary sources for use in Italtvolt's 45GWh Scarmagno Gigafactory. The University will assess material quality from primary suppliers to ensure that Italtvolt can develop high-quality lithium-ion batteries.

In addition to primary sourcing, Politecnico will analyse production waste streams for secondary sourcing of key materials. The University will assess production process chains to help Italtvolt recover key materials which remain in spent batteries. This analysis will be integral for minimising waste and developing a more efficient production process. Recycling key materials in batteries will be increasingly important to meet demand over the coming decades. The IEA estimates that by 2040, recycled lithium used in batteries could equate to around 81 kilotons, a huge increase from the 3 kilotons expected to be used in 2030<sup>1</sup>.

The partnership between Italtvolt and Politecnico di Milano comes at a crucial time for lithium-ion battery development. The University has a rich history in engineering, architecture, and industrial design, as such, it is well-placed to help Italtvolt refine its battery development process. The IEA's Global EV Outlook 2022 notes that lithium is the commodity with the largest projected supply gap, and demand is set to increase sixfold to 500 kilotonnes by 2030<sup>2</sup>. Politecnico's review will help Italtvolt adapt its production process in line with fluctuating supply and demand dynamics. By increasing the efficiency of raw material supply through both primary and secondary sources, Italtvolt will simultaneously reduce the final cost of batteries, and overall waste from development process.

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<sup>1</sup> <https://www.iea.org/data-and-statistics/charts/contribution-of-recycling-and-reuse-of-batteries-to-reducing-primary-supply-requirement-for-selected-minerals-in-the-sustainable-development-scenario-2030-2040>

<sup>2</sup> <https://www.iea.org/reports/global-ev-outlook-2022/executive-summary>



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**Lars Carlstrom, Italvolt Founder and CEO of Italvolt** said: "Our partnership with Politecnico di Milano will create the Italy's first closed-loop, battery development process. This partnership will allow Italvolt to produce high-quality, lithium-ion batteries, using recycled raw materials sourced in a sustainable way. This business model for battery development will contribute towards the green industrialisation of the region, as well as the creation of new, highly skilled jobs for the local community."

**Professor Marco Bocciolone, Head of Mechanical Engineering, Politecnico di Milano** said: "We are proud to partner with Italvolt on this strategic initiative, especially in the current global, geopolitical context. The structure and skills of the interdepartmental CIRC-eV Lab of Politecnico will allow for skills development and know-how in building new batteries, by reusing and recycling processes of noble and rare materials from spent batteries - A remarkable example of the circular economy."

**Prof. Marcello Colledani, Head of CIRC-eV, Politecnico di Milano** said: "The supply of battery-grade materials for the European battery eco-system, poses a challenge towards the establishment of a truly sustainable supply of high-quality, in-specification, secondary raw materials from the high-value recycling of post-use batteries and production defects. Through this collaboration the multi-disciplinary team of CIRC-eV will investigate the technical enablers for achieving this goal, contributing to the development of a circular battery value-chain within our local eco-system."

### **ITALVOLT**

*Italvolt is building a Gigafactory with a 45 GWh production capacity for battery cells in Scarmagno, Italy. A key goal is to contribute to green industrialisation, by becoming one of the main suppliers of green batteries in Europe and by establishing Italy's presence as a preeminent battery manufacturer and playing our part in advancing the circular economy. Italvolt is committed to the economic regeneration of the Piedmont region as a historical industry powerhouse, which includes developing a 20,000 m<sup>2</sup> advanced R&D centre to support employment and learning.*



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