

Case Studies



The leading solution for
supply chain traceability



Traceability throughout Volvo Cars' battery supply chain

Client



Circular services

- Material traceability
- CO₂ tracking

Situation

In 2018, Volvo Cars recognised the traceability of critical minerals such as cobalt to be one of the main responsible sourcing and sustainability challenges faced by car makers. To address the human impact challenge, and to ensure that only materials from known and audited sources were included in their cars, they began working with Circular.

Starting with Cobalt, Circular established full chain of custody tracking for all cobalt used in Volvo Cars' EVs. Suppliers onboarded include LG Energy Solutions, CATL, Huayou Cobalt, Posco, and many others.

The work has continued apace. By mid-2022, 8 battery materials are now being tracked across all legs of the supply chain, with attribution of key ESG metrics (like inherited CO₂ emissions).

Outcome

Volvo announced this work alongside the launch of their first fully electric car, the XC40 Recharge, demonstrating to both consumers and supply chain participants that they could prove their claims of transparency, traceability, and responsible sourcing – nurturing trust between participants along the supply chain.

Through this partnership, Volvo Cars created a groundbreaking new standard in verified responsible sourcing and won the Responsible Business Alliance 2019 Compass Award for Innovation. They are now on the verge of meeting the requirements of EU battery regulations and issuing battery passports for all EVs.

In 2020 Volvo Cars Tech Fund invested in Circular.





Polestar is on a mission to drive the shift in supply chain transparency

Client

Polestar

Circular services

- Material traceability
- CO₂ tracking

Situation

Polestar's mission is to drive the shift to sustainable mobility. Supply chain transparency is one big step on the journey.

Partnering with Circular, the company is setting a radical scope and ambition to track a wide range of raw materials focusing on those with identified risks in either environmental and/or human rights.

Polestar wants to track emissions that have been created as part of its production process, per facility as well as those inherited from suppliers through the supply chain.

Outcome

Polestar now benefits from a much more accurate view of its CO₂ emissions footprint than using generic emission information from databases.

Polestar CEO, Thomas Ingenlath said; "This unprecedented level of traceability means that Polestar can promote sustainable and ethical practices in its supply chain, and provide better transparency for consumers."

In its 2022 sustainability report, Polestar announced a 6% reduction in emissions per car produced, specifically citing their partnership with Circular as a key enabler.



BHP and Southwire complete first-ever “carbon neutral” copper transaction

Client

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Circular services

- Material traceability
- CO₂ tracking

Situation

BHP, a multinational mining and metals company, and Southwire, one of the world’s leading wire and cable manufacturers, use Circular’s technology to secure ethical copper sourcing for EV batteries.

Utilizing Circular’s traceability and CO₂ tracking, BHP traced copper cathodes and associated emissions through Southwire’s rod production operations.

BHP then leveraged high-quality carbon offsetting capabilities to be able to offer Southwire a carbon neutral copper product.

Outcome

This is the first step as BHP pursues operational decarbonization within production, transportation, and processing.

Enhanced supply chain transparency such as this demonstrates broader downstream demand potential for carbon-neutral products across the copper value chain.

The move is the first carbon-neutral sale of any of BHP’s commodities and serves to help improve understanding, enhance transparency, and create social value through sustainable production and sourcing practices.





German government launches world-first “Battery Pass”

Client



Bundesministerium
für Wirtschaft
und Klimaschutz

Circular services

- Material traceability
- CO₂ tracking

Situation

With the widespread adoption of electric vehicles, it will be of increasing importance to track, re-use and recycle the batteries and their materials responsibly.

Circular’s team has already implemented battery passport management products for clients like Volvo Cars, Polestar, and Rock Tech Lithium, among others.

We are eager to bring insights we’ve learned to date and also learn from our consortium partners on how such efforts can be expanded and adopted more broadly.

Outcome

The German government selected Circular and ten companies to design technical and cross-industry standards to prove responsible, sustainable, and ethical battery production.

This project is funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) - €12m in total from April 2022 to April 2025.

Circular leads the ‘Battery Pass Demonstrator’ work package, using the technical inputs and simulating data flows between industry and regulatory stakeholders.

The demonstrator aims to standardize data management of “battery passes” with high potential for global adoption.



TotalEnergies partnership for plastics recycling & traceability

Client



Circular services

- Material traceability

Situation

As of April 2022, the UK's Plastic Packaging Tax applies to plastic packaging with less than 30% recycled plastic. Likewise, the EU has introduced a Packaging Levy on all non-recyclable plastic packaging waste handled by member states. Both initiatives exemplify the need for accurate information on plastic recycling and its use in new materials.

TotalEnergies, a broad energy company, and Recycling Technologies, a chemical recycler of plastic, partnered with Circular on a solution for tracing Hard To Recycle Plastics (HTRP).

The initiative, named Project TRACKCYCLE, tracked HTRPs from collection, to chemical recycling, and through to polymer production.

Outcome

Project TRACKCYCLE has enabled proof of provenance of ethically sourced Hard To Recycle Plastics.

The project extended to a follow-on phase to track second-life plastics generated from pyrolysis oil re-entering the market thus enabling and evidencing the circular economy.

Valérie Goff, Senior Vice President of Polymers at TotalEnergies highlighted: "This collaboration with Circular and Recycling Technologies is an excellent example of innovation to develop more traceable recycled polymers. It reinforces our commitment to move advanced recycling forward and contributes to our ambition of producing 30% recycled and renewable polymers by 2030."

