

ELECTRIC VEHICLES

Carmakers bet on blockchain for ethically sourced cobalt

David Iaconangelo, E&E News reporter • Published: Friday, December 13, 2019



A miner carries raw ore at Tilwizembe, a former industrial copper-cobalt mine in the south of the Democratic Republic of the Congo in June 2016. Kenny-Katombe Butunka/Reuters/Newscom

A growing number of automakers are using the core technology behind bitcoin to trace the sources of cobalt in their electric vehicles' batteries — but the initiative may not end scrutiny from shareholders and activists concerned about the mineral's association with labor abuses.

The Responsible Sourcing Blockchain Network, as the effort is known, takes blockchain-enabled software — long a darling of Silicon Valley — and applies it to age-old problems tied to natural resource extraction in developing nations.

Transactions recorded by miners, smelters, cathode manufacturers and automakers on the blockchain, a virtual ledger that's created by member consensus and can't be altered by any single participant, are used by third-party auditor RCS Global to verify information about cobalt's origins and presence in products sold throughout the EV battery supply chain.

This year, a pilot version of the initiative tracked the mineral from a mine owned by China-based Huayou Cobalt Co. Ltd. in the Democratic Republic of Congo, through an LG Chem Ltd. cathode factory and later into a Ford Motor Co. manufacturing plant. It's slated to go into regular use by spring 2020, with participants including Volkswagen AG, Volvo Car Group and, as of this week, Fiat Chrysler Automobiles NV.

The network's architects have offered little detail about what kind of information would be shared among companies on the ledger. But they say that by increasing transparency among buyers and sellers of cobalt and cobalt products, carmakers' voluntary due diligence efforts will become more reliable.

"Today, it's a very cumbersome process, and it's not trustable," said Sai Yadati, global business services partner at IBM, one of the network's technology providers.

Carmakers aren't entirely in the dark about where their cobalt comes from, he said. But relying on conventional means to trace the source of the mineral through the supply chain all the way to the mine source risks exposing automakers to forged or incomplete data. "It's touched by too many people, and it's been tampered to a degree," he said.

"We eliminate that and digitize it. It's a single source of truth where, at the push of a button, you have all the information presented to you where it can be traced to the source," said Yadati, who leads IBM's work with the network.

The ethics of cobalt sourcing gained visibility in 2016, after [an investigation by Amnesty International](#) turned up human rights abuses, including the use of child labor, at mines located in Congo, which supplies almost three-fourths of the world's cobalt.

Since then, shareholders and nongovernmental organizations have pressed carmakers on the topic. Some manufacturers have responded by entering into new consortiums with responsible-sourcing groups or by pledging to reduce the content of cobalt in battery chemistries.

Some critics of the industry think automakers are not doing enough. An October report by the Responsible Sourcing Network, a California-based sustainable trade group that doesn't participate in the blockchain project, found that several major car companies carried out "virtually no due diligence" on cobalt supplies.

And among those that did, many didn't make their findings public.

"The technology itself wouldn't solve the whole problem," said Yadati. "It's about providing a capability to members on the network that allows them to address it."

Some question whether the additional transparency between suppliers and buyers will translate into the same visibility for the public.

"Disclosures around sourcing relationships is critical," said Mary Beth Gallagher, executive director at Investor Advocates for Social Justice, a Catholic group that represents shareholders in human rights dialogues with automakers.

There's value in keeping information for internal purposes "for a period" as automakers gain an understanding of their supply chains, she said. "We want them to create solutions."

Over the longer term, though, "I think we need some kind of demonstrated evidence that they have an effective system in place," added Gallagher.

As carmakers ramp up their EV production, the issue could become more prominent. Fiat Chrysler, for instance, plans to deliver 30 all-electric and hybrid models by 2022. It has also invested in the construction of an in-house battery assembly factory, though it will buy the battery cells from suppliers.

The initiative will eventually track the sourcing of other "conflict" minerals like mica, tungsten, tantalum, tin and gold, said Yadati. It started with cobalt because of the expectation that EVs will drive growth in demand, he added.

In its first stage, at least, the initiative won't trace cobalt produced at artisanal mines, where freelance workers dig for the mineral without official sanction.

Those mines are often the most hazardous and most likely to include children, human rights groups say. As much as 20% of the cobalt exported from Congo comes from them, according to some estimates.

Zuzia Danielski, communications director at Impact, a Canadian natural resources watchdog, noted that blockchain-enabled software has also been employed as a transparency tool in the diamond sector, where artisanal mines have complicated efforts to keep "conflict diamonds" out of supply chains.

"Blockchain isn't really adapted to these types of issues," said Danielski.

"We believe that if you really want to be doing responsible sourcing and you want to have an impact on the ground in the countries you're sourcing from, you also need to be doing development" work, she said.

In a press release on Tuesday announcing Fiat Chrysler's participation in the initiative, the company's chief purchasing and supply chain officer, Carl Smiley, said it would "propel our ability to have visibility into artisanal and small-scale mines."

Kaileen Connelly, a Fiat Chrysler spokesperson, said the network's members were "keen to explore how it can expand beyond industrial mines," including through an existing artisanal mine monitor run by auditor RCS Global.

In the meantime, the company would be working with its first-tier suppliers to draw a greater swath of the supply chain into the initiative, said Connelly. "There are significant benefits for the supplier to participate."

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