Manufacturing batteries for electric vehicles is more complex than it might appear. *Brot für alle* (Bread for all), *Fastenopfer* (Swiss Catholic Lenten Fund), and *ATE Swiss Association for transport and environment* have been investigating the corporate policies of the leading battery manufacturers. Our analysis of these policies has identified serious problems and risks, especially in the mining of raw materials.

A move away from the use of fossil fuels and towards more climate friendly forms of transportation will only be possible if the e-mobility sector is substantially expanded. Switzerland is one of the countries in which the sale of electric vehicles is accelerating. At the heart of these vehicles lies their Electric Vehicle Battery (EVB), which stores energy for the electric motor. However, manufacturing these batteries not only consumes a substantial amount of energy, but is also responsible for various forms of ecological and social damage. The growing demand for the raw materials required in their production is especially problematic.

The charities *Brot für alle*, *Fastenopfer*, and *ATE Swiss Association for transport and environment* have shed light on the corporate policies of the six leading international battery manufacturers and a large Swiss technology company to gain an insight into how environmental and human rights concerns are dealt with in this industry. The companies’ own data from their sustainability and Corporate Social Responsibility (CSR) reports were analysed in order to examine the following questions:

- Are they complying with internationally agreed guidelines?
- Do they ensure that their subcontractors and their business partners along the supply chain also protect the environment and respect human rights?

Corporate policies regarding human rights, raw materials and the environment were examined on the basis of a total of 39 criteria. The companies in question were then sent their results and invited to supply feedback. Four of the seven companies responded, and their follow-up information was taken into account when preparing the final evaluation.

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<th>Human rights</th>
<th>Raw materials</th>
<th>Environment</th>
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On the right path | Poor | Inadequate/ no information
KEY FINDINGS

Global market leader brings up the rear
The three South Korean manufacturers Samsung SDI, LG Chem, and SK Innovation as well as the Swiss company ABB fared better in the overall evaluation than the Japanese producer Panasonic and the two Chinese manufacturers BYD and CATL. The results for CATL, the global leader for car batteries, which is currently expanding strongly in the Western market, gave particular cause for concern.

Strategy good but implementation lacking
The majority of the companies under scrutiny have developed strategies and policies indicating how they would like their suppliers to behave. However, their own publications provide little detail on whether or not these policies are implemented. Progress tracking by defining specific objectives and target figures is even less convincing.

Problems in the supply chains
Internal corporate structures and processes allow abuses in the supply chain to be identified, although they are only rarely followed up or rectified. Stakeholders from civil society are seldom brought on board to help define joint solutions. Complaint mechanisms along the entire supply chain are the exception rather than the rule. Making restitution for harmful effects which arise further down the supply chain is not addressed. None of the companies under review provides detailed information about their suppliers.

Problematic mining of raw materials
A large proportion of the raw materials used in batteries are mined in countries with high poverty rates and poor administrative and governance structures. Globally, it is the raw materials sector which accounts for the highest number of complaints about human rights violations.

The companies under examination focus their duty of care on the mineral cobalt, which is associated with child labour, as well as on the four so-called ‘conflict minerals’ (tin, tantalum, tungsten, and gold). But other important raw materials used in the manufacture of batteries such as lithium and nickel, whose extraction can also be extremely harmful, are largely disregarded. The companies under review delegate most of their responsibility for monitoring the conditions under which the raw materials are mined to the Responsible Minerals Initiative (RMI). Yet the RMI focuses on the classic conflict minerals and cobalt and monitors conditions only as far back as the smelting plants rather than to the mines right at the start of the supply chain.

Greenhouse gas emissions off track
Most of the companies under examination have their own energy and environmental policies in place as well as an environmental management system. But only a few ask their suppliers to restrict their consumption of toxins, energy, and water and to improve waste water and waste disposal, or provide suitable support when their suppliers attempt to do so. Their progress tracking by setting tangible objectives and target figures is inadequate, except in the case of CO₂ values. Four of the seven companies publish statistics on their greenhouse gas emissions, including those of their most important suppliers. However, only three are pursuing the emission targets set out in the Paris Agreement.

WHERE ACTION IS REQUIRED

• In order for battery and vehicle manufacturers to honour their duty of care, they must take appropriate measures to ensure compliance with internationally recognised human rights and environmental standards.
• Investors should not automatically categorise e-mobility as a ‘green’ or sustainable investment. Social and ecological due diligence is required throughout the supply chain, especially in terms of the extraction of raw materials.
• When buying electric vehicles, the purchasing power of public procurers and vehicle users provides them with the leverage to demand sustainability and responsible manufacturing practices from electric vehicle makers. At the same time, suitable purchasing criteria can help bring about the necessary transparency in the supply chains.
• Politicians and lawmakers should promote technical innovations and create state incentives and regulation so that the life of batteries can be maximised and as many raw materials used in their manufacture as possible can be recycled. Greater durability, giving batteries a second life, and recycling all reduce the need for raw materials to continue to be mined.
• The most efficient solution for reducing greenhouse gas emissions and the other problems associated with vehicle and battery manufacture is to downsize the number of vehicles on our roads altogether. Public transport, car-sharing, car-pooling, and cycling are all possible alternatives to driving individual cars.