

Introduction to:

**The Democratic
Republic of Congo**

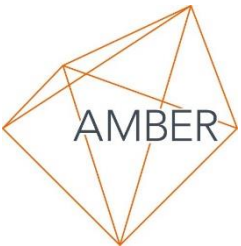


The **Democratic Republic of the Congo (DRC)** is located in central Africa and has a population of 77 million

DRC has a rich source of many minerals that people use across the world. The region has an estimated **\$24 trillion in untapped minerals**

DRC ranks among the poorest countries in the world at 176 out of 187 countries on the most recent Human Development Index calculated by the UN (2015)

The DRC has the potential to become one of the richest countries on the continent of Africa





Workers at the Kisanga mine in Katanga, c. 1920



Katanga province (*Marked in red on the map*) is in the South of the DRC. Many mines are still active in the province today



- The DRC's minerals have attracted foreign attention since Portuguese explorers first arrived in the 15th century.
- In the 19th century DRC was a Belgian colony. Congolese worked in the mines for the Belgians.
- On the 30 June 1960 Congo became an independent state.
- The mining and mineral processing sector is Congo's main source of state revenue. It provides employment at least half a million people.
- In 2015 **Transparency International** ranked the DRC 147 out of 167 countries in the Corruption Perception Index. This means that people do not trust the government of the Congo – many officials have been accused of taking bribes and making unjust decisions.

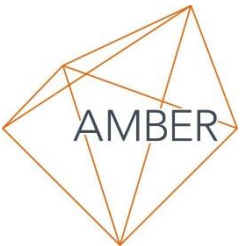


- Many wars have been fought in the DRC.
- Internal conflicts and conflicts with other African countries have killed more than 5.4 million people since 1998 and displaced over 4.5 million.
- Today the DRC is still in the mist of violence, some of which is funded through the sale of the countries rich sources of minerals, and is sometimes over control of the minerals themselves.



- The Democratic Republic of Congo (DRC) is the most biologically diverse country in Africa and one of the most important centers of biodiversity in the world, encompassing over half of Africa's tropical forest.
- Despite the armed conflicts that ravaged the country starting in the mid-1990s, World Wildlife Fund maintained a continuous presence in the DRC and gradually expanded its geographical and thematic scope. The country office in Kinshasa opened in March 2004.
- This information is from the World Wildlife Fund Website.

Table 2: Cobalt and mining





- This is Cobalt – Copper ore: Rocks from which copper and cobalt can be extracted. Cobalt is a hard and lustrous metal.
- Cobalt is found in every rechargeable battery on the planet – from smartphones to tablets to laptops to electric vehicles – and wearable devices.
- Market prices of cobalt have spiked [300% in the past two years](#) .
- **60% of the worlds cobalt comes from the Democratic Republic of Congo (DRC).**
- Global demand for cobalt is increasing, but the global cobalt market remains largely **unregulated** as it falls outside “conflict mineral” legislation regulating the extraction and sale of other minerals such as gold, coltan and tin from the Democratic Republic of Congo.



- 20% of the world's cobalt comes from **artisanal mines** in the southern part of the country. This image is of an artisanal mine in **Katanga province**.
- As many as 100,000 diggers, sorters and washers are believed to work at these mines. In 2014, United Nations International Children's Emergency Fund, UNICEF, estimated that around 40,000 children were involved in artisanal mining in the DRC.
- In a recent research trip by Harvard Business school interviewed some of the children, as young as 7, working in these mines. Older children and women also work in artisanal mines washing stones. Chinese traders will pay them about \$0.65 (50p) for a day's work.

This information is from The Guardian Newspaper

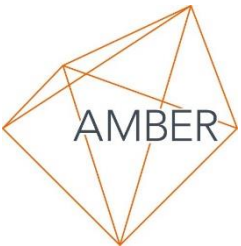


- 40% of the world's cobalt comes from Large Scale mines in the Democratic Republic of Congo (DRC).
- This is Mutanda mine (photo) in **Katanga** province in the DRC. This mine is owned by Glencore, a Swiss Company. It was granted a licence to operate by the Congolese Ministry of Mines, a branch of the government. The mine is for copper and **cobalt**.
- The mine is located in the Basse Kando, a game reserve. Its development led to the destruction of vegetation posing substantial risks to forests and forest carbon stocks and biodiversity.
- All mining starts with deforestation of the area concerned. In some cases this causes a decrease in access to, or availability of, subsistence livelihoods among local communities. This includes non-timber forest products (NTFPs), such as honey, caterpillars, medicinal plants, and bush meat.
- Some local people claim that local rivers have been polluted rendering the water unfit for use by villagers in the surrounding area. Fishing, irrigating farmland, washing and drinking have begun to impose a health risk.
- *This information is from a report by Centre for Research on Multinational Corporations, based in the Netherlands, 'Cobalt blues environmental pollution and human rights violations in **Katanga's** copper and cobalt mines' April 2016.*

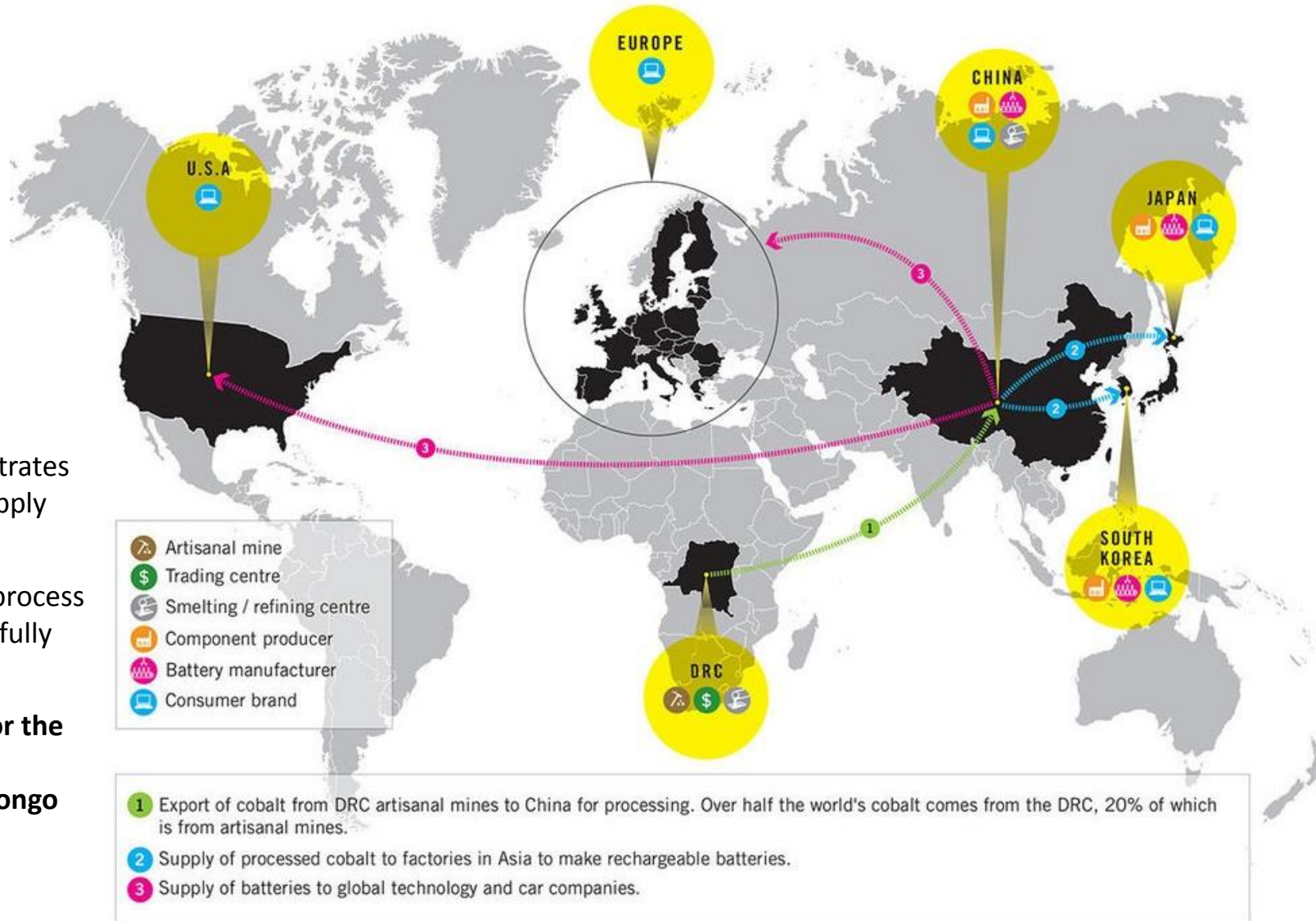


- 40% of the world's cobalt comes from **large scale mines** in the southern part of the Democratic Republic of Congo (DRC).
- Glencore, a Swiss company, now owns the largest open pit mines in Katanga province in the DRC. This is the world's biggest cobalt production facility, with state-of-the-art technology and a meticulous corporate management system
- The mines employ about 12,000 people.
- This information is from Glencore

Table 3: Transporting and refining Cobalt



Movement of cobalt from artisanal mines in the DRC to the global market



- This map illustrates the Cobalt supply chain.
- Examine the process and read carefully from 1, 2, 3.
- **DRC stands for the Democratic Republic of Congo**

AMBER

Source: Amnesty International & AfreWatch (2016)

<https://www.amnesty.org/download/Documents/AFR6231832016ENGLISH.PDF>



Location of the Democratic Republic of Congo and the main southern town of Lubumbashi, Katanga Province.

Image of a lorry carrying ore from mines to Lubumbashi.

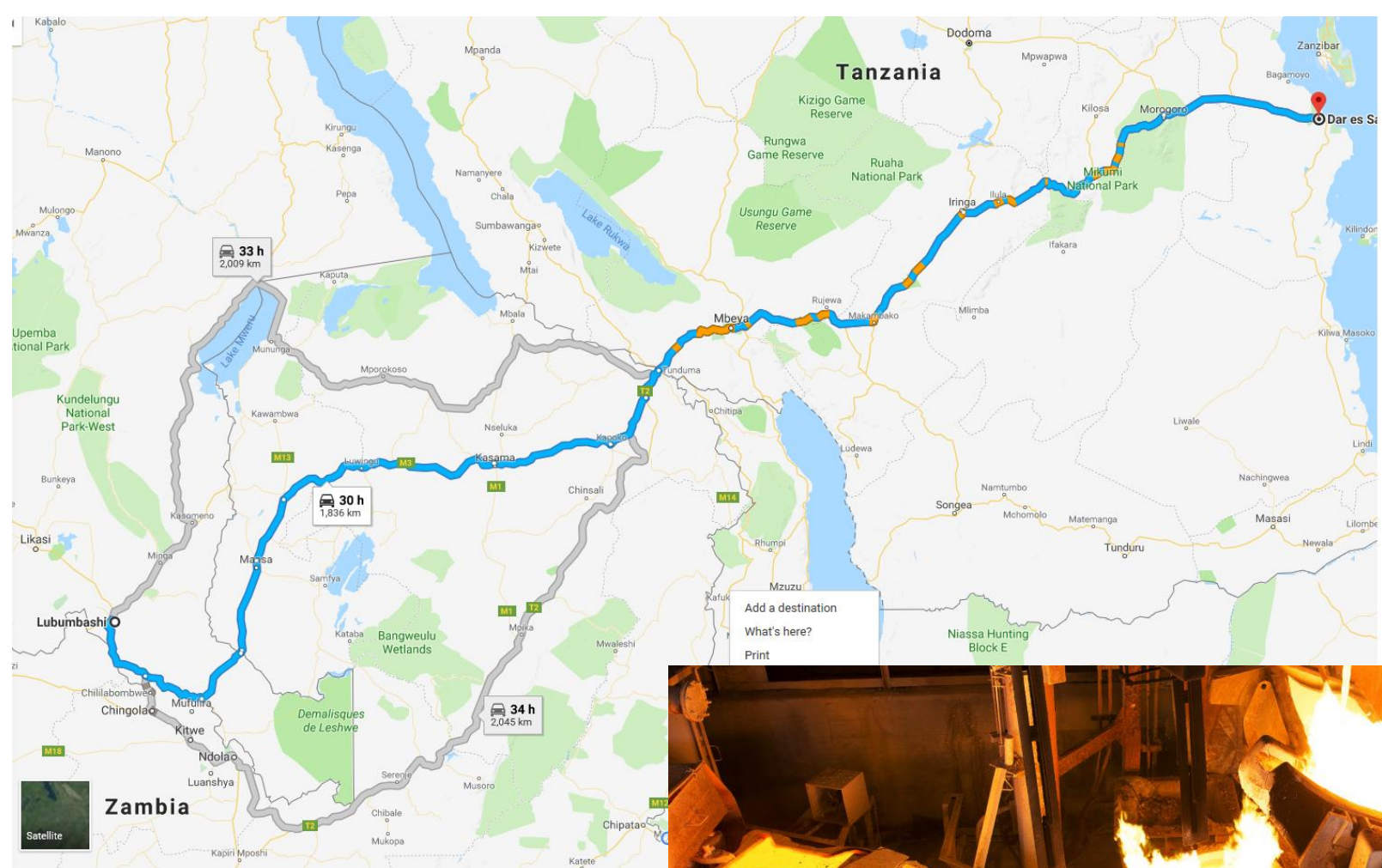
Source: *Centre for Research on Multinational Corporations, based in the Netherlands, from the report: 'Cobalt blues environmental pollution and human rights violations in **Katanga's** copper and cobalt mines' April 2016.*



- After extracting Cobalt ore from the mines in Katanga Province, southern DRC, it must be transported to a refiner. Very often this is done by road and through the main town in the south of the Democratic Republic of Congo, Lubumbashi.
- “Pollution caused by copper and cobalt mining has induced widespread illness in Lubumbashi, a city of more than 2-million residents in the country’s southeast. Plumes of smoke and clouds of dust rise into the air from vehicles transporting ore to be refined. Used water containing chemicals and mineral alloys run off untreated from the mines into streams. “High concentrations of toxic metals ... cause respiratory disorders and birth defects”, particularly in people living near the mines, said toxicologist Celestin Banza of the University of Lubumbashi”.
- MP (government minister) Davon N’Sa Mputu Elima, who served as environment minister from 2012-2014 says that mining companies put up considerable resistance to a 2009 amendment in the country’s environmental code, which imposed stringent new health and safety requirements. Such protective measures are often not enforced because of what the MP calls “a lack of expertise” among administrative officials who are responsible for seeing that mining companies comply”.

This extract is from Business Day 08.23.2016. BD is a national daily newspaper in South Africa, published from Monday to Friday and also available as an e-edition

<https://www.businesslive.co.za/bd/world/africa/2016-08-23-drc-mines-cause-toxic-damage/>



Refining ore

Map of road transport from Lubumbashi, Democratic Republic of Congo, to Dar Es Salam in Tanzania



- Refining adds value to ore. The refining process uses heat and chemicals to produce a copper-cobalt concentrate. The Congolese government wants to encourage Copper – Cobalt mines to have their ore refined in the country. The government has tried several times to ban the export of unrefined ores, but the lack of electricity in the Democratic Republic of Congo makes it impossible to have all of the ore refined. The mines and their associates move ore into Zambia to have it refined. It is then transported for further refining and smelting in Indonesia and China.
- Congo Dongfang Mining International (**CDM**) is a refiner and processes some of the ore in Congo before exporting it to Huayou Cobalt, a company in China, via the port of Dar Es Salam in Tanzania. **Huayou Cobalt owns CDM.**
- **The company which smelts and refines the cobalt is very important.** It is in a key position in the supply chain often referred to as the “choke point”. This is the point at which minerals are processed before being incorporated into components and other products. It is generally seen as the best point to track cobalt from the mine site through to local suppliers and an important point of occurrence of human rights abuses and environmental issues linked to the extraction, movement and processing of the ore.
- Source: Amnesty International & AfreWatch (2016)
<https://www.amnesty.org/download/Documents/AFR6231832016ENGLISH.PDF>

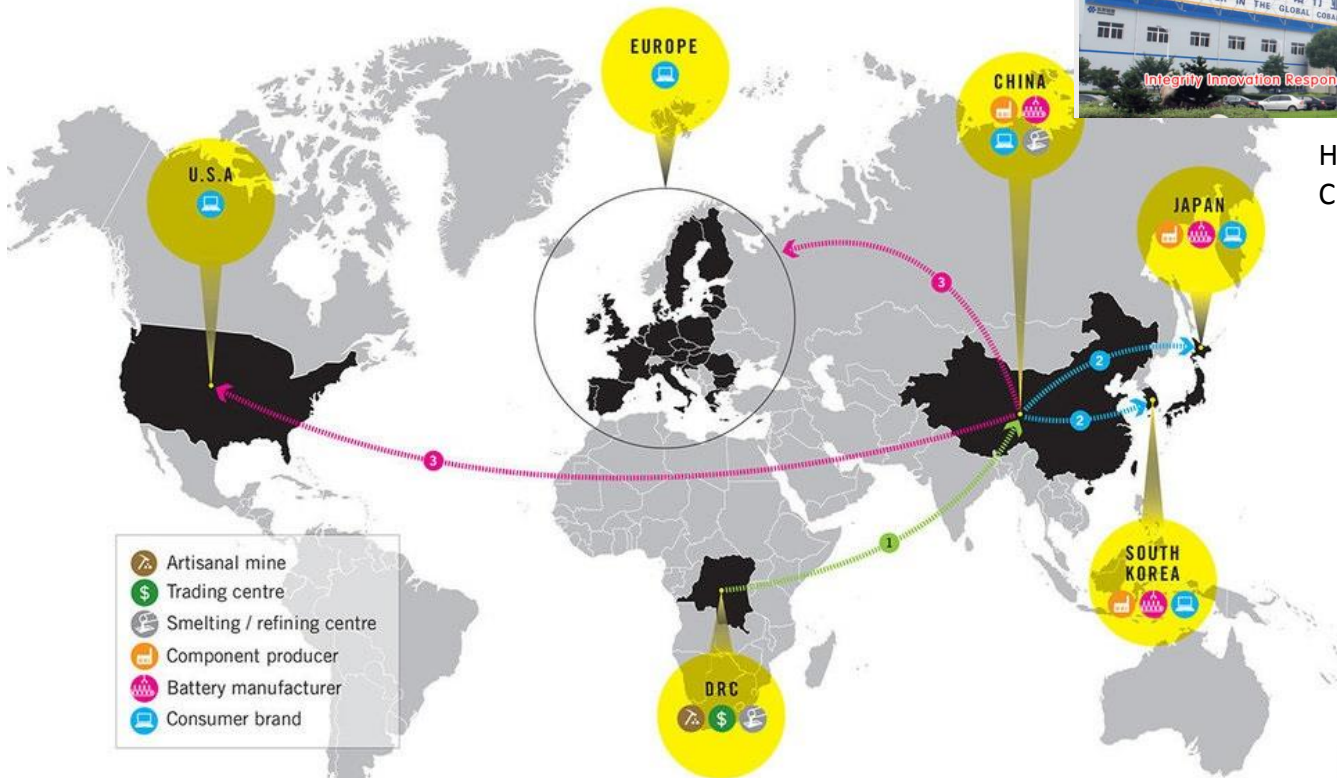
Table 4: Incorporating Cobalt into rechargeable batteries



Flow chart of the cobalt supply chain



Movement of cobalt from artisanal mines in the DRC to the global market



Headquarters of Huayou Cobalt, China

- This map illustrates the Cobalt supply chain.
- Examine the process and read carefully from 1, 2, 3.
- **DRC stands for the Democratic Republic of Congo**

Source: Amnesty International & AfreWatch (2016)

- 1** Export of cobalt from DRC artisanal mines to China for processing. Over half the world's cobalt comes from the DRC, 20% of which is from artisanal mines.
- 2** Supply of processed cobalt to factories in Asia to make rechargeable batteries.
- 3** Supply of batteries to global technology and car companies.

- Some estimate that between 68 - 90 % of Chinese cobalt is imported from the Democratic Republic of Congo.
- Huayou Cobalt is one of the largest Chinese cobalt processor and refinery that is a primary a supplier of cobalt to the rechargeable battery industry.
- According to a joint **Amnesty International and AfreWatch (2016) report**: some suppliers of cobalt to Huayou Cobalt were from "artisanal" mines in the Democratic Republic of the Congo. In artisanal mines there are few worker protections and child labour has been employed.
- In 2017 Huayou Cobalt posted Gross Profit of \$470.59M according to the Nikkie Asian Review; an increase from \$106.7M posted in 2016. (<https://asia.nikkei.com/Companies/Zhejiang-Huayou-Cobalt-Co.-Ltd>)
- In March 2018 Huayou Cobalt joined the 'Better Cobalt' initiative run by the 'Better Sourcing Program' a London based charity. 'Better Cobalt' is a pilot project which aims to electronically track cobalt from 5 sites, improve worker safety and improve human rights. It uses the **Organization for Economic Cooperation and Development, or OECD**, draft due-diligence guidelines for corporations on mineral supply chains.



POTENTIAL DRC COBALT SUPPLY CHAIN According to publicly available information

- Smelter/refiner
- Battery component manufacturers
- Battery manufacturer
- Electronic goods and vehicle manufacturers

* Indicates companies which deny a connection to this potential supply chain and/or to DRC cobalt.

CDM / Huayou Cobalt



Toda Hunan Shanshan New Material

Tianjin Bamo Technology*

L&F Material

Ningbo Shanshan (parent company of Toda Shanshan)

Samsung SDI*

BAK

Tianjin Lishen*

Coslight*

Samsung SDI*

LG Chem

Apple

Samsung*

**ATL
BYD
LG
Mercedes (Daimler)*
Sony***

VW*

**Apple
Dell
HP*
Huawei*
Lenovo (Motorola)
Microsoft
Samsung*
Vodafone*
VW***

BYD

**Ahong
Huawei*
OKWAP (Inventec)*
ZTE**

**Apple
Samsung***

**Apple
LG**

Rechargeable battery supply chain. Source: Amnesty & AfreWatch 2016



Images: Rechargeable batteries

- Cobalt is currently a key component in rechargeable battery manufacture.
- There are many companies involved in the supply chain after cobalt refining and smelting, to component manufacture, through to battery manufacture and then the final device. There is a large presence of rechargeable battery producers in China – for example Samsung SDI & LG Chem. Batteries are transported to the end supplier, e.g. Apple, Samsung, Intel who incorporate the batteries into the end device for export.
- Rechargeable batteries are currently the most popular type of batteries but they have shortcomings due to their large size, bulky volume, and heavy weight. They also suffer from several inherent limitations such as liquid electrolyte leakage, flammability, and unsatisfactory safety and flexibility.
- In 2017, China's Chamber of Commerce of Metals, Minerals & Chemicals Importers & Exporters launched the **Responsible Cobalt Initiative**, bringing together companies that agree to follow the OECD's due-diligence rules by trying to eliminate child labour from their supply chains. The group includes Apple, Samsung SDI, [HP](#), and Sony.



- This image is of the Congo Dongfang Mine (CDM)

<http://fortune.com/longform/blood-sweat-and-batteries/>
23.08.2018

- In 2016 Amnesty International and AfreWatch issue a report on cobalt mining in Congo. In the report many big companies are criticized for their practices, including Huayou Cobalt.
- In 2016, Apple said that starting in 2017 they will treat cobalt as a conflict mineral, and will require that all cobalt suppliers agree to outside supply-chain audits and risk assessments.
- In 2017 Apple Inc. said that approximately 20% of the in Apple's batteries were sourced from **Huayou Cobalt**.
- After a 2017 Sky News report that showed that child labour continued to be utilized in the Cobalt supply chain Apple put in place more stringent processes.
- Apple has mapped its supply chain down to the mines. All smelters in the chain receive third-party audits and Apple works closely with suppliers and miners to build capacity and improve practices.
- In 2018 Huayou Cobalt, which owns Congo Dongfang Mine , put in place measures to ensure no child labour or pregnant women were allowed work at the Congo Dongfang Mine, one of the largest artisanal mines in the country.