GLOBAL IMPACTS OF THE NORDIC EV REVOLUTION

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Shifting to 100% renewable energy by 2050, without concerted efforts to reduce energy use, is both technically and economically feasible with little downside (Jacobsen et al 2015: 1).

"And what about all the lithium and other finite materials used in the batteries? They're just not an issue. Through 2030, battery packs will require less than 1% of the known reserves of lithium, nickel, manganese, and copper. They'll require 4% of the world's cobalt" (BNEF, 2020).

There is a need for more comprehensive accounting and analysis of the political ecologies underpinning EVs

MAPPING THE COMMODITY CHAINS OF LI-ION BATTERIES

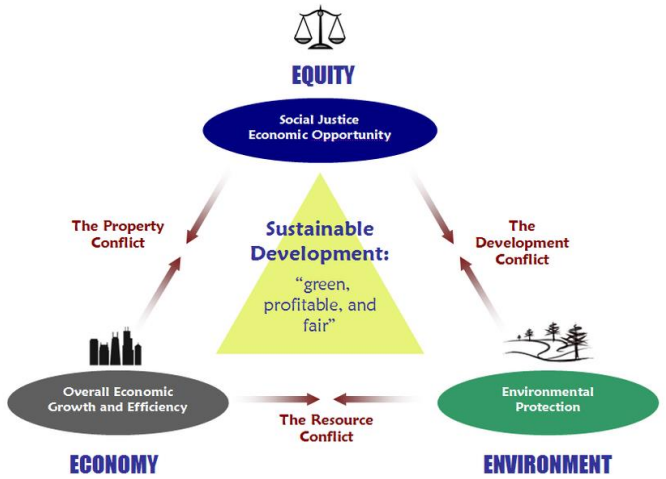
- Global Systems Theory
- Intersectionality
- Staying with the Trouble

How many stages?

Upstream

Downstream

- Extraction
- Refining
- Manufacturing
- Driving
- Post-car life



Semi-conductors

Cathode

Battery Cell

Infrastructure

Re-use

Recylcing

Landfill

EXTRACTION

Cobalt – DRC (Glencore case)

Silica – U.S.A

Copper - Chile

Manganese – South Africa

Lithium Triangle

REFINING

- China, China, China
- The changing landscape of geopolitics

MANUFACTURING

- Semiconductors
- Cathodes
- Cells

Giga cell factory in Berlin

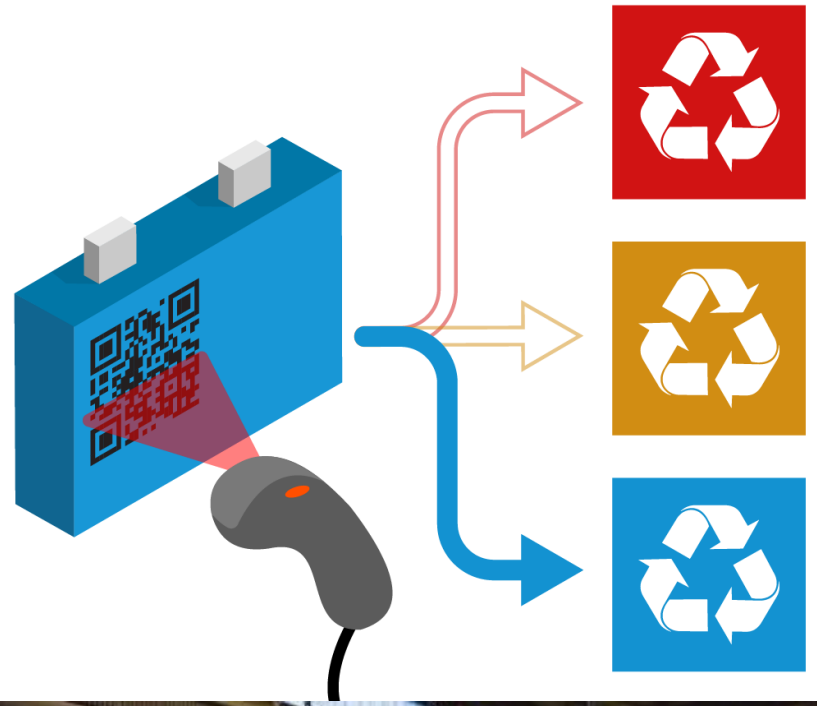
Semi-conductor bottle necks through Taiwan

USE

- Second hand car markets
- Right to repair

END OF LIFE ON THE ROAD

- Re-use
- Recycling
- New Nordic players (Batteriretur, Northvolt)
- New EU proposals for regulation in 2022
- Digital tracking innovations



FINAL POINTS

NOT ABOUT WHETHER EVS ARE BETTER THAN ICE VEHICLES AS MANY LCAS FOCUS ON

REGIMES OF AUTOMOBILITY PERPETUATE UNEVEN DISTRIBUTION OF BENEFITS AND BURDENS

TECHNOLOGIES CANNOT DISPLACE THE NEED FOR REDUCING RESOURCE AND ENERGY USE IN THE GLOBAL NORTH