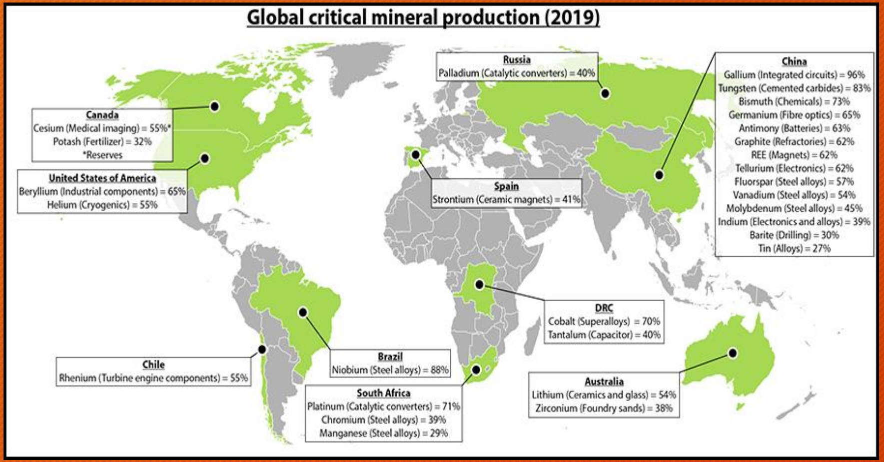
RD. CONGO

- The world's first carbon sink
- Minerals: Cobalt, tin, lithium, niobium, Copper, Nickel, tungsten and tantalum…manganese



RD.CONGO

- 110 MILLION OF POPULATION
- 2,345,409 km^2
- HDI (2021)Decrease 0.479[6]
- low · 179th
- the Congo rainforest, the second-largest rain forest in the world after the Amazon rainforest

THE CONGO AND THE GLOBAL TRANSITION TO GREEN

I. TRANSITION

AT THE HEART OF CLIMATE MITIGATION AND ADAPTATION

- ❑ WHAT IT IS?
- ❑ WHAT IS THE PROBLEM?
- ❑ OPPORTUNITIES & CHALLENGES

GLOBAL WARMING AND CLIMATE CHANGE HAVE LED TO THREE REFLECTIONS ON TRANSITIONS:

1. THE ENERGY TRANSITION
2. THE ECOLOGICAL TRANSITION
3. THE SOCIETAL TRANSITION

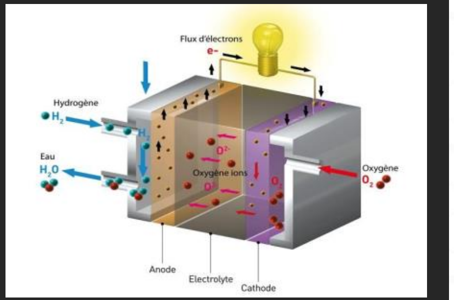
TRANSITIONING TO

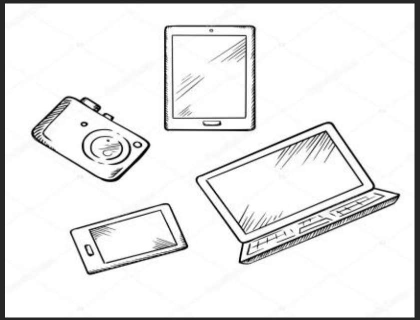
RAISES TWO ISSUES:

1. SOCIOTECHNICAL TRANSITIONS
2. SUSTAINABLE TRANSITIONS

THE JUST TRANSITION REFERS TO THIS DOUBLE CHALLENGE

II. HOW DO THESE CHALLENGES RELATED TO SOCIO-TECHNICAL AND SUSTAINABLE TRANSITIONS EMERGE?

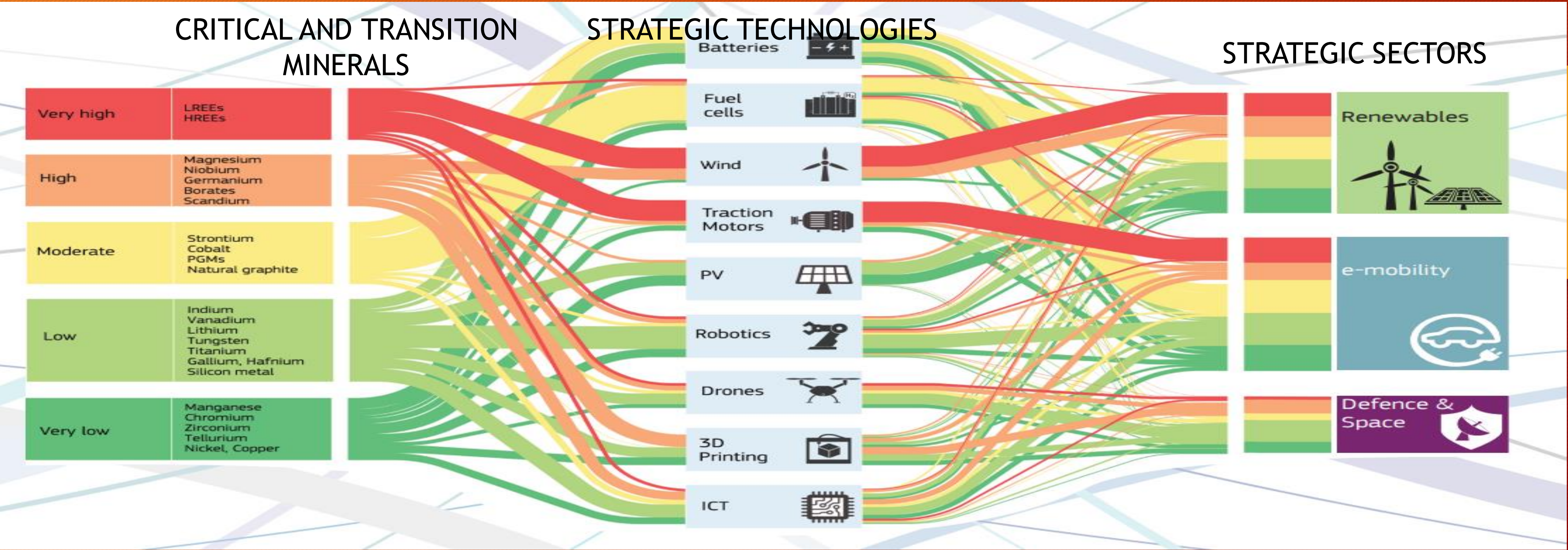




THE ROLE,
IMPORTANCE ,
AND CHALLENGES
OF GREEN, CLEAN AND STRATEGIC
TECHNOLOGIES
IN THE TRANSITION

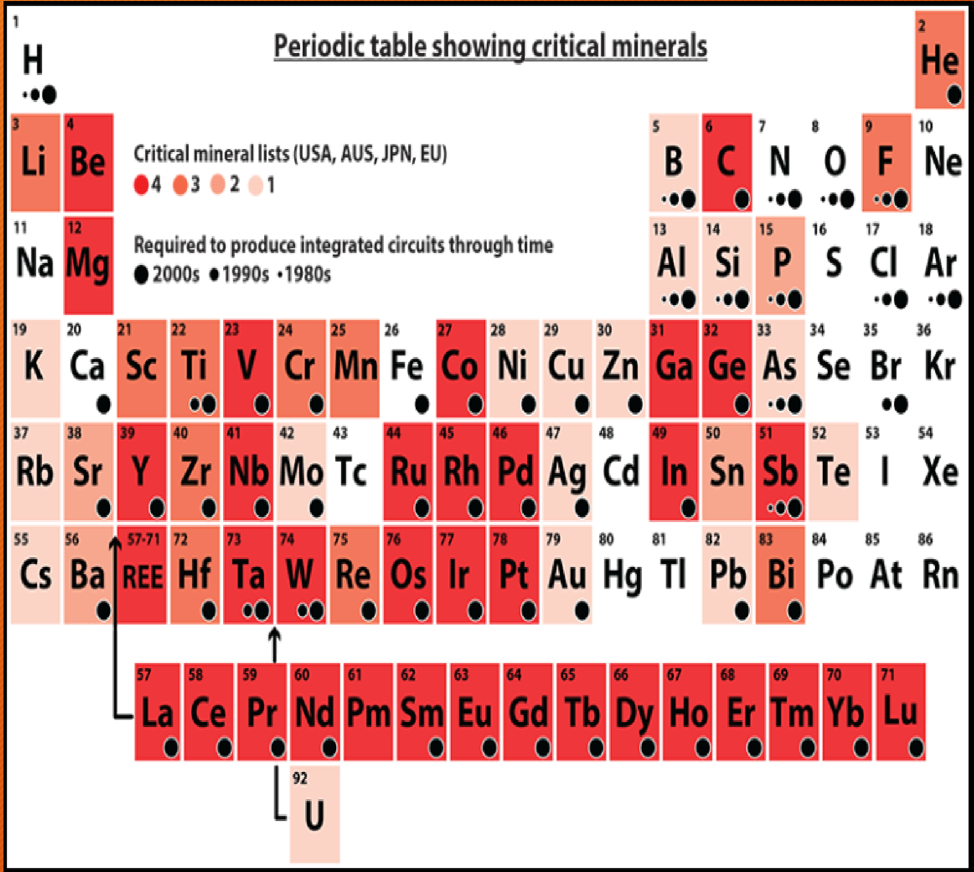
MINING IN GREEN, CLEAN AND STRATEGIC TECHNOLOGIES AND SECTORS

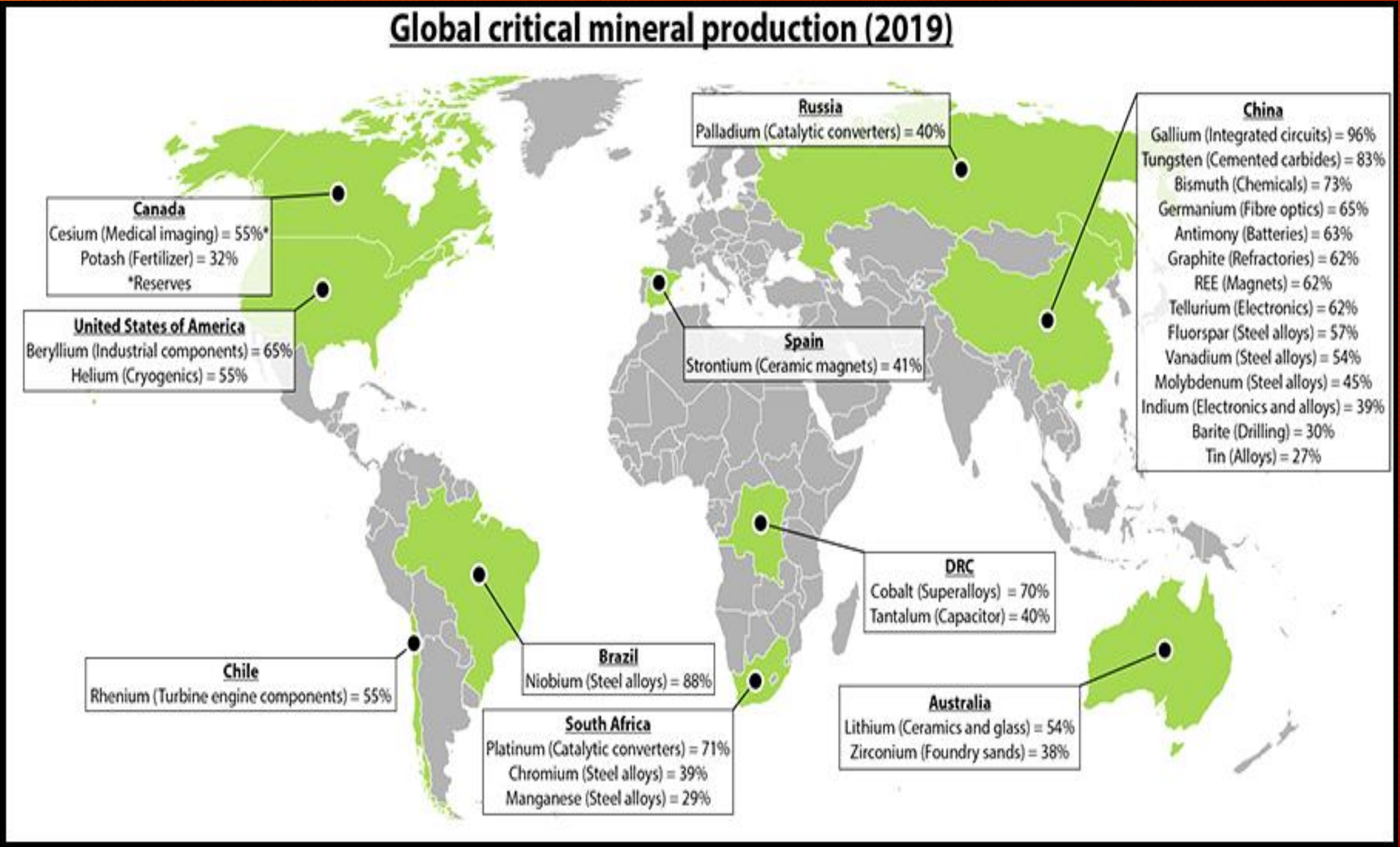
UNDERSTANDING THE GOLBAL VALUE CHAINS OF THE TRANSION AND THE PLACE OF THE CONGO



HOW DO WE PRODUCE GREEN TECHNOLOGIES?

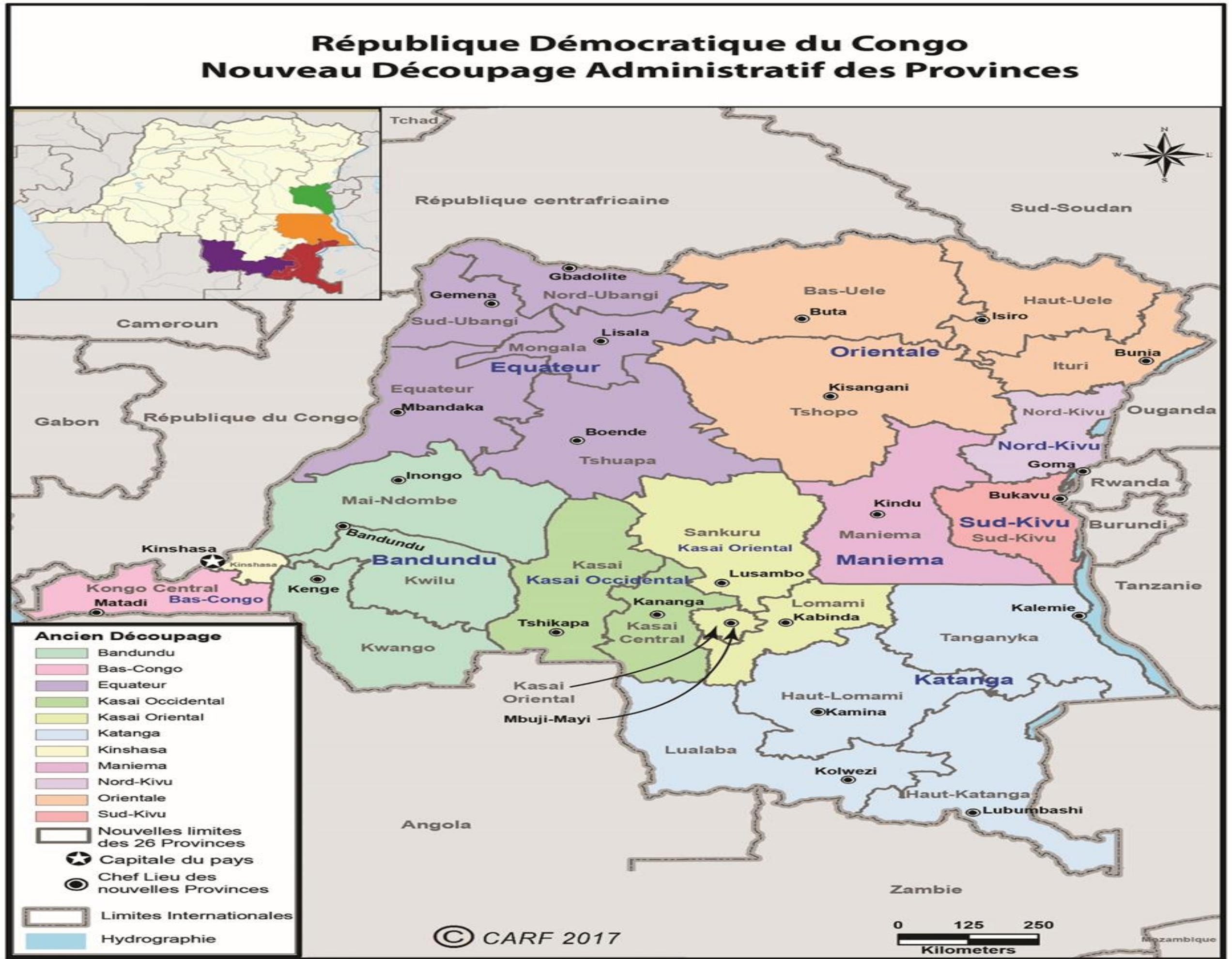
WHERE DO STRATEGIC MINERALS COME FROM?

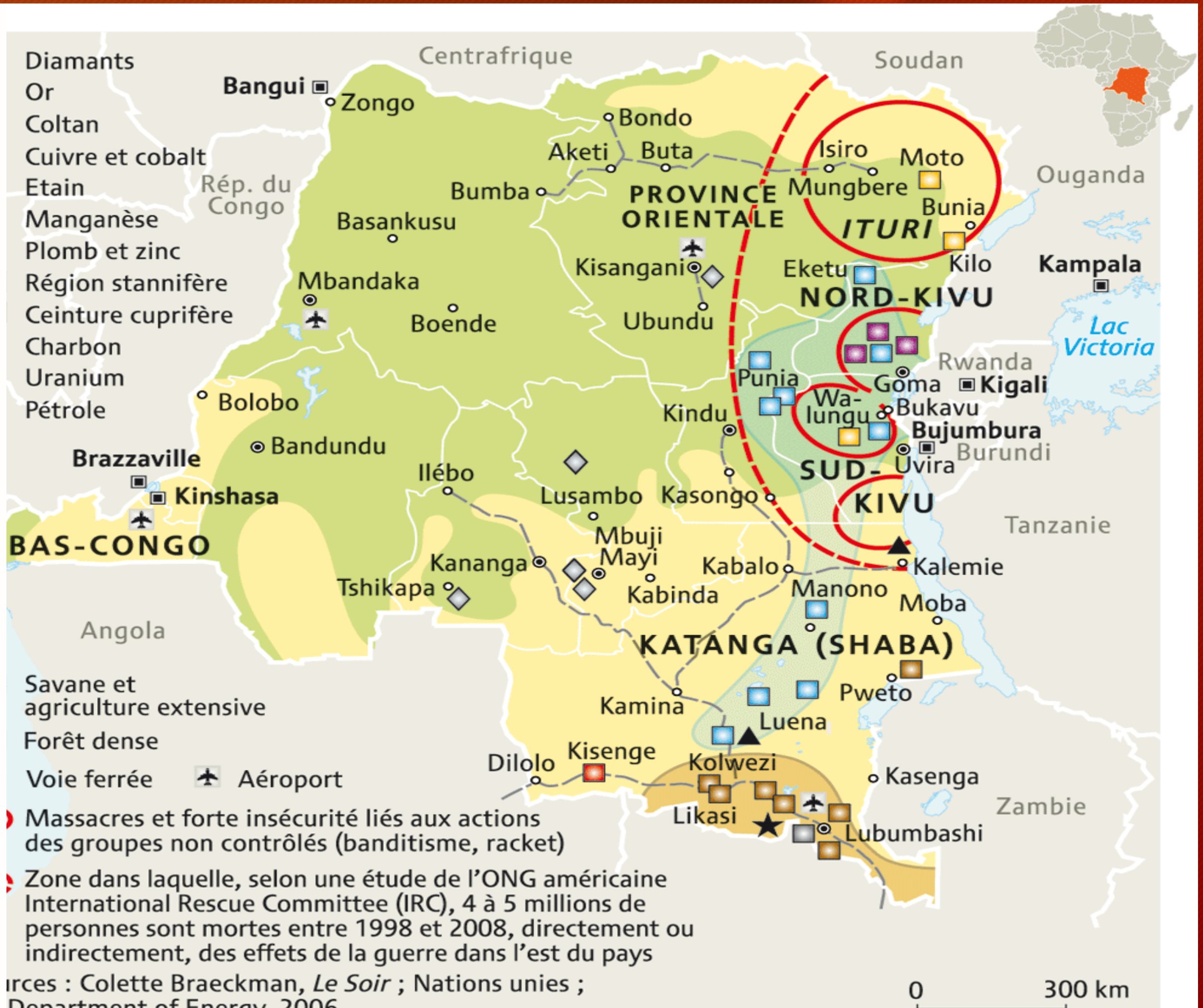




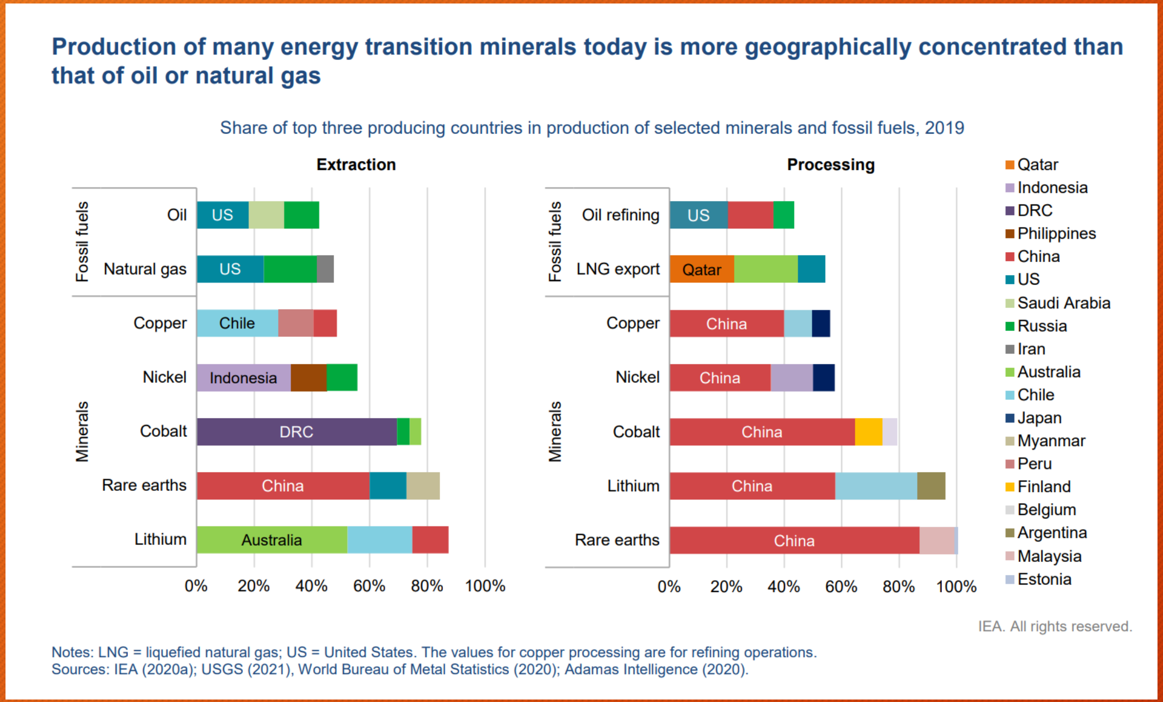
Credit: Emsbo, P., Lawley, C., and Czarnota, Karol. (2021), Geological surveys unite to improve critical mineral security, *Eos, 102*

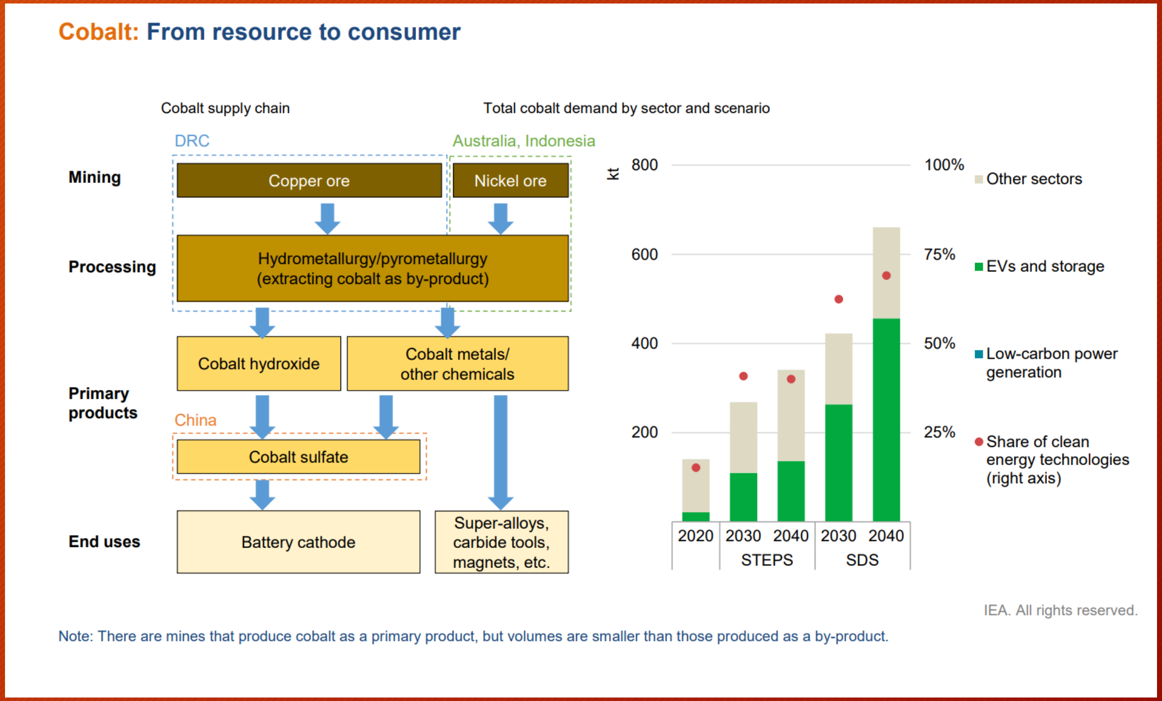
CONGO'S POSITION AND ROLE IN THE PRODUCTION OF CRITICAL MINERALS





CONGO'S POSITION AND ROLE IN THE PRODUCTION OF CRITICAL MINERALS

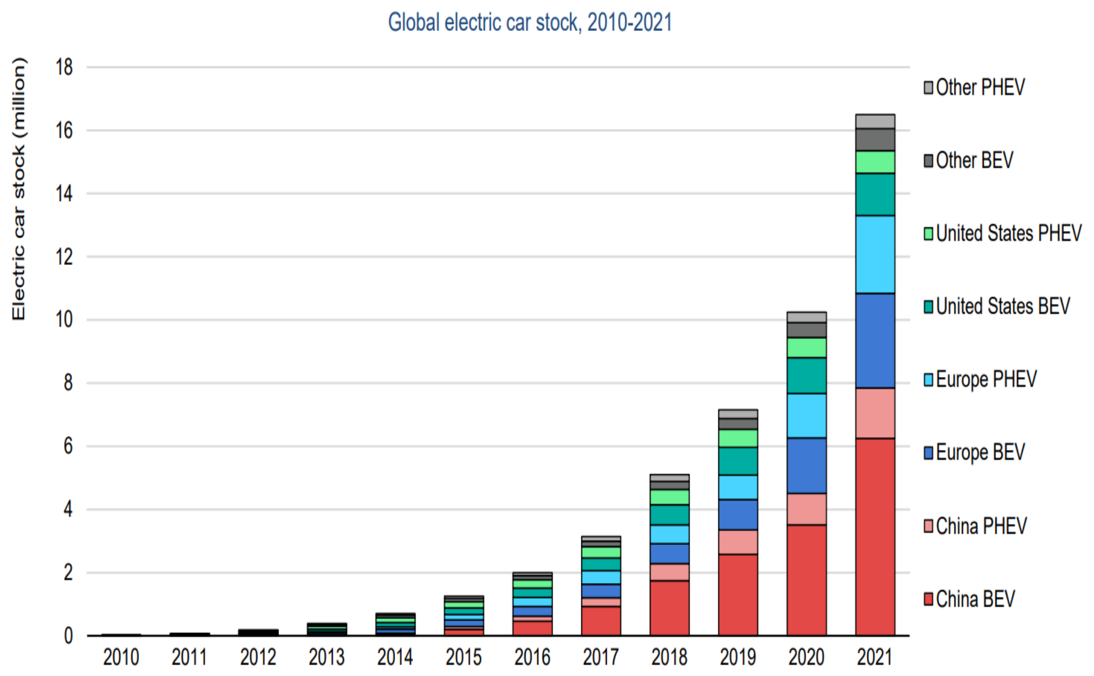




Credit: IEA

ELECTRIC VEHICLES AND BATTERIES MINERAL DEMAND

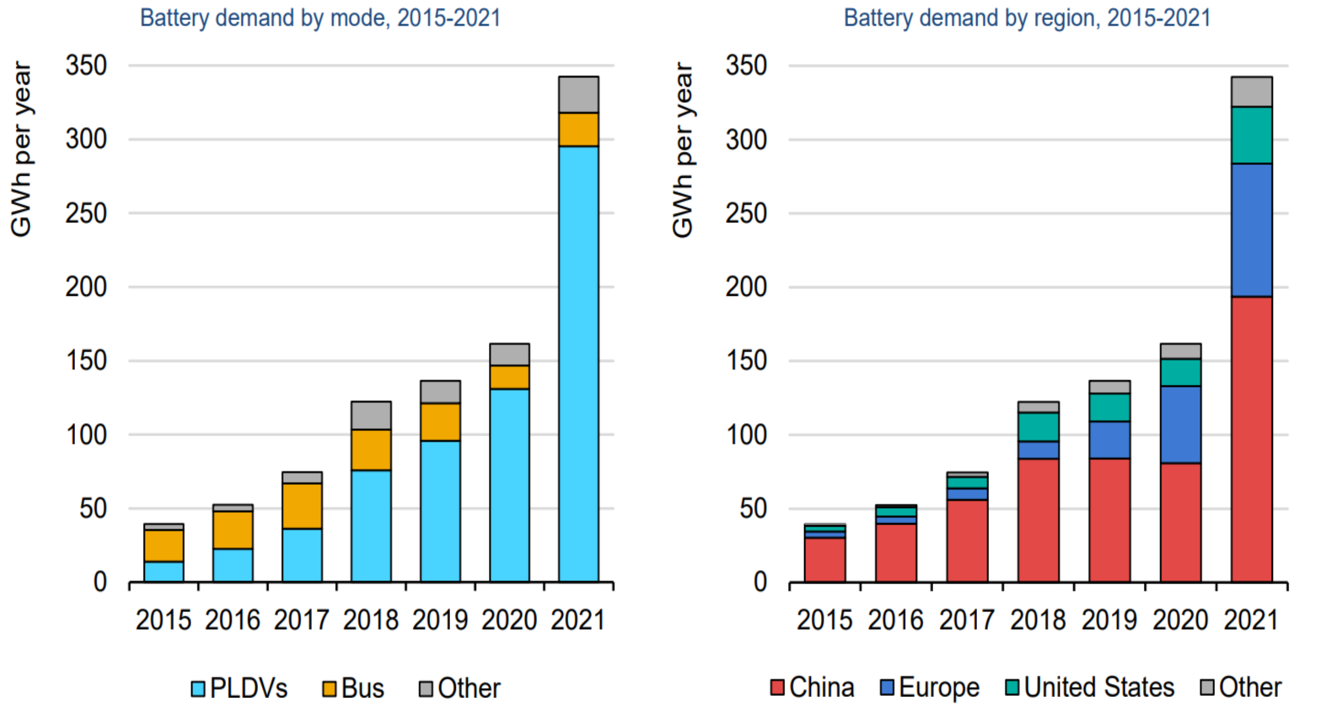
Over 16.5 million electric cars were on the road in 2021, a tripling in just three years



Notes: BEV = battery electric vehicle; PHEV = plug-in hybrid electric vehicle. Electric car stock in this figure refers to passenger light-duty vehicles. "Other" includes Australia, Brazil, Canada, Chile, India, Japan, Korea, Malaysia, Mexico, New Zealand, South Africa and Thailand. Europe in this figure includes the EU27, Norway, Iceland, Switzerland and United Kingdom.

Sources: IEA analysis based on country submissions, complemented by ACEA; CAAM; EAFO; EV Volumes; Marklines.

Global battery demand doubled in 2021, driven by electric car sales in China

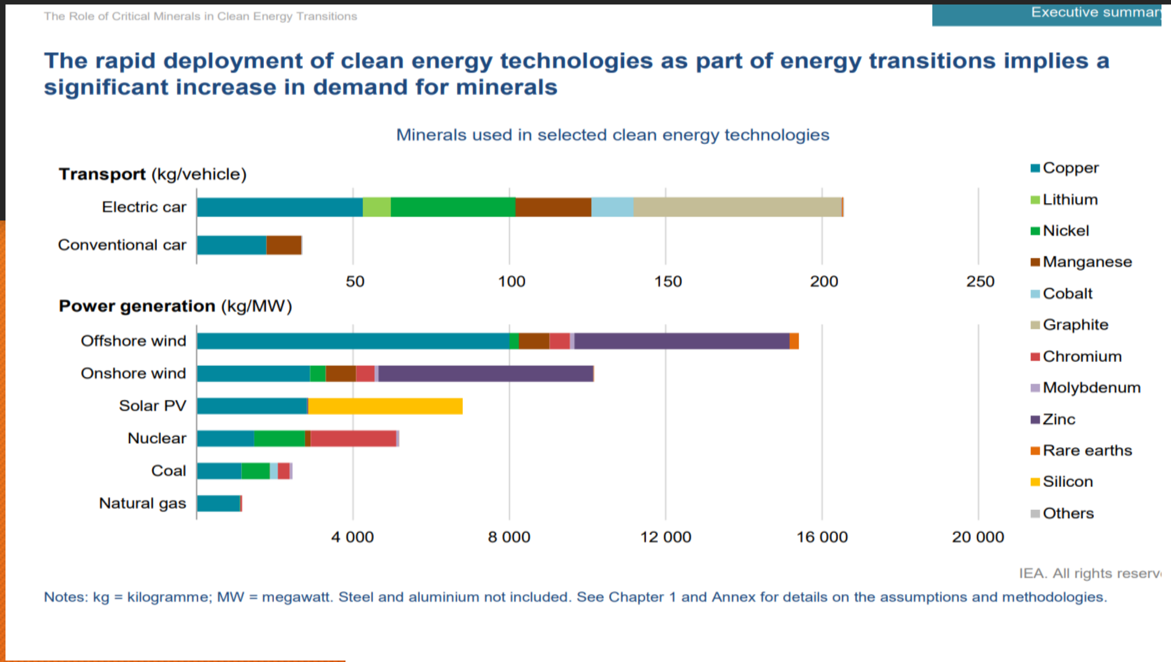


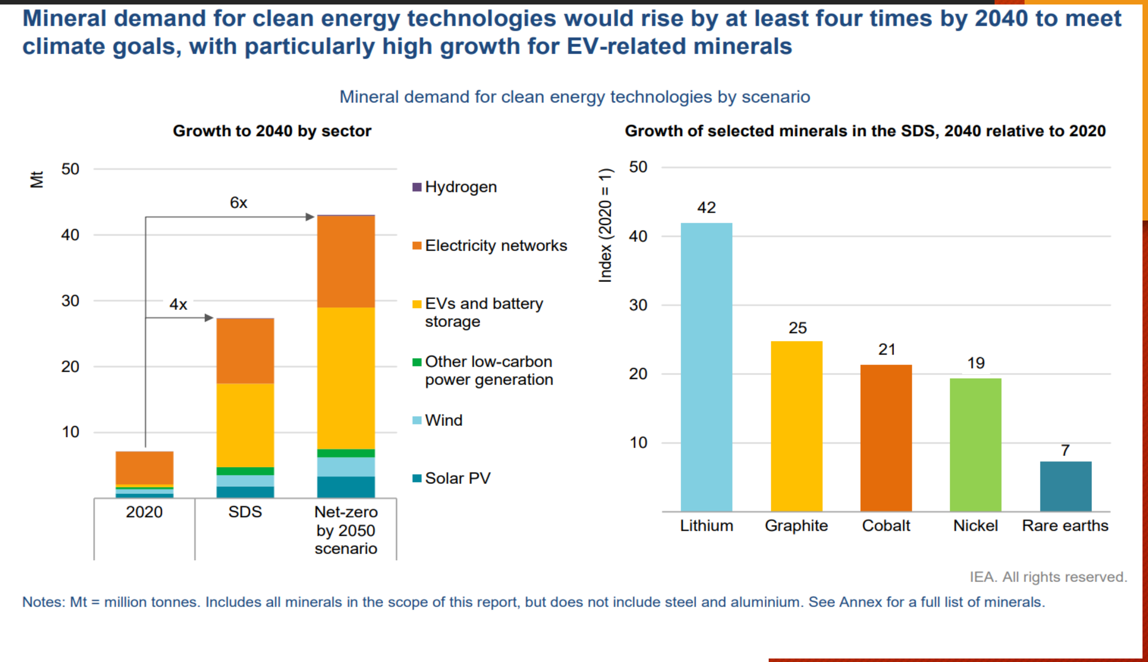
Notes: GWh = gigawatt-hours; PLDVs = passenger light-duty vehicles; other includes medium- and heavy-duty trucks and two/three-wheelers. This analysis does not include conventional hybrid vehicles.

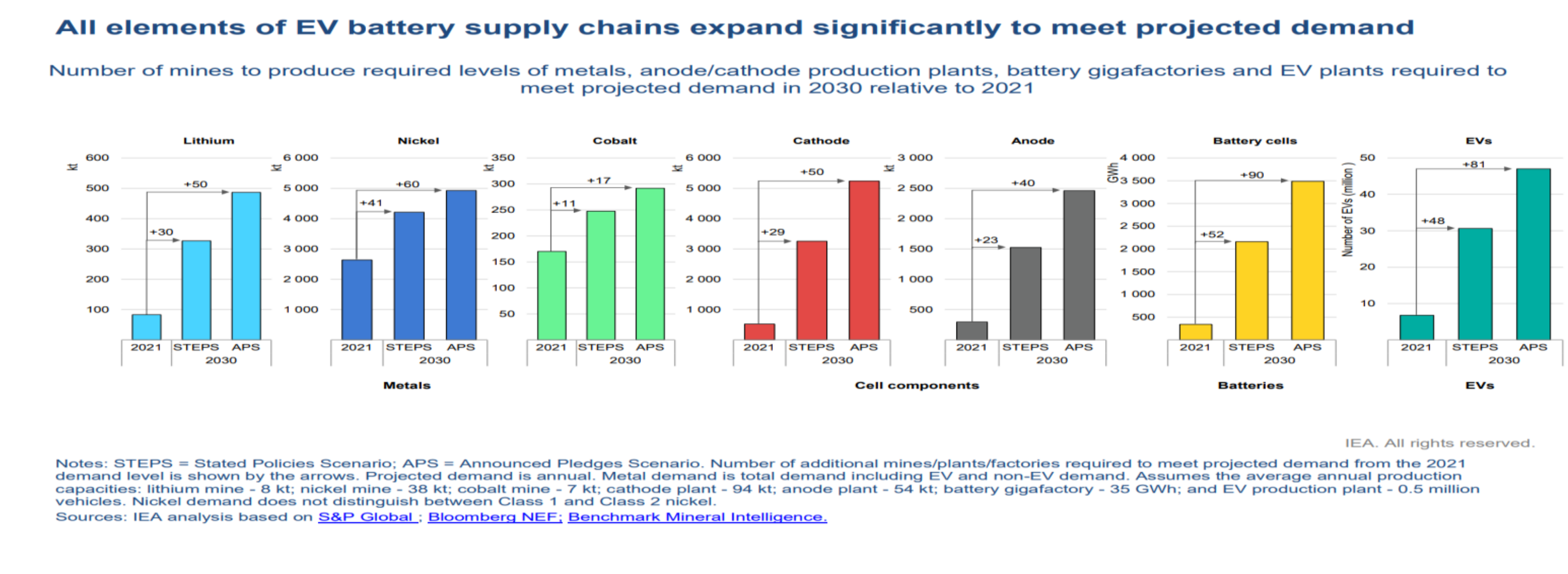
Sources: IEA analysis based on EV Volumes.

Credit: IEA

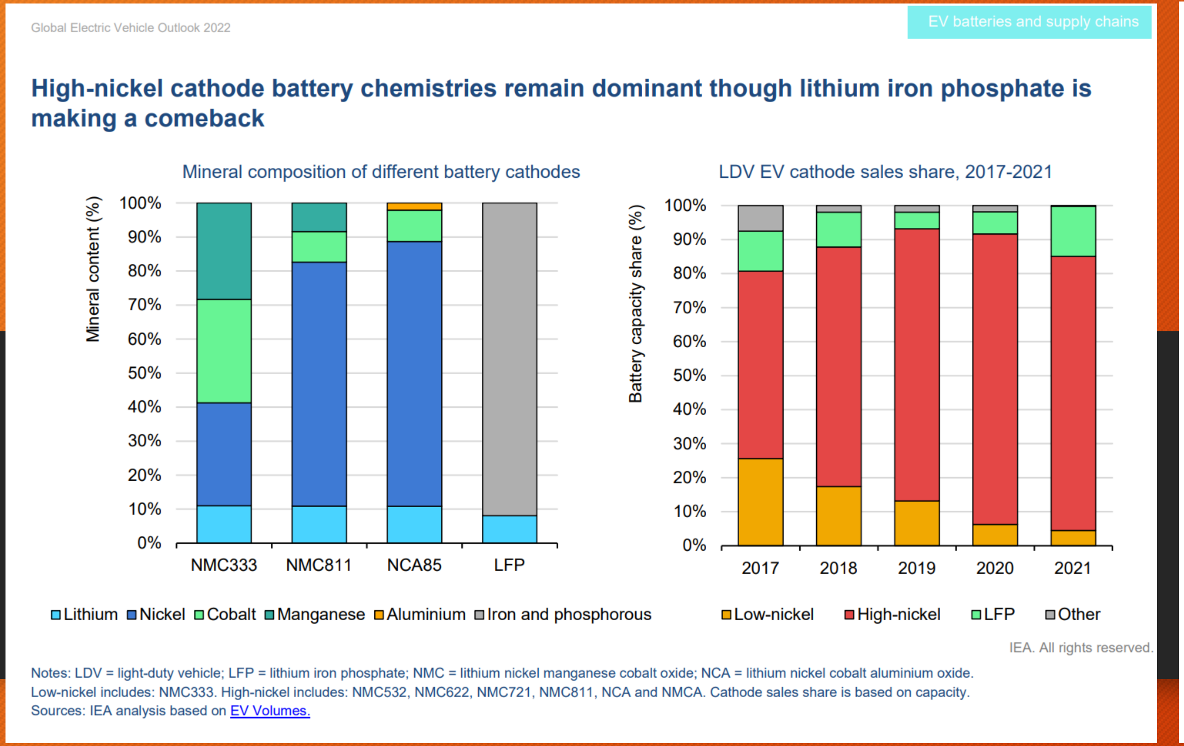
MINERALS AND DEMANDS IN TRANSITION TECHNOLOGIES: IMPACTS ON CONGO

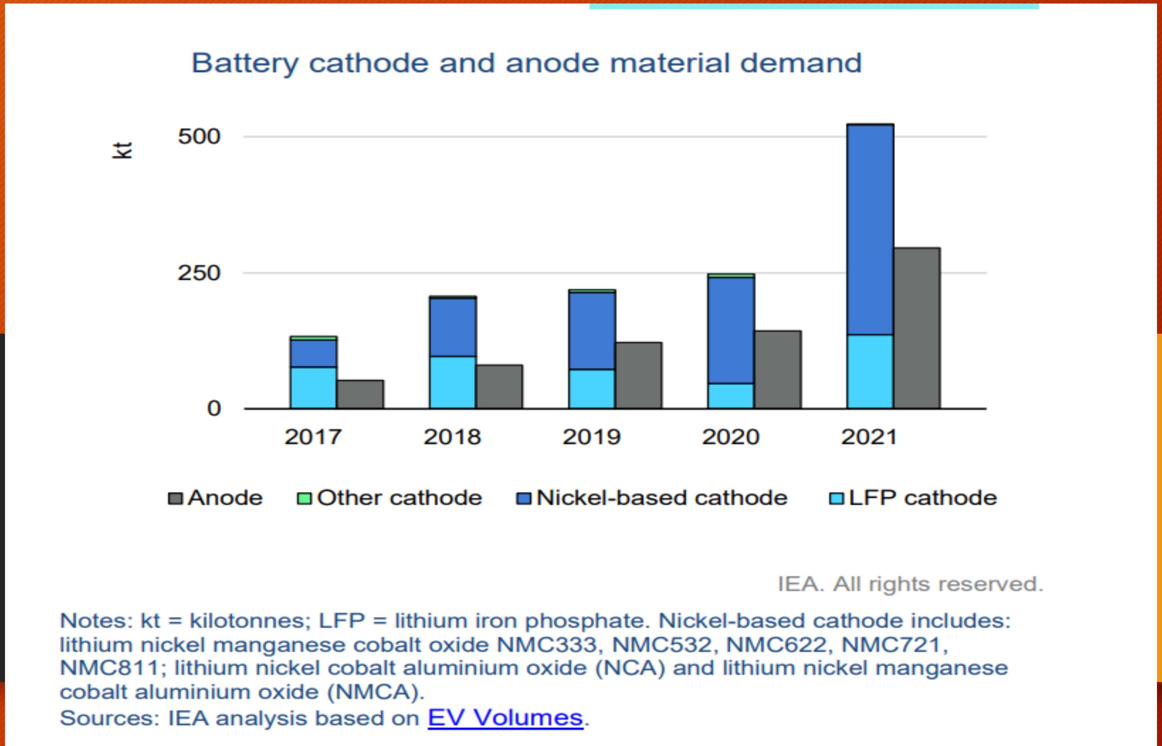


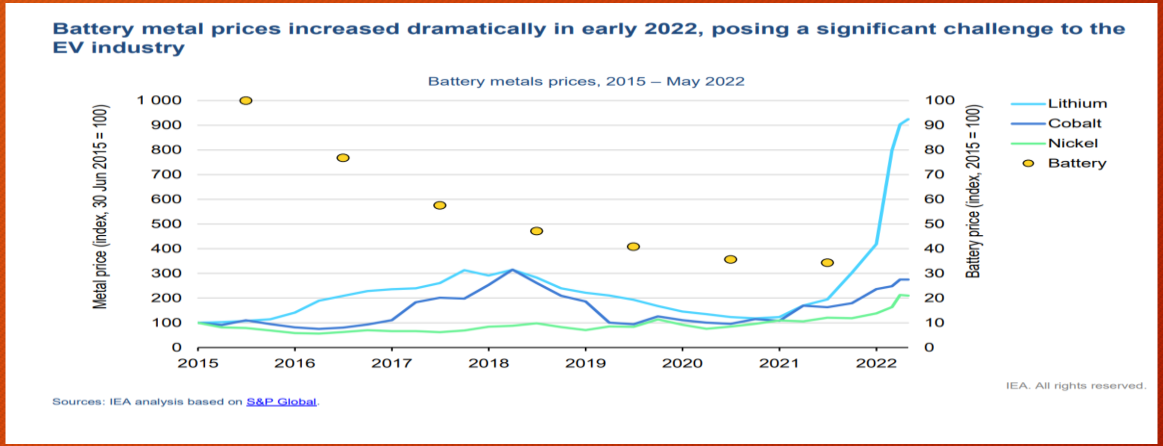




BATTERY CHEMISTRIES, ANODE AND CATHODE MATERIAL DEMAND:
CONVENTIONAL AND NON-CONVENTIONAL BATTERIES







III. UNDERSTANDING THE IMPACTS OF GLOBAL VALUE CHAINS OF TRANSITION TECHNOLOGIES IN THE DRC

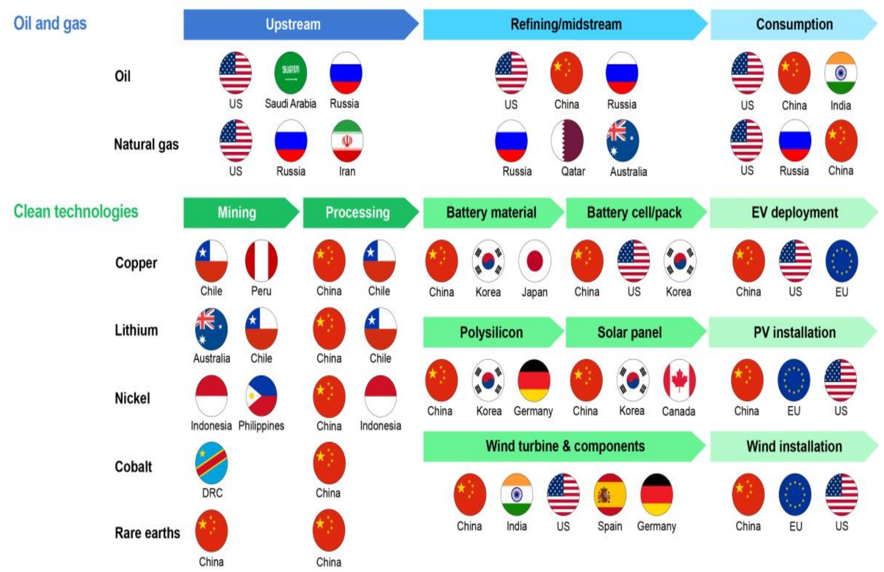
Exploitation of mineral resources gives rise to a variety of environmental and social implications that must be carefully managed to ensure reliable supplies

Selected environmental and social challenges related to energy transition minerals

Areas of risks		Description
Environment	Climate change	• With higher greenhouse gas emission intensities than bulk metals, production of energy transition minerals can be a significant source of emissions as demand rises • Changing patterns of demand and types of resource targeted for development pose upward pressure
	Land use	• Mining brings major changes in land cover that can have adverse impacts on biodiversity • Changes in land use can result in the displacement of communities and the loss of habitats that are home to endangered species
	Water management	• Mining and mineral processing require large volumes of water for their operations and pose contamination risks through acid mine drainage, wastewater discharge and the disposal of tailings • Water scarcity is a major barrier to the development of mineral resources: around half of global lithium and copper production are concentrated in areas of high water stress
	Waste	• Declining ore quality can lead to a major increase in mining waste (e.g. tailings, waste rocks); tailings dam failure can cause large-scale environmental disasters (e.g. Brumadinho dam collapse in Brazil) • Mining and mineral processing generate hazardous waste (e.g. heavy metals, radioactive material)
Social	Governance	• Mineral revenues in resource-rich countries have not always been used to support economic and industrial growth and are often diverted to finance armed conflict or for private gain • Corruption and bribery pose major liability risks for companies
	Health and safety	• Workers face poor working conditions and workplace hazards (e.g. accidents, exposure to toxic chemicals) • Workers at artisanal and small-scale mine (ASM) sites often work in unstable underground mines without access to safety equipment
	Human rights	• Mineral exploitation may lead to adverse impacts on the local population such as child or forced labour (e.g. children have been found to be present at about 30% of cobalt ASM sites in the DRC) • Changes in the community associated with mining may also have an unequal impact on women

The transition to a clean energy system brings new energy trade patterns, countries and geopolitical considerations into play

Indicative supply chains of oil and gas and selected clean energy technologies



Notes: DRC = Democratic Republic of the Congo; EU = European Union; US = United States; Russia = Russian Federation; China = People's Republic of China. Largest producers and consumers are noted in each case to provide an indication, rather than a complete account.

III. 1. MINING COMPANIES IN THE CONGO

IMPACTS ON THE PEOPLE, THE SOCIETY, ENVIRONMENT, GOVERNANCE

MINING COMPANIES IMPACTS/ ENVIRONMENTAL IMPACTS

- Water energy nexus management; soil pollution
- Decarbonizatio; air pollution
  - biodiversity ; GREEN PRODUCTION

MINING COMPANIES IMPACTS/ SOCIAL IMPACTS

- LOCAL COMMUNITY IMPACT
- RELOCATION
- TRANSPARENCY
- CONFLICT MINERALS

III 2. ARTISANAL MINING

ARTISANAL MINING IMPACTS

I. VULNERABLE WOMEN AND SAFTY PROBLEMS

ARTISANAL MINING IMPACTS

II. CHILD LABOUR

400 thousand children have no access to education in the mining areas of Lualaba Province. They are in the mines to work and support their poor families.

ARTISANAL MINING IMPACTS

II. CHILD LABOUR

Children working with cobalt and copper

WOMEN WORK WASHING COBALT AND COPPER ORES

Going underground in a 100m shaft to manually extract cobalt and copper for our phones and tablets

ARTISANAL MINING IMPACTS

CONFLICT MINERALS

More than 10 million Congolese have died as a result of wars and conflicts over the exploitation of the minerals that have powered our phones and tablets for the past 20 years.

My God, my God, why have you abandoned me? (Mt 27, 45-47; Ps 22,1)

SIGNS OF HOPE

- ADVOCACY AND NETWORK FOR :
- DUE DILIGENCES
- COMPLIANCES

ON MINING SUPPLY CHAIN AND VALUE OF CLEAN TECHNOLOGIES

ARRUPE CENTER-CIJ

ALTERNATIVE MINING PROJECT
ALTERNATIVE ECONOMY PROJECT

DUE DILIGENCE AND COMPLIANCES.

THE CONGO, THE LABORATORY OF ALL INTERNATIONAL INITIATIVES

FIVE-STEP PROCESS: CLASSIC APPROACH

Establishment of sound management systems (policies)

Identification and assessment of supply chain risks

Designing and implementing appropriate strategies to address the identified risks

Independent audits

Accountability of the due diligence exercise through transparent reporting

DUE DILIGENCE AND COMPLIANCES.

THE CONGO, THE LABORATORY OF ALL INTERNATIONAL INITIATIVES

- **DUE DILIGENCE AND COMPLIANCES.**
  - **VOLUNTARY OR MANDATORY?**

❑ PROLIFERATION OF CERTIFICATION AND TRACALIBITY MEASURES AND INITIATIVES OF DUE DILIGENCE AND ESG
❑ NEED FOR HARMONIZATION OF INITIATIVES
❑ LITTLE IMPACT ON THE GROUND LEVEL IN THE DRC
❑ BLEACHING OF MINERALS
❑ GREENWASHING

DUE DILIGENCE AND COMPLIANCES.

THE CONGO, THE LABORATORY OF ALL INTERNATIONAL INITIATIVES

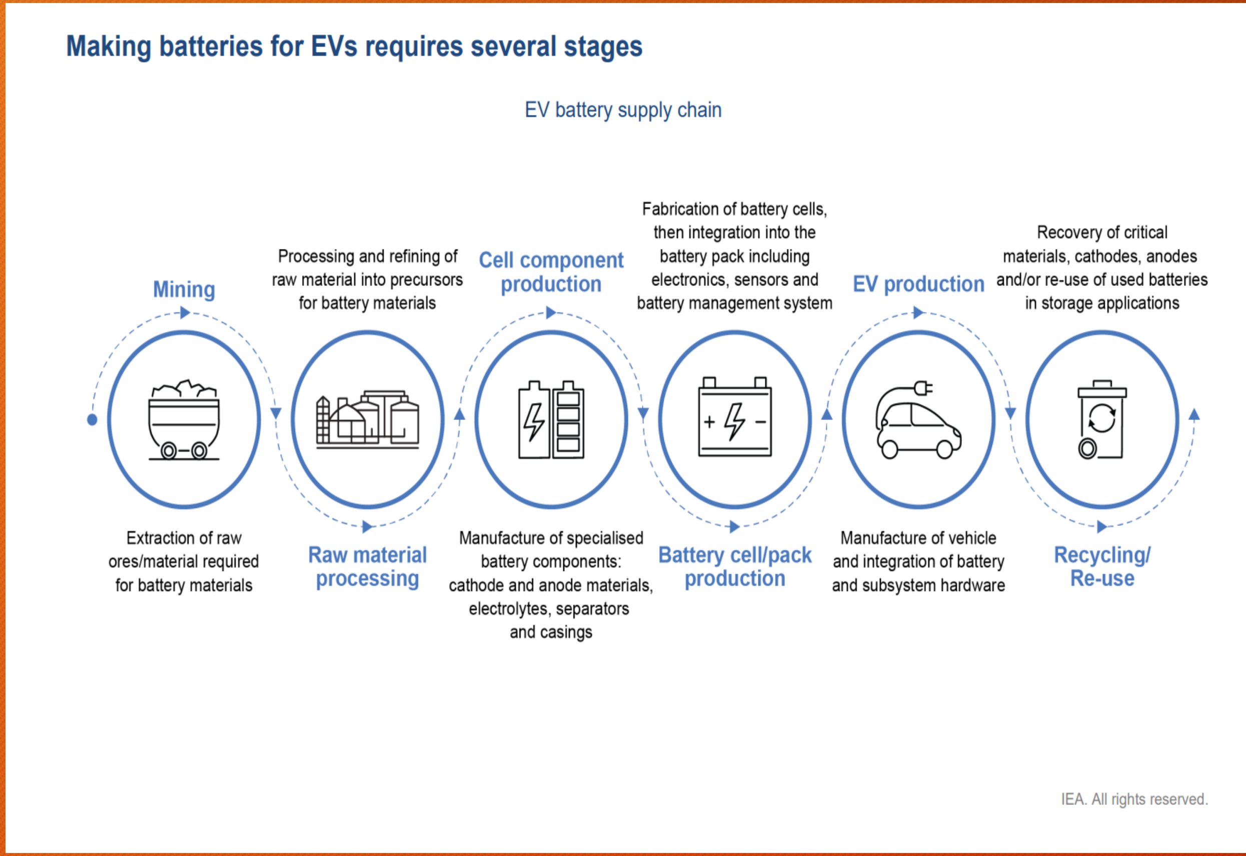
- **VOLUNTARY OR MANDATORY?**

TO ENSURE THE EFFECTIVENESS OF ESG AND COMPLIANCE, A COMPROMISE MUST BE FOUND BETWEEN THE VOLUNTARY AND THE MANDATORY.

ACCESS TO JUSTICE FOR THE WEAKEST AND MOST VULNERABLE VICTIMS OF THE TRANSITION IS A MAJOR REFLECTION FOR A JUST TRANSITION

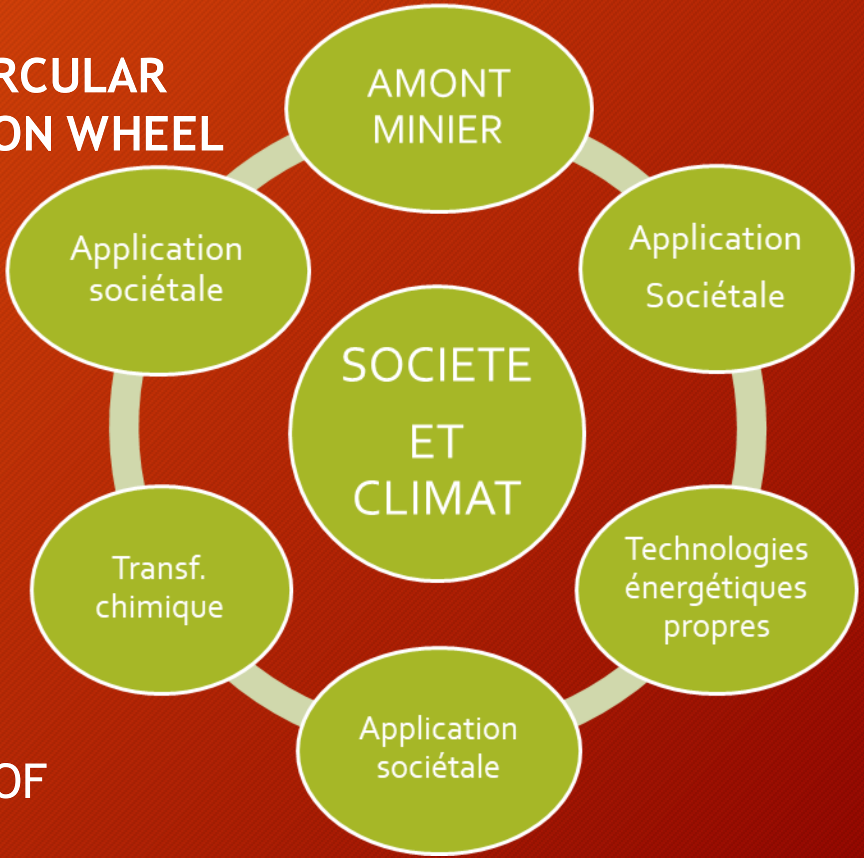
IN THIS WAY, THE GAINS AND LOSSES OF THE TRANSITION CAN BE SHARED IN A CIRCULAR WAY ACROSS ALL VALUE CHAINS FROM UPSTREAM MINING TO DOWNSTREAM TECHNOLOGY.

ANOTHER TRANSITION IS NEEDED: THE CIRCULAR TRANSITION FOR ALL VALUE CHAINS OF TRANSITION AND BATTERY TECHNOLOGIES



BUILDING A CIRCULAR TRANSITION

THE CIRCULAR TRANSITION WHEEL



THIS REQUIRES A SOCIAL TRANSITION IN OUR MODES OF PRODUCTION, CONSUMPTION AND LIVING.

GOVERNING THE TRANSITION IS LIKE GOVERNING THE CACOPHONY

- A MAXIMUM OF MANDATORY RULES IS DESIRABLE IN TERMS OF ESG AND COMPLIANCES FOR ALL VALUE CHAINS OF TRANSITION TECHNOLOGIES

THANK YOU