A blue ribbon graphic with a 3D effect, featuring a lighter blue top surface and a darker blue bottom surface, framing the text on the left.

# The Future of Mining in Africa

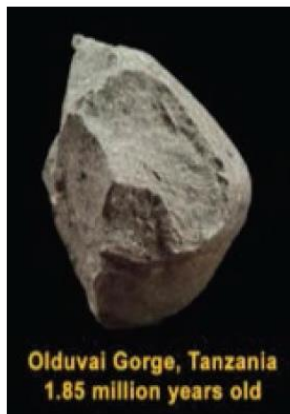
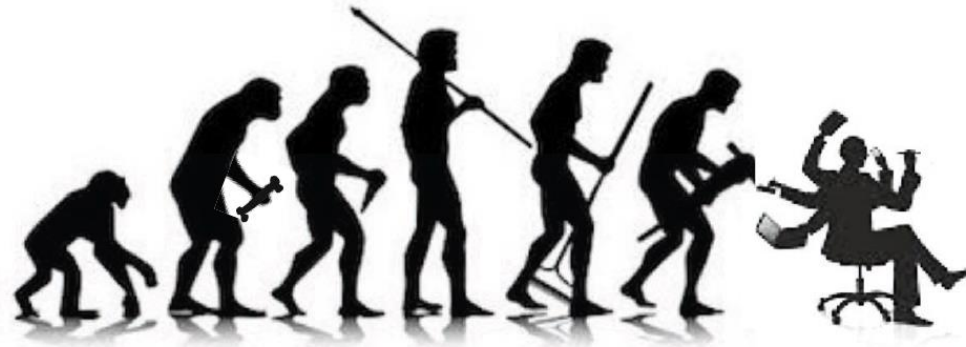
by Antonio M. A. Pedro, Director ECA  
Regional Office for Central Africa

# A Mixed Profile for Sure

- Minerals are ubiquitous: Resource intensity driven by demographics, state of development, urbanization, other infrastructure needs, and key transitions (energy and transport) can support Africa Mining Inc
- **The issues are very well understood (ISG Report)**
- Excellent frameworks and pathways have been clarified (AMV and CMV Guidebook)
- First class mineral resource endowments
- AfCFTA and COVID-19 supply side shocks strengthen the business fundamentals of an inward-looking resource-driven and trade-induced development agenda
- But legacy from the colonial past persist: Enclaves with few linkages with other sectors of the economy
- **Locked in lower end of global value chains**
- Poor competitiveness scores
- Unfavourable perceptions (e.g. Fraser Policy Perception Index)
- Deep decarbonisation, resource-efficiency and decoupling imperatives gaining traction: The case of stranded resources
- **Overall implementation remains a concern: We cannot blame it on lack of capacity!**

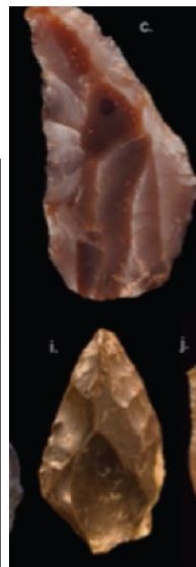


Minerals in your life



Olduvai Gorge, Tanzania  
1.85 million years old

Old Stone age  
(~3.3-0.3 Ma)



Middle Stone Age  
(300-50 Ka)



Late Stone Age  
(50-10 Ka)



Neolithic Age  
(10,000 -3,000 y)



Copper Age  
(before 4000BC)



Electricity Age  
(>1890s)

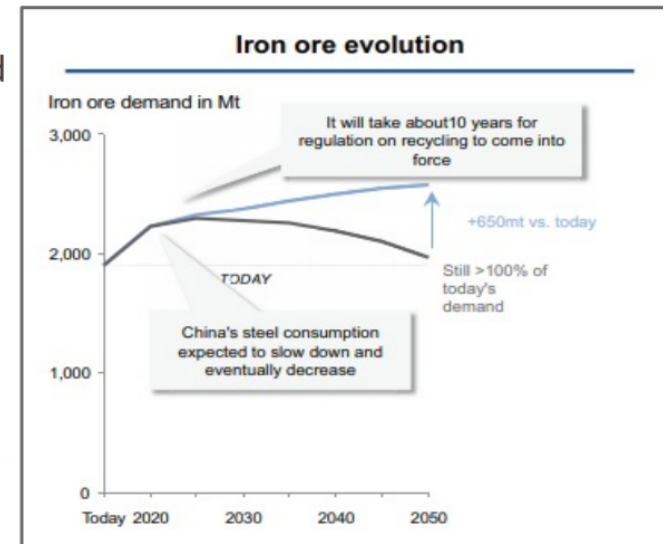


Renewable energy,  
Electric vehicles

# Global Material Demand Projections

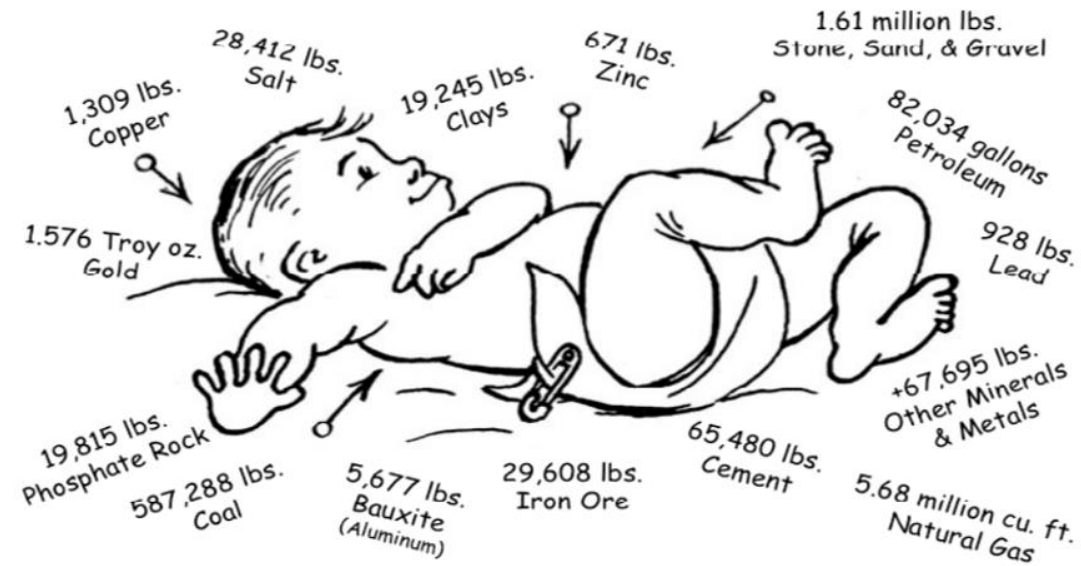
Global populations are expected to jump to approx **9 billion people by 2030**, including **3 billion new middle class consumers** (ICMM, 2016).

1. If emerging economies use a similar suite of technologies and lifestyles as developed countries, global in-use material stocks will increase **3-9 times**.
2. OECD projections indicate a **doubling** of global materials use by 2060.
3. Even IRP scenarios proposing ambitious resource efficiency transition only shave these needs by **one quarter**.



World Economic Forum 2015

## Every American Born Will Need . . . **1633 tonnes**



**3.6 million pounds of minerals, metals, and fuels in their lifetime**





## Minerals and Africa's Development

The International Study Group Report on  
Africa's Mineral Regimes



Economic Commission for Africa

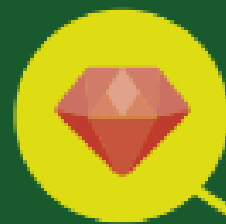


African Union

# Africa Mining Vision

- The AMV is deliberately ambitious
- It is what is required to change the path and destiny of Africa's industrialization and fight against poverty
- The realization of the Vision hinges on strong political will and a commitment to developing strong capable mineral management systems and institutions
- It requires an astute understanding of Africa's relative advantages in the global mineral value chain
- Regional integration will maximize its benefits
- Robust partnerships are needed

## Africa ranks 1st or 2nd in global reserves of:



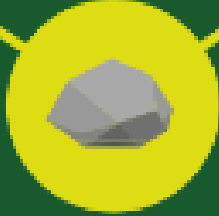
Industrial diamonds



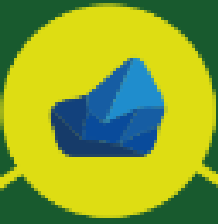
Platinum group metals



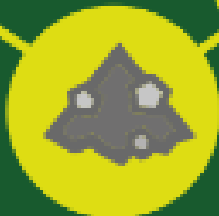
Phosphate rock



Bauxite



Cobalt



Zirconium

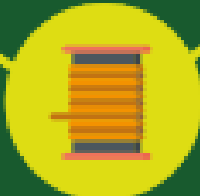


Vermiculite

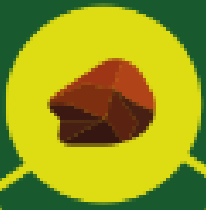
## Among other minerals, Africa has vast reserves of:



Gold



Copper



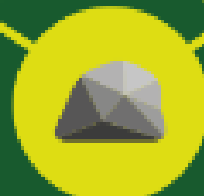
Iron ore



Lead



Coal



Manganese



Natural diamonds

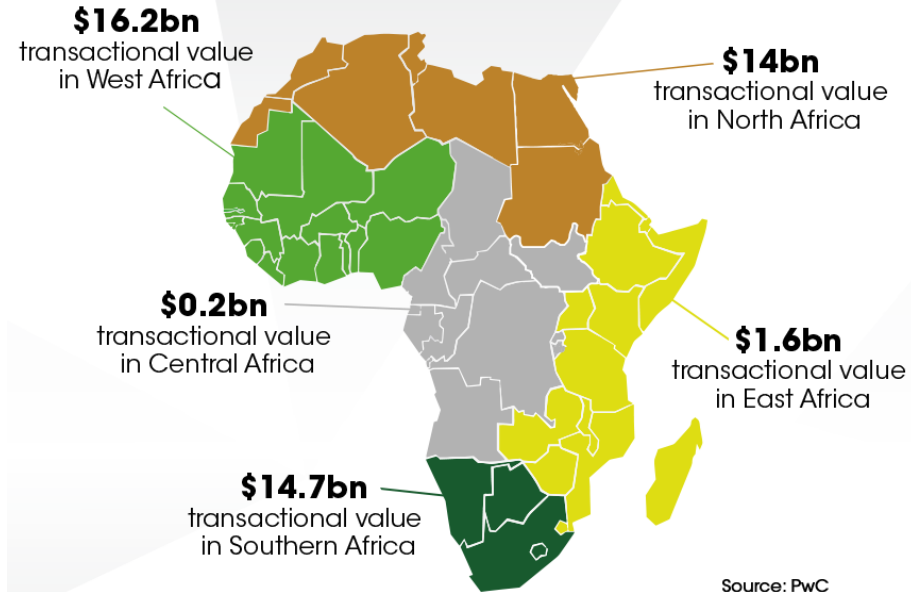


Uranium

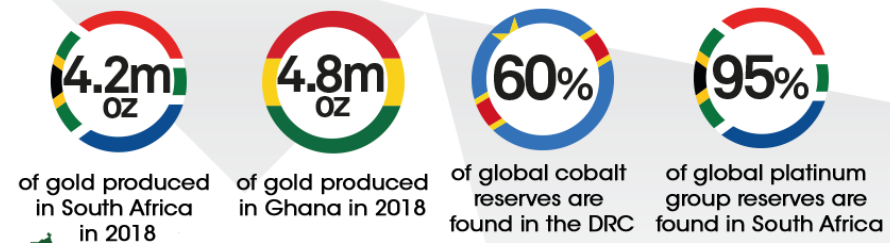


## Foreign direct investment into Africa's mining sector

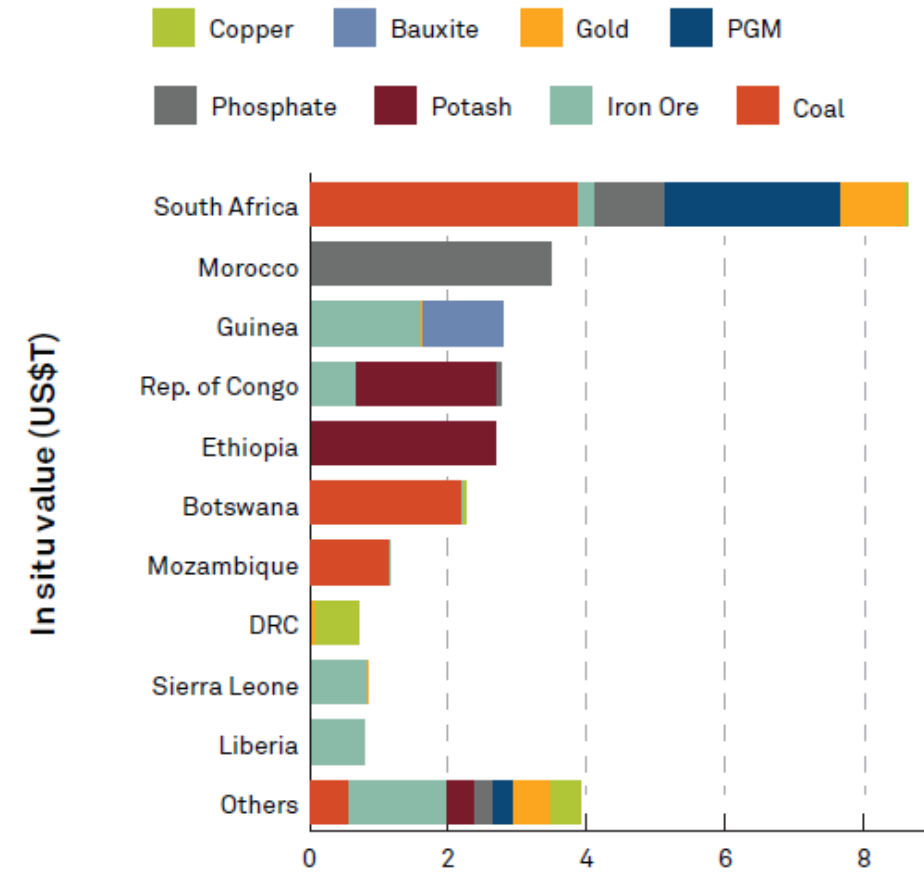
**\$47bn** of mining deals between multinationals and African partners in 2018



**Ghana and South Africa are among the top 10 gold producing countries globally, with Ghana recently overtaking South Africa after many years as global and continental leader**



### Reserves & resources in situ value for top commodities



**ELEMENTS (MOSTLY METALLIC  
ELEMENTS) IN INDUSTRIAL  
SCALE USE FOR ENERGY  
RELATED APPLICATIONS.**  
 Author: P. Christmann  
 (unpublished in English,  
 published in French, this being  
 an updated version November  
 2019)

H																	He
Li	Be										B	C	N	O	F	Ne	
Na	Mg										Al	Si	P	S	Cl	Ar	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup	Uuh		Uuo

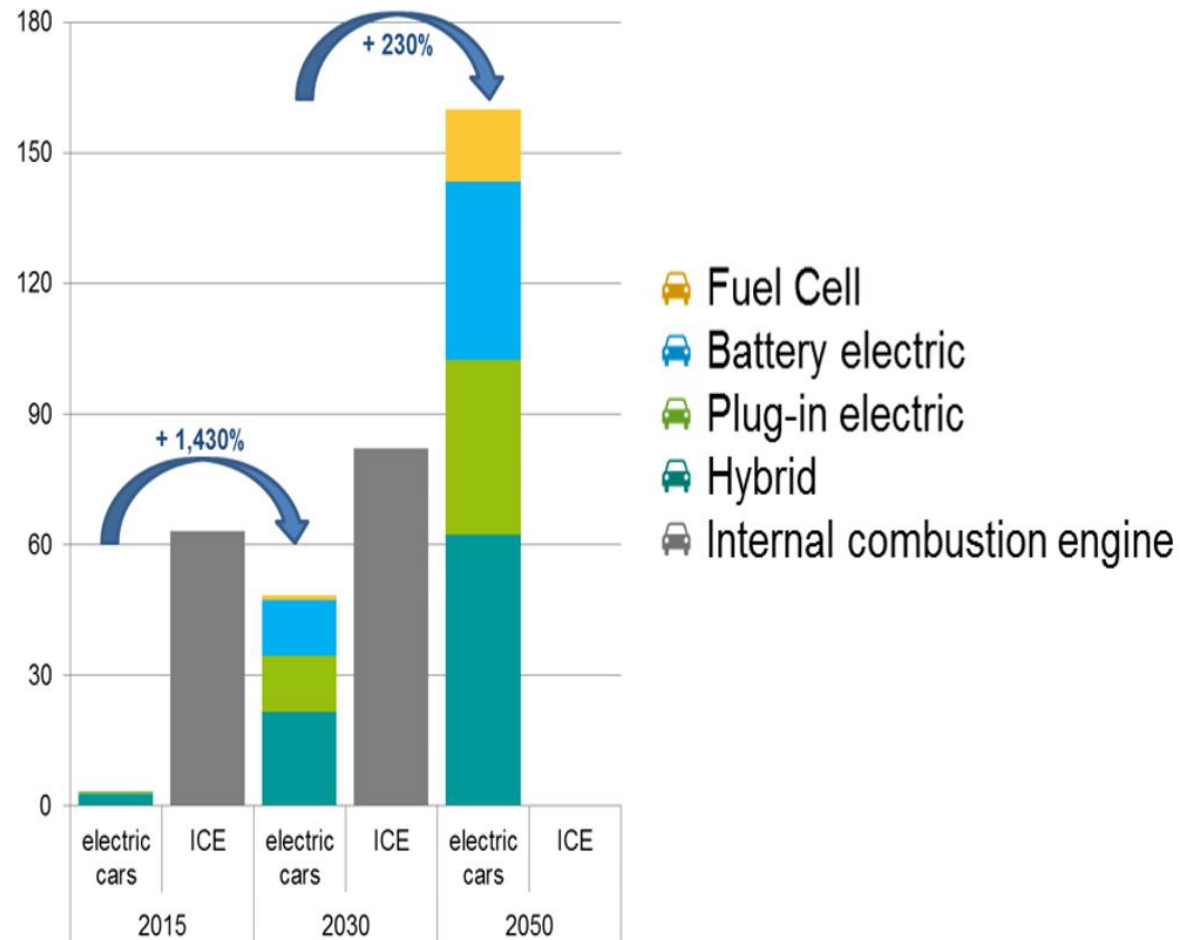
Lanthanides	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Hm	Er	Tm	Yb	Lu
(Rare Earth)														
Actinides	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Energy storage  
 Connectivity  
 Energy saving  
 Catalysis (fuel cells)

Permanent magnets for windmills and electrical/ hybrid cars

Electricity generation and transport  
 Elements specific to nuclear electricity generation  
 Photovoltaics  
 Lighting  
 Supraconductors  
 Oil and gas drilling muds

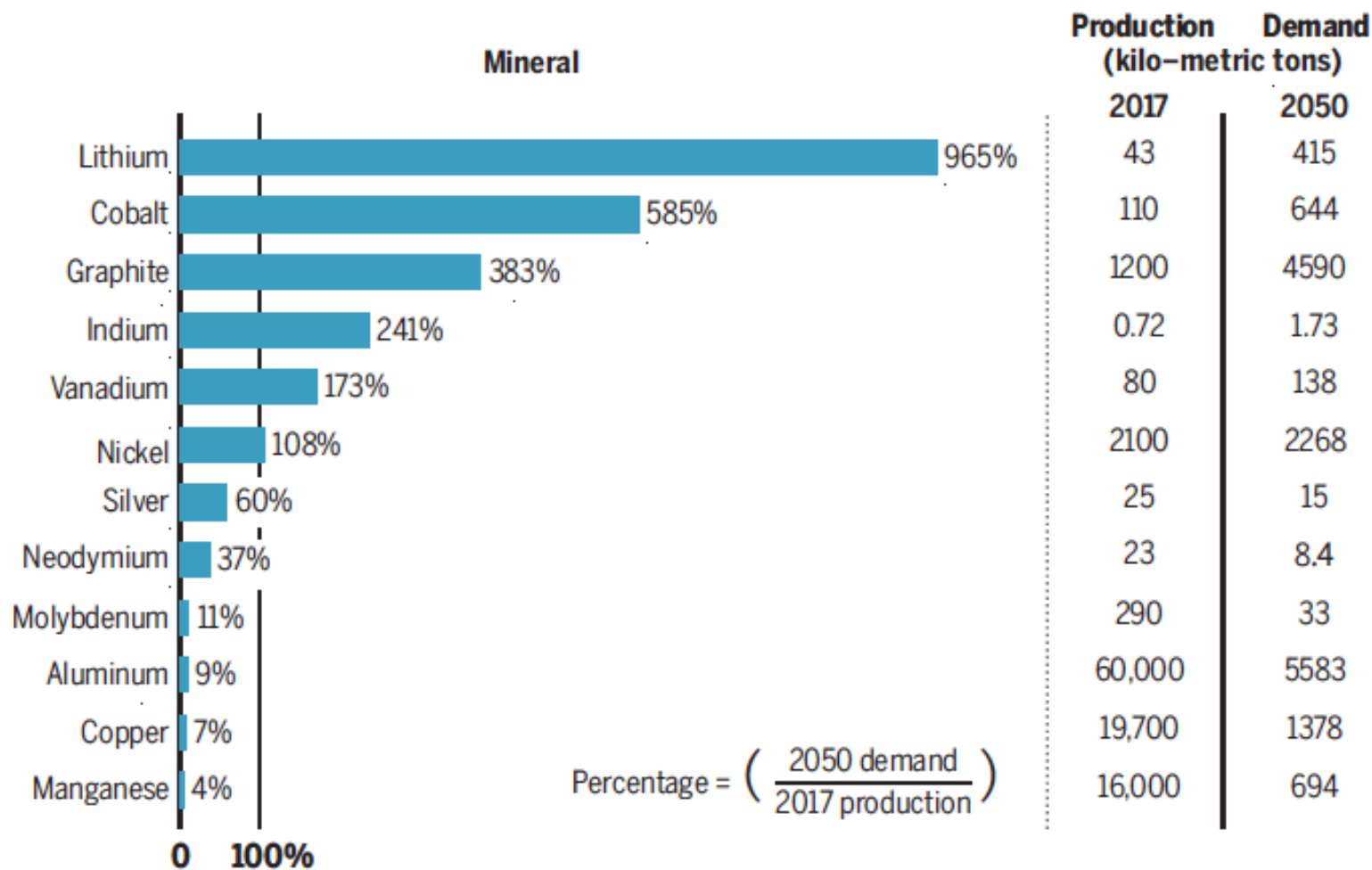
Figure 1: Annual passenger vehicles sales in the 2 degree scenario (in million)



Source: Oeko-Institut calculations based on [11]

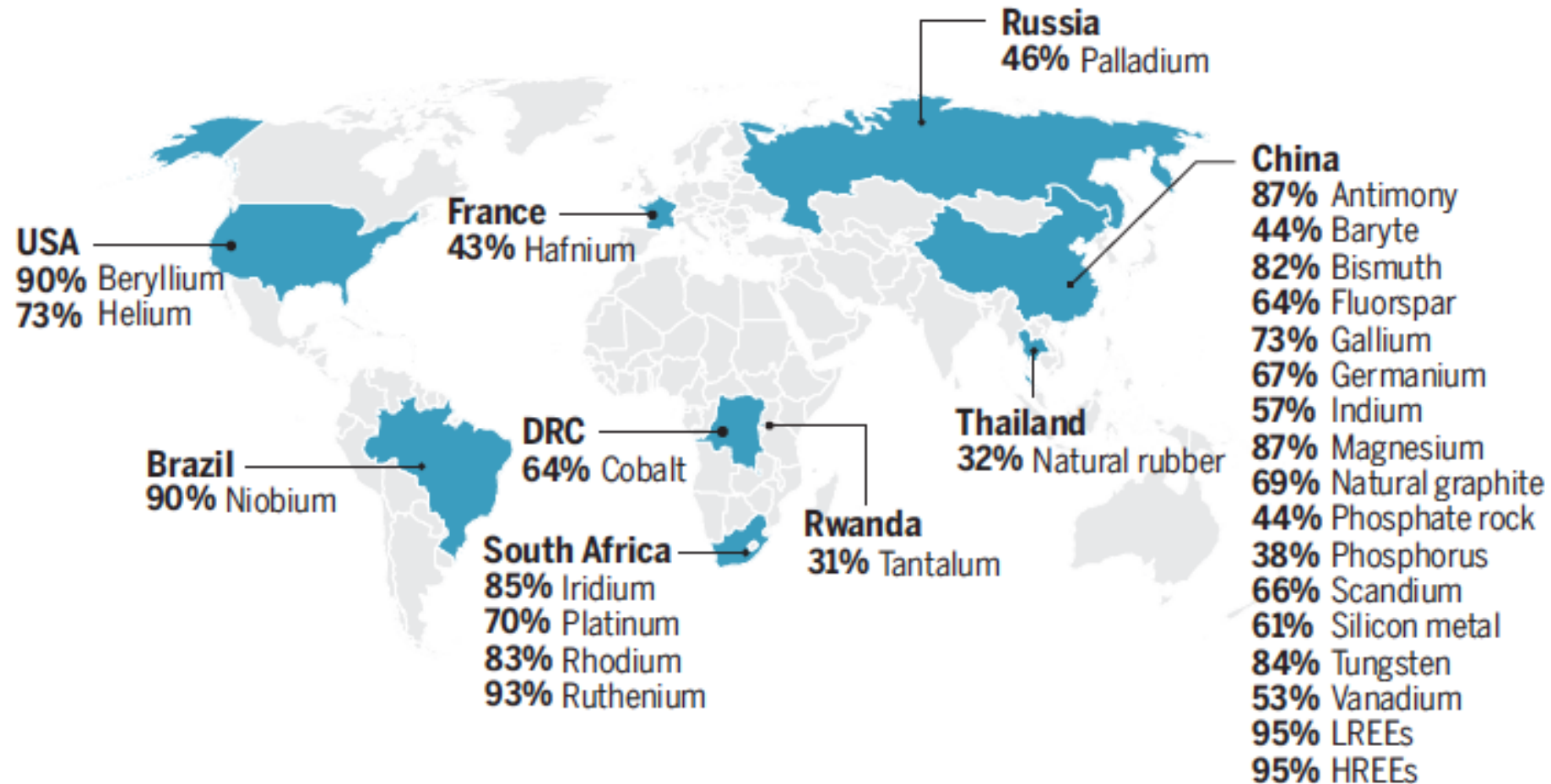
Based on the stock data the yearly sales of electric passenger vehicles, trucks, busses, 2-3-wheeler and pedelecs were calculated.

## Growth in mineral needs for low-carbon energy technology



All production and demand data reflect annual values. 2017 data reflect annual production for all uses. 2050 data reflect estimated demand for only low-carbon energy technology uses. Data from (7).

## Countries accounting for the largest share of critical raw materials



DRC, Democratic Republic of Congo; LREEs, light rare earth elements; HREEs, heavy rare earth elements. Figure modified from European Commission, "Third list of critical raw materials for the EU of 2017" (European Commission, 2017); [https://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical\\_en](https://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_en).



## Africa's minerals are fuelling the new digital economy & green energy transition



The continent's mineral resources are crucial to meeting growing demand for lithium-ion batteries for electric vehicles, smartphones and off-grid energy storage

Many African nations lead in the production of battery metals and fuel cell/filtration metals



Zimbabwe & Namibia are among the top 10 nations for lithium production, with Zimbabwe holding the world's largest known deposit

Most of the world's cobalt is found in Zambia and the DRC, with the DRC producing over 60% globally



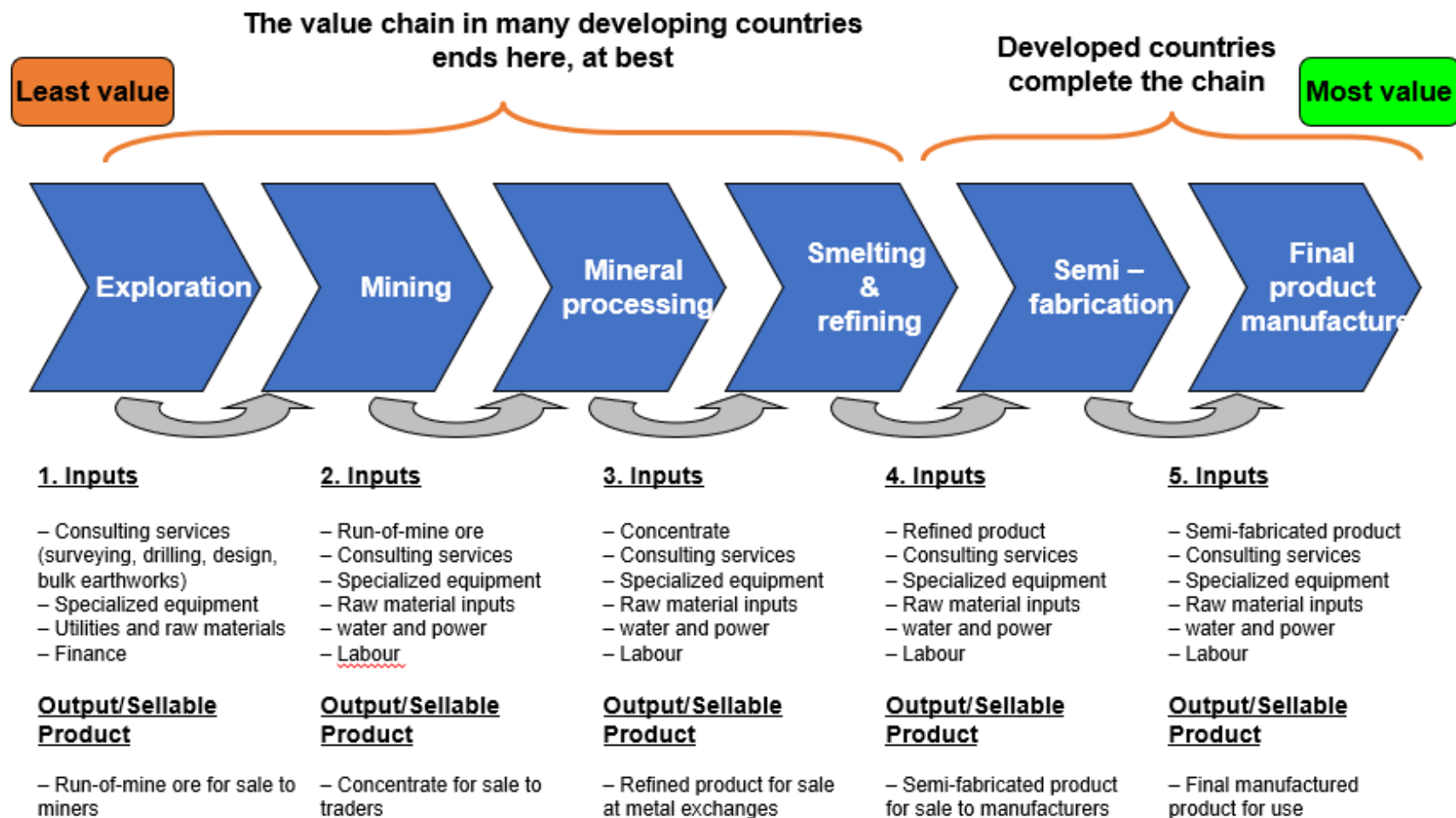
80% of global manganese resources are found in South Africa, while Gabon and Ghana are also top 10 global producers

Zambia and the DRC are among the world's top 10 producers of copper, with South Africa and many other African nations also key producers



South Africa is the world's no.1 producer of platinum, offering 75% globally, with Zimbabwe the world's no.3, supplying 9%

# The Mining Value Chain and Developing Countries



Source: Adapted from Lydall, 2010

# We Don't Feature Well: Should We Get Worried?



- Policy Perception Index (PPI), a “report card” to governments on the attractiveness of their mining policies: It gives policy climate the same weight as geologic and economic considerations when considering investment considerations
- The PPI is composed of survey responses to policy factors that affect investment decisions, including uncertainty concerning the administration of current regulations, environmental regulations, regulatory duplication, the legal system and taxation regime, protected areas and disputed land claims, infrastructure, socioeconomic and community development conditions, trade barriers, political stability, labor regulations, quality of the geological database, security, and labor and skills availability
- Predictability matters

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# What should Africa do? The strategies

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- **Update the AMV Theory of Change:** Multipolar actors, movement and mission
- Mainstream the AMV at national (CMVs) and regional levels and secure buy in: Broadening ownership and agency is essential
- Advocacy, communication and dissemination: Expand the coalition for change and build new champions
- A win-win conversation aimed at potentiating a future beyond mining
- Improve the level/quality of Africa's resource potential data (gm and mineral inventory): It strengthens the continents' bargaining power
- **Exercise power: The Case for Africa's Raw Materials and Critical Minerals Strategy**
- Fight for more fiscal space: Robust, but flexible tax regimes that are responsive to economic circumstances
- Innovate licensing schemes to boost competition and realise better value: Go beyond "First come and first served" and explore auctioning through differentiation of mineral terrains
- **Unlock and mobilize domestic investment (local listing, sovereign ratings in local currency, capital markets, SPVs, etc), and local captains of industry**
- Resource-driven and trade induced industrialization at the centre of national AfCFTA strategies and building back and forward better
- **Smart local content**
- Domesticate governance and transparency agenda (CSOs, legislature, etc)
- Use existing tools and guidelines

# The Case for Africa's Raw Materials and Critical Minerals Strategy: Others Have It

- Path to 2063
- **Africa Green Deal**
- **Why not an African Battery Alliance?**
- The Future of Food
- Deep Sea Mining and Out of Space Exploration
- Deep decarbonisation, stranded assets and just transitions
- Global vision on the circular economy and resource efficiency
- **ANRC, AMDC, AMGC in collaboration with IRP and the International Institute for Applied Systems Analysis (IIASA) : Publish a regular Africa Resources Outlook**
- Foster a transition from “Resources for infrastructure to resources for industrialization and green growth”: Road and Belt Initiative, OACPS-EU Partnership (Post 2020 Cotonou Partnership Agreement), Better Utilization of Investments Leading to Development ACT (BUILD ACT), etc
- **Engagements with G20 and other geopolitical fora**

## Africa's path to 2063: Choice in the face of great transformation







EUROPEAN  
COMMISSION

Brussels, 3.9.2020  
COM(2020) 474 final

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL  
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Critical Raw Materials Resilience: Charting a Path towards greater Security and  
Sustainability**



# A COUNTRY MINING VISION GUIDEBOOK

Domesticating the Africa Mining Vision





## Guiding Principles for Durable Extractive Contracts



**IGF**

INTERGOVERNMENTAL FORUM  
on Mining, Minerals, Metals and  
Sustainable Development

# GUIDANCE FOR GOVERNMENTS

Local content policies

**JULY 2018**



## Scaling up value creation and local development in the mining sector in Ghana





## Extracting with Purpose

Creating Shared Value in the Oil and Gas  
and Mining Sectors' Companies and Communities

FOREWORD BY MICHAEL E. PORTER





## LEVELS OF SHARED VALUE CREATION FOR EXTRACTIVES COMPANIES

Reconceiving Products and Markets	1	Redefining Productivity in Value Chains	2	Creating an Enabling Local Environment	3
<ul style="list-style-type: none"><li>→ Build local markets for intermediate products created by extractive activity (e.g., drinking or irrigation water, electricity)</li></ul>		<ul style="list-style-type: none"><li>→ Improve local workforce capabilities</li><li>→ Strengthen suppliers in the value chain</li><li>→ Increase local disaster and emergency preparedness, response, and rehabilitation capabilities</li><li>→ Improve utilization of water, energy, and other resources used in operations</li></ul>		<ul style="list-style-type: none"><li>→ Develop the local cluster supporting the extractives sectors</li><li>→ Invest in shared infrastructure and logistics networks</li><li>→ Partner with other local clusters and government in building community infrastructure</li><li>→ Play an active role in broad-based economic and community development</li><li>→ Improve local and national governance capacity</li></ul>	



# Some success factors

- Shared vision, but phased (Short, medium and long-term actions) and context specific action (There is no “one size fits all”)
- Leadership, political will, proactive government action
- Focused and effective public policy
- Policy space, a capacitated African developmental state: Ownership of the development process is a must
- Independent, accountable institutions able to operate across longer-term horizons
- Prioritise the sector and reflect it in relevant budget and planning frameworks
- Credible multistakeholder engagement and decision making

# Implementation Matters

- One thing for sure: We don't need to rewrite the AMV! Its tenets are still valid
- Governments cannot do it alone
- The value proposition of Africa Mining Inc needs to be demonstrated and local champions and captains of industry should be among the change agents
- We need better growth diagnostic studies, value chains analysis and scenario modelling to refine our strategies, validate our theories of change, and calibrate our pathways
- Mineral Policy should be fully integrated with Trade and Industrial Policy: The Minerals, Industrial, Trade, Agricultural, Chemical and Energy Complex
- The “basics” need to be fixed
- And, of course, “One Thing Leads to Another...”

