



# JRC CONFERENCE AND WORKSHOP REPORT

## Building Africa-EU raw materials knowledge base

*Proceedings of the  
“Knowledge needs – EU-Africa  
focus” event*

*Raw Materials Week, Brussels,  
18 November 2021*

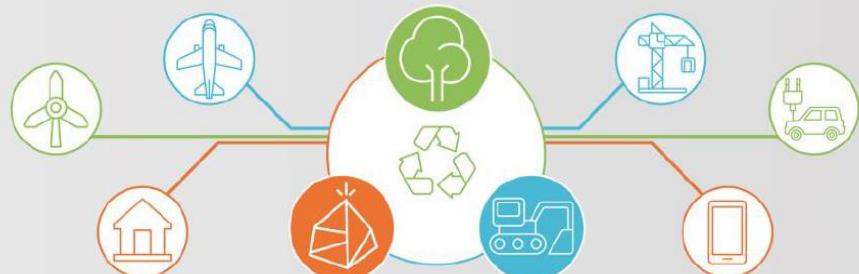
d'Elia, E., Hamor, T., Manfredi, S., Pennington, D.

2022



## Raw Materials Week

15-19 November 2021



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## **Abstract**

The sixth edition of the "Raw Materials Week" took place from the 15 to 19 November 2021, as a hybrid and online event, gathering a wide range of stakeholders discussing policies and research initiatives in the field of raw materials.

The 2021 Raw Materials Week was centred around the eighth annual High-level Conference of the European Innovation Partnership (EIP) on raw materials. Several complementary events took place, addressing the latest news on raw materials in the EU, including: Critical Raw Materials, Trends in innovation and Skills for raw materials, EU Horizon technology success stories, EU-Canada Partnership, UNECE Resource management.

As part of the event, the JRC jointly with DG GROW, organized the 4<sup>th</sup> EU Raw Materials Knowledge Base event titled "Knowledge needs – EU-Africa focus", on November 18<sup>th</sup>, 2021.

This report is a proceeding note of this event. It gives an overview of the themes touched by the speakers in a concise and balanced way. Finally, it includes (as Annexes) the agenda, the speakers' biography, and the slides and available abstracts of the presentations.

The event also touched upon few broader aspects in the context of the relation between the EU and the Africa continent, including the needs of both parties for a fair, responsible and secure transition towards a green society – highlighting how sustainable raw materials value chains could contribute to these overarching objectives.

# **Building EU-Africa raw materials knowledge base**

## **Introduction**

This report is a proceeding note of the 4<sup>th</sup> EU Raw Materials Knowledge Base event titled “Knowledge needs – EU-Africa focus”, organized jointly by the JRC and DG GROW, held on November 18<sup>th</sup>, 2021 in the frame of the EU Raw Materials Week.

It focuses on the African continent and its countries in terms of raw materials value chain knowledge. It is structured with an overall wrap-up of the entire session presented in this chapter, followed by annexes including specific material of the event: the agenda, the speakers’ biography and slides and available abstracts of the presentations.

## **The EU policy context**

Transitions towards a low carbon society and digitalisation, as well as supporting key sectors such as defence and space, are reliant on the sustainable and secure supply of raw materials. To achieve this in an informed manner, business and governments should have timely and appropriate knowledge.

The European Commission (EC) foresees achieving sustainable and secure supply by working closely with partners, facilitating trade associated with careful management of the environment, through ensuring value chains resulting in positive contributions to involved communities, and by increasing circularity of material flows within economies. Given that many value chains go beyond EU borders, knowledge provision and management must also be a fundamental part of the EC’s interactions and partnerships.

*The European Green Deal*<sup>(1)</sup> aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are zero net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. Access to resources is a strategic security question for Europe’s ambition to deliver the Green Deal.

Ensuring the supply of sustainable raw materials, in particular of critical raw materials, necessary for clean technologies, digital, space and defence applications by diversifying supply from both primary and secondary sources is therefore one of the pre-requisites to make this transition happen. The strategy stresses that the trade policy needs to ensure undistorted and fair trade and investment in raw materials necessary for the EU’s green transition.

For this reason, many actions, programmes, initiatives and side agreements have been stipulated with a specific focus on raw materials, addressing a variety of aspects including autonomy/resilience, due diligence, sustainability and circular economy aspects. Among them:

- The European Partnership on Responsible Minerals<sup>(2)</sup> promotes responsible sourcing particularly in fragile and conflict prone areas, and is part of the accompanying measures in support to upstream and downstream the Conflict Minerals Regulation(see next sub-chapter).
- The EU-ACP (Organisation Of African, Caribbean And Pacific States) Development Minerals Programme<sup>(3)</sup>, funded by the EU and the UNDP(United Nations Development Programme), which aims to develop capacity and share best practices within the raw materials’ sector.
- The Extractive Industry Transparency Initiative<sup>(4)</sup>, an attempt enable the disclosure of information along the value chain, a quite efficient measure in pushing actors to lay open the entire revenues derived from the supply chain. This Initiative involves 55 members, 27 from Africa.
- The G7 CONNEX Initiative<sup>(5)</sup> supports governments of developing countries and economies in transition, in the negotiation of complex commercial contracts in the extractive sector, providing highly specialized expertise in mining, financial, fiscal or legal areas.

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<sup>(1)</sup> COM(2019)640

<sup>(2)</sup> <https://europeanpartnership-responsibleminerals.eu/>

<sup>(3)</sup> <http://www.developmentminerals.org/index.php/en/>

<sup>(4)</sup> <https://eiti.org/>

<sup>(5)</sup> <https://www.connex-unit.org/en/>

- The NDICI (Neighbourhood, Development and International Cooperation Instrument) – Global Europe (2021-2027)<sup>(6)</sup>, a funding programme, which highly involves delegations on site. It focuses on the countries by pulling resources and expertise, at the specific country level<sup>(7)</sup>.
- The new 2020 CEAP (Circular Economy Action Plan)<sup>(8)</sup>, constituted of 35 separate actions. It focuses on the different aspects of the life-cycle of products, with the objective of a more sustainable product use in the EU: products with a longer life, reusable, recyclable, ensuring less waste production, and more value retention. It gives specific attention on key products value chains (electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction, food water and nutrients). Under this umbrella, different Actions are taken internationally, as the Global Action on Plastics<sup>(9)</sup> and the creation of a new Global Alliance on Circular Economy and Resource Efficiency<sup>(10)</sup>.
- The 2020 Action Plan on Critical Raw Materials (CRM)<sup>(11)</sup>, named “*Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability*”, in which is presented the 2020 EU Critical Raw Materials List, and the “*challenges for a secure and sustainable supply of critical raw materials and actions to increase EU resilience and open strategic autonomy*”. With a strong focus on the concept of diversification, as to “*diversify supply with sustainable and responsible sourcing from third countries, strengthening rules-based open trade in raw materials and removing distortions to international trade*”<sup>(12)</sup>.

Finally, in loco, in cooperation with OECD, DG TRADE has a key role in assisting a fair negotiation among parties, assuring an integration of the value chains between the EU and its partner countries, helping sustainable and diversified supply from 3<sup>rd</sup> countries.

DG TRADE, monitoring, and consulting the African partners on how to improve the general framework on investment, aims to ensure fair and undistorted trade options and to achieve a gradual integration of the value chains between EU and Africa, to a mutual benefit.

### **A focus on the “EU Conflict Minerals Regulation” and the OECD’s Due Diligence Guidance**

Entered into force in 2017, the so-called “EU Conflict Minerals Regulation”, reached full implementation in 2021, after a long preparatory phase. It applies to EU importers of minerals and metals consisting of or containing 3Ts (tin, tantalum and tungsten) and gold, coming from CAHRAs areas, when import volumes exceed a certain threshold.

As explicated by its complete name: the “Regulation laying down supply chain due diligence obligations for Union importers of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas”<sup>(13)</sup> defines the CAHRAs as areas in a state of armed conflict or fragile post-conflict. The definition also covers areas witnessing weak or non-existent governance and security, such as failed states, and widespread and systematic violations of international law, including human rights abuses.

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<sup>(6)</sup> [https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes/global-europe-neighbourhood-development-and-international-cooperation-instrument\\_en](https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes/global-europe-neighbourhood-development-and-international-cooperation-instrument_en)

<sup>(7)</sup> NDICI – Global Europe’s specific objectives are: 1. to support and foster dialogue and cooperation with third countries and regions in the Neighbourhood, in Sub-Saharan Africa, in Asia and the Pacific, and in the Americas and the Caribbean; to develop special strengthened partnerships and enhanced political cooperation with the European Neighbourhood, founded on cooperation, peace and stability and a shared commitment to the universal values of democracy, rule of law and respect for human rights, and aiming at deep and sustainable democracy and progressive socio-economic integration as well as people-to-people contacts; 2. at global level, to protect, promote and advance democracy, and rule of law, including accountability mechanisms, and human rights including gender equality and the protection of human rights defenders, ; to support civil society organisations, to further stability and peace, and prevent conflict, thereby contributing to the protection of civilians, to address other global challenges such as climate change, protection of biodiversity and the environment, as well as migration and mobility; 3. to respond rapidly to: situations of crisis, instability and conflict including those which may result from migratory flows and forced displacement and hybrid threats; resilience challenges, including natural and man-made disasters, and linking of humanitarian aid and development action; as well as the Union’s foreign policy needs and priorities.

<sup>(8)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>

<sup>(9)</sup> [https://ec.europa.eu/environment/topics/plastics/global-action-plastics\\_en](https://ec.europa.eu/environment/topics/plastics/global-action-plastics_en)

<sup>(10)</sup> [https://ec.europa.eu/environment/international\\_issues/qacere.html#:~:text=Bringing%20together%20governments%20and%20relevant,production%2C%20building%20on%20efforts](https://ec.europa.eu/environment/international_issues/qacere.html#:~:text=Bringing%20together%20governments%20and%20relevant,production%2C%20building%20on%20efforts)

<sup>(11)</sup> <https://ec.europa.eu/docsroom/documents/42849>

<sup>(12)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0474&from=EN>

<sup>(13)</sup> <https://op.europa.eu/en/publication-detail/-/publication/8b0e378b-3c59-11e7-a08e-01aa75ed71a1/language-en>

The regulation imposes to the EU importers who meet the requirements to mandatorily follow the Due Diligence Guidance for Responsible Supply Chains from Conflict-Affected and High-Risk Areas" (OECD Due Diligence Guidance).

Concerning the OECD's Due Diligence Guidance, studies have been verifying the voluntary scheme's impacts on the local community, and results are rather mixed. For this reason, in 2021 was published a Monitoring & Evaluation Framework<sup>(14)</sup> to investigate the entire ecosystem of different interventions and outcomes of the Due Diligence Guidance.

The framework monitors the driving forces, measures the companies' performances (on the entire value chain upstream to downstream), and how companies' performance is affecting the trade in minerals. Finally, it measures the outcomes and impacts associated with 'on the ground' due diligence in terms of miners (as child labour, forced labour, corruption, political instability, etc...). The framework is complex and combines 8 separate meta studies; results are going to be published in 2022.

Important data gaps exist affecting this monitoring framework, such as in relation to inspection data, as for the case of the ASM(Artisanal and Small-Scale mine), for which information can be found only locally, with a deep 'on the ground' work, in cooperation with local associations and NGOs.

The outcome of the interactions between the uptake and the impacts is typically also unclear: as the phenomenon of *de-risking*, or the data on cost and benefits around the value chain (how is the cost of due diligence shared along the value chain), or the role of control points in global metals, or, finally, the attribution and contribution correlation problem.

### **The role of knowledge in Africa and the green transition perspective**

Pushed by the urgency to meet carbon neutrality by mid-century, countries will increase their share of renewable sources. Hence, the low-carbon future will be very mineral intensive as clean energy technologies need more materials than fossil-fuel-based technologies.

Africa hosts significant volumes of these strategic/green minerals, comprehensive of the Rare-Earth Elements (REE), key ingredients of permanent magnets used in high-performance wind turbines and electric motors. The known reserves and resources are however believed to be a tip of the iceberg as Africa is largely geologically unexplored and very patchy in its development.

It is within this context that the African Development Bank has undertaken several value chains' analyses to define an informed development of a possible African strategy for establishing battery manufacturing plants based on the significant resources available in the Democratic Republic of Congo (cobalt and lithium), Zimbabwe (lithium), and South Africa (Manganese) among others. These studies provided opportunities and challenges for the development of an end-to-end value chain of battery minerals<sup>(15)</sup>.

The Africa Mining Vision (AMV)<sup>(16)</sup> has set pathways to an enhanced contribution of the extractive sector to Africa's sustainable development hinged on the aspirational objectives of a transparent, optimal and equitable exploitation of mineral resources.

African countries will have the opportunity to generate tax revenues and foreign exchange from trading and exporting these minerals. They will be able to mobilise the much-needed development finance. They will have the chance to embark on diversification and domestic value addition capacity to generate employment and income. They will be able to build vital infrastructure, roads, rails, and ports.

In fact, Africa's value proposition lies in its significant reserves of the identified critical minerals, abundant renewable resources for energy generation, relatively low costs for establishment industries, as well as buoyant youth population for reskilling and upskilling.

However, raw materials availability is not the only criteria for a successful development of clean energy technologies and battery manufacturing value chains.

This calls for the development of deliberate strategic framework to help Africa positions itself to make the most out of the opportunities provided by the new global trends, whilst addressing the related emerging challenges.

<sup>(14)</sup> <http://mneguidelines.oecd.org/monitoring-and-evaluation-framework.pdf>

<sup>(15)</sup> <https://www.afdb.org/en/documents/lithium-cobalt-value-chain-analysis-mineral-based-industrialization-africa> ,  
<https://www.afdb.org/en/documents/rare-earth-elements-ree-value-chain-analysis-mineral-based-industrialization-africa>

<sup>(16)</sup> <https://au.int/en/ti/amv/about>

Anyhow, there are crucial knowledge gaps. First, in terms of the economics, there are uncertainties if the capacities, skills, and know-how exist to add value and process these energy minerals domestically.

Second, in terms of climate change, the production and processing of critical minerals themselves can generate considerable greenhouse gas emissions. Production of these minerals requires more energy per unit of output than oil and gas.

Third, concerning the environment and social issues, there is limited knowledge of whether adequate standards are in place to protect biodiversity and ecosystem services and tackle soil erosion. Or what level of capacity is there to avoid changes in community life, displacements, excessive migration, improve poor working conditions, remove workplace hazards, exposure to chemicals.

Finally, more knowledge is needed to strengthen the systems that incentivise producers to engage in responsible business conduct related to governance issues.

In conclusion, it is necessary to have adequate knowledge to balance the growing demands for critical minerals and the need for a new resource governance model that benefits Africans. As well as coherent and smart strategies to guide the development of critical mineral value chains and to create opportunities to manufacture products for green energy generation, battery energy storage systems, EVs among others, in a green, fair and systematic way.

A mutual partnership with mining companies, battery precursor companies and battery manufacturers and an organized Action Plan is therefore needed for implementation to guide Africa's vision of leveraging her critical mineral resources for green energy and optimization of benefits for socio-economic development.

For these reasons, Africa's proximity to the European market is an opportunity that can be exploited and bring mutual benefits. Knowledge and partnerships can, therefore, be considered critical for the success of Africa's mineral development, and for the EU security of supply.

### **The Circular Economy concept in the African continent**

Africa's specific characteristics and demographic trends currently shape the Circular Economy discussions and agenda in the continent. Factors are connected to the climate change impacts, the economic situation (for example most African countries are resource exporter and product importer), the demographic evolution, but also the employment and social situation (between inequalities, the need to access to "goods and services" and the UBUNTU principle "*I am because we are*" – sharing principle).

It all ends up in the African Circular Economy Network (ACEN)<sup>(17)</sup> vision: "*Build a restorative African economy that generates well-being and prosperity inclusive of all its people through new forms of economic production and consumption which maintain and regenerate its environmental resources*".

In this context, a key issue are the supply chains of EEE (Electrical and Electronic Equipment) and WEEE (Waste of Electrical and Electronic Equipment). Materials necessary for the production of many electrical and electronic equipment, are sourced in Africa, but manufactured in other countries (predominantly in Asia) and then imported, between others, in Europe to enable the green transition.

At the same time, though, Africa receives vast amounts of WEEE (often under the guise of still functional equipment), and most of the value that is eventually recovered (mainly by the informal sector) from secondary materials (including metals) is exported again. Since Africa does not possess much end-processing facilities/capacities, it is hardly possible to responsibly handle the non-viable/hazardous fraction of WEEE left behind with huge environmental (biodiversity loss, environmental destruction) and social (child labour, conflict minerals) costs. Thus, essentially, Africa loses benefits in the entire value chains paying the highest costs.

As for its historical and cultural background, the African continent lends itself to become a global hub for remanufacturing and repair and could be seen by the EU as a future Circular Economy strategy partner and considered as a service provider that can keep EEE functional for much longer for the high value local utilization of secondary materials.

The key strategies that should be considered as building blocks for a more equitable future of the EU/Africa business partnership model should include different aspects, such as the principle of "leave no one behind", a fair rethink of the current trade agreements, the possibility of introducing a leasing for the primary resources, the need for more transparency in the supply chains (especially for EEE/WEEE), the focus on "social justice" for

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<sup>(17)</sup> <https://www.acen.africa/>

Africa, and respect and comply with the local way to live according to circular basic principles every day and preserve the useful life of products.

In relation to the EU and the new EU Africa strategy<sup>(18)</sup>, the Circular Economy policies and strategies in act with and within Africa are many. This includes the engagement with the African CE Alliance<sup>(19)</sup>, the African Union<sup>(20)</sup> and the Europe Africa Business Forum<sup>(21)</sup>.

To have a complete picture of the local situation, DG ENV commissioned the study "*Circular Economy in EU-Africa cooperation*"<sup>(22)</sup>, which highlights key trends, opportunities, and potential of the development of CE policies in Africa. It also includes recommendations for the EU-Africa engagements (policy dialogues, research cooperation, business to business relations, etc...). The study led to one continental report and 8 case studies of African countries where the CE logic is most advanced namely: Egypt, South Africa, Nigeria, Rwanda, Senegal, Morocco, Kenya, Ghana.

The key knowledge gaps to support the development of more robust CE policies in Africa regards data availability and quality on circular economic production processes, waste generation, resource consumption, informal employment per sectors, trade flows of waste and 2<sup>nd</sup> hand products as well as the need to further investigate in measuring and assessing benefits of CE policies.

### **The role of JRC in enhancing the Africa-EU raw materials knowledge base**

Strengthening the EU-Africa dialogue is at the very core of EC's agenda. The EU, as a key trade partner of African countries, needs to be part of facilitating fair, greener, and responsible sourcing of raw materials.

In this framework, the Directorate General Joint Research Centre (JRC), the in-house science and knowledge service of the Commission, has a long standing attention on Africa, e.g. the JRC report Science for the AU-EU Partnership: building knowledge for sustainable development (2017) and the recently established Africa Knowledge Platform<sup>(23)</sup>.

The African Knowledge Platform is a web-based entry-point, highly visual and geospatially explicit that brings together datasets, narratives, interactive tools and partnerships across more than 30 disciplines and policy priorities. It enhances recent scientific evidence on African raw materials<sup>(24)</sup> and demonstrates the value added of geographically explicit narratives in science-to-policy context.

By bridging the gap between research and policy, the African Knowledge Platform empowers EU policymakers and support science diplomacy in line with the EU-Africa Strategy and international development agendas. It stimulates knowledge-sharing and enhances partnerships between European and African stakeholders.

Another fundamental EC's knowledge base related to raw materials is the Raw Materials Information System (RMIS). In fact, since 2015, the RMIS acts as the EC's reference knowledge platform on non-energy, non-food raw materials from primary to secondary sources, along the entire raw materials value chains and considering the full material life cycle.

The RMIS provides the core basis for raw materials knowledge and analyses required to support EU policy, fulfilling a wide range of knowledge needs integrating information by a broad spectrum of EU and international knowledge suppliers.

In particular, the RMIS facilitates harmonised availability, coherence and quality of key data and analyses required by specific EC raw materials policies and EC services; it highlights priority knowledge needs identified by the EC, as well as contributes to coordinated knowledge dissemination.

It supports the knowledge needs of the EC's criticality assessment, the knowledge on raw materials at country-level, the Raw Materials Scoreboard for monitoring, trade, social policy related to supply chains such as due diligence/conflict minerals policy, as well as other raw materials specific policies.

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<sup>(18)</sup> [https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/690516/EPRS\\_ATA\(2021\)690516\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/690516/EPRS_ATA(2021)690516_EN.pdf)

<sup>(19)</sup> <https://www.aceafrica.org/about-acea>

<sup>(20)</sup> <https://au.int/>

<sup>(21)</sup> <https://www.euafrica-businessforum.com/>

<sup>(22)</sup> <https://op.europa.eu/en/publication-detail/-/publication/4faa23f2-8b8a-11eb-b85c-01aa75ed71a1/language-en>

<sup>(23)</sup> African Knowledge Platform <https://africa-knowledge-platform.ec.europa.eu>

<sup>(24)</sup> 1. Critical raw materials for low carbon and digital technologies (including responsible sourcing of primary resources and reuse of secondary resources), 2. Monitoring gold mining in remote parts of central Africa using satellite technology (with the aim of enhancing transparency and compliance)

The RMIS knowledge network includes 200+ representatives from Member States, e.g. industry associations, key European/international organisations, as well as EU funded projects on raw materials (e.g. H2020 and EIT-RM). The RMIS team every year organizes the so-called RMIS workshop (in 2021 held the December 3rd), which aims to e.g. strengthen the dialogue with EU funded projects and ensure that projects' outputs help meet RMIS development objectives.

As part of its communication strategy, the JRC publishes the RMIS Newsletter bi-annually, and the RMIS Roadmap report every two years. The 2021 RMIS Roadmap<sup>(25)</sup> has been recently released, it presents the RMIS development priorities for the years to come, derived from extensive discussion with various policy DGs.

Key focus of the latest developments is the new RMIS African country profiles<sup>(26)</sup>. The tile presents each African country as a non-food, non-energy raw material supplier, both globally and to the EU.

In doing so, are highlighted relevant aspects for a sustainable sourcing, in seven thematic sections:

1. The "Quick Facts" section presents information on the country's mining contribution to the value added of the economy, and the main country's raw materials produced.
2. "Trade": the module provides information about the African country exports by type of material and destination, with a focus on but not restricted to critical raw materials. It also provides a snapshot of the most relevant most relevant materials imported by the EU from the specific country.
3. The "Trade measures": summarizes the provisions that affect the free trade of raw materials, that is, the trade agreements and export restrictions that involve and are applied by the African country.
4. "Investments": focusing on foreign direct investments and on mining exploration budgets, this module offers a view on the overall international investment to the country, with a focus on the companies that do exploration on the African land.
5. "Governance and social responsibility": collects several humanitarian and socio-economic country-specific indicators, focusing on the natural resource governance, the humanitarian risk, the poverty, and mining workers conditions.
6. "Environment" displays the location of mines in relation with local natural aspects like protected areas, or areas with deforestation or high flooding hazard. Moreover, it shows the amount of greenhouse gases and air pollutant emissions by raw materials sector.
7. "Circular economy and resource efficiency": the section collects information on the local waste generation and collection, as well as on the legal and illegal waste trade flows.

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<sup>(25)</sup> <https://publications.jrc.ec.europa.eu/repository/handle/JRC126612>

<sup>(26)</sup> <https://rmis.jrc.ec.europa.eu/apps/ap/#/>

## **List of abbreviations and definitions**

3Ts	Tin, Tantalum and Tungsten
ACEN	African Circular Economy Network
AfDB	Africa Development Bank
ANRC	African Natural Resources Centre
ASM	Artisanal Small-Scale Mining
CE	Circular Economy
CEAP	Circular Economy Action Plan
CAHRAs	Conflict-Affected and High-Risk Areas
CRMs	Critical Raw Material/s
DG	Directorate-General
EC	European Commission
EEE	Electrical And Electronic Equipment
ESG	Environment, Social and Governance
EU	European Union
GDP	Gross Domestic Product
NDICI	Neighbourhood, Development and International Cooperation Instrument
OECD	Organisation For Economic Co-Operation and Development
RMs	Raw Material/s
SRI	Sustainable Recycling Industries
UNDP	United Nations Development Programme
WEEE	Waste Of Electrical and Electronic Equipment

## Annexes

### Annex 1. Agenda

**Raw Materials Week**  
15-19 November 2021

**Knowledge needs – EU-Africa focus**  
**18 November 2021**  
Le Plaza Hotel (Boulevard Adolphe Max 118-126, 1000 Bruxelles) and Online

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**Rationale**  
Transitions towards a low carbon society and digitalisation, as well as supporting key sectors such as defence and space, are reliant on the sustainable and secure supply of raw materials. To achieve this in an informed manner, business and governments must have timely and appropriate knowledge. The European Commission foresees achieving sustainable and secure supply by working closely with partners, facilitating trade associated with careful management of the environment, through ensuring value chains result in positive contributions to involved communities, and by increasing circularity of material flows within economies. Given that many value chains go beyond EU borders, knowledge provision and management must also be a fundamental part of the EC's interactions and partnerships. This workshop focuses on Africa and its countries in terms of raw materials value chain knowledge. This regional example illustrates related EU needs, the current situation and recommendations.

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**Session Chair:** David Pennington, Directorate-General Joint Research Centre, European Commission

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14:00-14:15	<b>Opening speech by Giovanni DE SANTI</b> , Director Sustainable Resources, DG JRC, European Commission	
14:15-14:30	<b>Peter HANDLEY</b> , Head of Unit Energy Intensive Industries and Raw Materials, DG GROW, European Commission	EU Raw Materials Policy and Africa
14:30- 14:45	<b>Constantin CIUPAGEA</b> , Head of Unit Land Resources, DG JRC, European Commission	EC's Raw Materials Information System – African Country Profiles
14:45-15:00	<b>Fred KABANDA</b> , African Development Bank, African Natural Resources Centre	The Role of Knowledge in maximizing Africa's Minerals Development – Perspective of the African Development Bank
15:00-15:30	<b>Coffee break</b>	
15:30-15:45	<b>Carsten SORENSEN</b> , Deputy Head of Unit Private Sector, Trade, DG	How to support development of raw materials sustainable value chains with our African partners

Twitter: [@EU\\_Growth](#) [#EIPRawMaterials](#) [#RawMaterialsWeek](#)

## Raw Materials Week

15-19 November 2021



	INTPA, European Commission	
15:45-16:00	<b>Degol HAILU</b> , United Nations Development Programme	Bridging the Knowledge Gap in Raw Materials Value Chain: The Case of Clean Energy Sources.
16:00-16:15	<b>Phillipp DUPUIS</b> , Head of Unit Multilateral Trade and Sustainable Development Policy, Green Deal, Conflict Minerals, <b>Marten WESTRUP</b> , Team Leader Unit Industry, Goods, Energy, Customs and Origin, DG TRADE, European Commission	<i>Raw Materials in Trade Agreements and Ensuring Responsible Sourcing</i>
16:15-16:30	<b>Tyler GILLARD</b> , Head of Due Diligence, OECD	Responsible sourcing – knowledge needs for monitoring progress and impact
16:30-16:45	<b>Gaëtan DUCROUX</b> , Unit Bilateral & Regional Environmental Cooperation, DG ENV, European Commission	Circular Economy in EU-Africa cooperation
16:45-17:00	<b>Susanne KARCHER</b> , Co-Founder of African Circular Economy Network and Sustainable Recycling Industries South Africa National Project Manager	Overcoming knowledge challenges/new pathways to equitable North/ South WEEE value chains
End of session		

Twitter: [@EU\\_Growth](#) [#EIPRawMaterials](#) [#RawMaterialsWeek](#)

## **Annex 2. Speakers' biography**

Session Chaired by Mr David Pennington, Directorate-General Joint Research Centre



Dr. David Pennington leads the Portfolio of projects on Strategic value chains with a focus on Secure and sustainable raw materials in the European Commission's Directorate General Joint Research Centre (JRC). An overarching output of the portfolio is the EC's Raw Materials Information System (RMIS). Key in-house underlying activities include foresight for sectors and technologies with broad analyses in relation to e.g. a carbon neutral society and digitalisation, and in-depth supply/demand analyses for primary and secondary raw materials in relation to e.g. batteries.

Opening speech by Mr Giovanni De Santi, Director Sustainable Resources, DG JRC, European Commission



Giovanni De Santi is the Director of the Directorate for Sustainable Resources, European Commission's Joint Research Centre. Previously he was Director of the Directorate Competences. He also held a position of the Director of the Institute for Energy and Transport. The Institute represented the reference centre of the European Commission for research in the energy field and sustainable transport. He has been working for the European Commission since 1985. He holds a PhD in Fluidynamics and is author of many peer reviewed publications in high level scientific journals and Chairman of many international conferences.

**DG GROW, European Commission – Peter HANDLEY**, Head of Unit Energy Intensive Industries and Raw Materials



Peter Handley is, since September 2017, Head of the Energy-Intensive Industries and Raw Materials Unit in the European Commission's Directorate-General for Growth. He was previously Head of the Resource Efficiency Unit at the Secretariat-General, where he was responsible for coordination of Energy Union, 2030 climate and energy package, low emission mobility strategy and the circular economy.

**EUROPEAN COMMISSION – Constantin CIUPAGEA**, Head of Unit Land Resources, JRC



Constantin Ciupagea is Head of Unit for Land Resources at the Directorate General Joint Research Centre (JRC), within the European Commission, managing projects in support to EU policies. He is also the JRC Director-General's Sherpa for the European Innovation Partnership on Raw Materials. The most recent areas of research and policy support were: Raw Materials and Strategic Value Chains - policy support and monitoring indicators, coordinating the management of the Commission's Raw Materials Information System (RMIS); Life Cycle and sustainability assessments of processes along strategic value chains - environmental, consumption footprints; Soil policies and research – providing evidence-support, assessments and management of knowledge (EU Soil Observatory) in support of soil strategy and healthy Soils and Food Mission; Ecosystem Services Mapping and Assessments and Natural Capital Accounting in support of Nature Restoration Law and Biodiversity Strategy. Before joining the European Commission in 2010, he was the director of the Institute of World Economy (IWE) of the Romanian Academy. Between 2006 and 2008 he acted as Economic State Counsellor in the Chancellery of the Prime Minister of Romania, while between 1994 and 1996 he was

the economic counsellor of the President of the Romanian Parliament's Chamber of Representatives. He has a PhD in macroeconomic and international trade modelling since 1997.

**AFRICAN NATURAL RESOURCES CENTRE - Fred KABANDA**, African Development Bank



Mr. Fred Kabanda is Manager, Extractives at the African Natural Resources Centre of the African Development Bank where he oversees the work streams in oil, gas and mineral sectors.

He has worked with the extractive sectors for over 28 years. Before joining the Bank, he was Assistant Commissioner in Uganda's Ministry of Energy and Minerals Development. He also taught in the Department of Geology at Makerere University. He has been involved in policy setting, formulation of laws, regulation of operations and general natural resources management in several countries. He holds a Masters from the Norwegian University of Science and Technology, Bachelors in Geology from Makerere University and several post graduate trainings in policy, management and contract negotiations from different Universities. Fred is a member of SPE, SEG, AAPG and GSAf among other professional bodies.

**EUROPEAN COMMISSION - Carsten SORENSEN**, Deputy Head of Unit Private Sector, Trade, DG INTPA



Carsten Sorensen is currently deputy head of the private sector, trade and employment unit in the European Commission's International Partnership Directorate-General. He has been with the Commission since 1995, in charge of both internal market and external relations files. Carsten has notably occupied different positions in external trade, political and development DGs, including a stint as trade counsellor in the EU Delegation to India. He has been in DG Development/International Partnerships since 2015, where he was deputy head of interinstitutional relations prior to his current assignment.

**UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP) - Degol HAILU**, Senior Advisor



Dr Degol Hailu is a Senior Advisor at the UNDP. He is published widely on macroeconomics, trade, development finance, employment, access to water and extractive industries. Previously, he had served as the Director of the International Policy Centre in Brazil. Before joining UNDP, Dr Hailu spent many years at the University of London researching, teaching and consulting. He holds a PhD in Economics from the same university.

**EUROPEAN COMMISSION - Marten WESTRUP**, Team Leader Unit Industry, Goods, Energy, Customs and Origin, DG TRADE

Marten Westrup is Team Leader in DG Trade of the European Commission (Unit "Industry, Goods, Energy, Customs and Origin"). In this capacity, he looks after development and implementation of trade policy from the perspective of specific industrial sectors, including raw materials. He also leads on FTA negotiations in this respect, and previously coordinated the EU's policies for responsible sourcing of minerals. Before joining DG Trade in 2017 he was Team Leader in DG Energy, working on strategic and horizontal aspects of energy and climate policies. Before first joining the Commission in 2007, he was a manager at the Swedish Trade Council in Brussels. A Swedish national, he holds dual Master's degrees in Economics (from Stockholm School of Economics) and law (from University of Stockholm).

**EUROPEAN COMMISSION - Philipp DUPUIS**, Head of Unit Multilateral Trade and Sustainable Development Policy, Green Deal, Conflict Minerals, DG TRADE



Philipp Dupuis is since September 2020 Deputy Head of the Unit in charge of Multilateral Trade and Sustainable Development Policy, Green Deal and Conflict Minerals in the Directorate General for Trade of the European Commission in Brussels.

From August 2015 to August 2020, he was Head of the Economic and Trade Section of the Delegation of the European Union in Thailand. He also covered Cambodia, Laos and Myanmar.

Between August 2009 and July 2015, Philipp Dupuis was Deputy Head of the Unit in charge of the trade relations with North America in the Directorate General for Trade of the European Commission in Brussels. In parallel, he was EU deputy chief negotiator for the EU-Canada Comprehensive Economic and Trade Agreement (CETA). Philipp

Dupuis worked previously as Deputy Head of the Unit responsible for the trade relations with Latin America, the Middle East and the management of the Generalised System of Preferences (GSP) and as Head of the Economic and Trade Section of the Delegation of the European Commission in Mexico, covering also Cuba. Before moving to Mexico, he was an investigator in the anti-dumping department of the Directorate General for Trade of the European Commission, was co-ordinator for the bilateral trade relations with Iran and Iraq in the same DG and head of section in the public procurement unit of the Commission Administration. Before joining the European Commission in 1995, Philipp Dupuis was a consultant for Andersen Consulting in Frankfurt/Germany carrying out projects in the financial sector. He studied Business Administration and, as subsidiary major, Political Sciences at the University of Mannheim in Germany and made a Banking Apprenticeship at the Deutsche Bank in Darmstadt/Germany.

**OECD CENTRE FOR RESPONSIBLE BUSINESS CONDUCT - Tyler GILLARD**, Head of Due Diligence



Tyler Gillard is the Head of Due Diligence Unit and Senior Legal Adviser in the OECD Centre for Responsible Business Conduct. He leads the OECD's work in the financial, textiles, mining & metals, oil & gas and agriculture sectors. Tyler joined the OECD in 2009 to lead the multi-stakeholder negotiation of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. He has since overseen the development of numerous global supply chain standards. Tyler works closely with governments, the private sector and civil society to implement these standards and integrate them into national policies, regulations and industry practice.

Before joining the OECD, Tyler was a fellow in international law at Columbia Law School where he worked with the Human Rights Institute and the Columbia Centre on Sustainable Investment on responsible business conduct, international investment law and transparency in the extractive industry. He has an LL.M. from Columbia Law School and an LL.B. from the School of Oriental and African Studies at the University of London.

**EUROPEAN COMMISSION - Gaëtan DUCROUX**, Unit Bilateral & Regional Environmental Cooperation, DG ENV



Gaëtan DUCROUX is International relations officer and is covering bilateral and regional environmental cooperation with sub-Saharan Africa and South Asia in the European Commission Directorate General for Environment.

In these functions, he follows policy dialogue between the EU and these regions on environmental issues and follows notably initiatives related to Circular Economy promotion on the African continent. Before working on these issues in DG environment, he worked on EU cooperation with Middle-Eastern countries in Directorate General for Neighbourhood and Enlargement (DG NEAR), as well as on development cooperation programmes in several African countries for various NGOs and EU Member States.

**AFRICAN CIRCULAR ECONOMY NETWORK AND SUSTAINABLE RECYCLING INDUSTRIES - Susanne KARCHER**, Co-Founder of ACEN and National Project Manager of SRI



After completing Chemical Engineering studies in Germany, Susanne Karcher started her company EnviroSense CC (an Environmental Consultancy) in Cape Town in 1999. Her company specialises in the planning, development and facilitation of tailor-made governmental, industrial/commercial and residential “Integrated Resource and Waste Management” programmes ultimately geared towards pollution prevention. Susanne is a qualified RECP (resource efficiency and cleaner production) end-use level trainer with the NCPC as well as a founding member of the African Circular Economy Network. In addition, Susanne provides voluntary mentoring services as a member of the globally operating Circular Economy Club. As a one-woman consultancy business and in her former role as the Chair of the Southern African e-Waste Alliance, Susanne specialised early in her career on furthering collaborative, safe and inclusive WEEE management. As part of an international round table led by the WRF she contributed to the development of various signature research publications and projects including the ISO IWA 19:2017 Guidance Principles and also assisted with SRI led training initiatives in Ghana and South Africa. Since the end of 2020 Susanne has been appointed by WRF and Empa as the National Coordinator for the Phase 2 of the SRI South Africa project (2023).

## Annex 3. Presentations and Abstracts

### Opening speech - Giovanni DE SANTI (DG JRC)

The slide features a blue header with the European Commission logo. The main title 'KNOWLEDGE NEEDS: EU-AFRICA FOCUS' is displayed in large yellow letters. Below it, the speaker's name 'Giovanni De Santi' and title '(European Commission, Director, JRC.D – Sustainable Resources)' are shown in white. At the bottom, the date '2021 EU Raw Materials Week – November 18th 2021' is written in white.

The screenshot shows the homepage of the Africa Knowledge Platform. The title 'Africa Knowledge Platform' is prominently displayed. Below it, a subtext reads: 'A gateway to data and information on Africa's social, economic, territorial and environmental development, developed by the Joint Research Centre of the European Commission.' There are three main call-to-action buttons: 'Browse our collection of geospatial datasets', 'Discover our interactive stories', and 'Interact with our analytical tools'. Below these are three numerical statistics: 175, 13, and 8. To the right, there are two sections: 'Mapping mines from space' (monitoring compliance of gold mines in Republic of Congo using earth observation) and 'Critical Raw Materials in Africa' (showing a map of critical raw materials in Africa). A sidebar on the right lists several features with checkmarks: Storytelling with maps and science-to-policy context, Embracing digital – from static to dynamic maps, Searching by SDG, by Topic, by Country, Mapping partnerships, Exploring with analytical tools, and a link to the platform's URL.

The screenshot shows the RMIS homepage. The top navigation bar includes links for Legal notice, Cookies, Contact, Search, and English (en). The main content area is titled 'Raw Materials Information System' and 'EU SCIENCE Raw Materials'. It features several sections: 'OVERVIEW & NEWS' (with a circular graphic), 'RESILIENCE, AUTONOMY, SECURITY OF SUPPLY & CRITICALITY' (with a target icon), 'ENVIRONMENTAL & SOCIAL SUSTAINABILITY' (with a hand holding a rock), 'RAW MATERIALS' PROFILES' (with a periodic table graphic), 'AFRICAN COUNTRY PROFILES' (with a map of Africa), and 'EU COUNTRY PROFILES' (with a map of the EU). A central call-to-action button says 'GO TO COUNTRY PROFILE'. The bottom right corner features the European Commission logo.

## EU Raw Materials Policy and Africa – Peter Handley (DG GROW)

## EC's Raw Materials Information System – African Country Profiles – Constantin CIUPAGEA (DG JRC)

The slide features the European Commission logo at the top left. The title "Raw Materials Information System RMIS" is prominently displayed in white on a blue background. Below it, the subtitle "Focus on Africa" is written in yellow. The author's name, "C. Ciupagea (on behalf of the JRC RMIS team)", is in white. At the bottom, the text "2021 EU Raw Materials Week – JRC Knowledge Base Event November 18th 2021" is in white, and the "Joint Research Centre" logo is at the bottom right.

The slide shows three "JRC TECHNICAL REPORTS" for the RMIS Roadmap. The first is titled "Raw Materials Information System (RMIS): towards v2.0" (2017), the second "Raw Materials Information System (RMIS): 2019 Roadmap Progress Report" (2019), and the third "RMIS Roadmap 2021" (2021). A red diagonal banner across the middle of the reports reads "Just published and downloadable from RMIS". The European Commission logo is at the bottom right.

The slide has a blue header with the title "Specific objectives" in white. Below it, a bulleted list of three items is shown:

- Announce the release of the 2021 RMIS Roadmap report
- Briefly present latest RMIS knowledge outputs
- Announce & present brand new RMIS tile focused on Africa

The European Commission logo is at the bottom right.

The slide displays the "RMIS Newsletter n.5 (October 2021)" with several news items. One article highlights the "Joint Research Centre (JRC) Raw Materials Information System (RMIS) RMIS Newsletter n.5 (October 2021)". Another article discusses the "RMIS Roadmap 2021" and its focus on Africa. The newsletter includes images of industrial sites and charts related to raw materials. The European Commission logo is at the bottom right.

## RMIS homepage overview

The screenshot shows the EU Science Hub RMIS homepage. At the top, there are three main sections: 'OVERVIEW & NEWS' (with a circular graphic), 'POLICY & LEGISLATION' (with a European Union flag), and 'RAW MATERIALS KNOWLEDGE GATEWAY' (with a metallic texture). Below these are four more sections: 'RESILIENCE, AUTONOMY, SECURITY OF SUPPLY & CRITICALITY' (with a close-up of a mineral), 'RAW MATERIALS SCOREBOARD & CIRCULAR ECONOMY: SECONDARY RAW MATERIALS & WASTE' (with a globe and charts), 'ENVIRONMENTAL & SOCIAL SUSTAINABILITY' (with a hand holding a small plant), and 'ECONOMICS & TRADE' (with a bar chart). At the bottom, there are three more sections: 'FORESIGHT, STRATEGIC VALUE CHAINS & MATERIAL FLOWS' (with a globe and network), 'RAW MATERIALS' PROFILES' (with a periodic table), and 'AFRICAN COUNTRY PROFILES' (with a globe and text). The European Commission logo is at the bottom right.

## RMIS homepage overview

The screenshot is identical to the one above, showing the EU Science Hub RMIS homepage. A yellow box highlights the middle section of the grid, which includes 'RESILIENCE, AUTONOMY, SECURITY OF SUPPLY & CRITICALITY', 'RAW MATERIALS SCOREBOARD & CIRCULAR ECONOMY: SECONDARY RAW MATERIALS & WASTE', and 'ENVIRONMENTAL & SOCIAL SUSTAINABILITY'. To the right of this highlighted area, text reads: 'Bottom raw of RMIS provides access to 3 types of 'quantitative summaries/profiles', relative to: • 80+ raw materials • 40+ African countries • 27 EU Member States'. The European Commission logo is at the bottom right.

## Raw Materials' Profiles: Dashboard (new!)

- Structure & content of RM Profiles is being revised
- First module, recently published: a dashboard-like summary covering key aspects such as production, trade, demand, circularity, sustainability



## EU Country Profiles

- Include profiles for all 27 EU MS
- Interactive profiles in RMIS are linked to a pdf-report that users can download.
- Profiles include info on e.g.
  - Resources & reserves,
  - Supply, use, trade
  - Environment sustainability
  - Social sustainability
  - CE aspects



## African Country Profiles (new!) - 1/2



- Profiles available in RMIS for 44 out of 54 African countries
- (first attempt to) provide concise quantitative summaries for non-food, non-energy RMs
- Include indicators related to trade, investments, environmental & social sustainability, circular economy & resource efficiency, governance.



## African Country Profiles (new!) - 2/2



- Continues updates are foreseen to meet knowledge needs identified by the EC (consultation between JRC and DG GROW, ENV, INTPA on this topic ongoing since 2020)
- Complement (and explicitly link to) the new, overarching **JRC Africa Knowledge Platform (AKP)**
- Enjoy the video for more details! (starts automatically with next slide)



Thank you



Website: [rmis.jrc.ec.europa.eu](http://rmis.jrc.ec.europa.eu)



Contact:  
[ec-rmis@jrc.ec.europa.eu](mailto:ec-rmis@jrc.ec.europa.eu)  
[constantin.ciupagea@ec.europa.eu](mailto:constantin.ciupagea@ec.europa.eu)  
[david.pennington@ec.europa.eu](mailto:david.pennington@ec.europa.eu)  
[simone.manfredi@ec.europa.eu](mailto:simone.manfredi@ec.europa.eu)

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## **The Role of Knowledge in maximizing Africa's Minerals Development - Perspective of the African Development Bank - Fred KABANDA (AfDB, ANRC)**

### **Abstract**

The world is witnessing a revolution in the transport sector as countries adopt electric vehicles as an alternative to the internal combustion engine vehicles. This, together with the promotion of renewable sources of energy including solar and wind are part of the efforts towards a global low carbon energy transition. The success of the energy transition will require Lithium-Ion battery (LIB) for reliable energy storage. The manufacture of LIB involves several minerals including Lithium and Cobalt (Li-Co), manganese, nickel, graphite, Rare Earth Elements (REE), iron, copper as well as phosphate.

Africa hosts significant volumes of these strategic/green minerals. According to the United States Geological Survey (USGS) data on global mineral reserves, Africa hosts: Cobalt (52.4%), Bauxite for aluminum production (24.7%); Graphite (21.2%), Manganese (46%) and Vanadium (16%). This is however believed to be a tip of the iceberg as Africa is largely geologically underexplored. Indeed, the strong association of copper and cobalt in stratiform deposits in several countries in Southern and Eastern Africa is a potential upside for Africa's cobalt deposits. Undoubtedly, Africa will be the driving force behind the cobalt value chain. There are also significant lithium deposits in the greenstone belts in Zimbabwe, DRC, Ghana and Mali. Globally, the demand for these minerals for the low-carbon energy transition will boost mining activities in resource-rich African countries.

Africa's mineral wealth calls for their strategic development in a bid to participate and benefit from the opportunity brought by the energy transition. It is within this context that the African Development Bank has undertaken several value chain analyses to inform development of an African strategy for establishing battery manufacturing plants based on the significant resources in the Democratic Republic of Congo (cobalt and lithium), Zimbabwe (lithium), South Africa (Manganese) among others. The studies provide opportunities and challenges for the development of an end-to-end value chain of battery minerals<sup>2728</sup>.

Battery demand from electric vehicles is expected to increase more than nine times between 2020 and 2030. Thus, the growth of battery demand both within the continent and elsewhere could represent an opportunity for developing the critical mineral value chains in Africa based on the abundant mineral resources for battery storage technologies and Electric Vehicles. However, having the raw materials is not the only criteria for a successful development of clean energy technologies and battery manufacturing value chains. For example, the DRC is already supplying 70% of the world's cobalt production, but the reigns of the value chain still lie in the hands of other countries. China currently controls 85% of the production capacity of refined cobalt sulfate, a high economic value product used in the production of batteries although China mines no cobalt. Thus, besides the abundance of minerals, Africa will need critical infrastructure, investment and skills to leverage the required technology to harness opportunities for the low carbon future.

The Africa Mining Vision (AMV) has set pathways to an enhanced contribution of the extractive sector to Africa's sustainable development hinged on the aspirational objectives of transparent, optimal and equitable exploitation of mineral resources. This calls for the development of deliberate strategic framework to guide how Africa positions itself to take advantage of the opportunities provided by the new global trends, whilst addressing the related challenges

Currently, battery cell and component manufacturing are largely confined to Asia. As new markets for electric vehicles (EVs) grow, manufacturing will also move to these locations. Demand for high-purity battery-grade lithium chemicals is expected to reach 700,000 metric tons by 2025, and 1.6 million metric tons lithium carbonate

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<sup>27</sup> <https://www.afdb.org/en/documents/lithium-cobalt-value-chain-analysis-mineral-based-industrialization-africa>

<sup>28</sup> <https://www.afdb.org/en/documents/rare-earth-elements-ree-value-chain-analysis-mineral-based-industrialization-africa>

equivalent (LCE) by 2030. Considering the fact that Africa lies central to the major consumers of LIB, this presents an opportunity for Africa. Unfortunately, based on data tracked by BloombergNEF, there are currently no battery manufacturing plants under development or commissioned in Africa.

Aside battery minerals, Rare-earth elements (REE), such as neodymium, dysprosium and praseodymium, are key ingredients of permanent magnets (powerful magnets that do not lose their magnetic fields), used in high-performance wind turbines and electric motors. Global wind power capacity additions are expected at an annual average of 77GW from 2020 to 2029, according to Wood Mackenzie. This represents a growth of 112% in global installed capacity from 2019 to 2029. In terms of REE consumption, this equates to an average increase in global REE consumption of 15,400 metric tonnes per year in wind turbines alone, a clear indication of robust growth in the global REE market. Africa's REE potential is mainly found in Burundi, Malawi and South Africa. However, there are also existing projects in several African countries that have delineated some significant resources. These countries include Tanzania, Zambia, Namibia, Kenya, Madagascar and Mozambique.

Africa's value proposition lies in her significant reserves of the identified critical minerals, abundant renewable resources for energy generation, relatively low cost of establishment of industries as well as buoyant youth population for reskilling and upskilling. The missing gap is the absence of a coherent and smart strategies to guide development of the critical mineral value chains to take advantage of the opportunities to manufacture products for green energy generation, battery energy storage systems, EVs among others. A mutual partnership with mining companies, battery precursor companies and battery manufacturers and an organized Action Plan is therefore needed for implementation to guide Africa's vision of leveraging her critical mineral resources for green energy and optimization of benefits for socio-economic development. Africa's proximity to the European market is an opportunity that can be harnessed for mutual benefit. Knowledge and partnerships are therefore critical for the success of Africa's mineral development.

## Presentation



# The Role of Knowledge in Maximizing Africa's Minerals Development

Perspective of the African Development Bank



Presentation at  
EU Raw Materials Week 2021

Fred Kabanda  
Manager, Extractives  
18<sup>th</sup> November 2021

## OUTLINE

1. Introduction
2. Constraints in using Critical Minerals for Africa's Development
3. Using Knowledge to Position Africa Better
4. Conclusion

### Introduction

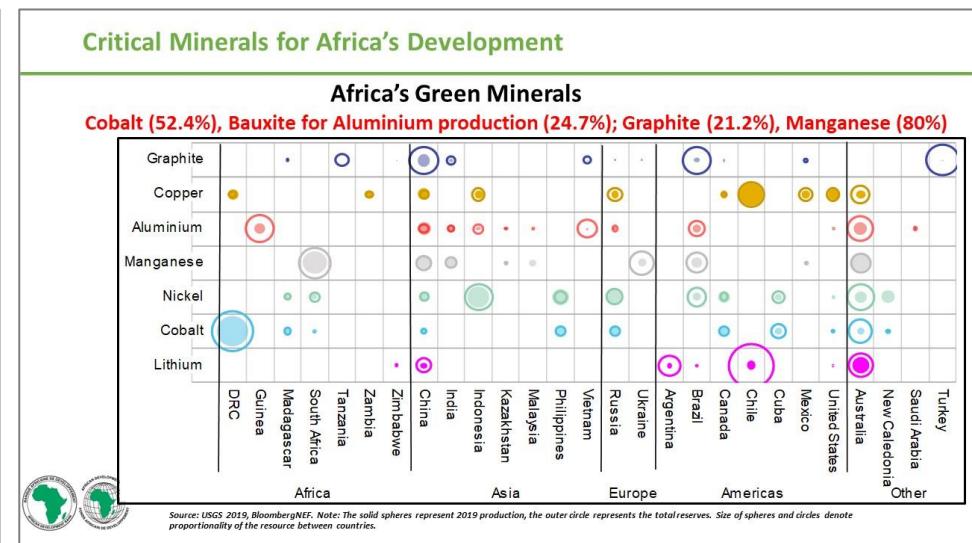
AfDB delivers **financial and technical support** for transformative projects that will significantly reduce poverty through **inclusive and transition to green growth**.

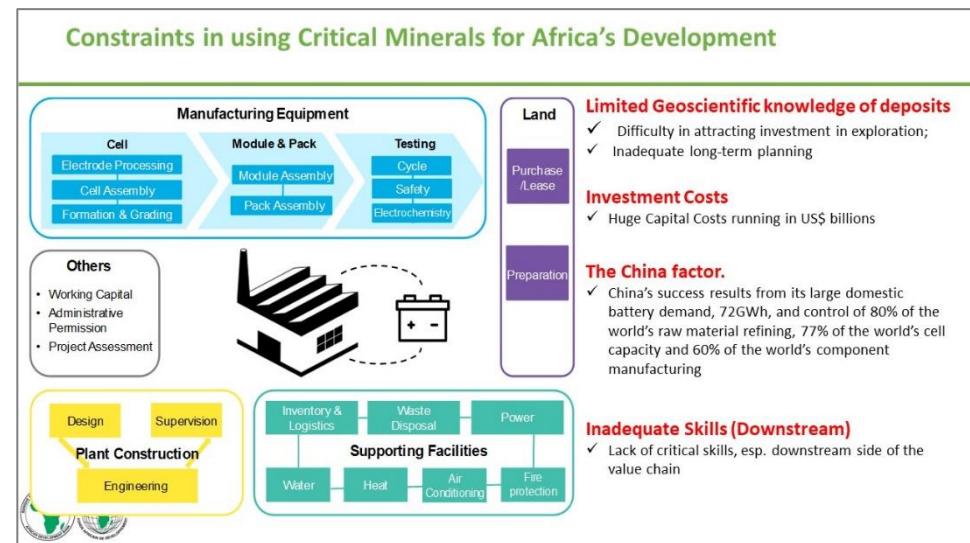
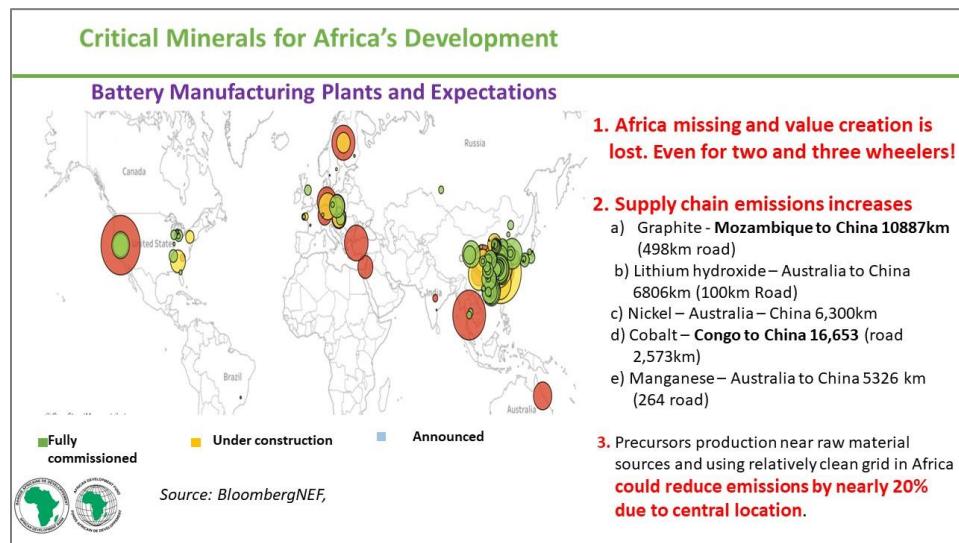
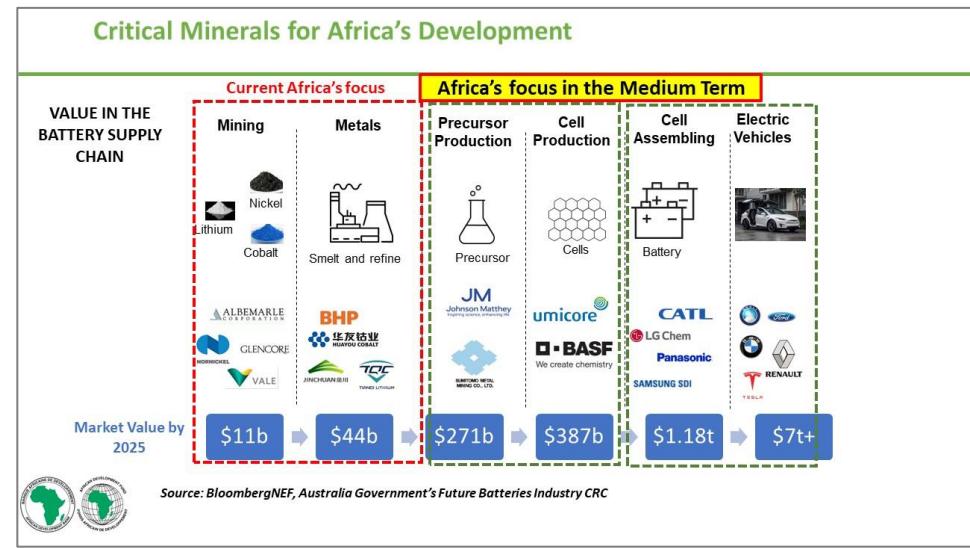
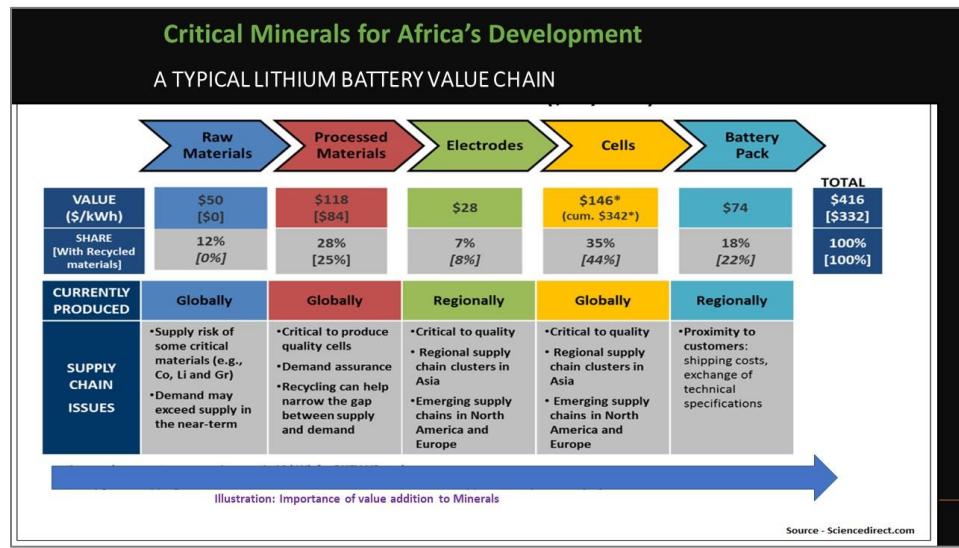




- Global transition to green energy and rapid decarbonization has spurred the demand for **EVs, battery storage systems and green energy investments (solar and wind)**.
- This has created **opportunity for developing the critical mineral value chains in Africa**.
- AfDB studies to **assess opportunities and challenges of harnessing battery minerals value chains** to accelerate mineral based industrialization in Africa.







## Constraints in using Critical Minerals for Africa's Development

### Price uncertainties and changing battery Technologies

- **Lithium:** Currently, Price fluctuations are a major risk to the commodities industry.
- **Cobalt :** The concentration of demand and processing chain in China
- **Low Demand of EV Products in Africa**

### ESG Issues in sourcing of Cobalt

- **ASM, Child labour, Environmental issues in the DRC**

### Inadequate Funding Mechanisms

### Rare Earth Elements Market control by China

- Major consumers are keen to establish alternative supply chains beyond China's jurisdiction to ensure reliable and consistent supply at predictable prices.
  - Africa is one of the regions targeted as an alternative source of REE.
  - This presents an opportunity for VC development. How can we surmount the Barriers



## CONCLUSION

- Africa's significant battery minerals fit with all the Li-ion battery chemistries:
- AfCFTA and COVID-19 supply side shocks strengthen the business fundamentals of an inward-looking resource-driven and trade-induced development agenda
- Governments and Regional Bodies have roles to play:
  - a) Resource their geological surveys to generate the requisite geoscientific Info.
  - b) Enhance global collaboration to promote joint development projects
- Knowledge is key in using Africa's minerals for development
  - a) Need to know what resources exist, develop a strategy for their development
  - b) Conduct feasibility studies for establishing Africa's battery manufacturing value chain: raw materials; refineries; precursors and battery assembling.
  - c) Promote Regional Approach for development of EV value chains.
  - d) Develop Bold Strategies for Financial Resource Mobilisation and Market Demand (pension, insurance)

Africa's recipe for value chain development is: Sustainable extraction of Raw Materials, Attract Investment for Battery Manufacturing & Create Local Demand for EV and Battery Energy Storage Systems (BESS)



## Role of Knowledge

### 1. Knowledge of Resources and Planning depending on Competitive Advantages

Each hub could adopt the supply chain structures consisting:  
i) Large Scale Mining ii) Refiners and Cathode Manufacturing and iii) Battery Manufacturers  
(Create partnerships and JVs)

### 2. Battery Research: Important to research and follow up technological advances.

### 3. Improve Investment Environment (including infrastructure and skills development)

### 4. Regional Strategy: The Case for Africa's Green Minerals Strategy

### 5. Conduct feasibility study on establishing battery manufacturing plants in Africa )

### 6. Unlock and mobilize domestic investment (local listing, private equity, SPVs, etc)

### 7. Resource-driven and trade induced industrialization facilitated by the AfCFTA strategies.



THANK YOU

24 – 25 November 2021,  
Kinshasa, DRC.

## DRC-AFRICA BUSINESS FORUM2021

FOSTERING THE DEVELOPMENT OF A BATTERY,  
ELECTRIC VEHICLE AND RENEWABLE ENERGY  
INDUSTRY VALUE CHAIN AND MARKET IN AFRICA



## How to support development of raw materials sustainable value chains with our African partners - Carsten SORENSEN (DG INTPA)



# How to support development of sustainable raw materials value chains

*Presentation by Carsten Sorensen,  
INTPA E2 Deputy Head of Unit  
18 November 2021*



## 1/ Policy and Context

## 2/ Tools

## 3/ Examples

## 4/ Next steps



### Policy and geo-political context:

- The European Green Deal
- Climate neutrality targets - net zero carbon emissions by 2050
- Global race for minerals

*but...*

- Need for a '*Just transition*'
  - **Sustainable** raw materials value chains.

Value chains that are global, produce value locally, link upstream and downstream actors, involve both EU and African actors and are respectful of social, environmental and governance standards



## Responsible sourcing: EPRM European Partnership for Responsible Minerals

- Accompanying measure to EU Conflict Minerals / Responsible Sourcing Regulation (EU)2017/821 of 17 May 2017
- Capacity Building, Market Access, Formalisation of Artisanal and Small-scale Miners (ASM) in CAHRAs
- Support to Due Diligence for EU Importers of 3TGs minerals as per OECD standards

<https://europeanpartnership-responsibleminerals.eu>



## Capacity building: EU-ACP Development Minerals Programme – UNDP

- Capacity Building of Mineral Institutions and Small-Scale Private Sector operating in Low-Value Minerals in ACP countries
- Phase 1: 2014 – 2019 € 13.4 M
- Phase 2: 2020 – 2023 € 11.1 M



- Implemented in all ACP countries with 6 focus countries: Cameron, Guinea, Tanzania, Uganda, Jamaica, Fiji.
- 4 new countries to be added by end 2021
- Skills and capacity building of ASM (artisanal and small scale mining)
- Support to the AU African Minerals Development Center -AMDC

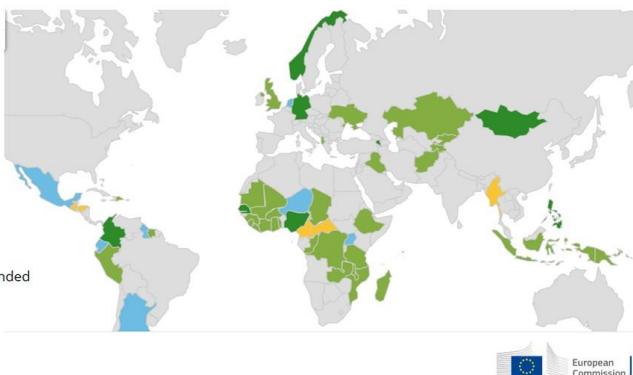
[www.developmentminerals.org](http://www.developmentminerals.org)



## Transparency: EITI Extractive Industries Transparency Initiative

- Standard setter
  - 55 countries
  - New focus on:
    - beneficial ownership
    - environmental and social standards
- Legend:
- Satisfactory progress
  - Meaningful progress
  - Inadequate progress / suspended
  - Yet to be assessed

<https://eiti.org>



## Contract negotiation: CONNEX

- **Demand driven:** provides technical expertise to assist governments to (re)negotiate to their benefit large-scale, complex investment contracts in the extractive industry
  - **Guinea, Liberia and Tanzania:** Review of financial models for extractive projects, as preparation for possible negotiations
  - **Mali and Mozambique:** Technical support focusing on the planning and conduct of contract negotiations, using previous negotiations as case studies
  - **Kyrgyzstan:** Technical support on tendering procedures.

<https://www.connex-unit.org/en/>



## Other programmes

- Extractive Global Programmatic Support (EGPS) – World Bank  
50% of budget dedicated to support countries towards EITI compliance  
<https://www.worldbank.org/en/programs/egps>
- Pan-African Support to Geological Sciences and Technology – PanAfgeo  
Capacity building for African Geological Surveys for national, regional and continental support to policy-making and planning processes.  
<https://www.eurogeosurveys.org/>
- Managing Natural Resource Wealth Thematic Fund (MNRW) – IMF  
Capacity development in tax policy, fiscal modeling and revenue forecasting; revenue administration; macro-fiscal and public financial management; monetary policy, exchange rate policy frameworks and macro-prudential frameworks and economic statistics for natural resources. In 20 countries.



## NDICI – Global Europe (2021-2027)



## Way forward:

- Further engagement through Multiannual Indicative Programmes + enhanced policy dialogue with selected pilot countries: DRC, Namibia, Rwanda, Uganda, South Africa, Senegal
- Objective: explore the potential for setting up EU-Africa partnerships on sustainable raw materials value chains
- 17-18 February 2022: **EABF 2020** (EU-Africa Business Forum)

« **Building stronger value chains for sustainable growth and decent jobs** »



## Thank you



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## **Bridging the Knowledge Gap in Raw Materials Value Chain: The Case of Clean Energy Sources - Degol HAILU (UNDP)**

### **Abstract**

With the urgency to meet the commitments to net-zero carbon emissions by mid-century, countries will increase their share of renewable sources. Hence, the low-carbon future will be very mineral intensive as clean energy technologies need more materials than fossil-fuel-based technologies. For instance, in the next 30 years, over 3 billion tons of critical minerals such as lithium, cobalt and silicon will be needed.

The good news is that African countries will have the opportunity to generate tax revenues and foreign exchange from trading and exporting these minerals. They will be able to mobilise the much-needed development finance. They will have the chance to embark on diversification and domestic value addition capacity to generate employment and income. They will be able to build vital infrastructure, roads, rails and ports

However, there are crucial knowledge gaps. First, in terms of the economics, we are not certain if the capacities, skills, and know-how exist to add value and process these energy minerals domestically. Second, in terms of climate change, the production and processing of critical minerals themselves can be sources of greenhouse gas emissions. These minerals require more energy to produce per unit of output than oil and gas. To what extent is smart-mining implemented in Africa is one big question. Third, concerning the environment and social issues, there is limited knowledge of whether adequate safeguards are in place to protect biodiversity and ecosystem services and tackle soil erosion. Or, what level of capacity is there to avoid changes in community life, displacements, excessive migration, improve poor working conditions, remove workplace hazards, exposure to chemicals. Finally, we need more knowledge to strengthen the systems that incentivise producers to engage in responsible business conduct related to governance issues.

In conclusion, we must have adequate knowledge to balance our growing demands for critical minerals and the need for a new resource governance model that benefits Africans.

## Raw Materials in Trade Agreements and Ensuring Responsible Sourcing - Philipp DUPUIS and Marten WESTRUP (DG TRADE)

### Responsible sourcing – knowledge needs for monitoring progress and impact - Tyler GILLARD (OECD)

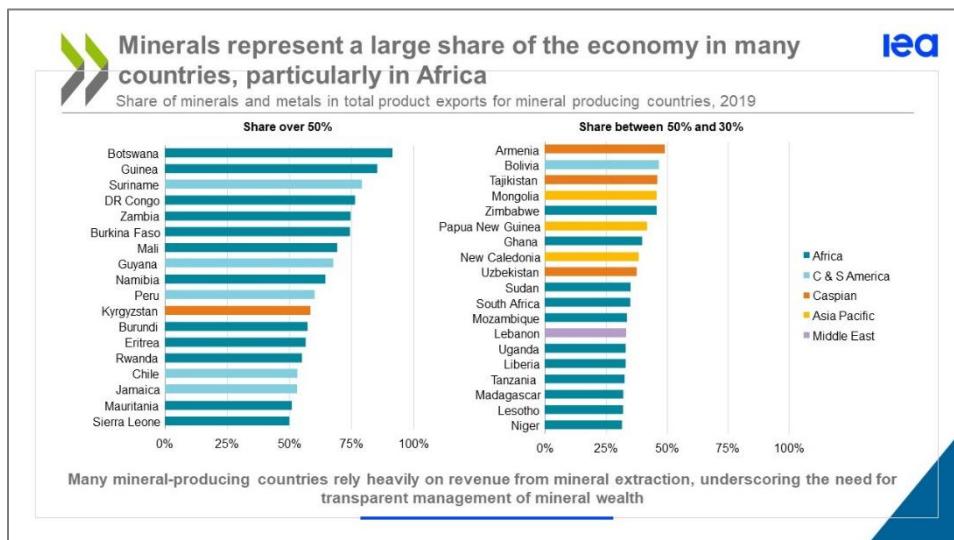
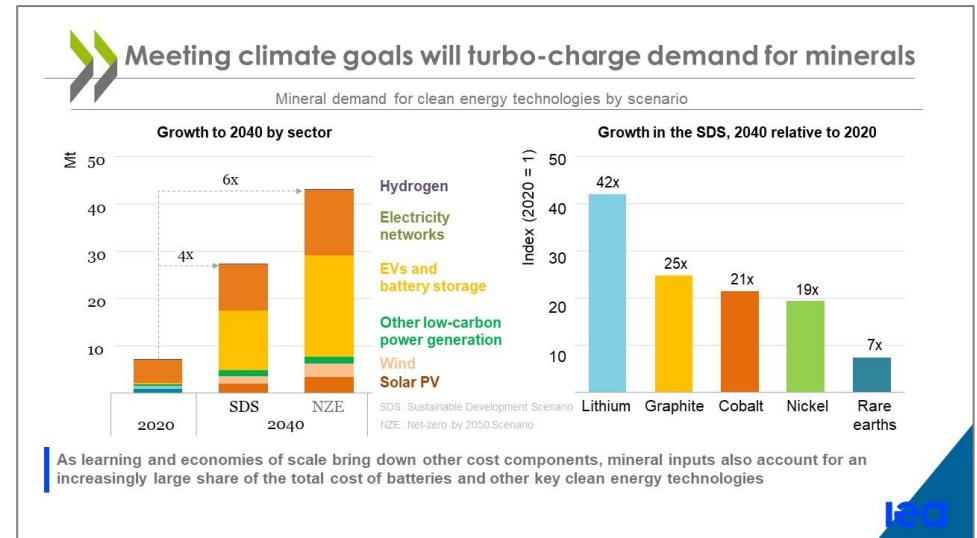
**MONITORING DUE DILIGENCE IN MINERAL VALUE CHAINS**

Informing policy design through data to support positive impacts in mineral producing countries

18 November 2021

Tyler Gillard  
Head of Due Diligence  
Centre for Responsible Business Conduct

**OECD**  
BETTER POLICIES FOR BETTER LIVES



## OECD Due Diligence Standards

| **Conduct supply chain due diligence**

- Anticipate risks and potential disruptions
- Mitigate the risk of adverse impacts on people, planet and society

**OECD Due Diligence Guidance for Responsible Business Conduct**

| **Maintain and expand diverse sources of supply**

Stay engaged responsibly in high-risk areas and with informal workers

| **Foster a just transition**

| **Enable secure supply**

- Due diligence management systems
- Identify and assess risks
- Mitigate and manage risks
- Verify due diligence
- Report on due diligence
- Provide for or cooperate in remediation

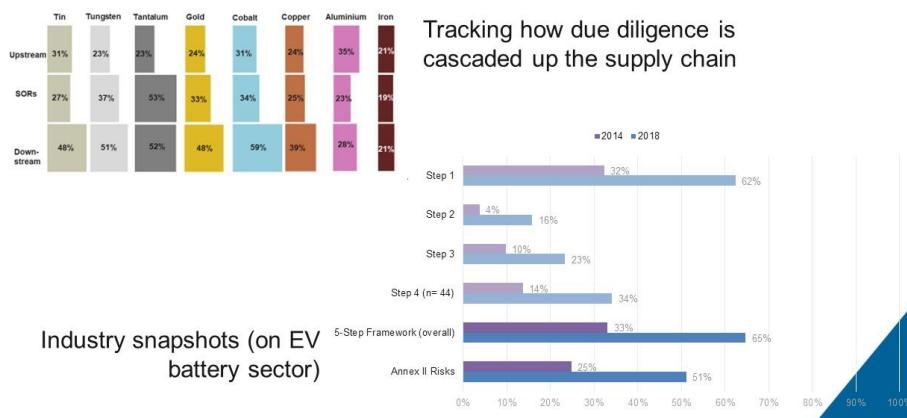


## Existing evidence on the impact of due diligence

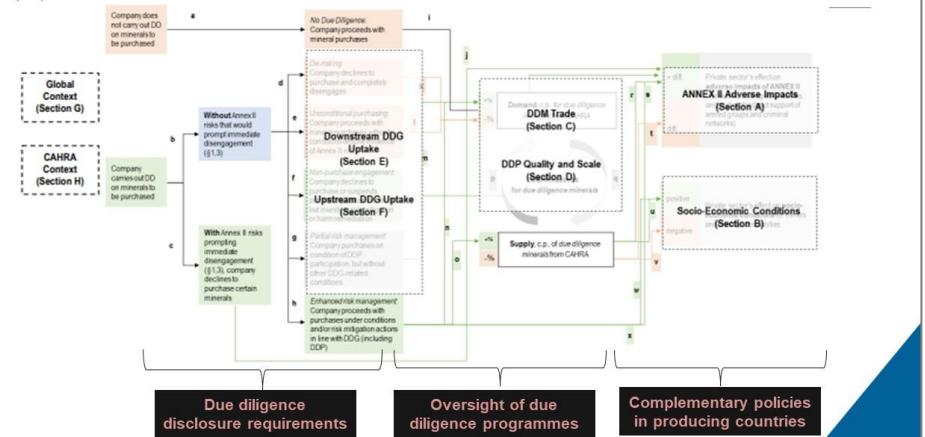
- | Companies subject to minerals due diligence legislation perform **3 x better** than average on due diligence disclosure (OECD)
- | Due diligence programmes companies use to comply with legislation **improve transparency** (UNGoE), **reduce military involvement in mining [-27%]** and **increase public services and revenue collection [+58%]** (UCLA, IPIS)
- | **Conflict has decreased** in countries covered by due diligence legislation relative to non-covered countries (Berkeley, Seoul National University)



## Initial findings on uptake



## Systematizing our approach to data



## Main data gaps



### | De-risking

Understanding the prevalence and effects of companies avoiding—instead of addressing—risks

### | Cost and value of due diligence

Research to help address the perceived imbalance of the cost burden of due diligence through the supply chain

### | Control points

How control points like smelters, refiners or key points of transformation use leverage

### | Attribution and contribution

Improving accuracy with which relationships are linked



## Implications of future legislation

### | Joint industry programmes

- Due diligence and audit programmes with different scopes – policymakers could help the market make sense of joint due diligence programmes while being careful not to create safe harbours for companies to avoid scrutiny
- OECD Alignment Assessments can lend structure to this process

### | Risk scope

- Meeting expectations for expansive risk scope while utilising the unique due diligence framework of the OECD Minerals Guidance
- OECD environmental due diligence tool for minerals sector in development

Alignment Assessment  
(AA) =

An evaluation of an industry or multi-stakeholder initiative. It evaluates the alignment of the initiative's written standards and their implementation with the recommendations in OECD due diligence guidance.

OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas

ALIGNMENT ASSESSMENT OF INDUSTRY PROGRAMMES WITH THE OECD MINERALS GUIDANCE



## Taking the work forward

### | Fully deploying the M&E framework

Focussing on high-risk countries and supply chains

### | Bespoke research on data gaps

Control points, industry programmes, de-risking, cost and value, attribution

### | Global benchmarking of uptake

Developing panel data on uptake of due diligence globally

### | Collaboration with policymakers

Incorporate policy impact lens across approaches

## **Circular Economy in EU-Africa cooperation - Gaëtan DUCROUX (DG ENV)**

### **Abstract**

Gaëtan DUCROUX, from the European Commission Directorate General on Environment, made a presentation on EU-Africa cooperation on Circular Economy (CE).

He framed this cooperation in the context of the implementation of the external dimension of the EU Circular Economy Action Plan (CEAP) which is a key component of the European Green Deal, EU's new growth strategy.

He presented the key features of this CEAP, which is a comprehensive action plan constituted of 35 actions along the life-cycle of products, focusing notably on making sustainable products the norm in the EU, empowering consumers, ensuring less waste and more value retention and focusing on key products value chains (electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction, food water and nutrients). He also stressed the international dimension of this CEAP, that notably includes the promotion of Global Agreement on Plastics, the creation of a new Global Alliance on Circular Economy and Resource Efficiency, the promotion of CE through development and international cooperation programmes, the inclusion of CE dimension in trade agreements, and international outreach activities.

More specifically on Africa, he developed the work being conducted by the Commission in the context of the new EU Africa strategy, the engagement with the African CE Alliance, the African Union, the Europe Africa Business Forum, and developed the key features of a study commissioned by DG ENV on Circular Economy in EU-Africa cooperation.

This study notably highlights the key trend in the development of CE policies in Africa, the opportunities a CE transition can provide to address some African priorities and challenges (related to Climate change, environmental degradation, economic development and job creation, etc) as well as the potential identified in Africa for CE uptake in key sectors (such as agri-food, plastics/Packaging, electronics and electric equipment, construction and textiles).

Finally, he insisted on the role of trade flows and policies in the development of a CE transition in Europe, in Africa and in global value chains and identified some key knowledge gaps to support the development of more robust CE policies in Africa notably regarding data availability and quality on circular economic production processes, waste generation, resource consumption, informal employment per sectors, trade flows of waste and 2nd hand products as well as the need to further investigate in measuring and assessing benefits of CE policies.

### Useful Links:

International dimension of the Circular Economy Action Plan: [https://ec.europa.eu/environment/international\\_issues/circular\\_economy\\_global\\_en.htm](https://ec.europa.eu/environment/international_issues/circular_economy_global_en.htm)

Study on Circular Economy in EU-Africa cooperation: <https://op.europa.eu/en/publication-detail/-/publication/4faa23f2-8b8a-11eb-b85c-01aa75ed71a1/language-en>

African Circular Economy Alliance: <https://www.aceafrica.org/>

## Presentation



# Circular Economy in EU-Africa Cooperation

Raw Materials week - Knowledge needs – EU-Africa focus  
18/11/2021

Gaëtan Ducroux, DG ENV <gaetan.ducroux@ec.europa.eu>



## A new vision for Europe

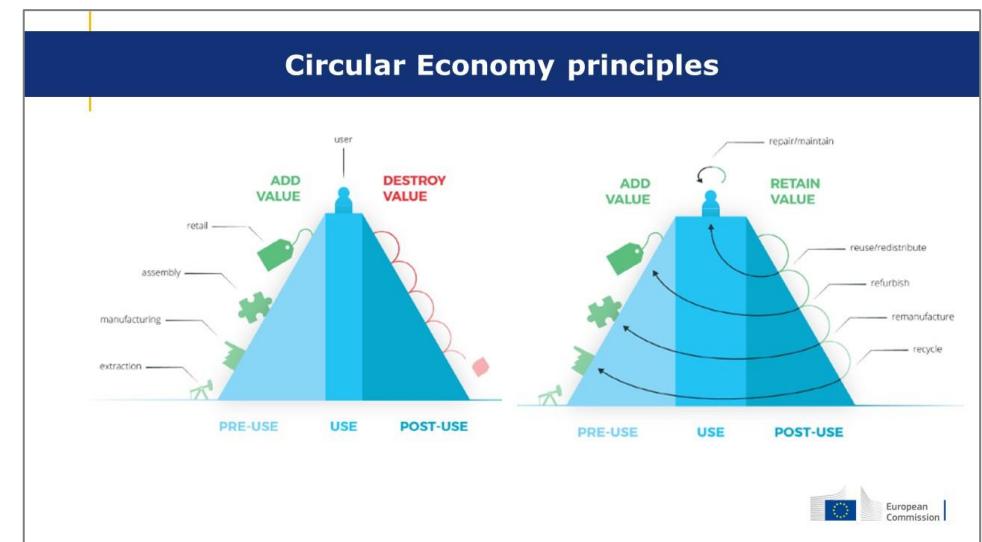


### Circular Economy Action Plan

For a cleaner and more competitive Europe

**35 actions along the entire life cycle of products, to:**

- Make **sustainable products** the norm in the EU
- Empower** consumers and public buyers
- Focus also on key product value chains:** electronics and ICT; batteries and vehicles; packaging; plastics; textiles; construction and buildings; food, water and nutrients
- Ensure **less waste and more value**
- Lead global efforts** on circular economy



## Leading efforts at global level

Need to drive efforts at global level:



- Global agreement on plastics
- Global Alliance on Circular Economy and Resource Efficiency
- Promote CE bilaterally, regionally and multilaterally, incl. through development and international cooperation programmes
- Free trade agreements to reflect enhanced CE objectives
- Outreach activities through European Green Deal diplomacy, circular economy missions and enhance coordination with EU MSs

[SWD\(2020\) 100 'Leading the way to a global circular economy: state of play and outlook'](#)



## Our engagement with Africa on CE

- ❖ New **EU Strategy with Africa** – green transition priority
- ❖ Engagement with the **African Circular Economy Alliance**
- ❖ Engagement with the African Union that has started late 2020 a new expert group on CE to **develop an African CE Action Plan**
- ❖ **Europe-Africa Business Forum (EABF)** in the margin of EU-AU Summit
- ❖ **Inclusion of CE** in NDICI Programming
- ❖ **Study on CE** in the EU-Africa cooperation



## Study on Circular Economy in EU-Africa cooperation



### Objectives

1. Improve the understanding of the **state of play** concerning current and **potential uptake** of implementing CE in Africa, focusing on selected priority case-study countries;
2. Analyse the potential **impact of the transition to the CE in Africa and in the EU** in terms of **opportunities** as well as **trade-offs**, and identify **policies and strategies** to maximise the former and mitigate the latter;
3. Provide **recommendations** for a more effective and integrated EU approach to promoting the CE transition in Africa

### Outputs

- ❖ 1 continental report
- ❖ 8 country reports : Egypt, South Africa, Nigeria, Rwanda, Senegal, Morocco, Kenya, **Ghana**



## Key features of Circular economy in Africa

- ❖ The term "Circular Economy" is **relatively new in the African policy context**, but its principles are deeply embedded in most African countries
- ❖ The circular economy (CE) as a policy paradigm is **gaining traction** over the last few years (e.g.: AMCEN, AU, AGSP) – correspond to various African priorities
- ❖ Strong population / economic growth in Africa → material consumption growth. CE as a **solution to decouple resource use and economic development**
- ❖ **Drivers for CE uptake :**
  - Job creation
  - Economic development and diversification
  - The growing waste problem
- ❖ In most African countries, the discussions surrounding circular economy have mostly **focused on improving waste management and recycling** (limited holistic CE policy frameworks)



## CE-related trends in Africa

- Key sectoral opportunities identified for CE uptake in Africa :
- Agriculture and food production
- Plastics/packaging
- Electronics and electric equipment
- Construction
- Fashion/ textile



## Potential impact of CE transition

- **Economic:** creation of new business and employment opportunities, increasing competitiveness of some sectors, transforming waste into more valuable products and creating revenues and mobilizing funds for innovative solutions.
- **Social:** improved livelihoods, particularly of informal workers, stronger capacities and awareness on waste management practices, better health conditions as a result of safer waste management practices.
- **Environmental:** reduced emissions, improved air quality due to lower degree of open burning of waste, lower influx of terrestrial waste into marine environments, water/resources/energy savings in production processes and reducing the amount of mismanaged waste

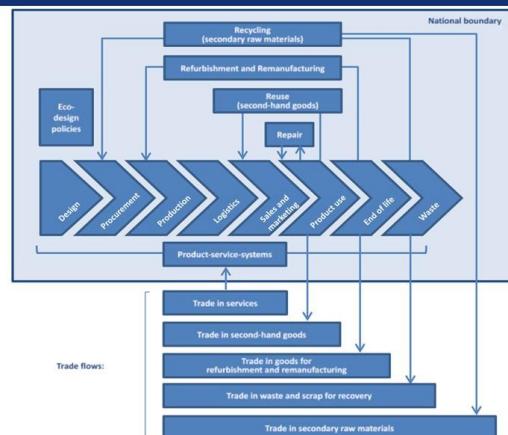
### Overall modelled impacts by 2030:

- GDP: +2.2%
- Employment: +2.7% (11 million jobs)
- Emissions: lower emissions per unit of economic growth



## CE and EU-Africa trade

- EU is Africa's most important trade partner outside the continent
- Raw materials and intermediate goods dominate Africa's exports
- Final products such as transport equipment, machinery and electronics dominate imports
- Africa receives large volumes of:
  - Second-hand products
  - Illegal waste shipments as part of second-hand trade flows



## Key knowledge gaps identified

- To better monitor and inform CE policies in Africa and support the CE transition in Africa, there is a need for:
- **more data availability & quality (and harmonization) notably on:**
  - Economic production in Africa (missing data on circularity - repair services, leasing services, etc);
  - Waste generation;
  - Resource consumption;
  - (informal) employment by sector.
- **better data on trade flows in waste, secondary materials and second-hand goods.**
- **Research to investigate, measure and model impact/benefits of CE policies:**
  - Environmental (resource savings, pollution reduction, GHG emissions)
  - Economic & social impacts (value creation, employment, health...)



## For more info



Available under 'Communication material' at  
[https://ec.europa.eu/environment/international\\_issues/circular\\_economy\\_global\\_en.htm](https://ec.europa.eu/environment/international_issues/circular_economy_global_en.htm)



<https://circularconomy.europa.eu/platform/en/knowledge/circular-economy-africa-eu-cooperation-ghana-report>



# Thank you



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## **Overcoming Knowledge Challenges - New Pathways to Equitable North/ South (W)EEE value chains - Susanne KARCHER (ACEN, SRI)**

### **Abstract**

Key project objectives of both the ACEN organization<sup>(29)</sup> and the South Africa based part of the SRI initiative<sup>(30)</sup> is the establishment of circular economy model based business opportunities related to secondary materials recovery and revalidation on the African continent.

To do so it is important to take full cognizance of Africa specific facts and demographic trends that shape currently the Circular Economy discussions and envisaged agenda deliverables in Africa.

With this in mind the presentation provides an EU/Africa value chain analysis for electrical and electronic equipment (EEE) as well as for waste electrical and electronic equipment (WEEE) to describe for both the relative position of Africa and the historical roles and responsibilities that the continent has been assuming so far. It shows that Africa is essentially still limited to extracting primary resources in Africa through mining (under often very problematic, triple bottom line violating conditions) to then get exported to Asia (China predominantly) where parts are manufactured to make the EEE for Europe including vital components required for the EU energy transition. Regarding WEEE and despite the Basel convention, Africa is still receiving vast amounts of WEEE (often under the guise of still functional equipment) which it is ill equipped in most countries to handle responsibly. Since Africa does not possess much end processing facilities/capacities most of the value that is eventually recovered (mainly by the informal sector) from secondary materials (including metals) is exported again to the global North where all the state-of-the-art smelters are located.

So essentially Africa loses in both value chains, in its current position much of its resource wealth to the Global North (including the EU), with very few Africans benefiting from it, at huge environmental (biodiversity loss, environmental destruction) and social (child labour, conflict minerals) costs. Typically, unauthorized WEEE imports further add to Africa becoming a dumping ground for non-viable/hazardous fraction that remain behind. Losing its own resource wealth Africa increasingly gets locked into a future role of the resource provider for wealthier continents and that compromises the continent's ability to forge ahead with its own continental green energy transition strategies and plans.

The African Union's Agenda 2063 "The Africa We Want"<sup>(31)</sup> envisions Africa as a powerhouse for the world but how can a powerhouse be powered without resources? With vast parts of Africa being stuck in the role of the primary resource extractor and exporter to the Global North this might also compromise opportunities for Africa's own CE transition plans as described in the African Circular Economy Alliance commissioned research report: "The five big bets for Africa to Circularity"<sup>(32)</sup>.

A window of opportunity and change might have however arisen at the recent COP 26 where South Africa received a sizable financial commitment from the EU, UK and USA to kickstarts the country's much needed de-carbonisation/green energy transformation journey<sup>(33)</sup>. While Africa is the continent with the lowest carbon footprint, South Africa – the "economic powerhouse" of Africa is notably a very significant carbon emitter (12<sup>th</sup> biggest globally and surpassing China and America together on sulphur dioxide pollution from coal burning emissions). A key objective for South Africa to start its green energy transition journey would be strengthening renewable energy investment and the development of new sectors such as electric vehicles and green hydrogen. Coal power stations set to be decommissioned over the next 15 years will have to be repurposed for solar and battery storage.

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<sup>(29)</sup> [www.acen.africa](http://www.acen.africa)

<sup>(30)</sup> <https://www.sustainable-recycling.org/>

<sup>(31)</sup> <https://au.int/en/agenda2063/overview>

<sup>(32)</sup> <https://www.aceafrica.org/5-circular-bets>

<sup>(33)</sup> <https://www.iol.co.za/news/world/cop26-south-africa-secures-around-r131-billion-to-phase-out-coal-aff3467b-03d0-5ec3-a965-c7a0908ab681>

This seems however a tall order for a country with a long history of being highly dependent on non-renewable resource extraction to build its relative wealth and secure its basic energy supplies. By now South Africa has many mining towns that comprise of communities whose entire current livelihood depends on the extraction of coal or precious metals and all these individuals will have to be re-trained and re-introduced to green job opportunities.

As a matter of fact, the mining sector was the only sector sawing some growth during the CoVID pandemic. March 2021 statistics suggest that all mining activities combined contributed about 9% to the GDP and therefore it was hailed by the Minister of Minerals and Resources “as an important sector to preserve and further grow so it can drive economic recovery<sup>(34)</sup> for South Africans”.

The potential support via the EU was pledged to South Africa in the form of grants, concessional loans and investment and risk-sharing instruments, including mobilizing private sector funding and what is therefore required politically now is a clear commitment to a green energy growth pass over the next few decades that goes beyond the enticement of short-term unsustainable temporary economic gains and conveniences to keep the status quo. The potential funders need also to make very sure that the funds and finances for future green energy transition programmes are used for their intended purposes in a fully accountable manner.

The presentation then shares some proposed key strategies that should be considered as building blocks for a more equitable future EU/Africa business partnership model including the introduction of leasing primary resources instead of selling them (so Africa remains the owner and can easier cover its own needs if and when African energy and wider CE transitioning plans unfold). It also suggests the need for more transparency in both the EEE and WEEE value chain by including block-chain based last mile (African) supplier tracking through apps such as BAN-QU<sup>(35)</sup>, Kudoti<sup>(36)</sup> or Basadi Solutions<sup>(37)</sup> who build technical solutions to enable optimized informal sector integration and acknowledgement of their contribution. With the challenges discussed and demographic trends observed, the presentation concludes with the notion that a future position in the value chain and role for Africa should harness the continent’s historical cultural knowledge on how to live according to circular basic principles every day and preserve the useful life of products. Hence the continent lends itself to become a global hub for remanufacturing and repair. The EU should consider supporting Africa to build Africa’s opportunities for the high value local utilization of secondary materials.

Africa must be seen by the EU as a future EU Circular Economy strategy partner far beyond materials recycling and utilized as a service provider that can keep EEE for much longer functional as it is currently the case both in Africa and for Europe.

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<sup>(34)</sup> <https://www.bloomberg.com/news/articles/2021-07-06/iconic-south-african-mines-are-ravaged-economy-s-unlikely-savior>

<sup>(35)</sup> <https://banqu.co/>

<sup>(36)</sup> <https://kudoti.com/>

<sup>(37)</sup> <https://www.basadi-solutions.co.za/>

## Presentation

# OVERCOMING KNOWLEDGE CHALLENGES- NEW PATHWAYS TO EQUITABLE NORTH/ SOUTH (W)EEE VALUE CHAINS

Susanne Yvonne Karcher (MSc. Chemeng)  
ACEN Co-Founder  
SRI National Project Coordinator

**African Circular Economy Network (ACEN)**  
Self-Funded  
Established in 2016 to be "the voice of Africa" that will be able to participate and negotiate in the global wider Circular Economy debate

**Sustainable Recycling Industries (SRI)**  
Funded by Swiss: SECO and EMPA  
SRI improves local capacity for sustainable recycling together with private and public institutions, as well as the informal sector.

100+ Representatives in 30 African countries  
Knowledge Network of Professionals  
[www.acen.africa](http://www.acen.africa)

## KNOWING AFRICA SPECIFIC TRENDS

### CLIMATE CHANGE IMPACT

- Continent strongest affected by Climate Change (AfDB)
- Continent least contributing to Climate Change (NCBI)
- South Africa is a significant carbon emitter even on global scale

### ECONOMY

- Little EEE manufacturing in Africa – limited to "assembly"
- Most African countries are resource exporter and product importer

### DEMOGRAPHICS

- Massive population growth in foreseeable future
- Africa's population is young and the majority in working age

### EMPLOYMENT

- Formal 8-5 is the exception
- Africans are entrepreneurial, "opportunity in the present seeking" innovators
- Many are economic survivors on a daily basis

### SOCIAL

- Massive inequity of wealth in many countries – masses a poor/few are very rich- little/no middle class
- Africans need mass access to "goods and services" over ownership for a few
- UBUNTU principle "I am because we are" - SHARING
- African CE Agenda is shaped by African realities: human development, building resilience (climate change), creating a unique, supplementary position playing into strongpoints

## INTRODUCING ACEN AND SRI

African Circular Economy Network (ACEN)	Sustainable Recycling Industries (SRI)
Self-Funded	Funded by Swiss: SECO and EMPA
Established in 2016 to be "the voice of Africa" that will be able to participate and negotiate in the global wider Circular Economy debate	SRI improves local capacity for sustainable recycling together with private and public institutions, as well as the informal sector.
100+ Representatives in 30 African countries	Colombia, Egypt, Ghana, Peru and South Africa
Knowledge Network of Professionals	4 generic Outcomes: Policy, Normative, Business, Hazardous Waste Solutions
<a href="http://www.acen.africa">www.acen.africa</a>	<a href="http://www.sustainable-recycling.org">www.sustainable-recycling.org</a>

## AFRICA SPECIFIC TRENDS

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ACEN VISION: Build a restorative African economy that generates well-being and prosperity inclusive of all its people through new forms of economic production and consumption which maintain and regenerate its environmental resources.

## KNOW THE STATUS QUO: THE AFRICA- EU PATHWAY FOR EEE

- Large scale primary mining activities in Africa
- Low priced export commodity
- Huge contributor to Africa's GDP and GINI Index
- CRMs, gold, cobalt, copper, tantalum- all crucial building blocks for EEE manufacturing.
- EEE needed for EU energy transition/de-carbonization to drive: wind mills, EV, solar plants, hydrogen plants
- Manufacturing of parts EEE for renewables e.g. in China
- Assemblies Asia or Europe
- EEE utilized in Europe until its useful life-time...



## KNOW THE STATUS QUO: THE AFRICA- EU PATHWAY FOR WEEE

- WEEE Directive comes into play in EU
- Producers fulfill EPR obligations of safe take back, recycling of WEEE in EU
- Some EU generated WEEE leaks out of Europe:
  - smuggled amongst functional second hand equipment including cars/fridges
  - sent when almost reached "end of life" (donation !)
- Africa EPR systems are only emerging slowly
- Informal sector based WEEE treatment- at a high EHS cost
- Functionality favoured over materials recovery
- Limited benefit from materials recovery- only value of fractions
- End processing capacity is lacking ----- EXPORT



## KNOWLEDGE GAPS ?

- Dependency to export primary resources is keeping Africa in a "linear lock-in" position
- Dependency to export secondary materials adds further to that
- Problematic WEEE fractions are retained in Africa- without treatment tech
- Current EEE/WEEE value chain position impoverishes people on the continent at triple bottomline levels
- Africas own CE ambitions might remain unattainable with the lack of both financial and natural resources..



## GOOD TO KNOW: FUTURE DEVELOPMENTS TO KEEP IN MIND

- Africa's own CE Vision (e.g. ACEA- The Big Five Bets), African Union Development Agenda "2063- The Africa we want"
- Africa's own Energy Transition Plans based on historical energy mix
  - South Africa on 80% coal dependency
  - 12th-biggest carbon emitter in the world and the worst sulphur dioxide polluter in its category, surpassing China and the US combined



## COP 26 - WATERSHED MOMENT FOR RSA ?

- South Africa has secured a multibillion-dollar deal with developed nations (R131-billion over the next three to five years)
- EU, UK, USA have partnered to support South Africa's own climate action and decarbonisation goals
- Areas the funding : renewable energy investment, electric vehicles and green hydrogen.
- Decommission and repurpose coal powerstations for solar and battery storage.
- Transition funding to assist coal business dependent communities - green jobs/decarbonization
- Pledged in the form of grants, concessional loans and investment and risk-sharing instruments, including mobilising private sector funding.
- Great opportunities but also significant risks:  
-Corruption, lack of commitment, huge social implications



## INGREDIENTS FOR EU/AFRICAN PARTNERSHIP SUCCESS

- Leave no one behind- The future EU growth model must not compromise Africa's opportunities
- Willingness to rethink T&Cs of current trade agreements
- Leasing of Africa's resource wealth to Europe vs selling ?
- Any Circular Economy inspired business relation / partnership MUST deliver wider "social justice" for Africa
- Build inclusive, last mile transparent value chains through blockchain apps (e.g. BAN-QU)
- Key KPI CE success in Africa is measured: impact for human development
- Africa offers historical cultural knowledge on how to live according to circular basic principles every day
- Future role for Africa: Hub for remanufacturing, repair, build industries built on utilizing secondary materials (Stahel: Ration man hours/kg resources: remanufactured engine vs virgin resource designed one: 270:1)

AFRICA: A future EU Circular Economy strategy partner far beyond materials recycling....

AFRICA: EU value chain partner for EEE to keep it functional as long as possible



## THANK YOU VERY MUCH FOR YOUR INTEREST

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