



UNDER THE HIGH PATRONAGE OF THE PRESIDENT OF THE DEMOCRATIC REPUBLIC OF THE CONGO
H.E. Mr. FELIX ANTOINE TSHISEKEDI TSHILOMBO,
 THE MINISTRY OF INDUSTRY

Is organizing the

DRC-AFRICA BUSINESS FORUM 2021

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



Date: 24 - 25 November 2021

Place: Kinshasa

PRESIDENTIAL DEBATES



I. BACKGROUND

The global transition towards green energy and rapid decarbonization significant opportunities for Africa. It has spurred the demand for electric vehicles and investment in battery-powered storage systems. The Democratic Republic of the Congo (DRC) is at the heart of the dynamic battery value chain as it is endowed with strategic minerals that are components of lithium-ion batteries, used for energy storage and electric mobility. Indeed, the DRC accounts for nearly 70% of the world's cobalt production. More than 25 million tons of cobalt reserves (2/3 of world reserves) are identified in its subsoil. In addition to cobalt in DRC, the African continent is endowed with significant reserves of other strategic minerals such as lithium, manganese, graphite, and copper, therefore creating the possibility of a robust regional value chain for batteries, electric vehicles, and renewable energy.

As a commodity exporter still locked in the mining and mineral processing stage, the DRC is at the bottom of the global battery and electric vehicle value chain, currently capturing only 3% of a total global value that is expected to reach US\$ 8.8 trillion by 2025 (BloombergNEF). It is therefore important for African countries to break the vicious cycle stemming from excessive dependence on the export of natural resources, by creating more value on the continent, strengthening productive capabilities, and expanding exports and intra-African trade through the African Continental Free Trade Area (AfCFTA).

To break this vicious cycle and go up in the ladder of global value chains, DRC as well as other African producers of battery minerals have to improve the linkages between the extractive sector and other sectors of the local economy, localize the procurement value chain and promote resource-driven industrialization, including the production of battery precursors (US\$271 billion by 2025), battery cells (US\$387 billion by 2025), cell assembling (US\$1.18 trillion by 2025), and, ultimately, electric vehicles (US\$ 7 trillion by 2025) (BloombergNEF). Better integration of African battery mineral producers into global value chains will not only contribute to the achievement of the SDGs and enlarge the share of wealth that is retained locally but also strengthen the competitiveness of local SMEs and enable the creation of decent jobs for the youth. In parallel and moving forward, creating more value, and strengthening productive capabilities would have to take into account the need to create relevant skills and competences, including through technical and vocational education and training (TVET) and national suppliers' development programmes. DRC and Africa's often cited demographic dividend, the aspirations of its youth and the skill requirements of the economy - all hinge on well-functioning skills development programmes, which should be a key national priority. Effective labour market transition must include initiatives for anticipating and addressing emerging skills and competency needs as



well as improving employment linkages and fostering the emergence of capable, competent, and competitive local suppliers of goods and services, including small and medium-scale enterprises, linking local content policies, licensing and contracts, entrepreneurship development and TVET programs accordingly for better outcomes. The investments needed for substantially increasing Africa's share of the global value chain of batteries, electric vehicles, and renewable energy are far beyond what public resources could provide. Private sector, particularly African private sector, investments will be essential to climb up the ladder in these important value chains.

II: THE OBJECTIVE AND PURPOSE OF THE PRESIDENTIAL DEBATES

The main objective of the DRC Africa Business Forum on "Fostering the development of a battery, electric vehicle, and renewable energy industry value chain and market in Africa" is to bring together African governments, African and foreign private sector, as well as other stakeholders to identify opportunities and to facilitate investments towards an increase of Africa's share of the battery, electric vehicles, and renewable energy value chain.

The purpose of the Presidential debates is for African Heads of States, captains of industry, as well as heads of prominent institutions to provide insights on the compelling reasons for investing in Africa; explain what Africa has to offer by localizing the batteries value chains on the continent; and demonstrate the engagement of governments in the provision of a conducive environment for investments.



III: MAJOR TOPICS FOR DISCUSSION

A. Political commitment for a conducive environment for investments

The government's political commitment is almost always the essential prerequisite for a conducive environment for investment and for private sector development. Policy makers must have institutional commitment, predictable and coherent policies and regulatory frameworks, and should strive to eliminate bottlenecks that prevent businesses and entrepreneurs to thrive. A concerted effort is required to improve governance of extractive resources, especially in the areas of transparency in business processes relating to establishment of private sector enterprises, and to address the challenges relating to Artisanal and Small-scale Miners (ASM) in the strategic minerals sector. There is also need for a holistic vision, coherent and coordinated policies across sectors (mining, industry, trade, infrastructure, revenue etc), and capable institutions. It is therefore important to align trade, industrialisation, and investment policies. Moreover, African countries need to break the vicious cycle stemming from excessive dependence on the export of natural resources, by creating more value on the continent, strengthening productive capabilities, and expanding exports and intra-African trade through the AfCFTA, and to develop the requisite infrastructure to attract investments from original equipment manufacturers and component suppliers to support the development of the automotive and renewable energy sectors, especially the battery and electric vehicles industry as well as the production of components to support the deployment of renewable energy on the continent .

Issues for discussion

- What are your visions and strategies regarding strategic minerals development at – national, regional, and continental levels?
- Are the existing policies relevant to minerals development- such as industrial, infrastructure, investment, and skills development- coordinated and coherent in your respective countries?
- What steps have you undertaken to ensure that the existing bottlenecks that impede investments are addressed?
- What policies / strategies / instruments / actions do you have to improve the business environment in your country?

B. Strategic minerals as opportunities for jobs creation and socio-economic development

The emergence of a competitive battery, electric vehicle, and renewable energy value chain in Africa is an effective way of augmenting the number of better-paying and higher-skilled jobs in regions dominated by mining activities; and strengthening the resilience of local economies. This will reduce poverty and improve



the welfare of the population - especially vulnerable groups such as youth, once they are trained and get the relevant skills set.

It is therefore important for African countries to break the vicious cycle stemming from excessive dependence on the export of natural resources, by creating more value on the continent, strengthening productive capabilities, and expanding exports and intra-African trade through the AfCFTA. By supporting intra-African trade, the AfCFTA would also advance Africa's industrialization agenda through regional value-chain development, reduce Africa's dependence on commodities and generate the jobs needed to harness Africa's demographic dividend. In practice, whether firms within the AfCFTA utilize trade preferences and the extent to which they would do so depends on the way rules of origin are designed and implemented.

Issues for discussion:

- Transforming from a battery minerals exporter to an industrialized manufacturing-driven economy that creates jobs for its citizens requires tailored policies and strategic actions. What are the national/regional policies and strategies and enforcement mechanisms for the promotion of industrialisation, beneficiation, and value addition?
- How can we move from a resource-for-infrastructure model to a resources-for-industrialisation and sustainable development?

- Are the existing local content policies linked to those of trade and industrialisation?
- With the coming into force of the AfCFTA and the launch of initiatives such as the G7 "Build Back Better World (B3W) what partnerships can be established to ensure African countries start building their own regional supply chains.
- What competitive advantages can be leveraged to attract investors into battery manufacturing?
- What practical steps should governments, captains of industry, financing institutions, and other stakeholders take to accelerate the battery manufacturing value chain in Africa?

C. Creating continental demand for batteries in Africa

The global transition towards green energy and rapid decarbonization has spurred the demand for EVs, battery storage systems and green energy investments. Battery demand from electric vehicles is expected to increase more than nine times between 2020 and 2030. This is an opportunity for Africa to develop its LIB manufacturing minerals to take advantage of the huge opportunity. 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 controls of the value chain still lie in the hands of other countries, especially China and recently some countries in Europe.

A key challenge has been inadequate demand on the African continent to justify the business case for localizing components of battery manufacturing value chains in African countries where significant portions of the battery minerals are mined. Creating this demand will require a number of factors including coherent automotive policies to facilitate establishment of industries to manufacture LIBs and EVs (especially 2 & 3 wheelers and E-buses) which are seen as Africa's low hanging fruits. This will also facilitate Joint Venture arrangements with experienced global companies to invest in EV infrastructure (e.g., renewable energy, charging points, etc.) and creating consumer awareness of the need to decarbonize, especially setting achievable targets for major companies to gradually replace their ICE fleet with BEVs.

Beyond the mining of raw materials, the LIB manufacturing value chain will require re-training of existing skills and development of required skills for the industries to be created. Some examples of workforce requirements are scientists; chemists; chemical,

electrical, materials and industrial engineers; technicians; and software developers. Business and economic sciences are needed for the development of entrepreneurial skills to sustain the profitability and viability of the stakeholder businesses that would form part of the value chain. This emerging EV led industry will need updating programmes at tertiary and other skill training institutions to re-skill the existing workforce. Additionally, strengthening Research, Development & Innovation (RDI) consortium will allow Africa to compete in the battery manufacturing value chain for EVs and energy storage applications. This session will discuss practical policy and regulatory frameworks as well as investment strategies to gradually create the market for EVs for Africa's 1.37 billion people¹.

Issues for Discussion

- Creating the continental demand for battery supply chains will require regional cooperation. How can national governments facilitate a feasibility study which will include mapping of national competitive advantages of components of the battery value chain?
- What are the key ingredients for developing a national/sub-regional battery roadmap for advancing battery technology, competitiveness and skills in Africa;
- Developing and implementing an automotive policy in Africa requires collaboration among key stakeholders. What should be the key provisions in such policies and what are the practical implementation barriers to surmount?
- Two and Three wheelers (electric motorcycles) and E-buses are seen as the low hanging fruits for Africa due to affordability among others. How can Africa leapfrog with the production of these range of vehicles?

D. Sustainability

Mining is always associated with impact on the planet, but measures exist to mitigate environmental issues arising from mining activities. The global push towards net zero carbon future has resulted in a sharp rise in the demand for lithium-ion batteries (LiBs) and their constituent materials. The need for such massive production raises issues about the sustainability of the battery supply chain, from mining impacts to recycling and/or repurposing of end of life (EOL) batteries. Despite the opportunities provided by the energy transition to strategic mineral rich countries to optimize benefits in the value chain, the extraction can exacerbate environmental and other risks in countries with weak governance.

On the midstream part of the value chain, the main danger associated with the LIB value chain is the disposal of waste material. Processing metals for battery chemicals produces toxic waste that requires careful handling and disposal to ensure minimal pollution and impact to the environment. This also hold true on the consumption side where disposal of used batteries can result in poisoning the environment if not handled properly. Recycling is expected to alleviate some of these environmental issues but because the battery industry is still at development stage, recycling is yet to be established in earnest primarily because of the economics of undertaking the recycling process. Currently only few battery recycling plants exist globally bringing into question how EOL batteries will be disposed in countries without recycling facilities. Other issues include regulatory and logistical barriers with the potential to impede progress on battery life extension, reuse and recycling.

In Africa, sustainability is a major issue for artisanal and small-scale miners – the mining methods are a risk to both the environment and society, and the use of child labor is endangering children and threatening the existence of the development of the mining industry. These issues are also prevalent in the DRC and unless they are addressed, the DRC and other African countries may not be able to realize the investment in its resources.

Thus, it is important to develop appropriate policies and strategies to improve sustainability across the EV battery supply chain. This will facilitate building regional infrastructure for battery recycling and transportation and creating regulatory certainty for recycling.



¹ <https://www.worldometers.info/world-population/africa-population/> (based on UN estimates as of June 9, 2021)



Issues to be discussed:

- Developing regional infrastructure to facilitate establishment of centralized battery recycling plants in Africa is one of the proposals to justify the business case as well as environmental sustainability. How can Governments, industry and research institutions work together to create regulatory certainty to attract investors for battery recycling?
- Mainstreaming environmental standards and Paris Agreement requirements into national and regional industrial development policy and regulatory frameworks is critical for sustainability of the battery value chains. How is Africa progressing in this endeavor?
- What practical ways should be adopted by stakeholders to align production technologies and consumption patterns to promote environmental sustainability and maximise resource use efficiency?
- Currently 15% of cobalt produced in the DRC comes from the ASM sub sector. However, the ASM sub sector is plagued with challenges including the use of child labor and issues such as unsafe working practices. These have made it difficult for major battery and electric vehicle manufacturers to source cobalt from the DRC without controversy. How do we deal with this hydra-headed challenge to properly capture the ASMs in the LIB supply chain?

E. Link with renewable energy and SDG7

The UN Sustainable Development Goal (SDG) 7 includes targets to ensure universal access to affordable, reliable, and modern energy services and to increase substantially the share of renewable energy in the global energy mix. Also, the AU Agenda 2063 commits AU member states to speed up actions to build the energy infrastructure needed by harnessing Africa's energy resources to ensure modern, efficient, reliable, cost-effective, renewable, and environmentally friendly energy for economic development. Achieving these goals and increasing renewable energy in Africa's socio-economic sector is well within reach. Africa has significant endowment of renewable energy sources: tremendous solar, hydropower, wind, and geothermal potential, among others. Africa can therefore achieve a high share of renewables in the continent's energy mix.

The drive towards the global transition will also need storage systems to store variable energy from the renewable sector for later use. This is made possible by battery energy storage systems (BESS) produced from strategic minerals on the African continent. These systems can unlock major potential for African countries to finally obtain reliable, modern, and clean energy to stimulate and support industrial and economic development. This in turn can lead to significant social improvements, poverty alleviation, and a meaningful contribution to reducing Africa's global-warming footprint.

Issues for Discussion:

- What are the priorities and best practices that have proven successful in helping policy makers and development partners understand what is needed to overcome existing challenges in the energy sector?
- If nearly half of Africa's population lacks access to electricity, have poor energy infrastructure, how can we overcome this challenge to create demand for the EV supply chains?
- What are the strategic initiatives led by DRC to facilitate the development of the Renewable Energy Sector? What are the medium to long-term objectives set for DRC?
- What key areas of support would DRC welcome to foster the development of its Renewable Energy Sector?