BOWMANS

THE VALUE OF KNOWING

TRENDS IN ENERGY & INFRASTRUCTURE INVESTMENT IN EAST AND SOUTHERN AFRICA

Aleem Tharani

KEY TRENDS

OVERVIEW

1. **Renewable Energy Projects**: There was a growing focus on renewable energy sources such as solar, wind, hydro, and geothermal power. Governments and private investors were increasingly investing in projects to harness Africa's abundant renewable energy resources.
2. **Public-Private Partnerships (PPPs):** Governments in the region were actively promoting PPPs to fund and develop infrastructure projects. These partnerships helped attract private sector expertise and funding to address infrastructure gaps.
3. **Road and Rail Infrastructure**: Investment in road and rail infrastructure was on the rise to improve connectivity and facilitate trade within the region. Several projects aimed to enhance transportation networks and reduce logistical challenges.
4. **Port Development**: Ports played a crucial role in facilitating international trade, and investments were being made to modernize and expand existing ports or construct new ones to accommodate larger cargo volumes and improve efficiency.
5. **Digital Infrastructure**: digital infrastructure investment in East and Southern Africa was gaining momentum due to the region's increasing adoption of digital technologies.
6. **Energy Access and Rural Electrification**: Efforts were being made to improve energy access in rural areas through Mini-Grids and off-grid solutions, bringing electricity to underserved communities.
7. **Private Equity Investment**: Private equity firms were increasingly showing interest in the region's energy and infrastructure sectors, seeking opportunities for investment and long-term growth.
8. **Sustainable and Green Investments**: There was a growing awareness of the importance of sustainability and environmental impact. Investors were showing interest in projects that had positive environmental, social, and governance (ESG) credentials

C&I TRENDS AND DEVELOPMENTS

TRENDS IN CONTRACTUAL STRUCTURING: PPA OR LEASE?

PPA

- Central contract in relation to any structure involving the sale and purchase of power between parties.
- Main obligation of the buyer under the PPA is to pay the agreed tariff when due.
- Seller's primary responsibilities are to build, operate and maintain the power plant in accordance with the requirements of the PPA and applicable law and deliver the agreed amount of power.

Lease arrangements

- In Kenya, there is a licensing exception under the Energy Act for the generation of up to 1MW for own use.
- Lease structures primarily enables the entity to lease the system for their own power generation needs.

Operating lease v Financial lease (lease structure or asset finance structure)

C&I CURRENT OUTLOOK AND FUTURE POSSIBILITIES

Wheeling

- Delivery of energy from a generator to an end-user located in another area, through the use of an existing distribution or transmission network.
- Most energy laws within the region provide for open access, however, most countries (including Kenya) lack specific wheeling regulations.

Net-Metering

- In Kenya, draft Energy (Net-Metering) Regulations intended to operationalize the provisions on net-metering in the Energy Act.
- Key aspects: installations of 1MW for self-consumption, provision of non-discriminatory net-metering arrangements on a first come first serve basis, no deemed generation payments and costs related to the meter and setting up the interconnection with the licensee's network.

Mini Grids

- In Kenya, the draft Energy (Mini-Grid) Regulations 2021 intended to provide a regulatory regime for the growth of the mini-grid segment.
- The regulations apply to all mini-grids with an installed capacity of up to 1MW.
- Development of mini-grids: Cabinet Secretary bids or private development.

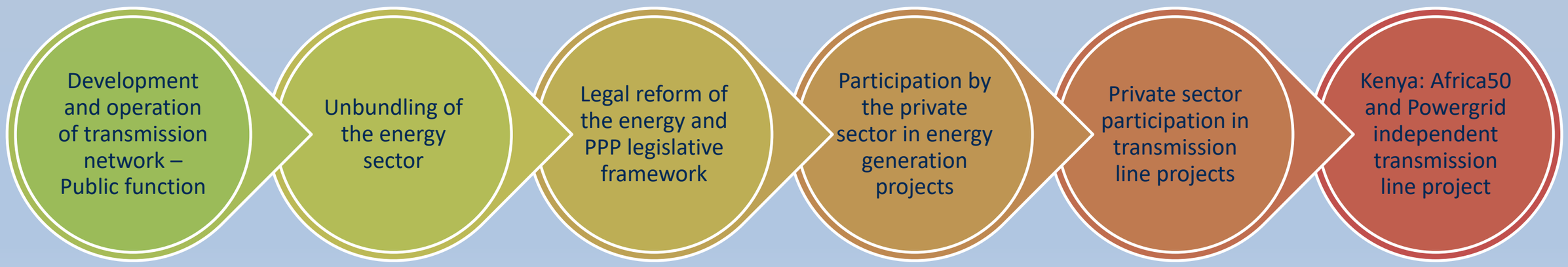
TRANSMISSION LINE PROJECTS

KENYA

- KETRACO is currently the main body mandated to build, maintain and operate high-voltage transmission infrastructure within the country.

- The government of Kenya, in partnership with Africa50 and Power Grid Corporation of India Limited will be undertaking the development, financing, construction and operation of a 400KV, 165km Loosuk-Lessos transmission line and a 220KV, 72km Kisumu-Musaga transmission line under a PPP framework.

- The project is the first private transmission line project in Kenya and will set a reference point in Africa as the first financing of transmission lines on a PPP basis.

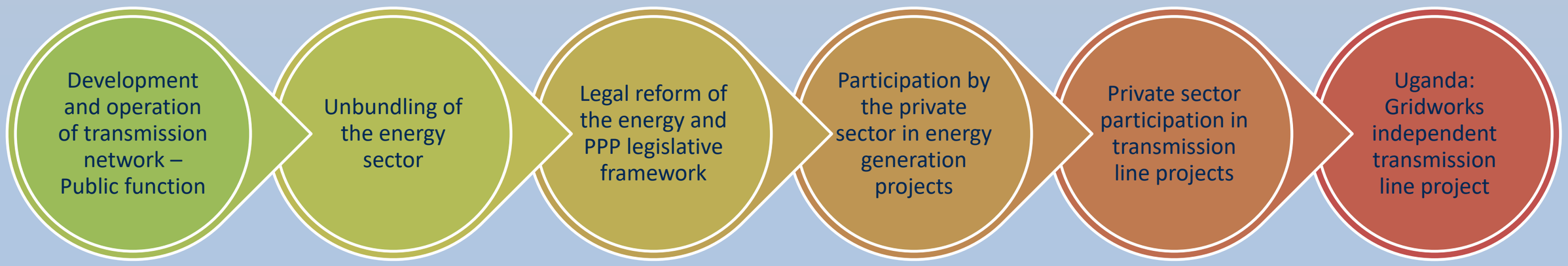


UGANDA

- UETCL is the public utility company mandated to own, operate and develop high voltage transmission grid above 33kV in Uganda.

- Gridworks and the government of Uganda have agreed to develop the country's first privately financed transmission project – Amari Power Transmission – which consists of the upgrade of four high voltage electricity substations at key points on Uganda's grid: Tororo, Nkenda, Mbarara and Mirama.

- This is the pilot project for the introduction of private sector capital in the country's transmission sector.

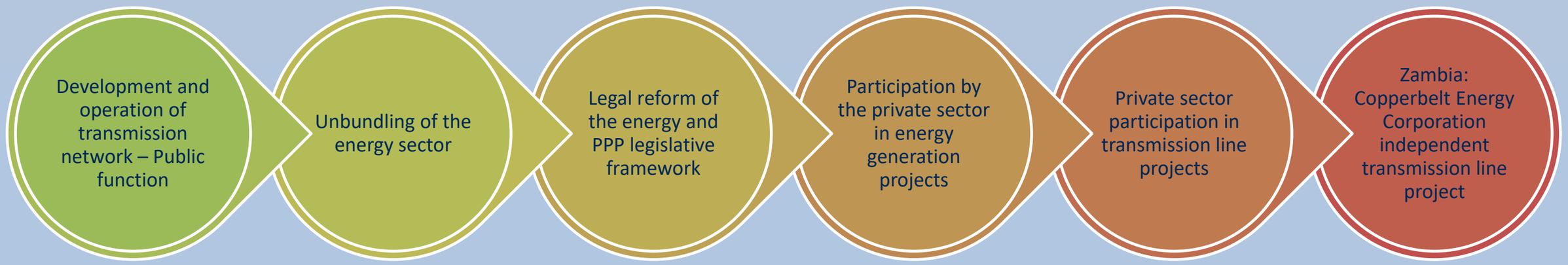


ZAMBIA

- Zambia is among the first African countries with a history of private sector involvement in transmission. The **Copperbelt Energy Corporation** (which was privatized in the 1990s) operates a privately owned transmission network to transmit electricity at a high voltage to its mining operations in the Copperbelt region.

- The state power utility, **ZESCO**, operates the transmission network in the **rest** of Zambia.

- Both the Electricity Act and Energy Regulation Act of 2019 enable private sector to participate in the transmission sector subject to obtaining a license. Additionally, the Public Procurement Act as amended in 2020 and the Public-Private Partnership Act as amended in 2018, also permit public procurement of new electricity transmission infrastructure developed by the private sector.



UPDATES IN THE PPP SECTOR: KENYA, TANZANIA AND MALAWI

KENYA

- PPA moratorium: The moratorium placed on the renewable of expiring PPAs and all PPs not concluded on the date the Taskforce for the Review of Power Purchase Agreements was appointed (29 March 2021), including any related letters of support and legal opinions pending issuance by the Attorney-General was lifted.

- Whilst lifting the moratorium has been welcome, there are still uncertainties caused by the Taskforce which stalled the development of policies, laws and regulations meant to give effect to the Energy Act such as the Renewable Energy Auction Policy and the 2021 Feed-in-Tariff.

TANZANIA

Recently passed the PPP Act, 2023 which introduced the following provisions:

- **Removal of obligation to deposit the commitment fee**

  Requirement to deposit 3% of the estimated project value upon approval of the pre-feasibility study has been repealed under the new Act.

- **Solicited projects**

  The Minister is allowed to exempt solicited projects from competitive bidding subject to the satisfying the criteria under the Act.

- **Tax incentives**

  PPP projects which qualify for fiscal and non-fiscal incentives under Tanzania's tax regime are now allowed to benefit from such incentives.

- **Settlement of disputes**

  Parties have the right to determine the dispute resolution mechanism (ADR in accordance with local arbitration law in TZ or international arbitration under ICSID/BIT).

- **Establishment of SPV**

  A private party is now mandatorily required to establish a SPV for the purpose of implementing the intended project.

- **PPP Act to supersede other written laws**

  The new PPP Act provides that it takes precedence over any other written laws where there is inconsistency in matters relating to PPPs.

MALAWI

Introduction of a new PPP Act (No. 23 of 2022) with the following provisions:

- **PPP Financing Fund and levy**

  A PPP financing fund and levy is payable by private investors after bring offered the opportunity to implement a PPP project.

- **Swiss challenge**

  The new law has introduced the concept of a Swiss challenge in the unsolicited bid process.

- **Government shareholding in an SPV**

  Parties can now negotiate the level of government's participation in the SPV depending on the nature of the proposed PPP project.

- **Direct negotiation**

  Direct negotiation is now recognized as a method of procuring PPP projects subject to satisfying the criteria set out in the Act.

- **Feasibility studies**

  The PPP Commission is empowered to request a private party to conduct feasibility studies on behalf of a MDA if the technical complexity of the project so demands.

- **Minimum contract requirements**

  The new law contains minimum contractual provisions to be included in every PPP contract.

ENERGY TRANSITION DEVELOPMENTS

MODERN BIOENERGY

- The use of modern bioenergy such modern solid biomass, biofuels and biomethane has grown rapidly, helping to decarbonize hard-to-abate sectors and processes.

- In Kenya, Eni Kenya, has been actively involved in the production of biofuel as part of the global shift to clean fuels and reduction of carbon emissions.

- Eni Kenya produces vegetable oil from its processing plant in Makueni County which was opened to process castor, croton and cotton seeds, and produce vegetable oil which is currently being exported to Italy for use as a feedstock in the Gela refinery.

GREEN HYDROGEN

- Low carbon hydrogen such as green hydrogen play a critical role in decarbonizing the energy system, especially in hard-to-abate processes and activities in industry and transport.

- In Kenya, the government and Fortescue Future Industries have entered into a binding framework agreement for the development of a 300MW capacity generation green ammonia and green fertilizer facility.

- Multilateral lenders such as EIB are also keen to support green hydrogen projects in Africa. EIB recently announced that it will provide 1.8 million euros to the government of Kenya for onward lending to green hydrogen investors in the country.

ELECTRIC VEHICLES (EVs)

- Carbon-free transportation and the transition to EV use is critical to decarbonizing the transportation sector.
- There has been significant government support for the widespread adoption of EVs. For instance, Rwanda recently announced tax breaks for EV purchases.
- Public transport has also not been left behalf with the European Commission recently announcing that it will fund the construction of £347.6M of the first dedicated electric bus rapid lane in Kenya and East Africa at large.

BATTERY ENERGY STORAGE SYSTEMS (BESS)

Energy storage systems have become an essential component in the development of energy markets with the proliferation of intermittent renewable power generation.

Countries such as:

- Malawi, where the Golomoti solar project features a 10MWh BESS;
- Mozambique, where the 15MW solar PV project with a battery energy storage component by Electricidade de Moçambique is at its commissioning stage; and
- South Africa, where the Kenhardt projects will contain a battery storage capacity of 1,140MWh,

have been leading examples of countries in the region which have already embraced BESS technologies.

CARBON MARKETS SPACE

- Carbon markets are markets are emissions (or emission reductions) can be exchanged from one entity to another.

- Carbon credits can be generated from emission reduction projects or removal projects.

- Where a reduction or removal project has been successfully implemented, various standard bodies:
  - inspect and certify the emissions reduced or removed from the project; and
  - register the carbon credits that can thereafter be traded in compliance or voluntary carbon markets.

DEVELOPMENTS IN CARBON MARKETS

Kenya

- The proposed **Climate Change (Amendment) Bill 2023** was recently published and is currently undergoing readings in Parliament prior to obtaining parliamentary approval.

Tanzania

- Recently published the **Environmental Management (Control and Management of Carbon Trading) Regulations, 2022** signalling Tanzania's formal participation in the global carbon trading industry.

East Africa

- AirCarbon Exchange (a Singapore-based global carbon exchange) together with the Nairobi Stock Exchange and the Nairobi International Financial Centre, have entered into a collaboration agreement to develop the **first carbon exchange** within the EA region.

- If operationalized, the carbon exchange will provide a further impetus for the growth of climate finance in Kenya and the EA region because it will provide a locally accessible marketplace for carbon offsets.

DIGITAL INFRASTRUCTURE

1. Digital infrastructure investment in East and Southern Africa is gaining momentum due to the region's increasing adoption of digital technologies.

2. Expanding Internet Connectivity: Efforts to expand internet connectivity and bridge the digital divide were likely to continue. Governments and private investors were expected to invest in initiatives to increase broadband coverage, especially in rural and underserved areas.

3. 5G Network Deployment: The deployment of 5G networks was anticipated to pick up pace in major urban centers, enhancing data speeds and supporting the growth of various digital applications and services.

4. Fintech and Mobile Payments: East and Southern Africa have been at the forefront of mobile money adoption, and the region was likely to see continued investment in fintech solutions and digital payment platforms to support the growing demand for digital financial services.

5. E-commerce and Digital Marketplaces: The rise of e-commerce platforms and digital marketplaces was expected to continue, driving investments in logistics and digital payment infrastructure to facilitate online trade.

6. Data Centers and Cloud Services: With the increasing adoption of cloud-based services and data-driven applications, investments in data centers and cloud infrastructure were projected to grow, catering to the region's data storage and computing needs.

7. Smart Cities and IoT: Some urban centers in the region were likely to invest in smart city technologies and the Internet of Things (IoT) to improve efficiency, infrastructure management, and overall urban living.

8. Cybersecurity Infrastructure: With the expansion of digital infrastructure, the importance of robust cybersecurity measures also increased. Investments in cybersecurity solutions were essential to protect digital assets and maintain trust in online services.

9. Telemedicine and Health Tech: The COVID-19 pandemic accelerated the adoption of telemedicine and health tech solutions. Investment in digital health infrastructure was expected to continue to improve healthcare access and delivery.

GENERAL MACROECONOMICS

GOVERNMENT SUPPORT MEASURES

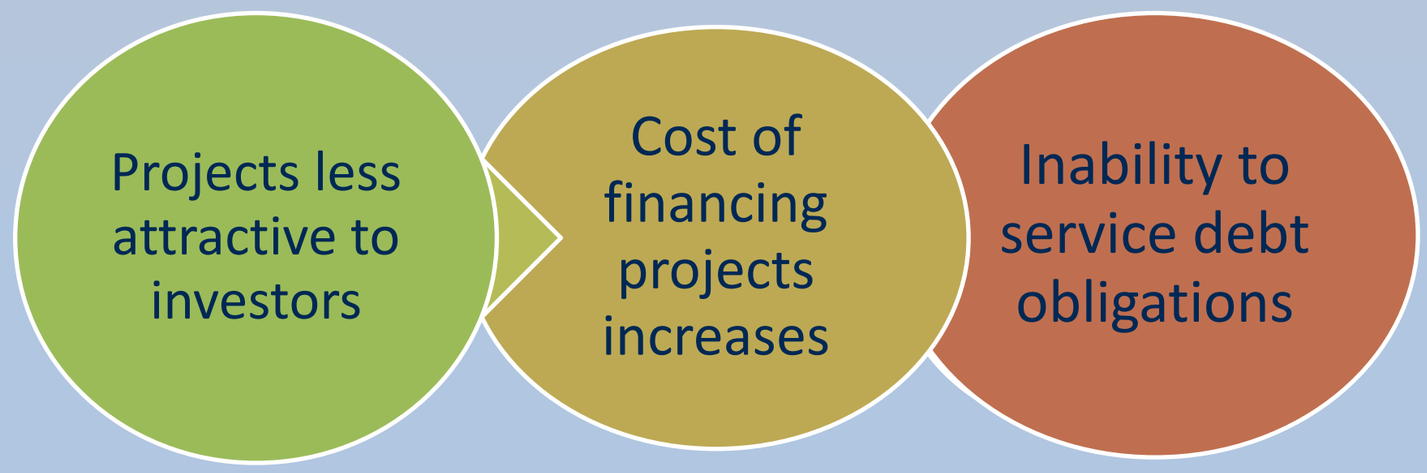
FINANCING OF PROJECTS

GENERAL MACROECONOMIC ISSUES

• **Currency transferability risk**	A foreign investor's inability to exchange/transfer local currency out of the country.
• **Interest rate fluctuations**	Most countries in East and Southern Africa suffer the brunt of frequent interest rate fluctuations which results in significant projects losses due to the uncertainties of the interest rate volatility.
• **Foreign exchange rate fluctuations**	FX rate pressures, which are driven predominantly by external factors, including tighter financing conditions and adverse terms of trade, are on the rise.
• **Inflation**	The global economic environment has had an impact on inflation in many countries in East and Southern Africa which invariably has an impact on the return of investment of investors of projects.
• **Influential economic events**	Global events such us the Russia-Ukraine war and the continued weakening of local currencies against the US Dollar influence the cost of financing of energy and infrastructure projects.

FINANCING OF PROJECTS

Energy and infrastructure projects are significantly exposed to general macroeconomic risks which consequently have an impact on the financing of projects by investors, local and international lenders.



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