



# EASTERN AFRICA POWER POOL

## SESSION1:

Regional electricity interconnection in Eastern Africa : Challenges and Opportunities:

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# Presentation outline



- 1) Background;**
- 2) Interconnections and Interchanges in brief**
- 3) Power transmission projects in the region**
- 4) The Power System master plan update \_ proposed additional cross boarder power transfer capacities**
- 5) Snapshot of short-term achievements and goals in regional power market development**
- 6) Highlights on EAPP Strategic Plan Themes & Activities**
- 7) Next steps**
- 8) Concluding remarks**



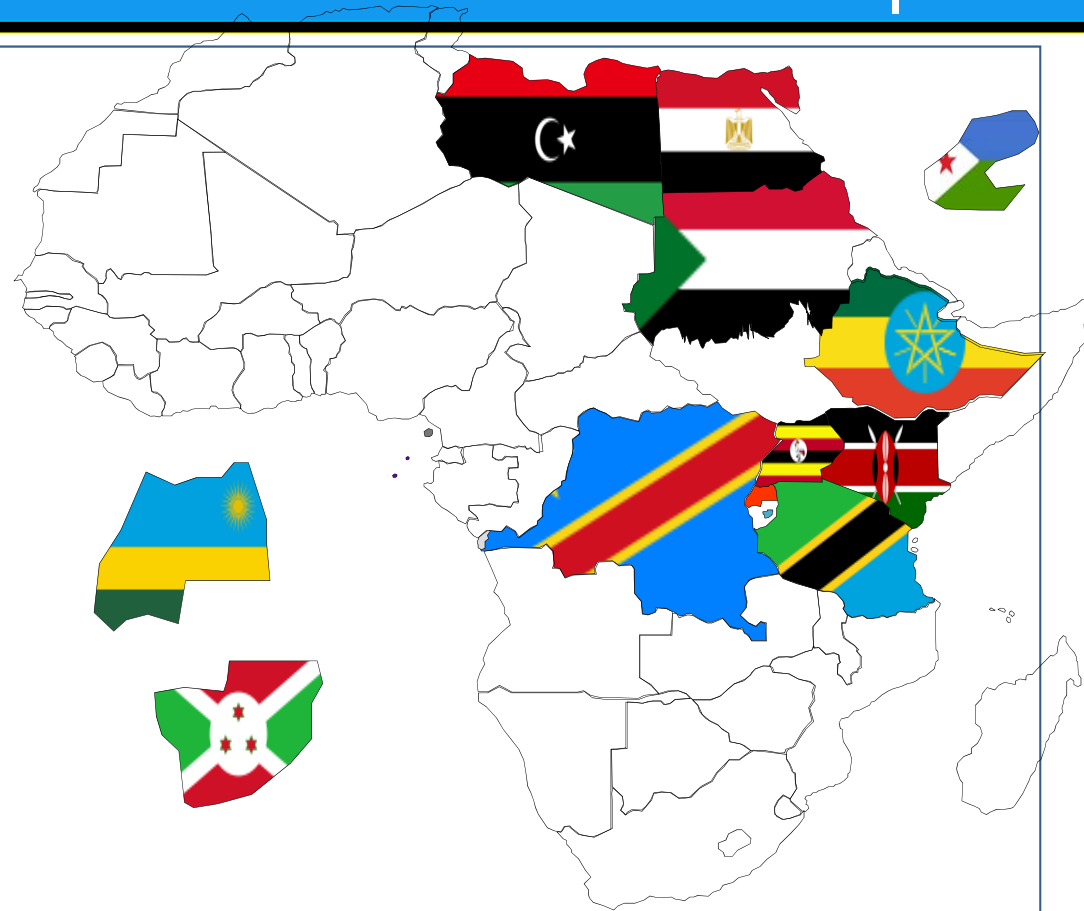
# 1. BACKGROUND

# EAPP Establishment



## ❑ Established in 2005

- ❑ Adopted as a Specialized Institution to foster energy system interconnectivity by COMESA in 2006
- ❑ Has 11 Countries as members, population~450M
- ❑ Three Potential member countries



2006 Nov: — Adopted by COMESA

2005 Nov: — IUMOU signed

2005 Feb: — IGMOU signed

2003 May: — EAPP conceived



# Member Countries/Utilities

Country	Utility
Burundi	REGIDESO
DR Congo	SNEL/SINELAC
Djibouti	EDD
Egypt	EEHC
Ethiopia	EEP
Libya	GECOL
Kenya	KPLC/KENGEN/KETRACO
Rwanda	REG/EUCL
Sudan	MED/SETCO
Tanzania	TANESCO
Uganda	UETCL



# Governance Structure

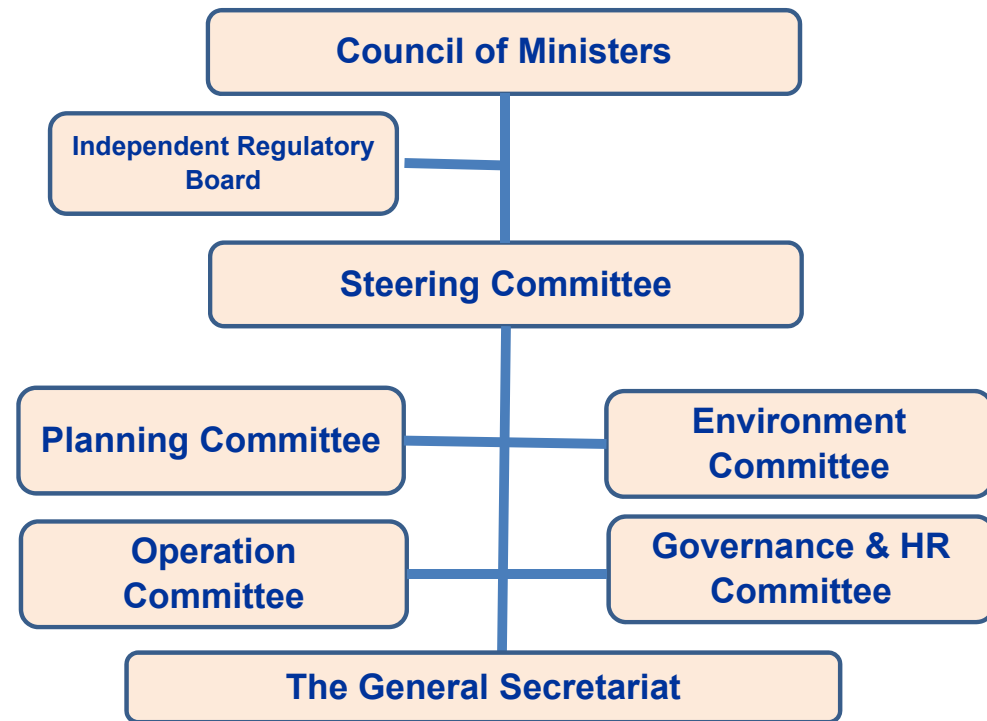


## Mission:

Integrating regional investment in power generation and transmission; integration of national power system operations into unified regional electricity market, and trade energy among member countries to secure power and optimize the usage of energy resources in the region to benefit the society with reduced cost of electricity production and increased access rate.

## Legal framework:

1. Inter Governmental MOU
2. Inter Utility MOU



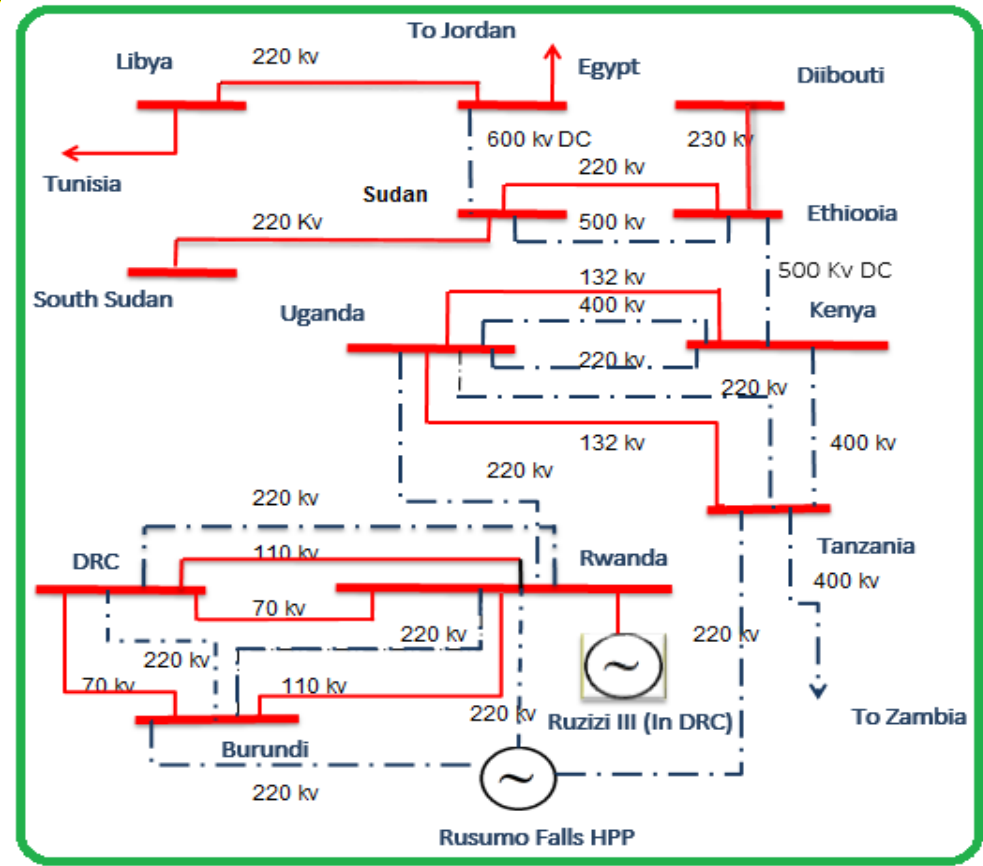


## 2. INTERCONNECTIONS & INTERCHANGES IN BRIEF



# Interconnections and Interchanges : Brief Status

- ❑ Previous studies & the current master plan update confirm significant benefit of trade and market based system expansion
- ❑ Current exchanges include long term bilateral (Ethiopia-Sudan, Ethiopia-Djibouti, & Kenya-Uganda), other cross border exchanges, & sharing of the Ruzizi (Burundi-DRC-Rwanda)
- ❑ The Lakes Region 220 kV interconnectors will be completed on or before 2021; the Ethio-Kenya and Kenya-Tanzania backbone will be completed on or before mid 2020 and 2021 respectively;
- ❑ All members, including SAPP & COMELEC (Maghreb) will be interconnected once ZTK, Ethio-Kenya, Egypt-Sudan, & Rwanda-Uganda are interconnected





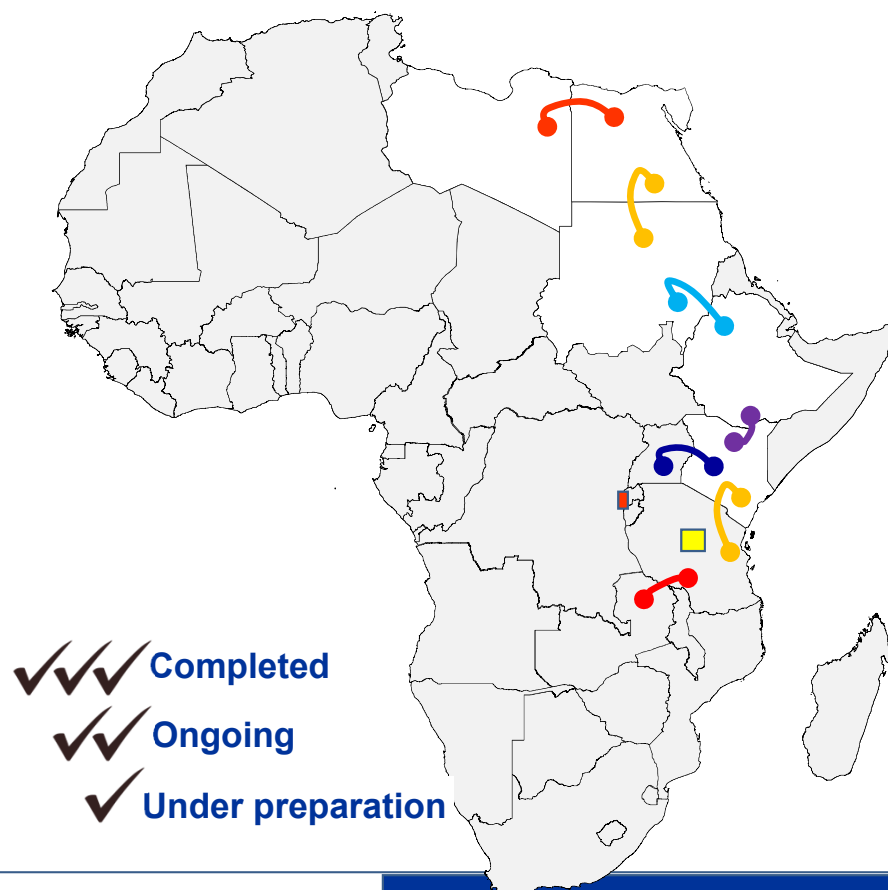


### 3. POWER TRANSMISSION PROJECTS IN THE REGION

# Assets Development



Projects	Progress
▪ Libya –Egypt (220KV)	✓✓✓
▪ Egypt – Sudan (220KV)	✓✓
▪ Tanzania Backbone	✓✓✓
▪ Ethiopia-Kenya	✓✓
▪ Kenya-Tanzania	✓✓
▪ Kenya-Uganda	✓✓
▪ Uganda-Rwanda	✓✓
▪ Burundi-Rwanda	✓✓
▪ Tanzania-Zambia	✓✓





## 4. THE POWER SYSTEM MASTER PLAN UPDATE: PROPOSED ADDITIONAL CROSS BORDER POWER TRANSFER CAPACITIES

# The last Master Plan Update\_ proposed Additional Transmission Capacity by 2025

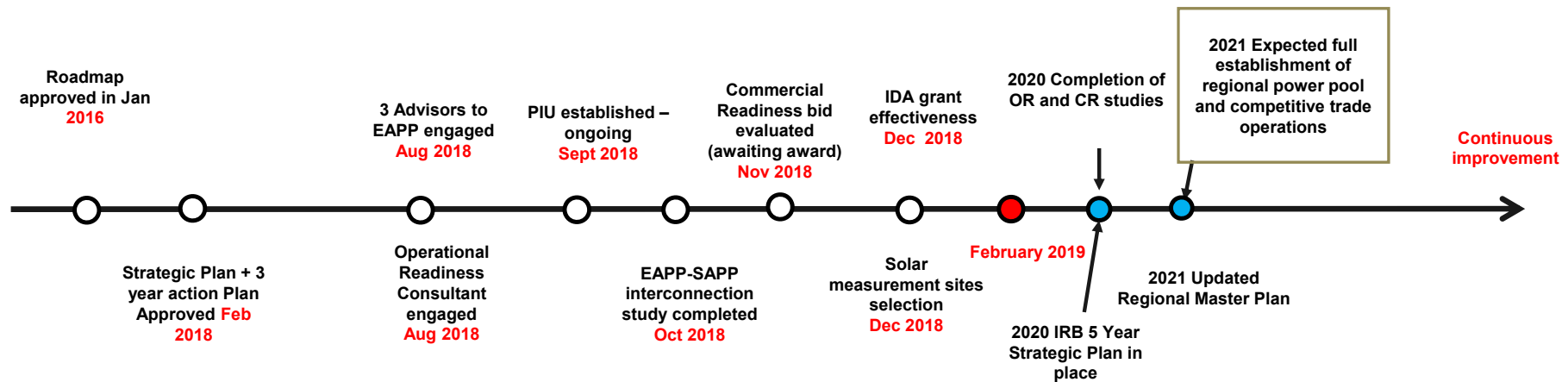


Recommended capacity by 2025	Capacity
	(MW)
Sudan – Ethiopia	1,600
Egypt – Sudan	2,000
Rwanda – Tanzania	1,000
Rwanda – DRC	300
Uganda – South Sudan	600
Libya – Egypt	200
Kenya – Uganda	600
DRC – Uganda	500
Sudan – South Sudan	300
Ethiopia – South Sudan	200



## 5. SNAPSHOT OF SHORT-TERM ACHIEVEMENTS AND GOALS IN REGIONAL POWER MARKET DEVELOPMENT

# Short term Strategic Achievements and Goals



- Road Map = Overall pathway with milestones over 10 years – agreed between DPs and EAPP
- Strategic Plan = 10 Year Rolling Plan (2018 to 2027) with four themes
- 3 - Year Action Plan = Short term plan to deliver essential activities



## 6. HIGHLIGHTS ON EAPP STRATEGIC PLAN THEMES & ACTIVITIES

# Strategic themes and activities



Theme	Sample activities
Power Infrastructure Development	Identification of robust regional interconnection and generation projects, promote projects to financial close.  Feasibility studies of interconnectors.
Power Market Development	Market design, market rules, pilot trade, commercial readiness study, EAPP – SAPP interconnection impact study
Operational Excellence	IC compliance programme, operational readiness study, EAPP – SAPP interconnection impact study
Learning and Growth	Operational and Commercial readiness workshops, training, study tours





## 7. NEXT STEPS

# Next steps



1

## Asset creation / Power infrastructure development

- Feasibility study of Uganda-South Sudan-Ethiopia Interconnector, Uganda-Tanzania and Ethiopia-Eritrea interconnectors
- Update feasibility study: Egypt-Sudan-Ethiopia interconnector
- Update Master Plan for mobilization of funds for viable regional projects
- Secure funds for Construction of EAPP Head Quarters

2

## Regional power market development

- Continue to co-ordinate finalization of the EKT wheeling methodology and agreement.
- Ensure the timely completion of the CR study and follow-up on the recommendations therein to operationalize the power market
- Operationalize the market committee

# Next steps.. Next steps



3

## Operational excellence

- Ensure timely completion of OR study and facilitate implementation of recommendations
- Conduct the EAPP – General Secretariat SCADA/EMS/ICT design study, secure funding, and install the systems
- Facilitate certification of system operators

4

## Learning and growth

- Implement capacity building activities including those recommended by the OR and CR studies
- Schedule and conduct staff exchange programmes with mature power pools.
- Ensure that significant capacity building is an integral component of the various consulting services on power trading, interconnected system operation and feasibility studies .

## 8. CONCLUDING REMARKS



## Concluding remarks



- The Eastern Africa Region at large is the least developed in terms of power infrastructure facilities at national level and interconnectivity between neighboring systems.
- There are of course visible encouraging developments in the past 5 years looking at the commitments for the development of major generation and transmission projects.
- However, given the current very low level of access to clean energy services and the regions vast potential for growth, significant expansion/reinforcement of the power generation and transmission capacity beyond the committed projects is a requirement well understood by most stakeholders.
- The Regional and National Master plans shall provide part of the analytical basis for investment decision on major generation & transmission projects of regional significance

## Concluding remarks ctd..



- Political commitment to regional integration and the growing pressure for sustainability transition offers opportunity to foster enhanced power system interconnectivity in the Eastern Africa region
- Financing gaps and shortfalls on project implementation capacity constituted part of the challenges to rapid power system integration in the region



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*THANK YOU FOR YOUR  
ATTENTION*