

Enhancing Electricity Regulatory Ecosystems

Southern African Power Pool Presentation

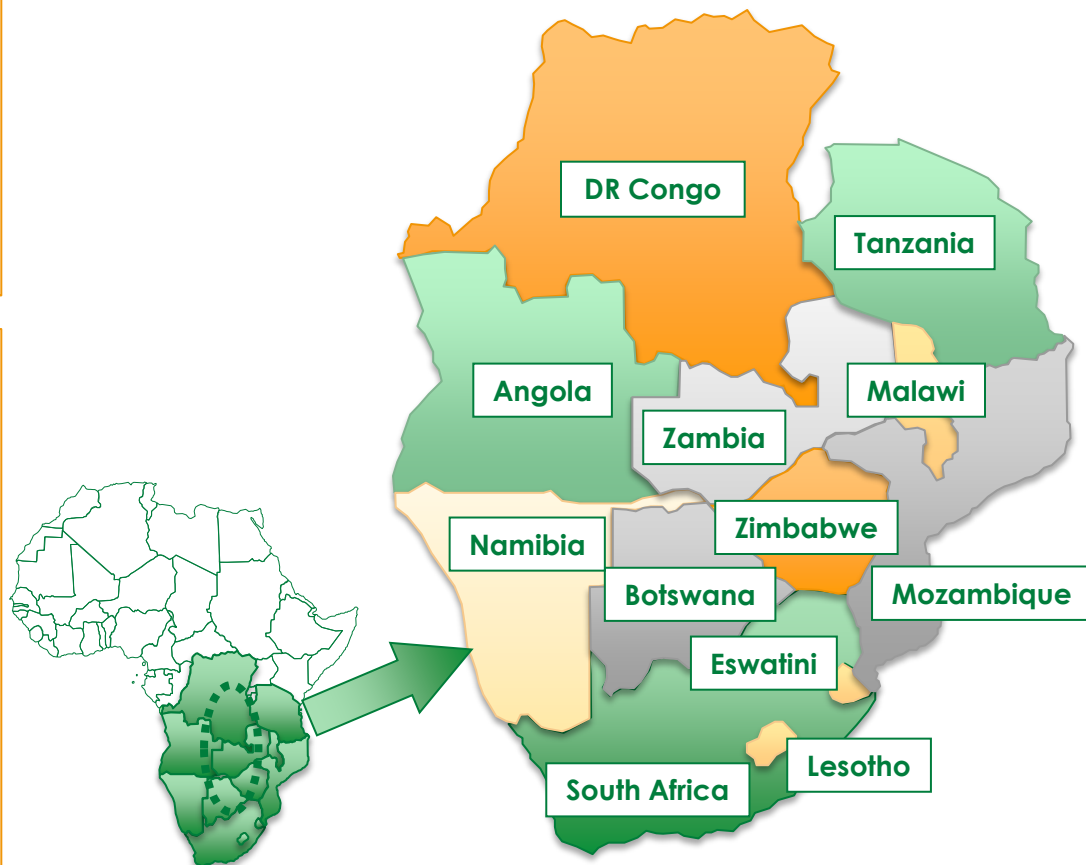


18 September 2023

Introduction to SAPP

- 12 Countries
- 400 Million people
- Installed Capacity: 80 GW

Created 1995 under Southern Africa Development Community (SADC) through an Inter-Governmental Memorandum of Understanding (IGMOU)

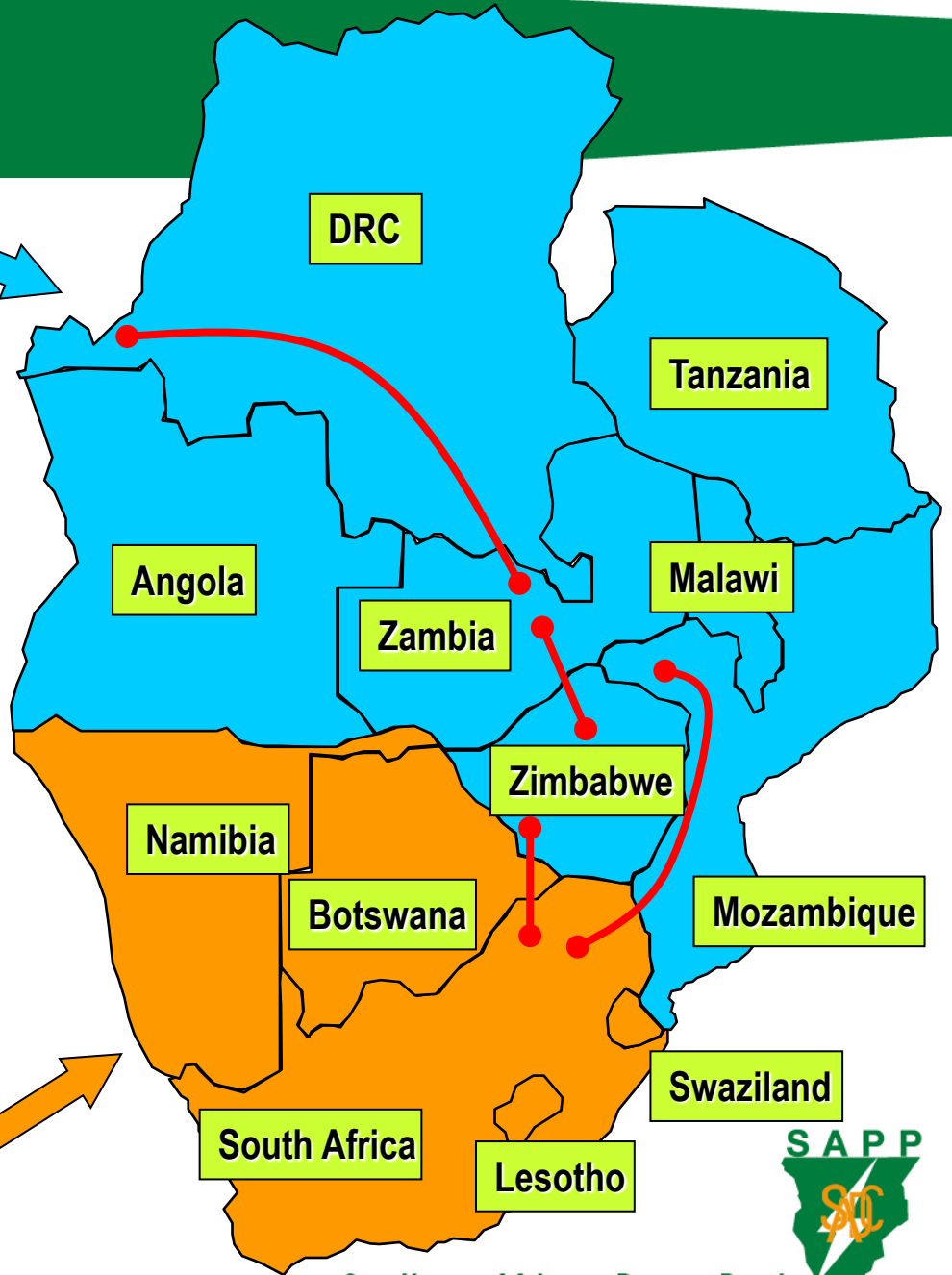


SAPP is financed by member utility contributions, electricity trading fees, other sources and Development partners



Historic

Hydro Northern Network



Thermal Southern Network



Southern African Power Pool

SAPP Vision and Mission Statement

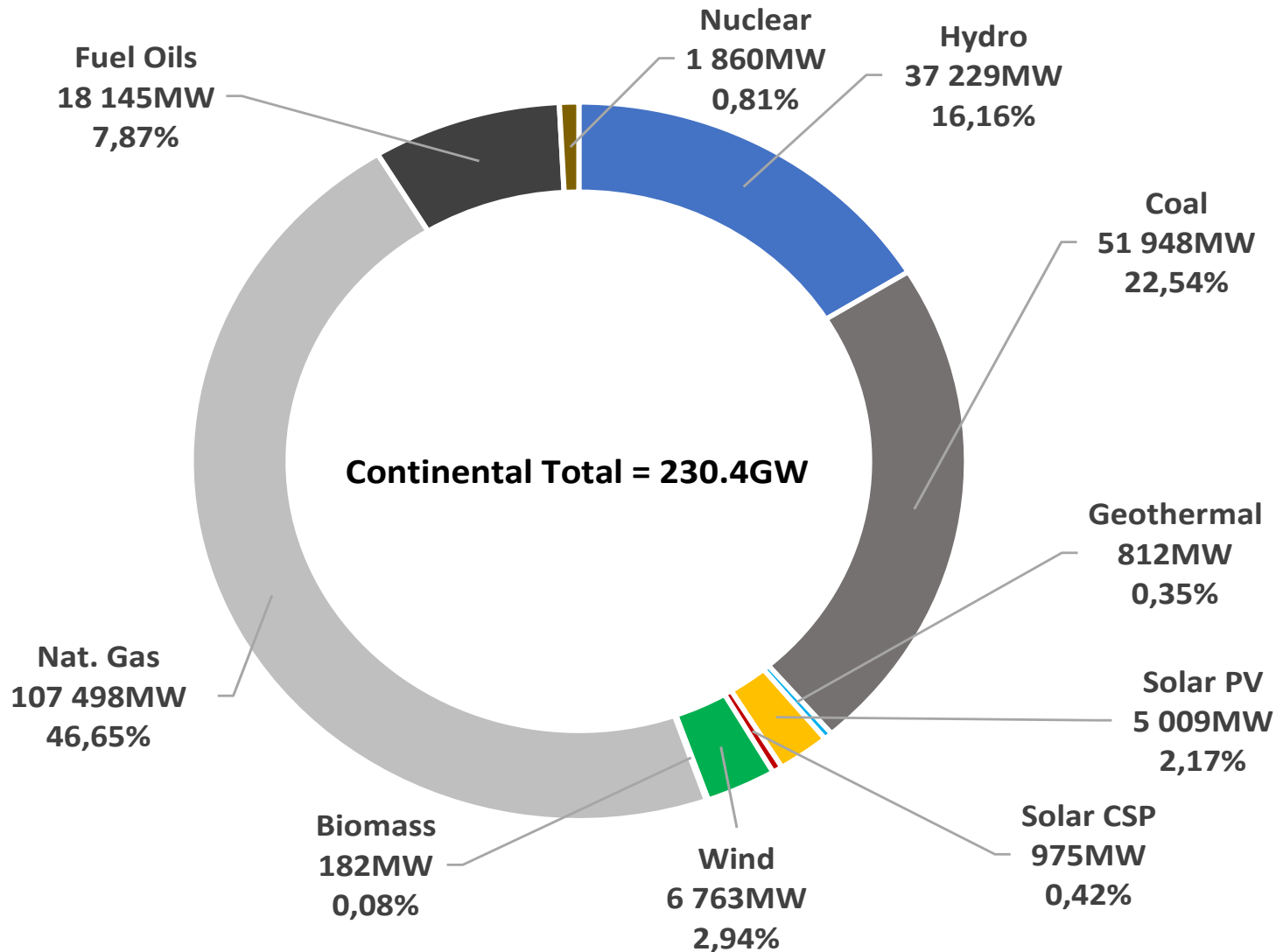
The Vision Statement of SAPP is:

To be a fully integrated, competitive energy market and a provider of sustainable energy solutions for the SADC region and beyond.

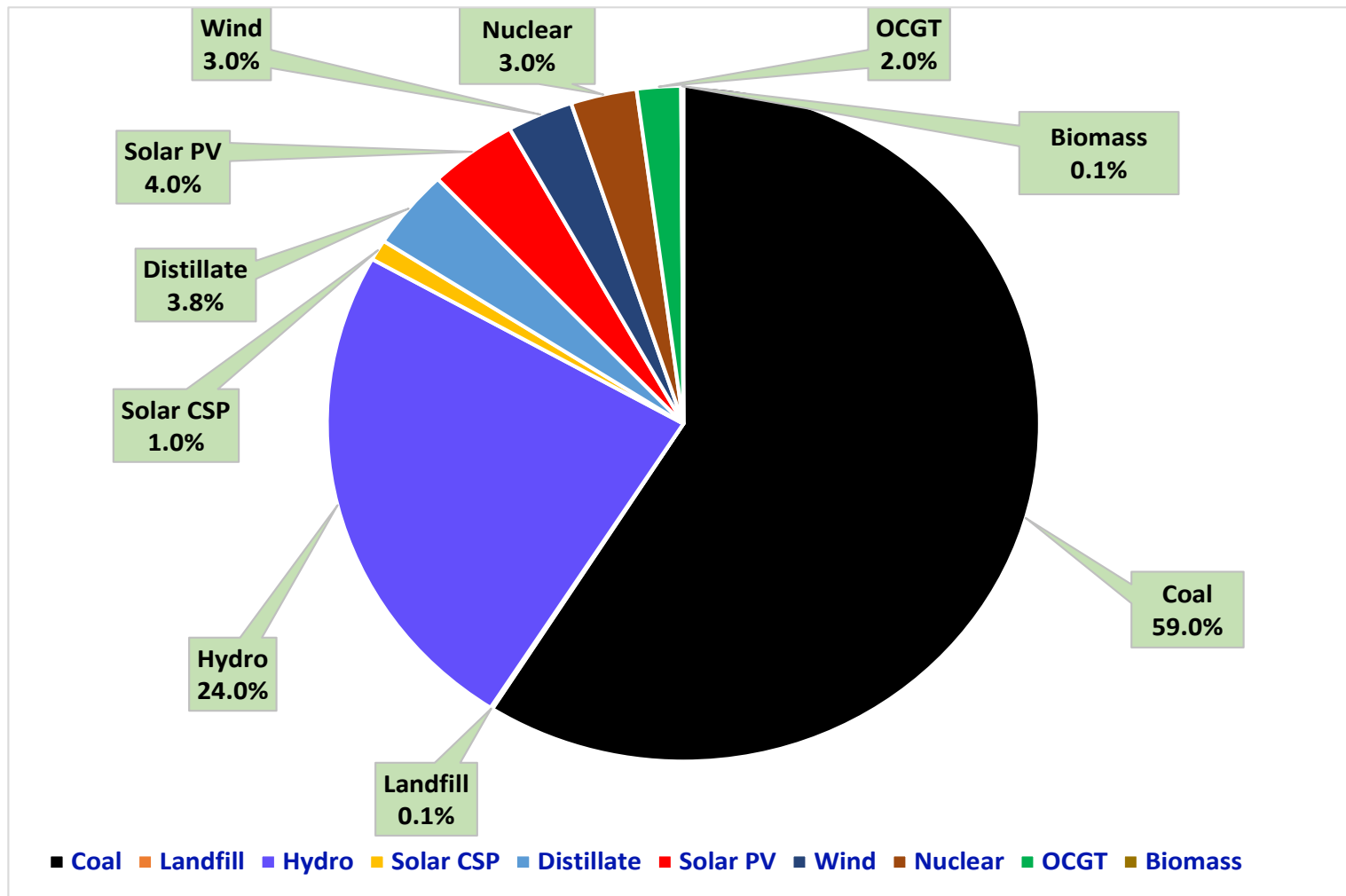
The Mission Statement for SAPP is:

To provide energy associated services in the region and beyond.

Continental Installed Generation Capacity Mix

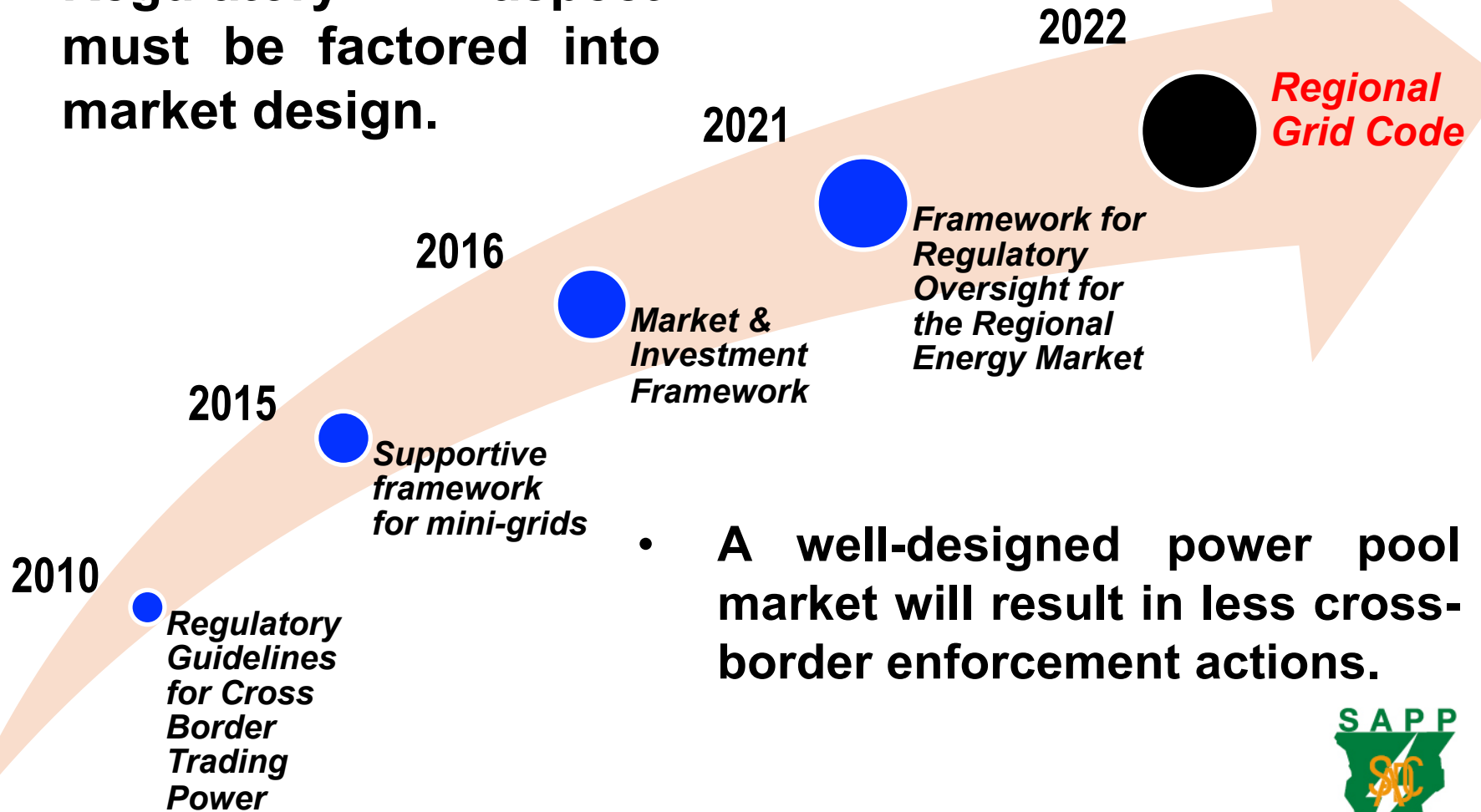


SAPP Generation Mix



Regulatory Initiatives and Harmonisation

- Regulatory aspect must be factored into market design.



- A well-designed power pool market will result in less cross-border enforcement actions.

Cross Border Electricity Trade in SAPP

- Bilateral contracts
- Short-Term Energy Market (STEM) – 2001 to 2009
- Post STEM – 2002 to 2009
- Day-Ahead Market (DAM) – 2009
- Post Day Ahead Market – 2013 to 2016
- Forward Physical Markets (Month Ahead & Week Ahead) – 2016
- Intra Day Market (Hour Ahead)– 2016
- Balancing Market- April 2022



POTENTIAL FUTURE ADDITIONS

- Ancillary Services Market
- Financial Markets
- Renewable Energy Market

The SAPP Market is changing

- New solar and wind technologies being commissioned in most countries
- Intermittent and fluctuating nature of renewables will need to be addressed
- New Large scale renewable energy projects will require transmission investments
- Solar on roof tops of building is resulting in net metering where customers are selling to the power company

SAPP Pool Plan Results

Installed Generation Capacity	130 GW
New Generation Capacity	75 GW
Item	Cost, USD billion
Generation Investments	117.7
Transmission Investments	3.3
Total Investments	121

It is **USD 37 billion cheaper** over a 40-year period to go for the regional integrated approach than pursuing national plans. More transmission corridors are developed.

Over-arching benefits of regional integration in the power sector

- **Within the electricity sector**

- **Technical benefits – frequency stability, security of supply through shared reserves**
- **Planning benefits – greater flexibility in developing generation projects**
- **Financial benefits**
 - **Reduced investment and operational costs of meeting demand**
 - **Improved utility viability**
 - **Accelerated attainment of electrification targets**

- **Within the wider economy**

- **Resources freed up for investment in the productive sectors**
- **More competitive industries due to lower electricity tariffs**
- **Electrification (esp. on-grid) gives multi-fold benefits at the household level, which also feed into the macro-economy**
- **Enhanced employment and national income**



Renewable Energy Targets

Renewable Energy Targets in SADC by 2030

39% for On Grid share of electricity consumption

7.5% for Off Grid

Key Observations

- The impact of VRE on the SAPP system on an hourly scheduling and dispatch basis can be managed. It is more the impact of the SAPP system on the VRE that presents the challenges.
- Ensure that regional transmission infrastructure that will enhance the sharing of resources in the SAPP region to be built
- Increase the ability for 3rd party access to the SAPP Physical Markets

Regulatory Initiatives

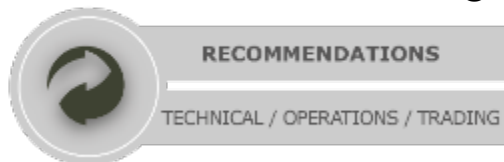
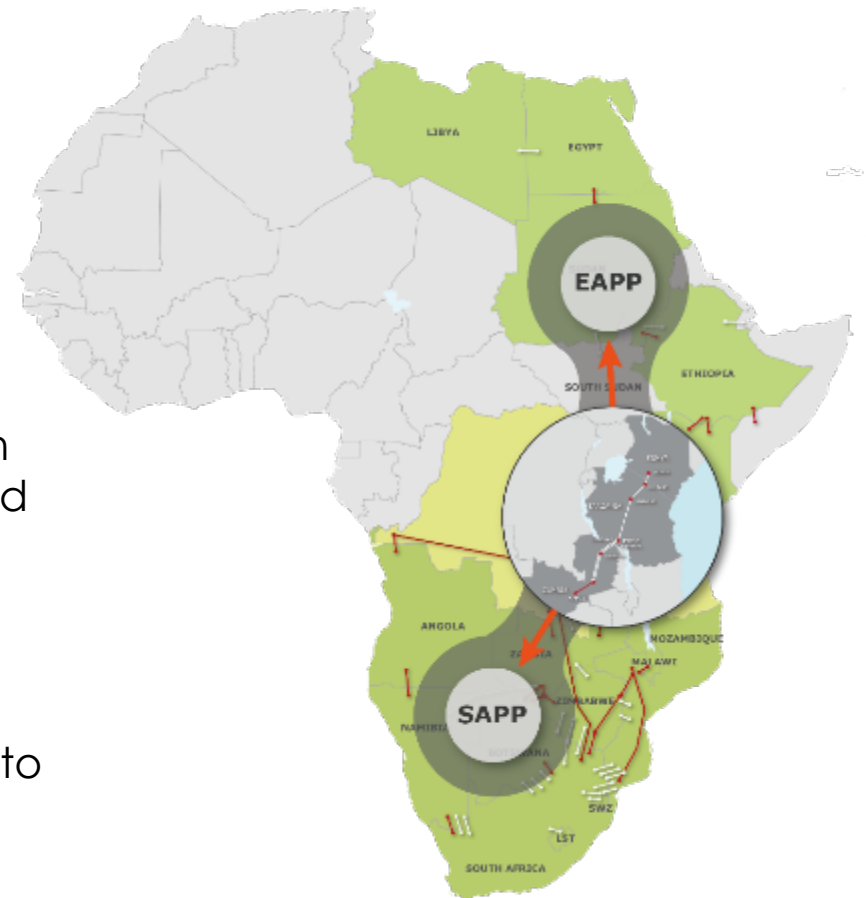
Completed the development of the [SADC Regional Grid Code](#) with the following objectives:

- 1 Implementing common standards for satisfactory operational security, reliability and quality of supply in the SAPP Electricity Market;
- 2 Ensuring non-discriminatory access and application to the cross-border trade of electricity in the region;
- 3 Defining the responsibilities of operational participants in the SAPP Electricity Markets and adding additional requirements to the SAPP Coordination Centre to increase the transparency and efficiency in the operation of the SAPP Electricity Markets;
- 4 Defining minimum technical requirements for all users of the SAPP Interconnected Transmission System and other Synchronous Areas in the SADC region; and
- 5 Setting out information exchange obligations for all parties to the Regional Grid Code.

Regional Transmission Integration

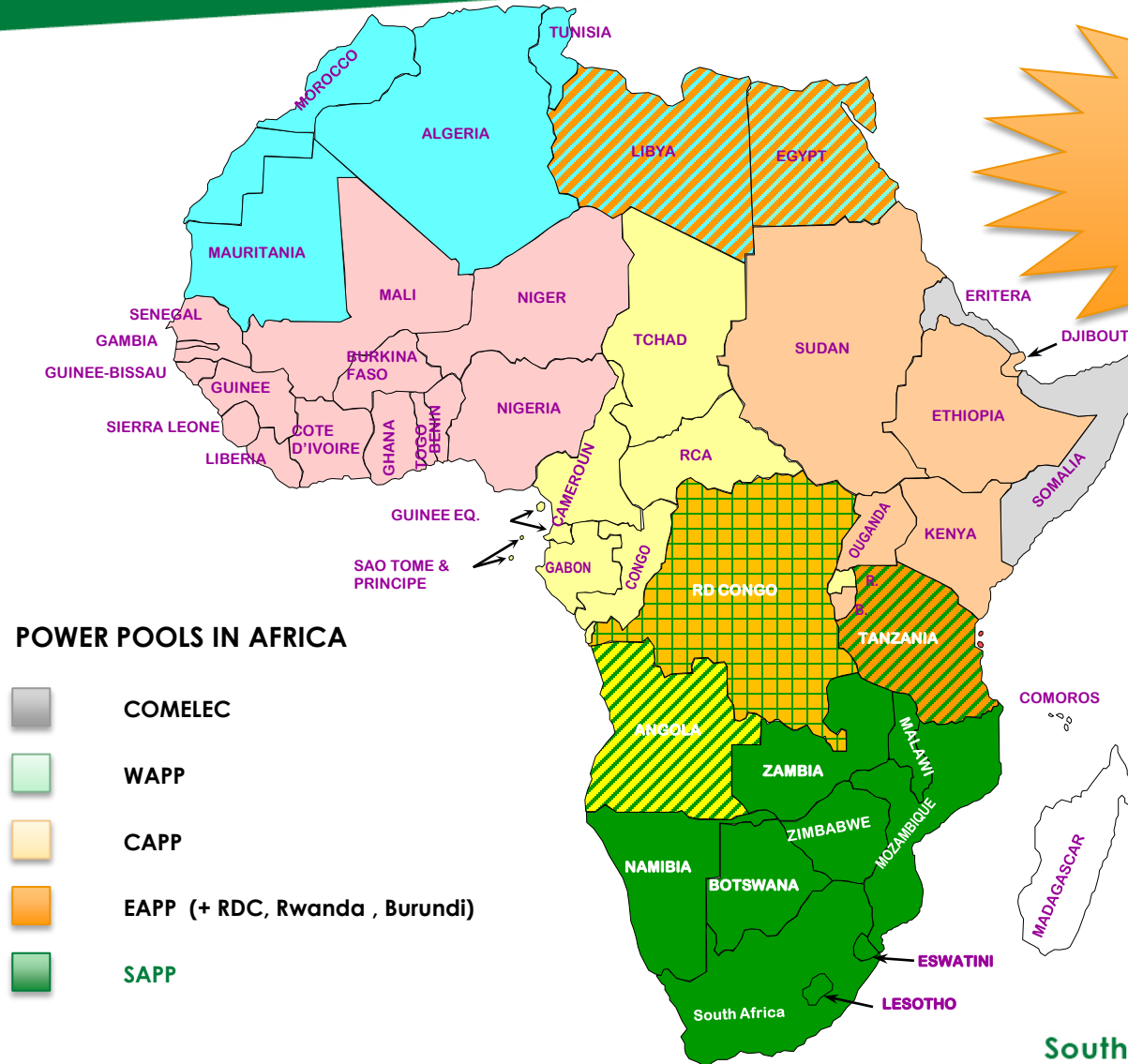
Specific recommendations regarding:

- The **Technical Performance** of the transmission interconnector when commissioned as well as under potential future scenarios (2030),
- The **Operations and Planning** requirements to ensure the safe and effective operation of the transmission interconnector under steady-state and selected contingency conditions, as well as the harmonised planning principles between the two Power Pools,
- Broad recommendations with regard to **Power Pool Trading** governance structures, agreements and memorandums of understanding, market and trading rules and platforms.



Towards an African Single Electricity Market (AfSEM)

Continental
Master Plan in
progress under
AUDA-NEPAD



Please note that RNT (Angola) is also a member of CAPP, SNEL (DRC) is also a member of CAPP and EAPP and TANESCO (Tanzania) is also a member of EAPP