

December 2017

CONTENTS

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Meetings, Workshops and Conferences 1
Welcome and Induction for SAPP
Coordination Centre Manager1
SAPP Meeting with EOH2
SAPP Finance Working Group Meeting 2
System Operations2
System Disturbances2
Equipment Outage2
Technical2
SAPP Master Plan2
SAPP EAPP Transmission Integration
Study3
SAPP Wheeling Charges and Transfer
Limits3
Electricity Trading3
Energy Traded3
Market Clearing Prices3
Market Revenues4
Update on SAPP Projects4
Botswana - South Africa (BOSA)
Interconnector4
Angola - Namibia Interconnector4
Zimbabwe - Zambia- Botswana -
Namibia (ZIZABONA) Interconnector 4
Mozambique - Zambia Transmission
Project4
Kolwezi – Solwezi Transmission
Project5
Tanzania - Zambia5
Luapula Hydro Electric Scheme5
Environmental Corner5
Clean Energy Financial Mechanism
Conference5
Upcoming Events6

Meetings, Workshops and Conferences

Welcome and Induction for SAPP Coordination Centre Manager

The SAPP Coordination Centre Manager, Eng. Stephen Dihwa started work on 1 December 2017. An induction program was undertaken at the SAPP Coordination Centre and at the SAPP Project Advisory Unit.



SAPP Staff Members and Management Committee representatives



SAPP Management and Management Committee representatives



Southern African Power Pool (SAPP) 24 Golden Stairs Road, P.O. Box EH52, Emerald Hill, Harare, Zimbabwe, Tel: +263-4-335517/335558/335468 Fax: +263-4-307023

Email: info@sapp.co.zwWebsite: www.sapp.co.zw





Eng. Stephen Dihwa, SAPP Coordination Centre Manager

SAPP Meeting with EOH

SAPP and EOH met on the 12th of December 2017 for a kick-off meeting on the implementation of the migration of the SAPP Market Trading Platform into the cloud. Amongst other things, they discussed the environmental plan and setup of the system. The first phase of the system migration is expected to be completed in the 1st week of February 2018.

SAPP Finance Working Group Meeting

The SAPP Finance Working Group met on 14 December 2017 in Johannesburg, South Africa. The Working Group reviewed the year 2018/19 budget for the SAPP Coordination Centre including that for the SAPP Project Advisory Unit. The Working Group also reviewed the external audit compliance register.

System Operations

System Disturbances

In the month of December 2017, one SAPP system disturbance was reported. A faulty current transformer (CT) in Zambia caused a 66 kV bus bar fault and subsequent loss of big customer load. Energy interchange on interconnectors

were affected in that hour. Refer to Figure 1 below for the general outlook of reported SAPP system disturbances from December 2016.

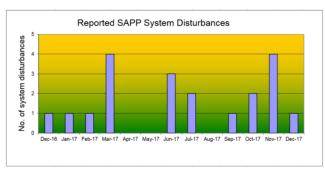


Figure 1 - Reported SAPP System Disturbances

Equipment Outage

The 220 kV Victoria Falls – Sesheke line in Zambia, which is in the path of the Zambia - Namibia interconnection, was taken out of service on 9 December 2017, to allow for commissioning works of new equipment at Victoria Falls Substation. The 330 kV Leopards Hill – Kabwe line no. 3 in Zambia was taken out of service on 16 and on 17 December 2017 for maintenance. This reduced the power wheeling capacity to Copperbelt Energy Company in Zambia and Katanga region in DR Congo. The 330 kV Zimbabwe – Zambia tie line no. 1 was taken out of service on 21 December 2017 to facilitate commissioning works of the new 300 MW Kariba South Extension power plant.

Technical

SAPP Master Plan

The final report for the SAPP generation and transmission master plan was delivered in December 2017.



Southern African Power Pool (SAPP)

24 Golden Stairs Road, P.O. Box EH52, Emerald Hill,
Harare, Zimbabwe,
Tel: +263-4-335517/335558/335468 Fax: +263-4-307023
Email: info@sapp.co.zwWebsite: www.sapp.co.zw



SAPP EAPP Transmission Integration Study

The draft studies report covering the landscape, Market Analysis and Modelling, Preliminary Power System Studies, Trading Environment, and Operations and Planning was delivered by the Consultant. The EAPP and SAPP are reviewing the report and the details will be discussed at a workshop scheduled in February 2018.

SAPP Wheeling Charges and Transfer Limits

Following the commissioning of new generation and transmission projects in 2017, the SAPP updated the wheeling charges, transmission losses factors, operating reserve requirements and transfer limits applicable for 2018.

Electricity Trading

Energy Traded

Trading in the market was marginally lower during the month of December 2017 when compared to November 2017. Total traded volumes on the Day Ahead market (DAM), intra-day market (IDM), Forward Physical Market Monthly (FPM-M) and Forward Physical Market Weekly (FPM-W) increased by 4.3% to 233,863.60 MWh in the month of December 2017, from the November 2017 volume of 224,142.40 MWh. Below is the overview of volumes traded in DAM, IDM, FPM-M and FPM-W for the month of December 2017.



Traded Volumes in MWh in DAM, IDM, FPM-W and FPM-M for the month of December 2017

Market Clearing Prices

FPM Monthly Prices

Non off-peak prices increased by 1% from 5.772USc/KWh in November 2017 to 5.828USc /KWh in December 2017. Off Peak prices decreased by 1.9% from 2.726USc/KWh in November 2017 to 2.674USc/KWh in December 2017.

FPM Weekly Prices

The average price for the Peak period was higher by 3.9% at 8.87USc/KWh in December 2017 from the November average peak price of 8.54USc/KWh. Standard period average prices increased from the November 2017 average prices of 5.775USc/KWh to 6.049USc/KWh in December 2017. The average Off–Peak price also increased by 5% from 2.65USc/KWh in November 2017 to 2.78USc/KWh in December 2017.

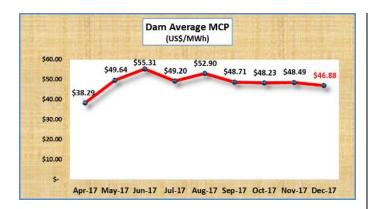
Day Ahead Market

The monthly average Day Ahead market clearing price (MCP) was slightly lower during the month of December 2017 at 4.69USc/KWh when compared to the 4.85USc/KWh recorded in November 2017.









Daily Average MCP prices April 2017 to December 2017.

Intra Day Ahead Market (IDM)

The average peak spot price for the IDM for the month of December 2017 was 7.695 USc/KWh from the November 2017 average of 7.28 USc/KWh. The average standard price increased from 5.616 USc/KWh in November to 5.638 USc/KWh in December 2017. The average off peak price also increased from 2.675 USc/KWh in November to 2.909 USc/KWh in December 2017.

Market Revenues

A total of **USD11,595,410.56** was exchanged on the DAM, IDM, FPM-W and FPM-M market during the month of December 2017 when compared to a total of **USD11,030,820.93** exchanged in November 2017. The change is mainly attributed to changes in traded volumes.

Update on SAPP Projects

Botswana - South Africa (BOSA) Interconnector

The commercial structure and options were presented by the consultant for discussions. The BOSA ESIA still needs to be approved.

Angola - Namibia (ANNA) Interconnector

The Angola – Namibia Interconnector prefeasibility report was approved by the stakeholders covering the options and line route selection, market analysis, preliminary design, pre-feasibility financial analysis and cost estimates and potential commercial structures. The next stage is to carry out a detailed feasibility study.

Zimbabwe – Zambia- Botswana -Namibia (ZIZABONA) Interconnector

The business case development, basic design and project cost estimates have now been produced. The funding for the construction will need to be secured and discussions are at an advanced stage for securing funding for the Zimbabwe- Zambia portion.

As for the Zambia – Namibia portion, SAPP PAU is working with the sponsors to develop a funding solution. An implementation agreement has been drafted and it is being reviewed by the sponsors.

Mozambique - Zambia Transmission Project

This project consists of a 400 kV Interconnector between Mozambique and Zambia.



SAPP PAU hosted an environmental workshop for the environmental stakeholders from



Southern African Power Pool (SAPP)

24 Golden Stairs Road, P.O. Box EH52, Emerald Hill,
Harare, Zimbabwe,
Fel: +263-4-335517/335558/335468 Fax: +263-4-307023

el: +263-4-335517/335558 / 335468 Fax: +263-4-30702 Email: <u>info@sapp.co.zw</u>Website: <u>www.sapp.co.zw</u>



Mozambique and Zambia. The PAU environmental specialist facilitated the meeting which resulted in a comprehensive understanding of the environmental procedures in the two countries.

Technical assessments for the Feasibility Studies and the ESIA process were completed during the month. The No objection from the AfDB to appoint the consultants was obtained paving the way for contract signing.

The implementation agreement, i.e. the Joint Development Agreement (JDA) was drafted and is currently being reviewed by the sponsors. The project is on track and within budget. The timelines for the ESIA and technical feasibility studies are indicated below:

- February 2018: Kick Off meeting
- March 2018: Inception Report
- September 2018: Preliminary Feasibility Report
- May 2019: Final Feasibility Report
- September 2019: Final Design report

SAPP PAU and the sponsors started business case development discussions and the project structures from a legal and financial perspective are being developed.

Kolwezi - Solwezi Transmission Project

This is a transmission Interconnector between Democratic Republic of Congo and Zambia. The technical and environmental bids were evaluated. The No objection from the AfDB to appoint the consultants for the technical studies was obtained paving the way for contract signing.

Tanzania – Zambia Interconnector

SAPP attended the presentation of the draft feasibility report by AECOM the consultants appointed by NELSAP. The final report has been

issued after incorporating comments raised by the sponsors on the draft report.

Luapula Hydro Electric Scheme

This is a cascading Hydroelectric Scheme between DRC and Zambia on the Luapula River.

The evaluation of the submissions for the technical feasibility study is complete. The kick-off meeting occurred in November 2017. The inception report was submitted in December 2017. The Feasibility Studies are currently on track and no delays are envisaged.

Discussion with the sponsors on the financial and legal structuring has started. This will be followed up with a joint financial and legal meeting between the sponsors in February 2018. On the ESIA, a consultant is still to be appointed.

Environmental Corner

Clean Energy Financial Mechanism Conference

Meeting the long-term objective of the Conference of Parties 21 on Climate Change (COP 21, Paris Agreement) and the commitments made in Nationally Determined Contributions (NDCs) requires climate-resilient, low-carbon investments at an unprecedented speed and scale. The demand to finance these investments from countries such as the SAPP member states is large and growing and, if well planned, can support sustainable growth, improve livelihoods, create jobs while delivering climate benefits. There is abundant financial capital available but much of it is currently earning low or even negative returns.

Public and private institutional investors have both the capacity and appetite to deploy massive amounts of capital to finance the green transition in emerging countries, but are hindered by a lack







of scalable investments. delivery vehicles. appropriate policy environments and mitigation mechanisms. In partnership with the Infrastructure Development Bank of Zimbabwe (IDBZ), the Reserve Bank of Zimbabwe (RBZ), the Ministry of Environment, Water and Climate, the SAPP and United Nations Climate Change (UNFCCC), convened the GREEN INVESTMENT CATALYST ROUND-TABLE at the Victoria Falls from 7 to 8 December, 2017. The main objective was to explore the possibility of using capital markets to channel more resources for low carbon, climate resilient development.

The meeting was concluded with the agreement to develop the Clean Energy Fund for SAPP (CEF4SAPP) that would take the following approaches:

- Establish an advisory Ad-hoc Working Group to advice on CEF4SAPP;
- Develop the CEF4SAPP to aid the mainstreaming of Nationally Determined Contributions (NDCs) plans and policies within SAPP country economies, driving mitigation and adaptation/resilience ambition upwards
- Design the CEF4SAPP to provide funding for Renewable Energy generation, transmission and distribution including energy efficient initiative/measures to:
 - include a demonstration pilot project;
 - seek the endorsement of SAPP members (Management and Executive Committees) and relevant SADC member states (energy, water and environment);
 - include a financial intermediary, accredited by the Green Climate Fund (GCF) and Green Energy Fund (GEF)

Upcoming Events

DATE	EVENT
13-14 Jan 2018	IRENA Assembly, Abu Dhabi, United Arab Emirates
16 Jan 2018	Joint MSC – OSC Meeting, Johannesburg, South Africa
17 – 18 Jan 2018	MSC Meeting, Johannesburg, South Africa
17 -18 Jan 2018	Power Supply Emergency & Blackstart Working Group Meeting, Johannesburg, South Africa
19 Jan 2018	Special Management Committee Meeting, Johannesburg, South Africa
23 Jan 2018	Meeting on Clean Energy Financing between the SAPP – and the UN Climate Change Secretariat, Harare, Zimbabwe
23 – 24 Jan 2018	AFSEC/IEC Conformity Assessment Capacity Building Workshop, Johannesburg South Africa
1 - 2 Feb 2018	Crime Prevention Working Group Meeting, Swaziland
15 – 16 Feb, 2018	Integrated Demand Management Meeting, Namibia
6 – 8 Feb 2018	SAPP – EAPP Transmission Integration Study Workshop, Dar es Salaam, Tanzania
20 – 21 Feb 2018	Africa Energy Indaba, Johannesburg, South Africa







26 Feb - 2	SAPP Sub Committee &
Mar 2018	Management Committee
	Meetings, Lusaka, Zambia
04 00 14	0.400.5
21 – 22 Mar	SAPP Executive Committee
2018	Meeting, Swaziland
27 – 28 Mar	Power Electricity World Africa,
2018	Johannesburg, South Africa
April 2018	Quality of Supply Working Group
	Meeting, Johannesburg, South
	Africa
April 2018	SAPP Human Resources Working
	Group Meeting, Gaborone,
	Botswana
15 -17 May	Africa Utility Week, Cape Town,
2018	South Africa
26 -29 June	IEEE PES- IAS Power Africa
2018	Conference 2018, Cape Town,
	South Africa
Sept 2018	SAPP Sub Committee and
	Management Committee
	Meetings, Tanzania
Oct 2018	SAPP Executive Meetings,
	Zimbabwe



