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## Meetings, Workshops and Conferences

### Role of Smart Grid in Facilitating the Integration of Renewables Webinar

The SAPP participated in a webinar on the role of smart grids in facilitating renewables organised by the South African Institute of Electrical Engineers.

With the focus on environmental sustainability and energy security, power system planners are looking at renewable energy as supplements and alternatives. But such generation sources have their own challenges - primarily intermittency. It is expected that the smart grid – due to its inherent communication, sensing and control capabilities – will have the ability to manage the load, storage and generation assets (including renewables) in the power grid to enable a large-scale integration of distributed generation. In a smart grid, information about the state of the grid and its components can be exchanged quickly over long distances and complex networks. It will therefore be possible to have the integration of sustainable energy sources, such as wind, solar, offshore electricity, etc. for smoother system operation. But, for this to be possible, the electric utility will have to evolve, and change their ways of operation to become an intelligent provider of these services.

### Utility CEO Forum Southern Africa

The SAPP participated in a webinar on the Utility CEO Forum Southern Africa on 5 August 2020. The discussions focused on the impact of Covid-19 on utility operations and profitability of utilities.



## System Planning

### Review of SAPP Load Forecasting Methodology

The Electricity demand forecasts are extremely important for energy suppliers and other participants in electric energy generation, transmission, distribution, and markets areas. The utilities in SAPP have different methodologies for determining the load forecasts for their respective countries. SAPP intends to benchmark and evaluate the different load forecasting methodologies that are being used in the various countries with the final objective being to develop a guideline for load forecasting.

The procurement of a Consultant has been completed, a project kick-off meeting was held in July 2020 where agreements on the Consultant's approach and methodology, project deliverables and timelines, project governance and data requirements were made.

Phase 1 of data collection exercise is ongoing.

### Impact of the Integration of Renewable Energy Technologies on SAPP Grid – Part 2

The SAPP has realized the increasing penetration of renewable energy sources in the SADC Region in line with general global thinking of reducing the carbon footprint and therefore the need to assess the impact of renewables on the SAPP Grid.

Part 1 of the study was completed in February 2020 and was focusing on high-level techno-economic and regulatory issues. Part 2 work includes the definition of the procedures and investments required to implement modified dispatch processes in the region. The project is at the core delivery phase where a range of sensitivity studies are being carried out to

investigate contingency situations in the power system and significant increases and decreases in the output of the VRE generation.

Bi-weekly meetings are being held virtually with the Consultant to discuss the progress. Three more workshops will be held with the Planning Sub Committee and Operating Sub Committee were the following will be discussed:

- Workshop 3, 15<sup>th</sup> October 2020 – presentation of preliminary findings
- Workshop 4, 12<sup>th</sup> November 2020 – presentation of draft report
- Workshop 5, 10<sup>th</sup> December 2020 – presentation of final report.

### Setting up SAPP Data Management System

The SAPP with funding from the World Bank is setting up a data management system which aims to enable SAPP to have a central depository of all data related to planning, project preparation and development, operations, markets, and environment. This will be assisting the SAPP to easily access the data for any future requirements or studies. The procurement of Consultancy services has been completed with an effective date of 8<sup>th</sup> September 2020.

## Update on SAPP Projects

### Angola – Namibia Interconnector Project

The Technical Feasibility Study is now due for completion in January 2021 and has been delayed by the environmental studies and approvals.

RNT submitted the Draft Environmental and Social Impact Assessment (ESIA) Report to the Environmental Authorities for review and approval is expected by October 2020. The



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ESIA certificate for Namibia is expected to be signed in September 2020.

### **Baynes Hydro-Power Plant Project**

The NEPAD IPPF Internal Working Group reviewed the Draft Project Information Memorandum (PIM) on 6 August 2020 and made recommendations for updating the PIM. SAPP responded on the recommendations for the project to be submitted for funding approval of the Techno-Economic Studies.

### **Botswana – South Africa Interconnector Project**

The Final Draft ESIA Report was submitted to the Department of Environment (DEA) in South Africa on 13 August 2020 for review.

The Facility Agreement (FA) will need to be extended in order to accommodate the completion of the ESIA Studies.

### **Kolwezi – Solwezi Interconnector Project**

The Final Resettlement Policy Framework was submitted. Specialised studies, gender and health analysis were completed and included in the ESIA Report. The Draft ESIA Report and Draft ESMP Report were submitted on 4 August 2020.

ESIA training was conducted in French for personnel from SNEL.

### **Luapula Hydro Power Project**

Funding for the Luapula Hydro Power Project (HPP) was discussed at the SADC Project Preparation and Development Facility (PPDF) Steering Committee Meeting on 6 August 2020.

SADC are engaging KfW, SAPP and the utilities, SNEL and ZESCO to have a

common understanding on the perceived environmental and social risks.

### **Malawi – Zambia Interconnector Project**

The World Bank approved the Terms of Reference (TORs) for the Technical Feasibility Study and indicated that procurement activities can commence after the Environmental TORs have been finalised and approved.

### **Mozambique-Tanzania Interconnector Project**

A meeting was held on 7 August 2020 between Senior Officials from the Government of Mozambique and Tanzania to discuss the Inter-Governmental Memorandum of Understanding (IGMOU) for the Mozambique-Tanzania (MOTA) Interconnector Project. The IGMOU will be signed at the next SADC Energy Ministers meeting scheduled for end of October 2020.

The utilities, EDM and TANESCO are in the process of renewing the Inter-Utility Memorandum of Understanding (IUMOU). SAPP is assisting to secure funding for the Feasibility Studies from the NEPAD IPPF.

### **Mozambique – Zambia Interconnector Project**

To mitigate the impacts of COVID-19 and maintain progress on the project, the Consultants, AFRY procured the services of a local firm to conduct the geo-technical survey in Zambia and Mozambique. In addition, a local Laboratory in Zambia was engaged to conduct tests on the soil samples which saved time on the project schedule and reduced the need for AFRY to import equipment.

AFRY was scheduled to finalise the alignment of the transmission line route to



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accommodate the deviation of the line in Zambia for the Environmental Consultant to progress with the ESIA studies. The Draft Stakeholders Engagement Plan (SEP) was submitted for comments.

### Zambia – Tanzania Interconnector Project

The first draft of the Substations Scoping Report was submitted for comments on 7 August 2020 followed by the Substations Workshop on 14 August 2020. On 11 August 2020, the Preliminary Overhead Line Design Report was submitted and the workshop to discuss the report was held on 26 August 2020.

The Geo-technical Investigator is a local Zambian company which began mobilising the team during the week of 31 August 2020.

### Regional Transmission Infrastructure Financing Facility (RTIFF)

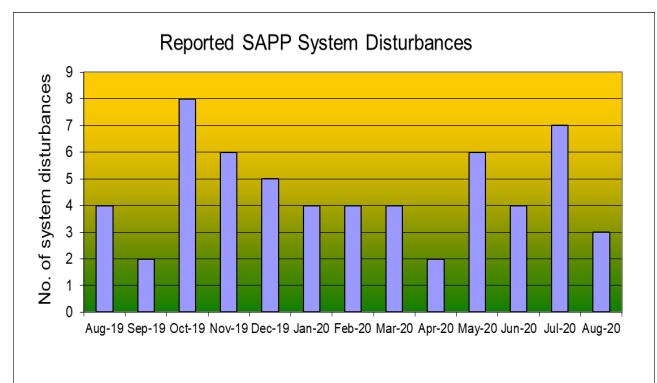
The Consultants Contract was extended to December 2020 to allow for engagement with the key stakeholders being, the SADC Secretariat, SAPP Utilities and Financial Institutions on the options being presented on the RTIFF Facility.

## System Operations

### SAPP System Disturbances

In the month of August 2020, three (3) SAPP system disturbances were reported. The first one was caused by a faulty HVDC line in DR Congo, interrupting about 500 MW power transmission. This led to power and voltage fluctuations. The interconnection between Zambia and DR Congo and the one between Zimbabwe and Botswana tripped due to power oscillations. The southern DR Congo network in Katanga Province collapsed. In the second disturbance, the blocking and deblocking protection scheme operated in DR Congo following HVDC line faults. This

caused power and voltage fluctuations in DR Congo and in Zambia. In the third disturbance, about 360 MW generation was lost when two (2) generators tripped in Zambia due to a faulty generator control system. This led to heavy power schedule change on the interconnection between Zambia and Zimbabwe. The power system was normalised within ten (10) minutes by re-synchronising the generators. Refer to the figure below for an outlook of reported SAPP system disturbances in the last twelve (12) months.



## Electricity Trading

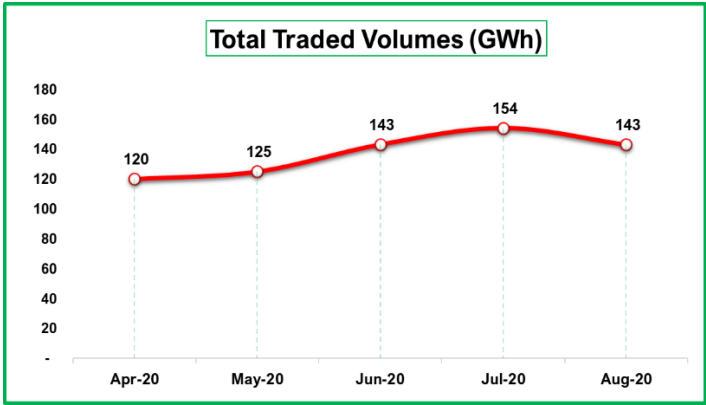
### Traded Volumes

Trading on the market was lower during the month of August 2020 when compared to July 2020. Total traded volumes on the Day Ahead Market (DAM), Intra-Day Market (IDM), Forward Physical Monthly Market (FPM-M) and Forward Physical Weekly Market (FPM-W) decreased by 7% to 143 GWh in the month of August 2020, from the July 2020 volume of 154 GWh.

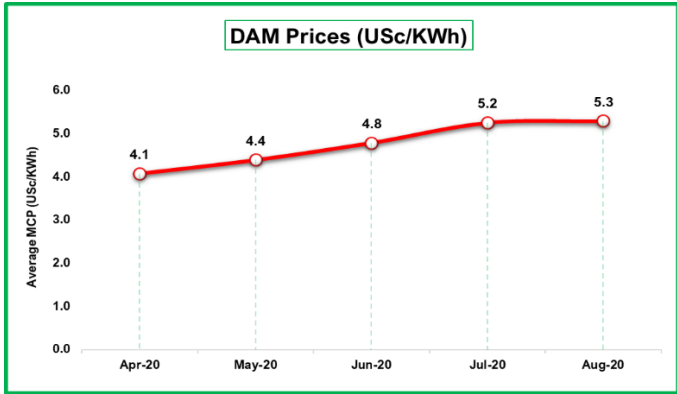


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Monthly Traded Volumes (GWh) in DAM, IDM, FPM-W and FPM-M (April 2020 to August 2020).



Monthly Average Market Clearing Prices from April 2020 to August 2020.

## Market Energy Prices

### FPM Monthly Prices

The market clearing prices for August for the off- Peak and non-off-peak periods were the same as the July figure of 3.0 USc/kWh and 10.7 USc/kWh, respectively.

### FPM Weekly Prices

The average market clearing price for the peak period was lower by 18% at 14.3 USc/kWh in August 2020 from the July 2020 figure of 17.5 USc/kWh. Standard period average market clearing prices decreased from the July 2020 figure of 8.4 USc/kWh to 6.6 USc/kWh in August 2020. The average off-peak market clearing price decreased from 2.6 USc/kWh in July 2020 to 2.5 USc/kWh in August 2020.

### Day Ahead Market

The monthly average DAM market clearing price (MCP) was slightly higher during the month of August 2020 at 5.3 USc/kWh when compared to 5.2 USc/kWh recorded in July 2020.

### Intra Day Ahead Market (IDM)

The average IDM price for the peak period for the month of August 2020 was 6.4 USc/kWh, down from the July 2020 figure of 7.3 USc/kWh. The average IDM price for the standard period in August 2020 was 5.0 USc/kWh an increase on the July 2020 figure of 5.6 USc/kWh. The average off-peak period price recorded for August 2020 was 4.2 USc/kWh, up from the July figure of 2.0 USc/kWh.

## Market Revenues

A total of USD 7.5 million was exchanged on the competitive market during the month of August 2020 when compared to USD 9.1 million exchanged in July 2020. The change is mainly attributed to changes in traded volumes and changes in prices. USD 14.9 million was exchanged on the competitive market during the month of August in 2019.

## Environmental Corner

### Southern Africa Regional Climate Outlook Forum (SARCOF-24)

The SADC Secretariat, through the Climate Services Centre, virtually convened the twenty-fourth (24th) Southern Africa Regional Climate Outlook Forum (SARCOF-24) **from 27 to 28 August 2020**. The theme for this



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## year is “Sustaining Climate Services in the SADC region during a Pandemic”.

The SARCOF-24 presented a consensus outlook for the 2020/2021 rainfall season over the SADC region. Climate scientists from the SADC National Meteorological and/or Hydrological Services (NMHSs), the SADC Climate Services Centre (CSC) formulated this outlook. Additional inputs were acquired from other institutions. This outlook covers the major rainfall season from October 2020 to March 2021. The outlook is presented in overlapping three-monthly periods as follows: October-November-December (OND); November-December-January (NDJ); December-January-February (DJF); and January- February-March (JFM).

The SARCOF-24 drew participation from respective partners and contacts in the 16 Member States from various sectors, including Health, Energy and Water.

### Carbon Markets and Instruments for Southern Africa

The Consultants engaged to conduct a study on regional opportunities for coordinating action related to climate markets and capacity support requirements convened a meeting with SAPP and SADC on 18 August 2020. This study is being conducted under the auspices of the Partnership for Market Readiness (PMR), that in general aims to create an enabling environment for a regional climate market (e.g. instruments such as carbon tax, or how an additional revenue stream could be structured on a regional level for promoting RE projects).

The meeting addressed, among others, the following aspects:

- The biggest barriers for Renewable Energy (RE) project implementation (e.g. bankability of Power Purchase

Agreements, transmission constraints, etc.)

- Additional support required for implementing more / additional RE projects (i.e. exceeding the SAPP expansion plan). Considering that SADC Member State (MS) NDC projects were under consideration meant that MS/regional projects outside the pool plan would be part of the scope.
- The private sector’s capacities to develop bankable projects, aligned with government Priorities.
- Climate market instruments (e.g. carbon tax, emission trading, Article 6 of the Paris Agreement pilots etc.) to be considered for implementing the RE projects included in the expansion plan. The proceeds of a carbon tax on power could be used to support:
  - (i) national projects which would increase trade (considering that some SADC Member States have comparative cost advantages in wind, other in hydro etc.) and
  - (ii) to promote trade of power. In principle SAPP could act as coordinator of such a regional program and to monitor the sources of emissions.
- Opportunities for Global Climate Fund (GCF) funding for supporting some of the Pool Projects (transmission and generation). If GCF funding would be explored for i) supporting project preparation or ii) funding the upfront costs for RE projects under the SAPP expansion plan, then such initiatives would need to be hosted e.g. by DBSA.
- Consideration of benefits to SADC becoming accredited under the GCF and climate financing instruments envisaged to accrue as a result. This aspect would require further engagement with the Policy and Planning (PPRM) Division at SADC.
- SADC and SAPP expressed the need for the region to be better prepared for Article



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6 programs so as not to miss opportunities as what happened with CDM.

- An appropriate institutional framework for coordinating a climate market instrument for the regional electricity sector. It was recommended to consider the RTIFF outputs with regard to how some regulations for a regional climate market could be framed.
- Capacity building needs to implement climate market instrument (e.g. SAPP, SADC, others) in the Region.

### Environmental Subcommittee Preparatory Meetings

The Environmental Subcommittee held preparatory meetings, preceding the 55<sup>th</sup> SAPP Meetings scheduled for 2<sup>nd</sup> September 2020. Salient issues from the task teams were as follows:

- (i) ESIA Task Team: Engage the SAPP Planning Sub-Committee on the efficient management of projects to ensure their implementation prior to expiry of environmental approvals.
- (ii) Climate Change Task Team: Presented vulnerability assessment conducted to facilitate preparation of Terms of Reference for the Climate Change study
- (iii) PCB Task Team: Presented status of utility PCB awareness activities. However, implementation of activities was subject to approval by the SAPP Management Committee on the Memorandum of Agreement submitted by UNEP.

### Crime Prevention Working Group Meeting

The Crime Prevention Working Group (CPWG) convened a virtual meeting on the 27th August 2020. The meeting addressed among others, Crime Incidents & Events and Comparative Statistics for the period January – June 2020.

The following observations were made because of COVID-19:

- General reduction in crime due to lockdown/restrictions, however notable gradual rise as restrictions were lifted. Increase also associated to loss in employment, and other economic hardships
- Generally, loss value of infrastructure property because of vandalism reduced compared to same period in 2019.
- Recovery was a challenge due Covid-19 protocol
- General increase of other crimes (power thefts, meter by passes) due to reduced policing and economic hardships associated with job losses

### Upcoming Events – 2020

DATE	EVENT
13 August 2020	Role of the Smart Grid in Facilitating the Integration of Renewables, <b>Virtual</b>
25 - 28 August 2020	IEEE PES/IAS PowerAfrica Conference, <b>Virtual</b>
2 September 2020	55th SAPP Meetings, <b>Virtual</b>
8 September 2020	44 <sup>th</sup> SAPP CC Board Meeting, <b>Virtual</b>
10 September 2020	44 <sup>th</sup> SAPP Management Committee Meeting, <b>Virtual</b>
14 -18 September 2020	Power Africa Week, Johannesburg, <b>Virtual</b>
15 October 2020	SADC Energy Thematic Group Meeting, <b>Virtual</b>
20 October 2020	49 <sup>th</sup> SAPP Executive Committee Meeting, <b>Virtual</b>
20-22 October 2020	Africa Energy Forum, <b>Amsterdam</b>
26 - 30 Oct 2020	SADC Joint Energy and Water Ministers' Meetings, <b>Virtual</b>
27 November 2020	45 <sup>th</sup> SAPP CC Board Meeting, Harare, <b>Zimbabwe</b>



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