



Energising the region for economic development

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Meetings, Workshops and Conferences

Regional and Global Energy Interconnection Webinar

The Chief Engineer (Planning and Operations) participated in a webinar focusing on evolving market designs for cross border electricity trading organised by the Global Energy Interconnection Development and Cooperation Organisation (GEIDCO). The webinar elaborated on the following:

- How to efficiently design the market model for cross- border electricity trade?
- What are the most difficult issues during the cross-border electricity trade?
- How does government play a role to facilitate the cross-border electricity trade?
- What lessons we could learn from the past?

Validation Workshop on Regional Gas Master Plan in SADC

SAPP participated in a Regional Gas Master Plan validation workshop on 28 July 2020. The validation workshop was part of a stakeholder engagement process on the development of the Regional Master Plan for SADC.

Scaling-up Renewable Energy Investments in Africa Workshop

The Planning Engineer participated in a webinar focusing on shedding light on the importance of effective de-risking initiatives to unlock Africa's renewable energy potential and call for a new impetus on possible solutions to crowd-in renewable energy investments. The webinar was attended by representatives from key European and African institutions, as well as Renewable Energy industry champions.



43rd SAPP Coordination Centre Board Meeting

The 43rd SAPP Coordination Centre Board meeting was held on 1 July 2020 virtually through Microsoft Teams.

System Planning

Review of SAPP Load Forecasting Methodology

A kick-off meeting for the project was held with the Consultant on 16 July 2020 where the Consultant's approach and methodology, project deliverables and timelines, project governance and data requirements were discussed. The project is now at data collection stage.

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

Bi-weekly meetings were held this month with the consultant on the Renewable Energy Integration study to discuss the progress. 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.

A working note describing the methodology to determine short-term balancing reserves that will go into the modelling and method to determine the minute to minute data was also issued by the Consultant.

Setting up SAPP Data Management System

The procurement of consultant services for setting up a SAPP data management system continued during the month. The tender adjudication process was completed and recommendations were sent to the World Bank for no-objection.

The main objective of the project is 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 including studies.

Update on SAPP Projects

Angola – Namibia Interconnector Project

The following reports were approved:

- The Environmental Impact Assessment (EIA) Report,
- The Environmental Management Plan (EMP),
- The Resettlement Action Plan (RAP) and
- The Preliminary Design Report.

Baynes Hydro-Power Plant Project

The Baynes Hydro-Power Plant (HPP) Stakeholders meeting took place on 8 and 22 July 2020. The Project Information Memorandum (PIM) to request for funding together with supporting documentation was submitted to the NEPAD IPPF.

Botswana – South Africa Interconnector Project

The Department of Environment in South Africa completed the Public Review process on 28 July 2020 and comments were submitted for review by the project team and the Consultants for inclusion in the ESIA Report.

Kolwezi – Solwezi Interconnector Project

The Scoping Report and Terms of Reference (TORs) for the ESIA were approved by the Environmental Agency, ACE in the Democratic Republic of Congo and the Draft Resettlement Policy Framework was circulated for comments.



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Mozambique – Zambia Interconnector Project

Preparations are in progress for the geotechnical survey of the line deviation in Zambia. The proposed reference date for commissioning of the line will be September 2024.

The Kick-Off meeting for the Additional Scope of Work on the Environmental activities took place on 17 July 2020.

Mozambique – Tanzania Interconnector Project

The Project Information Memorandum (PIM) to request for funding together with supporting documentation was submitted to the NEPAD IPPF.

Zambia – Tanzania Interconnector Project

The Inception Report was finalised and approved. The Consultant submitted the Draft Substations Report which was discussed at a Workshop held on 10 July 2020.

Regional Transmission Infrastructure Financing Facility (RTIFF)

The Draft Final RTIFF Report was circulated for comments. A presentation of the RTIFF report was made to the SADC Secretariat on 27 July 2020 for guidance on the proposed options.

System Operations

SAPP System Disturbances

In the month of July 2020, seven (7) SAPP system disturbances were reported on the interconnected power system. In the first one, the southern DR Congo power system collapsed following loss of about 509 MW power in-feed from Inga due to an HVDC line fault. The three 220 kV Zambia – DR Congo

interconnectors tripped on overvoltage. In Zambia loads also tripped on over-voltage. The 400 kV Botswana - Zimbabwe interconnector also tripped because of un-damped power oscillations. In the second one, the southern DR Congo power system collapsed again, this time due to a delay in tripping of a circuit breaker following a fault introduced by vandalism of conductors on a 220 kV transmission line. The fault was detected by the HVDC converters which tripped, cutting off about 524 MW of power in-feed.

In the third one, at one major power station in South Africa, three generation units tripped one after another taking off about 1530 MW from the grid. Power frequency temporarily dipped to 49.366 Hz. Non-availability of these units exacerbated supply-side power deficiency in South Africa and led to load-shedding.

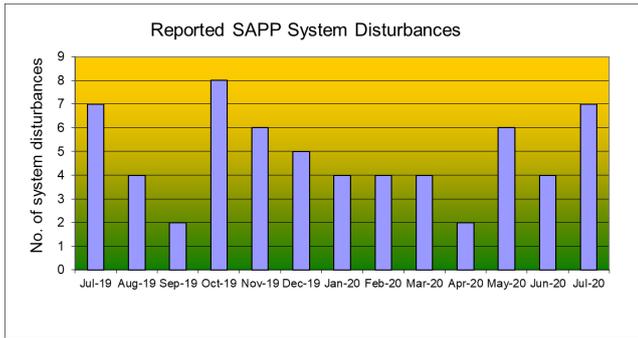
In the fourth and fifth disturbances, the southern DR Congo power system experienced partial collapse twice on different days. About 520 MW power in-feed from Inga was lost due to HVDC line faults. Several generation, transmission and distribution equipment tripped. But Lubumbashi and two more load centres remained connected to the Zambian network.

In the sixth disturbance, one generation unit tripped while supplying 604 MW in South Africa and power frequency dipped to 49.449 Hz. In the last disturbance, power flow and voltage fluctuations were experienced in Zambia following an earth fault on a 66 kV line introduced by a broken over-head ground wire. The figure below gives the general outlook of reported SAPP system disturbances.



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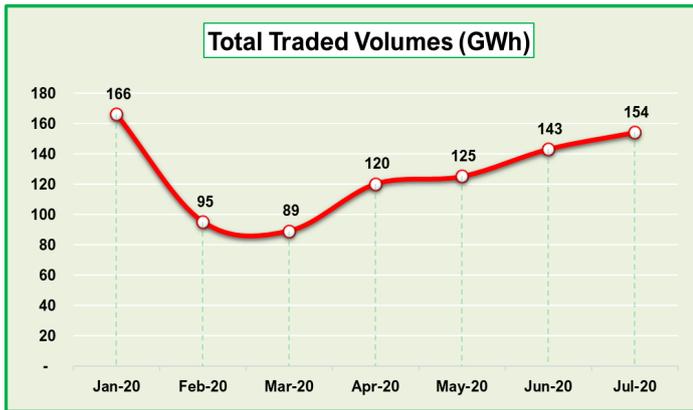




Electricity Trading

Traded Volumes

Trading on the SAPP competitive market was higher during the month when compared to June 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) increased by 8% to 154 GWh this month from the June 2020 volume of 143 GWh.



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

Market Energy Prices

FPM Monthly Prices

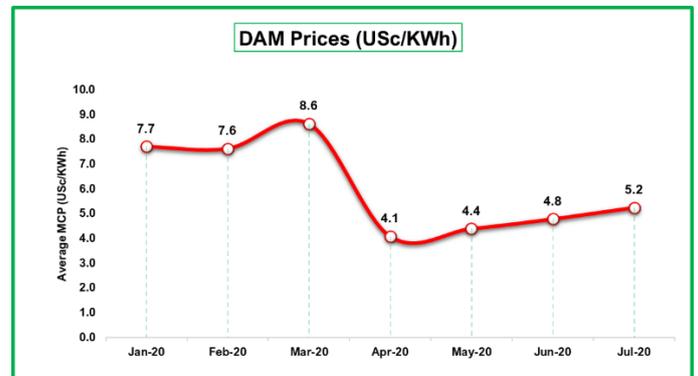
Non off-peak market clearing prices decreased from the June 2020 figure of 11.4 USc/KWh to 10.7 USc/KWh this month. Off-Peak market clearing price was maintained at the June price of 3.0 USc/KWh.

FPM Weekly Prices

The average market clearing price for the peak period was lower by 2% at 17.5 USc/KWh compared to the June 2020 figure of 17.8 USc/KWh. Standard period average market clearing prices increased from the June 2020 figure of 6 USc/KWh to 8.4 USc/KWh. The average off-peak market clearing price decreased from 2.8 USc/KWh in June 2020 to 2.6 USc/KWh.

Day Ahead Market

The monthly average DAM market clearing price (MCP) was higher during the month at 5.2 USc/KWh when compared to 4.8 USc/KWh recorded in June 2020.



Monthly Average Market Clearing Prices from January to July 2020.

Intra Day Ahead Market (IDM)

The average IDM price for the peak period for the month was 7.3 USc/KWh, down from the June 2020 figure of 8.4 USc/KWh. The average IDM price for the standard period was at the same level as that of June at 5.6 USc/KWh. The average off-peak period price recorded for the month was also the same as the June figure of 2.0 USc/KWh.

Market Revenues

A total of USD 9.1 million was exchanged on the competitive market during the month compared to USD 7.3 million exchanged in



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June 2020. The change is mainly attributed to increases in traded volumes and prices. USD 20 million was exchanged on the competitive market during the month of July in 2019.

Environmental Corner

Webinar: Water – Energy – Food Nexus and Covid-19 Pandemic

The SAPP participated in a *Water – Energy – Food Nexus and the Covid-19 Pandemic* webinar, hosted by Waternet and Water Resources Commission on 21 July 2020. It explored the impacts of the Covid-19 pandemic on the WEF Nexus in the SADC Region. There has been progress in developing knowledge, frameworks and tools on operationalising the nexus in Southern Africa but this has undoubtedly been affected by the rapid spread of Covid-19. This has caused a shift in priorities towards health, nationwide lockdowns and changes in working environments. The analysis helped identifying gaps and/or opportunities within the nexus that can be taken forward post the pandemic.

The presentations specifically addressed the following issues:

- Challenges inflicted by Covid-19 pandemic on the WEF nexus agenda in Southern Africa
- Gaps and opportunities in the WEF nexus exposed by the Covid-19 pandemic
- Way forward post – Covid-19 regarding the WEF nexus agenda

The discussions revealed the following salient issues:

- WEF issues are closely related with climate, society, policy and governments. Therefore, the nexus ought to take cognisance of its interaction with these aspects and should be people centred.

- WEF nexus should address access to water and not limit its attention to the availability.
- The need to appreciate linkage with health aspects as exemplified by Covid-19.
- The consideration going forward would be to appreciate the synergies that exist as opposed to operating in isolation and could consider Food - Poverty – Health nexus
- Outbreak of Covid-19 has brought the need to develop a nexus that is human-centric, breaking the barriers of tradition and embracing the synergies of variability.
- Drivers of change are urbanisation, climate change, agricultural expansion and population growth. These changes have propagated rise in public health issues.
- Addressing WEF issues going forward requires transformative approaches that are sustainable, acknowledging that the challenges before us are not linear. Linear approaches would cause an imbalance which would not be responsive to the current scenario. Transformative approaches will require a multi-criteria decision-making process.

Carbon Markets and Instruments in Southern Africa

The Partnership for Market Readiness (PMR) is a forum for collective innovation and action that supports capacity building to scale up climate change mitigation. 96 countries that have submitted their Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC) under the Paris Agreement, representing over half of global Green House Gas (GHG) emissions, have stated that they are planning or considering the use of carbon pricing as a tool to meet their commitments.



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The PMR's objective is to support participating countries to design and implement carbon pricing instruments. The World Bank Group provides secretariat services to the PMR including leading the Technical Work and Policy Programs.

Considering the limited participation of Sub-Saharan African countries in the use of the flexible mechanisms of the Kyoto Protocol, PMR has initiated a systematic assessment of climate market and carbon pricing opportunities, strengths and weaknesses in the SADC countries that operate in a joint electricity market under the Southern African Power Pool.

The study will primarily focus on regional opportunities for coordinating action related to climate markets and may also outline national climate market activities and related capacity support requirements. The consultants have commenced the initial engagements with the SAPP to introduce the Programme and get insights and perspectives on regional and national climate market instruments and related support needs in Southern Africa.

SAPP Grievance Mechanism

The World Bank approved the SAPP Grievance Mechanism (GM), through issuance of a "no objection." The GM standardises the approach in the management of grievances raised by the Affected Parties during project development and implementation. This will now be succeeded by the development of an implementation plan and budget for associated activities.

Upcoming Events – 2020

DATE	EVENT
13 August 2020	Role of the Smart Grid in Facilitating the Integration of Renewables, Virtual
25 - 28 August 2020	IEEE PES/IAS PowerAfrica Conference, Virtual
September 2020	55th SAPP Meetings, Virtual
8 September 2020	44 th SAPP CC Board Meeting, Virtual
14 -18 September 2020	Power Africa Week, Johannesburg, South Africa
21 - 25 September 2020	SADC Joint Energy and Water Ministers' Meetings, Virtual
October 2020	SADC Energy Thematic Group Meeting, Gaborone, Botswana
20-22 October 2020	Africa Energy Forum, Amsterdam
29 October 2020	49 th SAPP Executive Committee Meeting and SAPP AGM, Kinshasa, DRC
27 November 2020	45 th SAPP CC Board Meeting, Harare, Zimbabwe



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