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Meetings, Workshops and Conferences

SADC Workshop on Western Corridor

As part of the RTIFF dialogue, a virtual workshop was convened by the SADC Secretariat on the Western Corridor on 7 April 2022. The workshop had participants from Angola, Namibia and DRC. Power projects on the corridor were discussed and action steps agreed.

SAPP/India Knowledge Exchange

The World Bank coordinated a virtual knowledge exchange between SAPP and India on the electricity markets on 11 April 2022. The presentations from both sides flagged the envisaged areas of cooperation on electricity matters.

Hitachi HVDC Presentation

Hitachi made a presentation on the latest developments on HVDC technology to the SAPP PSC and OSC virtually on 12 April 2022.

Namibia International Energy Conference

The SAPP Coordination Centre Executive Director attended the Namibia International Energy Conference (NIEC) 2022 hosted by RichAfrica Consultancy in Windhoek from 20 to 21 April 2022. The conference included presentations on discoveries of oil and gas in Namibia and on the Green Hydrogen initiative. SAPP participated on a panel discussion covering the role of Namibia in the power sector in the region and opportunities for investors.

RenPower Mozambique

The SAPP Coordination Centre Executive Director attended the RenPower Mozambique 2022 Conference organised by Euroconvention Global in Maputo on 28 April 2022. SAPP was requested to make a presentation on how SAPP markets can create opportunities for renewable energy projects developed in Mozambique. EdM, the Mozambican Energy Regulator, Financial institutions and the private sector made presentations on their roles in the deployment of renewable energy technologies in the country.



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System Planning

SAPP Database Management System

The SAPP is in the final stages of developing the database management system which necessitates the following:

- (i) Design and develop an online centralised Data Base Management System (DMS) for structured (financial, trading, etc.) and unstructured (pdf, emails, etc.) data management on a cloud-based centralised system;
- (ii) Understand the business process and data structure, and adopt the best ICT technology;
- (iii) Build a fresh (from scratch) cloud-based DMS system including design and development with open-source technologies (.NET application); and
- (iv) Publish the software on a secure cloud for private and public access.

During the period under review the final DSM demo software presentation was made by the Consultant to SAPP on the 22nd April 2022.

The outstanding deliverables includes the following:

- Delivery of the Test Protocol and software URL with credentials
- User Acceptance Testing
- Final delivery

Continental Master Plan Update

The development of the African Continental Power System Masterplan (CMP) is on-going. During the period under review the CMP modelling team had meetings with the SAPP from 27th to 29th April 2022 to discuss the following:

- Transition from the deliverables under baseline set-up to the ones under modelling runs

- Review existing data
- Discuss further data and assumptions for SPLAT-Africa modelling
- Discussion on data and assumptions for transmission modelling in PSS/E
- Review functionalities of the CMP Platform and Database
- Review data collection procedures
- Discuss power pools priorities within the CMP
- Update the status of collaboration with CMP- Power Pools and align agendas

For the month of May the following activities are planned:

- PSS/E Training for all African Power Pools
- MESSAGE Refresher Training for all the Power Pools



CMP Modelling Team visit to SAPP Coordination Centre in Harare, Zimbabwe, 27 – 29 April 2022, and participants from ZESA and SAPP CC.

Transmission Pricing Model Review

The SAPP continued with the refinement of the proposed Transmission Pricing Model, TPM. The following activities are currently on-going:

- Model simulations
- Analysis of results by the task team

Upcoming activities are as follows:

- Calculate a trial set of TSO charges for external network use



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- Demonstration of the final tool
- Final workshop with PSC and MSC.
- Presentation of model and results to SAPP MANCO and EXCO members

The project is expected to be completed on 31st May 2022.

Update on SAPP Projects

Angola – Namibia Interconnector Project

The ANNA Project Part-3 stage scope implementation continued during the month.

The Transaction Advisor (TA) has begun compiling and reviewing the legal documentation required to support RNT and NamPower in reaching project bankability, and assist with the fulfilment of conditions precedent for the financing arrangements and achieve the drawdown milestone for the first disbursement. Below are some of the activities so far completed and pending workshopping with SAPP and the Utilities:

1) Joint Development Agreement (JDA):

- a) Draft Joint Development Agreement developed and shared with SAPP and the utilities on 10 April 2022. Feedback awaited from the SAPP and Sponsors.

2) Updated Market Analysis:

- a) Updated base Information.
- b) Updated Market Scenarios.
- c) Updated Energy Model.
- d) Run Scenarios.

3) Environmental Reports:

- a) Draft Commitment Register developed
- b) Resettlement Action Plan (RAP) Terms of Reference developed
- c) Environmental and Social Specifications developed
- d) Internal review in progress

4) Kunene Preliminary Design update:

- a) Scope clarification meeting held with NamPower on 8th April 2022.
- b) SVC size and connection point confirmed.
- c) Design documentation and drawings updated.

5) Tender Documents and Support:

- a) Draft procurement approach developed.

Baynes Hydro-Power Plant Transmission Project

The Baynes HPP Transmission Lines Project is a transmission study project with the purpose of producing a bankable feasibility study, for the integration of the proposed 600MW Baynes hydropower plant to the Angola and Namibia transmission networks.

The process to procure Consultancy services for the Technical and ESIA studies has advanced.

Technical Study:

The RFP bid submitted to the market, to procure a Techno-Economic Consultant closed on 30 April 2022 and attracted five (5) bids. Evaluation of the bids will commence in early to mid-May 2022. The Technical studies are funded by the NEPAD-IPPF.

ESIA Study:

The Expression of Interest (EOI) bid submitted to the market, on 1 April 2022 and closed on 15 April 2022, only attracted one (1) bid. Therefore, a resubmission to the market has been necessitated to ensure a competitive response to the EOI bids. The ESIA study is funded by a grant from the Swedfund.



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Kolwezi – Solwezi Interconnector Project

The Kolwezi-Solwezi Transmission Interconnector Project Feasibility and ESIA studies closed in 2019 and 2021 respectively. Therefore, the SAPP-PAU has started the process of advancing the proposed transmission solution to project financing, by initiating financial, legal and commercial structuring processes, with support from the SAPP Transaction Advisor. Support to the project will be rendered through the RTIFF project, with commitment from the two participating utilities: SNEL (DRC) and ZESCO (Zambia).

Malawi – Zambia Interconnector Project

Both the Feasibility and ESIA studies for the proposed Malawi – Zambia Interconnector are funded under the SAPP Program for Accelerating Regional Energy/Transformational Projects.

Feasibility Study:

A Request for Proposal (RFP) for the feasibility studies closed on 16 November 2021. The evaluation of both the technical and financial proposals was completed in January 2022. This was then followed by negotiations with the successful bidder on 20 January 2022. The approval of the draft contract is still under consideration.

ESIA Study

The project is at the final stages of procurement which was initiated in the last quarter of 2021. The evaluation of the technical and the financial proposals were completed in January 2022. The contract negotiations with the successful bidder were held on 9 March 2022. The approval of the draft contract is still under consideration.

Mozambique – Zambia Interconnector Project

The techno-economic and ESIA studies for the Mozambique – Zambia Interconnector are funded by the NEPAD-IPPF and the World Bank under the AREP Programme respectively.

Feasibility Study

The Consultant for the technical studies completed the studies in December 2021. The reports have been under review by the utilities. The final reports were submitted on 23 February 2022. In March 2022, the two utilities approved the final reports. The final reports have since been submitted to the funders for their review.

ESIA Study

The Final Environmental Impact Assessment Report (including the Environmental and Social Management Plan) and the Resettlements Policy Framework Report was submitted to the Mozambique Environmental Authority for review and approval.

Mozambique – Tanzania Interconnector Project

The Mozambique – Tanzania Interconnector Project (MOTA) is supported by the NEPAD-IPPF. The financial support is towards the techno-economic feasibility and ESIA studies for the proposed interconnector. A revised Letter of Agreement for the grant was submitted to SAPP by NEPAD-IPPF for final review before execution. The final Letter of Agreement is yet to be issued following the review by SAPP and the utilities.

The review and update of the ToRs for both the feasibility and ESIA studies have been completed. A workshop for the update of the ToRs for the ESIA was held on 5 April 2022.



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Mozambique – Zimbabwe Interconnector Project

The SAPP, SADC and the Project sponsors; EDM (Mozambique) and ZESA (Zimbabwe), met on 14 April 2022, to restart the processes of advancing the project to feasibility study of the Mozambique-Zimbabwe (MOZI), separate from the Mozambique-Zimbabwe-South Africa (MOZISA) project arrangement. The meeting discussed among other project aspects the following:

- Review of the IGMOU and IUMOU
- Mandate letter from the sponsors authorising SAPP to mobilise project resources.
- Review and update of the Project Concept note.
- Review and update of the technical, environmental, and social Terms of Reference (TORs).
- Structure of project governance and management team.
- Budget proposals for technical and ESIA studies.

The meeting resolved to meet on 17 May 2022, to strengthen arrangements towards project implementation.

Zambia – Tanzania Interconnector Project

On the Zambian side, the preparation of tender documents for the project was completed in October 2021. The World Bank supported the studies using the AREP facility at SAPP. The next steps include resource mobilisation by ZESCO/Government of Zambia for the implementation of the project.

The status of the project has remained the same during the period under review.

Luapula Hydro Electric Power Scheme

The prefeasibility study and preliminary environmental scanning were completed in 2019. The technical studies were funded under the SADC PPDF while the preliminary environmental studies were supported by the World Bank using the AREP facility.

Commencement of the detailed feasibility study and the ESIA await the mobilisation of funds. The World Bank, NEPAD-IPPF, NEPAD-AUDA and Swedfund are being engaged for possible financial support for the detailed studies. As part of the fund mobilisation, the project was presented to potential funders during the 7th PIDA Week in Nairobi which took place from 28 February to 4 March 2022.

The NEPAD-IPPF has committed funds towards the techno-economic studies for one site. Additional funds are however still required to cover the costs for the technical and ESIA studies. The total funding gap for the feasibility studies for the three sites is about US\$6.1 million. The review and update of the ToRs for the detailed ESIA studies are expected to be completed in May 2022.

Regional Transmission Infrastructure Financing Facility (RTIFF)

The finalisation of the energy and financial models and deeper engagement with potential project sponsors was the primary focus over this month. Extensive engagement continued with the SAPP Team and other key stakeholders, including the Steering Working Group and the RTIFF Oversight Task Team, to finalise the draft financial and energy models.

Finalisation of the financial model was accelerated in the interest of having the RTIFF and projects specific models available ahead of the engagement with selected



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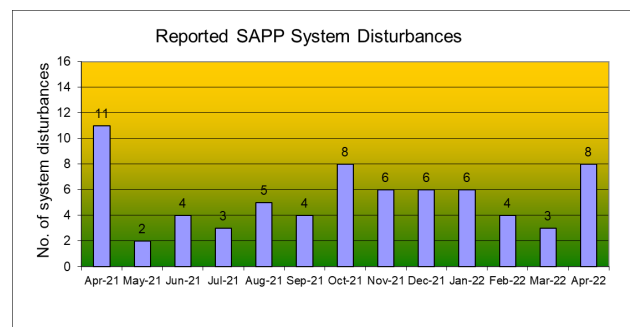


project sponsors. Finalisation of ‘Databook’ that outlines the model workings, key assumptions, outputs, and commercial reasoning is currently ongoing and will be shared with SAPP-CC and relevant stakeholders in May 2022.

During the discussions on the energy model, it was agreed that two additional scenarios will be modelled ahead of finalisation. These include a ‘high hydro’ and a new ‘high renewable’ scenario.

The Consulting Team, in close liaison with SAPP, will continue to engage potential funders and financiers. Notably, plans are being made for some light scouting with priority European funders on the week commencing 23rd May 2022, with a view to identify top-priority follow-up engagements ahead of the Africa Energy Forum in Brussels, Belgium in June 2022.

from 730 MW and power frequency temporarily fell from 49.92 Hz to 49.44 Hz; ii) one generator tripped from 386 MW and power frequency temporarily fell from 49.79 Hz to 49.488 Hz; and iii) one generator tripped from 609 MW and power frequency temporarily fell from 49.824 Hz to 49.482 Hz. In all these incidences, power frequency decline was arrested by instantaneous demand response and automatic deployment of pumped storage units.



System Operations

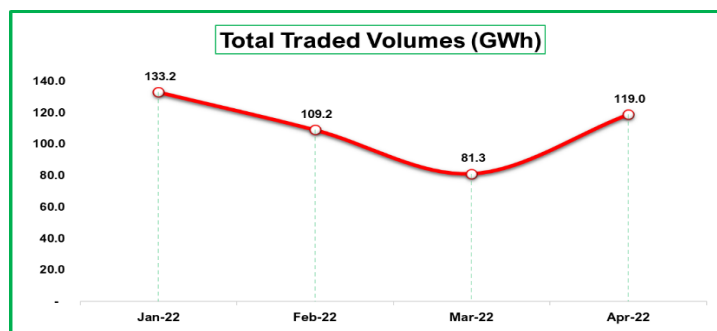
SAPP System Disturbances

In the month of April 2022, eight (8) SAPP system disturbances were reported. In the first one a transmission line tripped in Zimbabwe and the 330 kV interconnection between Mozambique and Zimbabwe tripped on over-frequency protection. Subsequently, the HVDC system tripped in Mozambique interrupting about 950 MW of power to South Africa. In the second one, an output of 410 MW was lost from the Mozambique - South Africa HVDC link and power frequency temporarily fell from 49.845 Hz to 49.492 Hz at minimum. In the third one, the 330 kV Mozambique - Zimbabwe interconnector tripped due to lightning and thunderstorms. In the fourth and fifth disturbance, the 220 kV interconnectors between Zambia and DR Congo tripped on directional over-power. The last three were power frequency excursion incidences where generators tripped in South Africa as follows: i) one generator tripped

Electricity Trading

Traded Volumes

Market performance during the month of April 2022 was higher when compared to March 2022. 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 46% to 119 GWh in the month of April 2022, from the March 2022 volume of 81.3 GWh.



Monthly Traded Volumes (GWh) in DAM, IDM, FPM-W, and FPM-M (January 2022 to April 2022)



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Market Revenue

A total of USD 7.3 million was exchanged on the competitive market during the month of April 2022 compared to USD 6.7 million exchanged in March 2022. The change is mainly attributed to a change in traded volumes. USD 7.1 million was exchanged on the competitive market during the same month of April in 2021.

Market Monitoring and Surveillance

During the month under review there were no observed cases of market manipulation or use of insider information.

On year-on-year basis compared to April 2021, the average hourly DAM-Market Clearing Prices (MCPs) for April 2022 were relatively similar for all the time periods. There were few participants for the IDM and FPM markets. The DAM continues to provide a reference price for the other markets.

According to the transmission allocation rules, transmission capacity utilisation was deemed to be efficient for the month under review. The Market Operator observed its own processes and procedures.

The Market Surveillance module of the MTP went live on 1 April 2022 and training for the MS unit was held on 21 and 22 April 2022.

Upcoming Events – 2022

DATE	EVENT
4 to 6 May 2022	SAPP Crime Prevention Working Group Meeting, Sandton, South Africa
2 – 3 June 2022	RTIFF Mission to Angola, Luanda
7 to 9 June 2022	ENLIT Africa, Cape Town, South Africa
16 June 2022	51 st SAPP CC Board Meeting, Virtual
21 to 24 June 2022	Africa Energy Forum 2022, Brussels, Belgium
5 – 6 July 2022	SAPP/EAPP Coordination Meeting, Dar-Es-Salaam, Tanzania
11 to 15 July 2022	SAPP Crime Prevention Working Group Study Visit to Uganda, Kampala, Uganda
13 to 16 July 2022	APUA Meetings, Senegal
26 – 27 July 2022	AFSEC General Assembly, Accra, Ghana (Hybrid)
26 – 28 July 2022	RTIFF Mission to Namibia, Windhoek
22 – 26 August 2022	IEEE Power Africa 2022, Rwanda
28 to 31 August 2022	CIGRE 2022, Paris, France
5 to 9 Sept 2022	59th SAPP Meetings, TBA
19 to 20 October 2022	53rd SAPP Executive Committee Meeting and AGM, Harare, Zimbabwe
8 December 2022	52 nd SAPP CC Board Meeting, Harare, Zimbabwe



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