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Meetings, Workshops and Conferences

Management Committee Study Visit to Europe

The SAPP Management Committee (MANCO) undertook a study to Europe on Electricity Markets and Power Pool Operations from 17-25 November 2017. The tour was sponsored by the Government of Norway and Sida funding support to SAPP. A total of 20

participants from SAPP attended the study tour.

The tour covered the following institutions and countries.

- RTE – Paris, France
- EPEX – Paris France
- Coreso – Brussels, Belgium
- ENTSO-E – Brussels, Belgium
- StatKraft – Oslo, Norway
- NordPool – Oslo, Norway and a presentation from Denmark on renewable energy.



Some MANCO Members pose for photos at Coreso Offices, Brussels, Belgium



The following are some of the areas covered during the study tour

- Organization of the electricity industry in France
- Power market operations in France, Europe and the Nordic regions
- Balancing markets operations
- Renewable energy integration
- Transmission capacity management
- Online transmission system operations management



MANCO Members pose for a photo at Statkraft Offices, Oslo, Norway



MANCO Members pose for a photo at NordPool Offices, Oslo, Norway

Telecommunications Working Group Meeting

The SAPP Telecommunications Working Group (TWG) held a meeting in Johannesburg, South Africa, from 01 to 02 November 2017. The meeting held discussions on the way-forward with the SAPP Video Conference System and came up with solid specifications of the system. Also discussed was implementation of cyber security before the Video Conference System is rolled out. The working group also discussed the use of the SAPP System Viewer and how best all utilities can benefit from it.



TWG Members during the meeting

Meeting on SAPP Operating Guidelines

From 8 to 9 November 2017 the SAPP convened a meeting at SAPP Coordination Centre in Harare for the three Control Area Operators (Eskom, ZESA and ZESCO). The meeting focused on implementation of warnings and penalties for non-compliance with requirements in the SAPP Operating Guidelines. Compliance with Operating



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guidelines is crucial to safe and reliable operations of the interconnected power system.

Energy Efficiency Workshop

The African Commission of Energy (AFREC) in association with The International Energy Agency (IEA) and The Ministry of Irrigation Water and Electricity of Republic of Ethiopia organized the third regional training and capacity building workshop on the collection of data and the creation of the basis of African data on indicators of the energy efficiency. The workshop was held in Addis Ababa, Ethiopia from 08-10 November 2017. SAPP was represented by the Planning Engineer and he presented a paper entitled "Update on Energy Efficiency within the SADC Region". The main objectives of the workshop were:

- to make improvements on the first version of the energy efficiency indicators and questionnaires excel template.
- training of National Focal Points on how to collect effectively, energy efficiency data for the residential sector.

The creation of an accurate energy efficiency database will be of paramount importance in the analysis and development of energy efficiency policies. The National Focal Points appreciated a project done by the Food and Agriculture Organization, FAO in Lesotho about developing a methodology on incorporating a wood fuel module into existing household surveys and further asked AFREC to help financially and technically to put in place such investigations to the other countries. Countries that does not have Energy Information Systems were encouraged to develop their own National Energy Information Systems.



Energy Efficiency Workshop participants at Sarem International Hotel in Addis Ababa, Ethiopia

CIGRE Conference

CIGRE is an international council of large electric power systems founded in 1921. CIGRE promotes collaboration among experts from all around the world by sharing knowledge and joining forces to improve electric power systems of today and tomorrow. With members in more than 80 countries, it is the leading worldwide organisation of electric power systems, covering technical, economic, environmental, operational, organisational and regulatory aspects. Eskom organised the CIGRE conference from 14 to 17 November 2017 in Cape Town, South Africa. The theme of the conference was "Electricity Supply to Africa and Developing Economies: Challenges and Opportunities". SAPP was represented by its Operations Engineer and presented a paper entitled "A historic perspective of power system disturbances in the Southern African Power Pool". Eskom and NamPower also presented papers at this conference which attracted delegates from over 40 countries from Africa and overseas.

The conference program included tutorials on power systems technologies and technical tours to wind farms (power plants) and other power system installations owned by Eskom. Of great interest was the



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"invisible" power transmission tower, a unique design and installation by Eskom. This tower does not affect the beautiful mountainous scenery of Somerset West in Cape Town even as it anchors one 400 kV and two 132 kV circuits plus their overhead earth wires across the mountain range.



Eskom's unique "invisible tower" near Cape Town, crossing the mountain range and carrying 132 kV double circuit and 400 kV single circuit



Group 1 of CIGRE conference participants at Palmiet Pumped Storage Power Plant in Cape Town

Human Resources Working Group Meeting

The SAPP Human Resources Working Group met in Luanda, Angola, from 15 to 16 November 2017. The discussions focused on the SAPP structure and SAPP Policies.

Power Transfer Limits Workshop

The SAPP held a workshop in South Africa from 29 to 30 November 2017 for determination of power transfer limits on critical transmission paths and on tie lines in the Eskom Control Area. This Control Area encompasses South Africa, Botswana, Swaziland, Mozambique, Lesotho and Namibia. The outcome will be implemented from January 2018.

Update on SAPP Projects

ZIZABONA Technical and Finance Meeting

The ZIZABONA Technical and Financial work stream activities were carried out in Johannesburg, South Africa. The basic design for the 3 components of the ZIZABONA project were presented covering the substations and lines. The financial and economic analysis was also presented including the project cost estimates. The final project feasibility assessment report is due to be submitted in December 2017.

Zambia Tanzania Kenya Power Interconnector Financiers Conference

The Zambia Tanzania Kenya Power Interconnector Financiers Conference was held in Livingstone, Zambia. The various components of the projects in the 3 countries were presented including the funding requirements.



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System Operations

System Disturbances

In the month of November 2017, four SAPP system disturbances were reported on the interconnected power system. Two originated from Mozambique due to faults on the HVDC system. The third one was caused by a broken conductor on one of the 220 kV Zambia - DR Congo tie lines. The fourth and last one resulted in power system excursions and power flow deviations on tie lines in the central corridor (Botswana, Zimbabwe and Zambia) and is still under investigation. Refer to figure below for a general outlook of reported SAPP system disturbances.



General outlook of reported SAPP System Disturbances

Equipment Outages

The 400 kV South Africa – Botswana Zimbabwe interconnector was taken out of service from 20 to 22 November 2017 to facilitate maintenance work on the South African end. This outage affected energy trading. From 21 to 23 November 2017, one circuit after another of the 330 kV Zimbabwe – Zambia interconnector was taken out of service to facilitate commissioning works of the Kariba South power plant extension. These outages did not affect energy trading because a single circuit had enough capacity to carry all transactions at that time.

Electricity Trading

Energy Traded

Trading in the market was marginally lower during the month of November 2017 when compared to October 2017. 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 8.6% to 224,142.10 MWh in the month of November 2017 when compared to the October 2017 figure of 245,163.30 MWh. Below is summary of volumes traded in DAM, IDM, FPM-M and FPM-W for the month of November 2017.



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

Market Clearing Prices

FPM Monthly Prices

Non off-peak prices decreased by 4.6% from 6.053USc/KWh in October 2017 to 5.772USc/KWh in November 2017. Off Peak prices decreased by 6.4% from 2.912USc/KWh in October 2017 to 2.726USc/KWh in November 2017.

FPM Weekly Prices

The average price for the peak period was lower by 3.9% at 8.54USc/KWh in November 2017 from the October 2017 figure of



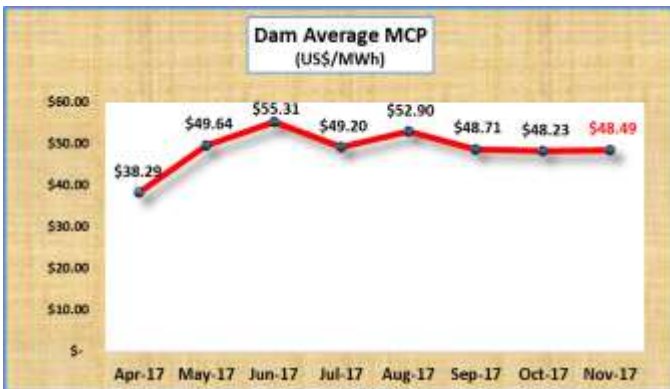
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8.881USc/KWh. Standard period average prices decreased from the October 2017 figure of 5.903USc/KWh to 5.775USc/KWh recorded in November 2017. The average Off-Peak price decreased by 3.1% from 2.73USc/KWh in October 2017 to 2.64USc/KWh in November 2017.

Day Ahead Market

The monthly average Day Ahead Market clearing price was slightly higher during the month of November 2017 at 4.85USc/KWh when compared to the 4.823USc/KWh recorded in October 2017.



Monthly Average MCP prices April 2017 to November 2017.

Intra Day Ahead Market (IDM)

The average peak price for the IDM market for the month of November 2017 was 7.280 USc/KWh from the October 2017 figure of 7.428 USc/KWh. The average standard price also decreased from 5.830 USc/KWh in October to 5.616 USc/KWh in November 2017. Off peak prices also declined from 2.749 USc/KWh recorded in October 2017 to 2.675 USc/KWh in November 2017.

Market Revenues

A total of **USD11,030,820.93** was exchanged on the DAM, IDM, FPM-W and FPM-M market during the month of November 2017 when compared to a total of **USD12,853,812.89** exchanged in October 2017. The decrease is mainly attributed to decrease in traded volumes.



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Environmental Corner

PCB Phase-out Meeting

The SAPP Environmental Sub-Committee (ESC) and the Africa Institute, which is the implementing Agency for the SADC PCB disposal project held their Project Steering Committee meeting concurrently in Pretoria from 6 to 10 November, 2017. The Project Progress was presented by Africa Institute and was noted that despite it falling short, countries are now in a better position to fast-track the project implementation. The funds utilization fell short of expected and planned levels. The committee acknowledged the challenges faced by the project and set resolutions to avert and address them. A better clarification of issues was provided and countries echoed their preparedness to move faster in 2018. It was agreed that each participating country shall submit a costed Inventory Verification Plan to be implemented between January and September 2018.

Conference of Parties (COP) 23 on Climate Change

Climate change talks took place in Bonn, Germany, from 6 to 19 November 2017. The talks came up with clear road map for implementation of finalisation of the rule-book that will guide implementation of the Paris climate agreement. This calls for developed countries to meet their pre-2020 obligations of reducing emission by 5.2% of their 1990 emissions as well as to mobilise US\$100 billion annually for climate change activities in developing countries. The Environmental Officer, Johnson Maviya, represented the SAPP at the COP 23.

Upcoming Events

DATE	EVENT
7 - 8 Dec 2017	1st meeting of the Ad Hoc Working Group on Clean Energy Financial Mechanism (CEFM) for Southern African Power Pool (SAPP), Victoria Falls, Zimbabwe
12 Dec 2017	ZIZABONA Meetings, Johannesburg, South Africa
12 Dec 2017	Meeting with EOH, Johannesburg, South Africa
14 Dec 2017	SAPP Finance Working Group, Johannesburg, South Africa
9 Jan 2018	SAPP-MTP Cloud Hosting Meetings, Johannesburg, South Africa
23-25 Jan 2018	Joint MSC - OSC Meetings, Johannesburg, South Africa
25-26 Jan 2018	Crime Prevention Working Group Meeting, Swaziland , TBA
1-2 Feb 2018	Integrated Demand Management Meeting, Zambia , TBA
26 Feb - 1 Mar 2018	50 th SAPP MANCO Meetings, Zambia
March 2017	SAPP Executive Committee Meeting, Swaziland



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