

Energy cooperation paying off as SADC records power surplus

SOUTHERN AFRICA is experiencing surplus electricity generation capacity for the first time in a decade, thanks to the success of regional cooperation in energy planning during the past few years.

Figures released by the Southern African Power Pool (SAPP) show that the 12-member pool is sitting on surplus peak period generation capacity of 919 megawatts (MW).

“The excess is much higher if we look at off-peak periods,” Acting SAPP Coordination Centre Manager Alison Chikova told the SADC Energy Thematic Group (ETG) during its biannual meeting in Gaborone, Botswana on 27 March.

He said the excess was partly because of the slowdown in the South African economy but also due to the impact of a coordinated approach in implementation of the SADC energy programme.

South Africa’s economy contracted to 0.3 percent in the last quarter of 2016, due to a fall in mining and manufacturing production.

According to Statistics South Africa (StatsSA), the decline in performance of the two key sectors pulled the overall economic growth into negative territory.

StatsSA figures show that production in the mining industry declined by 11.5 percent as a result of falls in the output of coal, gold and other metal ores such as platinum and iron.

Manufacturing production dropped by 3.1 percent between October and December 2016.

Chikova said South Africa has excess capacity of 5,797MW, largely due to the economic slowdown and the commissioning of 2,550MW of additional generation capacity from six new projects in 2016.

The six projects include the 999MW Ingula power station owned by state enterprise Eskom as well as five others involving power generation through wind, gas and solar photovoltaic technologies that were commissioned by Independent Power Producers (IPPs).

According to the SAPP figures, the increased regional generation capacity was strengthened through the commissioning of new projects in other SAPP member countries.

Angola had largest number of projects commissioned in 2016, contributing 780MW or about 19 percent of the 4,180MW of the new capacity commissioned in the region last year.

Other significant contributions were from Zambia and Zimbabwe where new IPP projects added 300MW and 200MW of power to the regional grid, respectively.

The 300MW Mwaamba coal-fired power project and the 200MW Dema diesel power plant were commissioned in 2016 as part of regional efforts to improve generation capacity in southern Africa.

Chikova revealed that SAPP member countries plan to commission more than 30,000MW of new generation capacity between 2017 and 2022, about half of which would come from South Africa.

However, the increased generation capacity in Angola, Malawi and United Republic of Tanzania is only available domestically as the three countries are yet to be interconnected to the rest of the SAPP grid.

New generation capacity installed in any of the three non-participating

countries is not accessible to the nine other members of SAPP – Botswana, the Democratic Republic of Congo, Lesotho, Mozambique, Namibia, Swaziland, South Africa, Zambia and Zimbabwe.

There are plans to tap into the installed capacity of these three SAPP members through the implementation of several interconnector projects.

These include the Zambia-Tanzania-Kenya interconnector project that is expected to connect the SAPP grid to the one operated by the Eastern Africa Power Pool – in addition to linking the Tanzanian power network to other SAPP member countries.

The Zambia-Tanzania-Kenya interconnector is expected to be ready by the end of 2019, according to Chikova.

Other interconnector projects are expected between Mozambique and Malawi as well as between Namibian and Angola. The target dates for commissioning these are in 2020.

Gas is increasingly becoming a major source of electricity in the region, accounting for 995MW or almost 24 percent of all power generated in 2016 – from two projects in Mozambique and one each in South Africa and Tanzania.



continued on page 2...

SADC renewable energy strategy ready for approval

THE REGIONAL Renewable Energy and Energy Efficiency Strategy and Action Plan (REEESAP) is expected to be presented to SADC Energy Ministers for adoption in July.

Once adopted by the ministers, the REEESAP will be forwarded to the SADC Council of Ministers and ultimately to the SADC Heads of State and Government Summit for final approval at their annual summit scheduled for South Africa in August 2017.

The REEESAP, which spans the period 2016-2030, aims to provide a framework for SADC member states to develop renewable energy strategies, leading to the greater uptake of RE resources as well as mobilization of financial resources in the sector.

This will be achieved by a variety of measures, including establishing renewable energy agencies in all 15 SADC member states that will have specific mandate for off-grid systems, as well as developing and adopting guidelines to meet the SADC target of cost-reflective tariffs by 2019 while ensuring that the poor are not prejudiced.

Other proposed measures include raising awareness on the value and benefits of renewable energy and introducing sustainable energy issues in school curricula and tertiary education.

The REEESAP also proposes to create a special purpose regional investment fund for renewable energy and energy efficiency projects of less than 10 megawatts (MW). The fund is expected, among other things, to support packaging of bankable projects


The adoption of the REEESAP will not only change the landscape of renewable energy development in SADC, but is also critical to encouraging the region to adopt innovative ways of using less energy to support development initiatives.

In the same light, the REEESAP is expected to promote technological innovation in the sector that will ensure that the region uses less energy to provide the same service.

This will be achieved through various measures including the use of remote electric geyser switches, water sensor dispatching equipment and time-controlled shower units for institutions, as well as banning the use of incandescent light bulbs, electric geysers, boilers and other inefficient water heating and lighting equipment.

Switching from traditional light bulbs to compact florescent lamps and commercial lighting, as well as the uptake of solar water heaters have been effective in most SADC countries as they have significantly reduced energy use. The use of compact florescent lamps can save up to 80 percent of the electricity consumption compared to incandescent bulbs.

Solar water heaters are another energy conservation device. Research shows that use of solar water heaters could reduce household electricity bills by 40 percent or more.

Implementation of these energy efficiency measures in southern Africa has resulted in savings of about 4,561MW of electricity between 2009 and 2015. It is envisaged that the SADC region will save more than 6,000MW by 2018 if such initiatives are implemented according to plan. 

Energy cooperation paying off as SADC records power surplus


Unlike in the past where coal-fired plants contributed the largest share of new generation capacity, 2016 saw only one new coal project in Zambia coming on board with a capacity of 300MW.

The move towards renewable energy follows a resolution made in 2012 by southern African countries to increase the uptake of cleaner and alternative energy sources that result in reduced carbon emission that increase climate warming and cause environmental damage.

In addition to being affordable, secure and reliable, renewable energy such as hydro, solar and wind will not be depleted and are also in abundance in the SADC region.

The long-term target set by SADC is to achieve a renewable energy mix in the regional grid of at least 32 percent by 2020 and 35 percent by 2030.

According to the African Development Bank, southern African alone has the potential to become a “gold mine” for renewable energy due to the abundant solar and wind resources that are now hugely sought after by international investors in their quest for clean energy.

The SADC region is also hugely endowed with watercourses such as the Congo and Zambezi, with the Inga Dam situated on the Congo River having the potential to produce about 40,000MW of electricity, according to SAPP. 

SACREEE to develop regional Industrial Efficiency programme



SACREEE
SADC CENTRE FOR RENEWABLE
ENERGY & ENERGY EFFICIENCY

TO CONTRIBUTE to the competitiveness of the industrial sector in the SADC region, the SADC Centre for Renewable Energy and Energy Efficiency (SACREEE) has launched a regional programme on Industrial Energy Efficiency.

The programme is in line with the Revised Industrialization Strategy and Roadmap (RISDP) 2015-2063 approved by the Extraordinary Summit in April.

The Revised RISDP identifies energy as a “key enabler” for industrial development in the region.

Supported by the European Union, the regional programme, will see a team of experts visiting SADC Member States to conduct a scoping study in order to assess current practices and the potential of energy efficiency in the industrial sector of SADC Member States.

Thereafter, a regional on Industrial Energy Efficiency will be developed and presented to Member States for validation. sacreee.org



Table: Update on SACREEE activities

Name	Implementing Agency	Objectives/Targets
SADC Renewable Energy Entrepreneurship Support Facility	SACREEE and International Renewable Energy Agency (IRENA)	<ul style="list-style-type: none"> • address barriers and challenges experienced by the private sector • enhance and strengthen the capacity of small to medium entrepreneurs in assessing the business potentials of sustainable energy • develop viable business plans and loan requests, and managing and maintaining their businesses successfully • increase the confidence of financial institutions in sustainable energy systems • create linkages between the entrepreneurs and financial institutions.
SADC Program on Gender and Sustainable Energy	SACREEE and NREL	<ul style="list-style-type: none"> • Steer and support the development of gender-sensitive policies • Improve knowledge management, awareness creation and advocacy on gender and energy issues • Build and strengthen capacities in gender mainstreaming in energy policies and projects • Implement gender-responsive investment and business promotion in sustainable energy development in the SADC region
SADC Industrial Energy Efficiency Programme (SIEEP)	SACREEE	<ul style="list-style-type: none"> • Contributing to the competitiveness of the industrial sectors of SADC Member States by building their capacity to adopt, invest and utilise energy efficient technologies and practices. • Develop a regional program for Industrial Energy Efficiency to be endorsed by the Member States
Renewable Energy Resource Assessment and Zoning study for the Africa Clean Energy Corridor (ACEC)	SACREEE, Ministries of Energy, National Utilities, Regulatory Bodies and	<ul style="list-style-type: none"> • Assist project developers to have a clearer understanding of the economic feasibility and investment needed for the development of the sites.
SADC regional EE lighting initiative	SACREEE	<ul style="list-style-type: none"> • Work with the SADC Member States in order to promote a rapid uptake of efficient, high quality lighting products with the objective to permanently remove any inefficient lamps from the market in the SADC region • Create a Regional Concerted Action expert group on energy efficient lighting which will act as a know how exchange platform and as an advisory group of experts towards decision makers in order to facilitate sound decision making process on the political level • Collaborate with existing testing institutions and laboratories and support the establishment of new ones in order to put in place mechanisms for high quality testing facilities • Implement measures that increase national and regional demand for high-efficiency, high quality on-grid and off-grid lighting products

SADC targets contribution of science and technology to energy sector development

THE DEVELOPMENT of the energy sector in the region has often focused on infrastructure development in order to increase generation capacity.

However, focus often lacks in strengthening innovations and improvement of common practice to obtain better results whilst using the same or less materials.


Currently, basic research continue to play a central role in the evolution of the energy sector.

To close that gap, the SADC Secretariat is developing a study on how science and technology could support the energy sector.

This comes as SADC Member States are increasingly becoming aware that the adoption of science and technologies in the energy sector is not a choice but imperative if the region is to achieve its regional development targets. This is in line with Priority D of the Revised Regional Indicative Strategic Development Plan (2015-2020) which centres on the promotion of special programmes of regional dimension under clusters such as education and human resource development; and science, technology and innovation and research and development.

The contribution of science and technology to the sector cannot be undermined as historically, fundamental science

has driven the development of new, innovative technologies.

To achieve the goal of global transition to a sustainable and low-carbon energy system, there is need for new scientific advances that will solve existing technological barriers in producing, storing and using energy. 

SADC to attract energy investment

PLANS TO host a regional energy conference aimed at attracting investment in the sector are progressing well.


The hosting of the conference was approved by the SADC Extraordinary Summit held in March in Swaziland.

The conference, which will be jointly held with a ministerial workshop in Swaziland on 12-13 July, is intended to showcase investment opportunities in the energy sector in SADC and is expected to open up opportunities for investment in the energy sector as well as leverage additional resources, focusing on specific flagship projects.

Most of the energy projects to be presented are contained in the SADC Regional Infrastructure Development Master Plan (RIDMP) approved by SADC leaders at their 32nd Ordinary Summit held in August 2012 in Maputo.

The Energy Sector Plan of the RIDMP estimates the total cost of additional electricity generation capacity for the region to be in the range of US\$114 billion to US\$233 billion.

The related transmission investment costs to support new generation capacity are about US\$540 million. This transmission investment does not, however, include planned transmission interconnectors and national backbone lines.

The Energy Sector Plan identifies 89 energy infrastructure projects, some of which will be showcased during the planned High-Level Ministerial Workshop and Regional Investors' Conference on Regional Energy Projects. 


Search for SADC Energy adviser ongoing

THE PROCESS to identify a new technical adviser (TA) responsible for energy policy is expected to be finalized soon.

The TA among other things provides operational support to the SADC Energy Division.

Austria as the lead International Cooperation Partner for the SADC Energy Sector, is expected to second the TA to the SADC Secretariat.

The contract for the previous TA, Wolfgang Moser ended in November 2016.

Moser was attached to the SADC Secretariat for 30 months, and contributed immensely to the development of the energy sector. His key highlight was the development of the SADC Renewable Energy and Energy Efficiency Strategy and Action Plan (REEESAP). 

ICPs urged to utilize online platforms

STAKEHOLDERS IN the SADC energy sector have been urged to utilize a regional energy online platform to share information and coordinate their activities.

The chairperson of the SADC Energy Thematic Group (SADC ETG), Austria made the call at the recent ETG meeting held in Botswana.

The regional energy online platform was developed by the Southern African Research and Documentation Centre (SARDC).

The online tool enables ICPs to constantly update their project information and share a comprehensive overview of their activities in SADC with the general public.

The SADC Energy Portal – accessible on the SARDC website (www.sardc.net) – is an information and knowledge-sharing initiative of the ICPs active in the SADC energy sector and is designed to promote coordinated approaches to bilateral and multilateral support for energy projects and programmes in the southern African region.

The portal is part of the Communicating Energy in Southern Africa Project whose goal is to raise regional awareness among stakeholders in southern Africa about key regional energy issues.

The Communicating Energy in Southern Africa Project is supported by Austria. 

SADC to host Water-Energy-Food Nexus workshop

MANAGEMENT OF water development in southern Africa cannot continue to undermine energy and food issues or vice versa because action in one area impacts on the others.

For example, water extraction and distribution require the availability of adequate energy supplies, while food production requires water.

This water-energy-food nexus, therefore, demands that countries and regions come up with innovative ways of finding a balance between these competing needs to promote socio-economic development, while at the same time ensuring that development of one of the needs does not affect the other.

Balancing and integrating these linkages is even more important now that most countries in the Southern Afri-

can Development Community (SADC) are experiencing economic growth, population growth and improving living standards – factors that have put more pressure on water, food and energy resources.

Additional challenges such as climate change are also threatening these resources.

SADC in partnership with the European Union is in the process of convening a special regional workshop on energy, food and water aimed at facilitating the exchange of ideas and forging practical and sustainable solutions towards addressing the energy, food and waters crisis in the region with a view to mapping out a strategic direction.

The regional water, food and energy workshop for this year.



Energy ministers meeting set for July

SADC ENERGY Ministers will meet in Swaziland in July to discuss a number of issues including the adoption of the Renewable Energy and Energy Efficiency Strategy and Action Plan.

Other issues will be how to align various energy activities, programmes and projects to the recently approval of two key regional action plans namely the Revised RISDP and SADC industrialization Strategy and Roadmap.

Alignment of support to the two regional documents will ensure the smooth implementation of agreed activities and programmes, thereby promoting socio-economic development and deeper integration.

The SADC Industrialization Strategy and Roadmap aims at accelerating the growing momentum towards strengthening the comparative and competitive advantages of the economies of the region, and is anchored on three pillars, industrialization, competitiveness and regional integration. The strategy covers the period 2015-2063.

The Revised RISDP is a five-year plan that guides the implementation of all SADC programmes from 2015 until 2020.

The plan has four priority areas -- Industrial development and market integration, Infrastructure in support of regional integration, Peace and Security cooperation as a prerequisite for regional integration, as well as Special programmes of regional dimension.

Energy is a critical area for both the Revised RISDP and SADC Industrialization Strategy and Roadmap.



Events Diary

June

1-3, Japan	2nd World Congress on Petroleum and Refinery
22-23, Ghana	8th Annual Ghana Summit Exhibition
28-30, Benin	9th Africa Carbon Forum

July

7, Turkey	22nd World Petroleum Congress
13-14, Germany	3rd International Conference and Expo on Oil and Gas
27-28, Switzerland	9th International Conference on Oil, Gas and Coal Technology

August

8, Denver	The Oil & Gas Conference
16-18, Tanzania	East Africa 2017 Oil and Gas Exhibition and Conference

September

11-13, Mexico	2017 International Renewable Energy Conference
15-16, Switzerland	International Conference on Oil and Gas Transportation
17-19, Egypt	Global Oil and Gas Middle East and North Africa Conference
20-22, Nigeria	Powering Africa: Nigeria 2017
28-29, UK	Wind and Renewable Energy

October

10-12, UK	3rd Oil and Gas International Licensing
-----------	---