

## ETG identifies key issues for consideration by Energy Ministers

THE 5TH SADC Energy Sector Thematic Group (ETG) meeting in Gaborone, Botswana, on 9-10 November identified a wide range of pertinent issues that require the attention of Energy Ministers if SADC-ICP cooperation is to be strengthened.

The Norwegian Ambassador to Mozambique, Tove Bruvik Westberg, set the tone when she urged fellow ICPs to move beyond support for projects and programmes, to supporting the SADC Secretariat to ensure that necessary decisions are made at the higher political level.

The ETG noted the lack of technical capacity at regional level which is apparent among many stakeholders, areas of competence and technologies. Some of the stakeholders requiring training and capacity building include SADC Secretariat, the Southern African Power Pool (SAPP), Regional Electricity Regulatory Authority of Southern Africa (RERA), power utilities in Member States and relevant ministries, national and regional training and research institutions.

Notable competences lacking are in general planning, engineering, project packaging and financing, and project management while technologies that are lagging behind are those in electric energy and power systems, basic energy and energy access, various types of renewable energy, and energy in general.

Although there are some efforts to address these gaps, most are implemented through national programmes with little regional focus, hence the interest from ICPs to concentrate on training and capacity building that is related to the development and implementation of SADC projects and programmes. Current focus is therefore on SADC energy division, SAPP, RERA and power utilities or energy officials directly involved in regional projects.

The ICPs noted that current capacity development concerns would not be fully addressed by mere recruitment of more officers at the SADC Secretariat unless there is a high-level intervention to address other aspects of a supportive institutional and organisational environment that allows for efficient utilisation of available human resources. These concerns tend to concur with recent job evaluations and studies which suggest that the Secretariat faces institutional challenges that seriously affect its ability to perform adequately.

Another issue raised by the ICPs is the need to empower the SAPP to be able to act more independent-

ly in project implementation. This comes against the background of lack of agreed regional priority projects in the power sector. The SAPP Pool Plan, which was supported by the World Bank, has been revised several times as the scenarios are always changing.

Efforts to strengthen SAPP can also be informed by the West African Power Pool (WAPP) which is already implementing regional projects.

The strengthening and transformation of SAPP would have to take into account the fact that the organization was initially created with a thrust towards cooperation leading to a competitive market, unlike WAPP which was initiated to implement projects. The SAPP staff complement would have to be substantially increased as it is currently small relative to WAPP and even the East African Power Pool.

The SADC Energy Activity Plan is another document that now requires urgent review as it was prepared nine years ago, yet the circumstances on the ground have now changed.

It was noted that the present Plan is a result of the work of a Task Force appointed to prepare a plan based on:

- o SADC Treaty (1992)o SADC Energy Protocol (1996)
- SADC Energy Cooperation Policy and Strategy (1996)
- o SADC Energy Action Plan (1997)

The Plan was finalized in 2000 and used at the SADC Energy Sector Roundtable in October 2000.

The ICP meeting further noted that the Plan does not take into account more recent developments and priorities such as climate change, and does not put enough emphasis on issues such as energy access, renewable energy and energy efficiency.

Therefore, ICPs recommended the need to:

- Review and strengthen the SADC Energy Protocol;
- o Review the SADC Energy Cooperation Policy and Strategy;
- o Develop the SADC Energy Policy and Strategy; and,

o Develop the Strategy Implementation Plan. Given that impacts of climate change know no borders, it was recommended that responses to climate risks should be dealt with at a regional level. For example, SADC countries can benefit from car-

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## CDM Programme of Action to be presented to Energy Ministers

**THE SADC** Energy Thematic Group is working on a regional Clean Development Mechanism (CDM) Programme of Action to promote the uptake of cleaner energy sources that result in less carbon emissions in line with new trends in the global energy sector.

CDM has also emerged as the most lucrative source of "carbon financing" and allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol to implement emission reduction projects in developing nations.

The International Cooperating Partners (ICPs) identified the Government of Norway as the lead ICP to coordinate the CDM Programme of Action.

According to available data, consultations on the programme of action have already started to ensure a draft document is presented to SADC Ministers responsible for Energy in 2010.

SADC Energy Ministers will meet on 27-28 April 2010 in

Luanda, Angola. At their previous meeting in Maputo, the Energy Ministers directed the SADC Secretariat to explore opportunities for Member States to embrace the CDM more actively and explore sources such as hydropower, wind, solar and biofuels.

Southern Africa is among the regions to benefit least from the US\$7 billion annual CDM market.

Since the European Union began trading "carbon credits" through its Emissions Trading Scheme in 2005, only 71 of the 2,156 CDM projects included under the scheme have been registered in Africa and of these 33 were in southern Africa.

These include 25 projects in South Africa, three each in the United Republic of Tanzania and the Democratic Republic of Congo, and two each in Madagascar, Mauritius and Mozambique.

Based on an analysis by SADC, a total of 19,000 Megawatts (MW)

worth of generation projects in the region can be commissioned under the CDM.

A 2008 report by the African Development Bank (AfDB) provides evidence of the continent's potential in adopting the CDM.

The AfDB notes that Sub-Saharan Africa has the potential to provide more than 170 Gigawatts (GW) of additional power generation capacity – more than double the sub-region's current installations – through 3,200 "low-carbon" energy projects.



Exploring clean energy sources such as hydropower can reduce carbon emissions.

### ETG identifies key issues for consideration by Energy Ministers

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bon financing under the Clean Development Mechanism (CDM), if they collectively lobby for international funding, an approach that is likely to be more successful as there would be greater opportunities for achieving economies of scale than might be possible through individual country efforts.

The Embassy of Norway in Maputo is working with SADC Secretariat to develop a SADC Carbon Markets Programme of Action.

Like previous meetings, the 5th ETG meeting was in two parts. The first day was a meeting for donors to share information and was attended by 17 participants representing 12 ICPs and one regional research institution. The second day was the full ETG meeting, attended by all the ICPs plus SADC Secretariat, SAPP and RERA.

Opening the ICPs meeting, mbassador Westberg noted the broad participation in the meeting, which she took as a sign of ICP commitment and a confidence that coordination could make a difference for the benefit of the SADC energy sector.

In the ICPs meeting, each representative gave a brief update of their ongoing and planned activities in the SADC energy sector with detailed written updates expected to be sent to the lead ICP, Norway, after the meeting.

Updates were also received from some of the ICPs who were allocated areas that had been identified as gaps requiring ICP support at the previous meeting in Maputo, Mozambique, on 13 May 2009. Presentations were made as follows:

- o Power generation and transmission, presentation by the World Bank;
- SADC Energy Activity Plan USAID Trade Hub;

- CDM Programme of Action -Norway;
- o Energy Access Strategy GTZ;
- Renewable Energy Strategy and Action Plan for Southern Africa – REEEP;
- Training and capacity building - Norway.

In his remarks to the ETG meeting, the Director of SADC infrastructure and Services, Remigious Makumbe, acknowledged the support from ICPs and the strides made in the energy sector since the Windhoek Declaration of 2006 which gave life to current SADC-ICP cooperation.

He cited various initiatives including the SADC Energy Roundtable sponsored by DBSA, KfW, DFID, and Norway as a notable milestone.

The next ETG meeting is scheduled for 23-24 March 2010 in Maputo. This will precede the SADC Energy Ministers meeting on 27-28 April in Luanda.

## Key decisions made at energy investors roundtable

**REGIONAL ENERGY** experts met for a Power Sector Roundtable in Lusaka, Zambia in July to discuss how southern Africa can attract investment into the energy sector.

The meeting, attended by potential investors and the SADC Secretariat among other participants, also sought to generate "interest from funders to get projects to close within two years" and get a feedback from stakeholders on what challenges they face in the sector.

After intensive consultations, the roundtable made a number of resolutions to ensure more investment comes into the energy sectors as well as to encourage Member States to remove barriers to investment.

The recommendations made at the meeting include:

- A Project Implementation Team be set up for Interconnectors;
- A Project Development Framework at national level be established in each country;
- A Project Acceleration Unit be set up at regional level;
- A facility should be set up and administered by a regional Development Finance Institution (DFI) (such as the Development Bank of Southern Africa) to provide risk capital funding for the "pilot" list of projects to overcome the equity problem faced by power utilities;
- These funds would be refinanced and applied to the next ready project;
- Regional regulatory environments should move towards being more compatible, drawing on lessons learnt from the structure within ECOWAS;
- Standardisation of Power Purchase Agreement (PPA) terms where possible was encouraged, thereby leaving negotiations to focus only on project specific elements; and,
- The current single buyer model should be enhanced to allow intensive energy users to underwrite power projects directly, thereby relieving Utilities of the burden of hav-

ing all regional projects come to them for a PPA.

To ensure these recommendations are adhered to, the roundtable tasked SAPP in collaboration with the DBSA, SADC Secretariat and RERA to have a "closeout meeting in December to develop a roadmap on the implementation of the recommendations ".

The three stakeholders have since met in Harare, Zimbabwe and the closeout produced consolidated recommendations that will be presented to SADC Energy Ministers at the meeting scheduled for April 2010 in Luanda.

#### Energy projects presented to the investors roundtable

A TOTAL of 12 energy projects were presented to investors at the Power Sector Investors Roundtable in Lusaka, Zambia. The projects are in various stages of completion and when fully operational they are expected to address the current power shortages being experienced in the SADC region. *See Table*  $\Box$ 

Project	Description	Project Sponsors	Estimated Costs
Benga Power Station	500 MW with the capacityto ramp up to 2000 MW coal-fired plant	Riversdale Mining Ltd, Elgas S.A.R.L & EDM	US\$1.270m
Moatize Power Station	600 MW with capacity to ramp up to 2400 MW base load coal-fired plant	Vale Mocambique Limitada	-
Mphanda Nkuwa Power Station	1500 MW mid-merit hydro plant	Camargo Correa Energia Capital S.A & EDM	US\$2.968m
Itezhi Tezhi Power Station	120 MW base load hydro plant	ITPC (ZESCO/ TATA JV)	US\$275m
Kariba North Bank Extension	360 MW peaking load hydro plant	ZESCO/Kariba North Bank Extension Power Company	US\$420m
Zimbabwe Generation Priority Projects -Gokwe North -Hwange Expansion -Kariba South Bank Ext	1400 MW coal fired plant 600 MW base load coal- fired plant 300 MW base load coal- fired plant	ZESA ZESA ZESA	US\$1.4b US\$600m US\$300m
Central Transmission Corridor Network (CTC)	Various transmission lines within Zimbabwe in order to strengthen capacity of the network	СТС	US\$100m
Mozambique Transmission Backbone	(i) 800KV HVDC line (ii) 400KV line	EDM	US\$2.348m
Zambia, Tanzania, Kenya, Interconnector	400KV 1600km transmission line linking Zambia, Tanzania & Kenya	OPPPI, TANESCO & KLPC	US\$860m
ZIZABONA	New transmission lines to link Zimbabwe, Zambia, Botswana & Namibia	ZESA, ZESCO, BPC & NamPower	US\$225m

#### **Energy and Environment Partnership Programme finalized**

**THE GOVERNMENT** of Finland has finalized the Energy and Environment Partnership (EEP) Programme with East and Southern Africa.

The programme document on the EEP was completed in October and aims among other things to increase access to sustainable energy derived from renewable energy sources as well as reducing the growth rate of greenhouse gas emissions in the region.

A total of  $\in$  8.5 million has been set aside for the smooth implementation of the programme.

The fund will cover activities such as part-financing of feasibility studies aimed at concrete investment and developing knowledge of renewable energy through thematic forums and other events, studies and publications.

The Counsellor for Regional Cooperation at the Embassy of



The EPP programme seeks to encourage uptake of renewable energy sources such as wind.

Finland in South Africa, Katriina Koivisto, said the programme will cover all renewable energy sources such as solar, mini-hydro (15 Megawatts or below), wind, geothermal and bio-diesel as well as energy efficiency.

To ensure the smooth implementation of the programme, a supervisory board consisting of the donor organizations, SADC and the East African Community Secretariats, and member states will be set to approve the annual plan and budget of the programme.

A steering committee will recommend the projects for approval while a technical evaluation team will assist the committee in evaluating projects.

As a way forward, the Finish government and the Development Bank of Southern Africa (DBSA) signed a contract for the latter to host the regional co-ordination office.

The first steering committee is set for December 2009 with national events launch scheduled for early 2010.

The second steering committee and approval of the first project profiles are expected in March-April 2010.

The EEP programme with Finland and East and Southern Africa was initiated a few years ago to promote the uptake of renewable energy.  $\Box$ 

#### Need for holistic approach to energy efficiency

#### STAKEHOLDERS ATTENDING

an Energy Efficiency Workshop organized in South Africa by the Renewable Energy and Energy Efficiency Partnership (REEEP) and the Sustainable Energy Regulation Network (SERN), said there is need for a holistic approach focused on practical, realistic and feasible solutions to promote energy efficiency initiatives in the region.

The workshop noted that managing the energy demand side is becoming as important as the expansion of generating capacity in SADC, hence the region should come up with vibrant energy efficiency policies.

This assessment is in line with calls by SADC Energy Ministries, who are charged with developing legislation and regulations for energy efficiency measures. Participants to the workshop recommended that the role of SAPP and RERA should be strengthened to coordinate energy efficiency programmes in the region as well as to craft marketing mechanisms for energy savings, as there is no regional policy or regulatory framework focusing specifically on energy efficiency. Such initiatives, where they exist, are instituted only at national level.

Participants also noted the need to create a conducive environment for energy efficiency in the region. This includes changing mindsets, educating, raising awareness, training and promotion of energy efficiency measures.

Member States were urged to speed up implementation of energy efficiency measures and energy management systems in southern Africa. Proper energy efficiency measures have the capacity to play a positive role since they alleviate the impact of climate change.

Participants to the Energy Efficiency Workshop were drawn from a wide range of representatives that include the ICPs, regional utilities, Development Bank of Southern Africa and the National Energy Efficiency Agency of South Africa.

The workshop was aimed at among other things stimulating an enabling environment to promote efficiency measures and energy management systems in southern Africa.

Identifying barriers to the implementation of efficiency measures and the development of practical policies to overcome these barriers were other main objectives of the meeting.

## Solar World Congress calls for more uptake of renewable energy

THE SOLAR World Congress has urged governments to urgently implement the most effective and efficient policies for the rapid transition to a renewable energy world.

Participates at the biennial Congress held in Johannesburg, South Africa in October said the global target of 100 percent is achievable and stakeholders must work together in implementing the policies.

"The global target of 100 percent renewable energy is both attainable and necessary by the middle of the next century," a resolution made at the Congress said. "This is motivated on the grounds of ecological, economic and social sustainability."

The Congress, attended by energy and solar experts from all over the world, proposed that local and rural communities should be actively involved and benefit directly from renewable energies.

"Governments should especially encourage and support community power projects and distributed generation, as well as investment in renewable energy manufacturing facilities in order to foster the local creation of jobs."

The Congress added that energy supply backlog in third world countries could be addressed in a cost-effective and timely manner only through the use of renewable energy. The President of the International Solar Energy Society (ISES), Monica Oliphant, agreed, saying it is essential to scale-up the implementation of the most effective and efficient policies to promote the use of renewable energy.

She said "we have to influence decision-makers to implement this, not only in Africa, but in other countries as well."

Other participants urged stakeholders to change their mindset and not take energy issues for granted as these have an impact on poverty reduction and various other sectors of the economy.

Running under the theme "Renewable Energy – Shaping Our Future", the 2009 Congress was organized by the ISES, the





Solar power is one of the most reliable and clean sources of energy,

Sustainable Energy Society of Southern Africa, and the Foundation for Professional Development.

A renewable energy expo focusing on solar, renewable, sustainable, alternative and efficient energy resources, products, services and developments ran concurrently with the Congress.

Solar energy is regarded as one of the most reliable and clean forms of energy that does not pollute the environment compared to other forms such as thermal.

Africa is endowed with sunshine throughout the year, which can be tapped to produce solar power.

A number of initiatives are in place to harness this energy to help the continent meet its growing demand for electricity.

These include a \$555.3 billion solar power project named Desertec to put solar panels in the North African desert, initiated by a consortium of German companies.

# China to support more clean energy in Africa

**CHINA HAS** announced that it will build about 100 small-sized, renewable-energy power stations in Africa in the next three years.

The Asian nation made the pledge at the fourth ministerial Forum on China-Africa Cooperation (FOCAC) held in Sharm el-Sheikh, Egypt in November.

Renewable energy such as solar, hydro, wind and bio-gas is regarded as the most reliable form of power that does not pollute the environment compared to other forms of energy such as thermal.

Africa is endowed with clean and renewable energy reserves but little is being done to harness the resources despite the huge demand for energy on the continent.  $\Box$ 

## World Bank: Africa needs US\$46 billion for energy generation

A RECENT study by the World Bank has revealed that almost half of the US\$93 billion needed to improve Africa's infrastructure should be spent on the construction of new power plants.

The study, *Africa's Infrastructure: A Time for Transformation,* assessed the infrastructure in 24 countries across the continent and found that Africa's largest infrastructure needs are in the power sector.

"The entire installed generation capacity of 48 Sub Saharan African countries is 68 gigawatts, no more than Spain's," the report found, adding that there is need to improve power generation as access to energy is critical for economic growth and poverty reduction.

"The financing is needed to support the installation of new power generation capacity at the rate of seven times the annual average of the last 10 years. Of the \$93 billion needed to improve



Africa's infrastructure, almost half is needed to boost the continent's power supply.

"In addition, the existing capacity also needs refurbishment because, as it stands today, a quarter of Africa's installed power generation capacity is not operational."

The study added that development of new hydropower may be the best way to increase Africa's capacity.

The study also said while improving maintenance of power

#### World Bank to fund Inga power plant?

**THE WORLD** Bank will support efforts to construct the Inga Hydro power plant in the Democratic Republic of Congo.

World Bank President Robert Zoellick revealed this during his recent visit to Africa in August, which took him to the dam site as well as meet with DRC President Joseph Kabila.

Zoellick said the bank will work closely with other donors, the private sector, the government and other stakeholders that have expressed an interest in rehabilitating the infrastructure to tap the huge potential of energy sources in the Inga.

The whole Inga dam has a capacity to produce about 40,000 Megawatts (MW) of electricity.

At least US\$80 billion is needed to rehabilitate the Inga plant. When fully operational, the project will become the world's biggest hydropower infrastructure project and will have almost twice the capacity of China's Three Gorges project.

DRC opened the bids early this year and a number of investors, among them Australian BHP-Billiton, have expressed an interest in the project.

BHP-Billiton has since pledged to contribute almost US\$35 million towards the project, which is expected to last about eight years.

The Inga 3 project is estimated at US\$7 billion and has the capacity to produce up to 4,300 MW.

is key for increasing access for Africa, regional trade is another important factor in lowering the cost of electricity.

"Regional power trade could save Africa US\$2 billion per year in energy costs," the study says, adding that such a plan will require 22,000 Megawatts (MW) of interconnectors to deliver power freely from country to country.

The ability to trade power supplies will "increase hydropower's share of the continent generation portfolio from about 36 percent to 48 percent."

"Installed capacity will need to grow by more than 10 percent annually, or more than 7,000 MWs a year, just to meet Africa's suppressed demand," the study states.

The study also says there is need to improve the operating efficiency of power utilities through reforms at the institutional level as this will save Africa about US\$2.7 billion a year – a significant contribution. "Presently, less than 90 percent of charges billed to customers are actually collected by utilities, compared with 100 percent for a well-run utility."

The study, Africa's Infrastructure: Α Time for Transformation, was conducted by the World Bank in partnership with institutions such as the African Union Commission, Development African Bank, Development Bank of Southern Africa, Infrastructure Consortium Africa. and the New for Partnership for Africa's Development.

Surveys were conducted among 16 rail operators, 20 road entities, 30 power utilities, 30 ports, 60 airports, 80 water utilities, and over 100 ICT operators.



## SADC to establish regulatory guidelines for cross-border power trading

**THE REGIONAL** Electricity Regulators Association (RERA) will soon establish regulatory guidelines for cross border power trading in southern Africa.

The guidelines are expected to help provide an enabling envi-

ronment for cross-border trade and investment in infrastructure that will reduce some of the current challenges deterring investment and affecting security supply through cross-border trading.



Upgrading infrastructure such as the transmission lines above will ensure efficient cross-border power trade.

#### SADC to commission new trading system

**SOUTHERN AFRICAN** countries are expected to launch a more competitive regional power trading system aiming to boost the pooling of electricity across the region before year-end

The system coordinated by the Southern African Power Pool (SAPP) should have been launched in November but was deferred for technical reasons.

According to SAPP Coordination Centre Manager Lawrence Musaba, trial runs for the new trading system, the Day-Ahead-Market (DAM), have been successful.

The DAM was introduced on a trial basis for an initial six-month period from February to August 2009.

The idea behind DAM is that power prices are set to be based

on demand and supply between the utilities in the countries where the power pool operates.

The new system will benefit most energy plants and see the emergence of other players, including independent power producers.

A more flexible and active electricity trading pool could be a blueprint for the rest of the continent, where little electricity is being traded, and help Africa to battle acute power shortages by giving access to excess capacity.

Currently, only about five percent of all power traded in southern Africa is in the short-term energy market, with prices set by the seller and administered by SAPP.

The rest is exchanged via bilateral long-term contracts with fixed tariffs.

RERA executive secretary Elijah Sichone said the guidelines, which are being studied by stakeholders will be presented to SADC Energy Ministers at their next meeting in 2010 for approval.

The guidelines are being developed in response to a directive made by energy ministers in April 2008 to address major constraints in the enabling environment for cross-border power trading.

According to a draft document, the guidelines will apply to any cross-border power facility that involves more than 20 Megawatts (MW) of power, and the relevant power purchase agreement or transmission wheeling agreement that is longer than one year.

The proposed nine guidelines deal with the following:

- Regulator's Powers and Duties in Cross-border Trading
- Working to Ensure Compatible Regulatory Decisions
- Timing of Regulatory Interactions for Proposed Cross-border Transactions
- Licensing Cross-border
- Trading Facilities, Imports and Exports
- Approving Cross-border Agreements in Importing Countries
- Approving Cross-border Agreements in Exporting Countries
- Approving Cross-border Agreements in Transit Countries
- Approving Transmission Access and Pricing and Ancillary Services
- Promoting Transparency in the Regulation of Cross-border Trading.

### Clean energy conference set for March 2010

ENERGY EXPERTS will meet in March 2010 for the Clean Technology World Africa conference to explore ways on how to increase the uptake of clean energy.

Clean energy sources, which result in less carbon emissions are fast emerging as the most lucrative source of "carbon financing" in the world.

According to available data, Africa, particularly southern Africa has benefited the least among all the regions of the continent from the US\$7 billion annual Clean Development Mechanism (CDM) set aside to finance clean energy.

To ensure Africa increases its uptake of clean energy sources, the conference, scheduled for 15-18 March in South Africa, will explore incentives in clean technology as well as identify new sources of efficient energy supply.

An energy exhibition is expected to run concurrently with the conference to be held at the Sandton Convention Centre in Johannesburg.

The conference will also promote new sources of efficient, clean technology and come up with ways that encourage countries to comply with new regulations that call for less emission.

Various stakeholders that include regional power utilities, the Southern Africa Power Pool and potential investors such as the African Development Bank will attend the conference.  $\Box$ 

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#### November 2009 4-6, Zimbabwe

7-9, DRC 9-10, Botswana

11-13, South Africa 16-27, Brazil 18-20, South Africa

#### December

2, Zimbabwe 7-8, Ghana 7-18, Denmark 12-15, Egypt

January 2010 20-21, Cameroon

**February** 9-10, South Africa 24-26, South Africa 24-26, Mozambique

#### March

3-5, Germany 15-17, Netherlands 15-18, South Africa 16, South Africa 23-24, Mozambique 23-25, Austria 24-27, DRC

April 22-23, Mozambique

27-28, Angola

EU Capacity Building Programme workshop for Operating Sub-committee SAPP Executive Committee SAPP Environment Sub-committee Training 5th SADC ETG meeting RERA Annual Conference-AGM Ethanol Week

Investors Roundtable close-out meeting All Africa Energy Summit Copenhagen Climate Change Summit Electrix Power 2009

International Energy and Water Investment Conference

11th Southern Africa Energy Week **Energy Indaba** Expanding Sustainable Bio-fuels Production

Power Sector Investors Roundtable World Bio-fuels Markets Clean Technology World Africa Energy Efficiency World Africa 6th SADC ETG meeting World Sustainable Energy Days 2010 4th African Petroleum Congress and Exhibition

Mozambique Mining and Energy Conference SADC Energy Ministers meeting