

Welcome! SENSE is a service of the Energy Policy Unit of the Sustainable Energy and Climate Change Project (SECCP) of Earthlife Africa Johannesburg (ELA Jhb).

SENSE is a regular publication, edited by Tristen Taylor. We welcome any feedback and submissions. Also, let us know if you wish to get more information from ELA Jhb, or know someone else who should be receiving SENSE. Please note that the material in SENSE (in particular the Editorial) does not necessarily reflect the positions or policies of Earthlife Africa Jhb and/or the SECCP.

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1. Editorial

Happy 2008, be safe, have fun, and may Eskom not load-shed you.

Speaking of load-shedding, Agence France-Presse reports on a startling confession from President Mbeki who is quoted as having said, "When Eskom said to the government: 'We think we must invest more in terms of electricity generation', we said no, but all you will be doing is just to build excess capacity. We said not now, later. We were wrong. Eskom was right. We were wrong."

Most unfortunately, the citizens of South Africa are paying for that mistake through enforced darkness. And, that mistake is being compounded in Eskom's current capacity drive. Despite strong evidence, the job creation, health and environmental benefits of renewable energy are being totally ignored by Eskom and the Government. So much so, that South African companies specialising in renewable technologies are working in Uganda rather than back home.

Instead, Eskom and the Government have chosen the same old dirty and risky energy path of coal and nukes (with rising costs, now R300 billion, up from R150 billion a few months ago). As the ELA-Jhb press release below shows, poor users will have to bear increased tariff costs,

further cutting into over-stretched household budgets.

For those who think that our nuclear industry is safe and that attacks on our nuclear reactors are a thing of the past, a group of armed men invaded Pelindaba in November and shot an employee. In the Energy Policy section of SENSE, the Atomic Bulletin of Scientists warns of the consequences of safety breaches at nuclear facilities. Simpler not have nukes in the first place; windmill proliferation doesn't quite strike the same level of gut-wrenching fear.

While governments, scientists and civil society organisations from around the world were engaged in climate change negotiations in Bali (Dec. 2007) to limit greenhouse, SASOL kept on pumping out CO2 like tomorrow will never come (despite shareholder protest, see article in this edition), making money hand over fist. So, while Christmas bonuses were probably quite sweet at SASOL in 2007, it will be Africa's poor that will pay the ultimate cost for SASOL's CO2 emissions as water becomes scarce, agricultural yields drop, environmental refugees cross borders, and sea levels rise. Once again, the costs of environmentally damaging energy generation will be borne disproportionately by the poor.

Something else that should give pause for consideration is the current move of the World Economic Forum, in conjunction with private companies, to make a bid to own African power generation. This is the logic of neoliberalism and robber-baron corporatism brought to its ultimate conclusion; the Californization of Africa.

The good news is that more South African traffic lights will be solar powered.

Tristen Taylor
Energy Policy Officer
Earthlife Africa Jhb
11th of January 2008

2. SECCP News

Press Release: Eskom's Price Hikes and the Poor
Earthlife Africa Jhb
22nd of November 2007

On the 22nd of November 2007, Earthlife Africa Johannesburg (ELA Jhb) attempted to make submissions to NERSA (National Energy Regulator of South Africa) concerning proposed Eskom and municipal tariff increases, particularly pertaining to for poor households. Despite having informed NERSA on its desire to do so on Monday (19th of November 2007), NERSA officials refused oral submissions from ELA Jhb.

However, ELA Jhb did submit written submissions and NERSA accepted these.

Eskom and municipalities are planning to dramatically increase electricity tariffs to poor households (defined by NERSA as domestic low users (100kWh per month), often at rates (c/kWh) above that of domestic high users (800kWh).

While ELA Jhb agree that electricity tariffs do need to rise in order for Eskom to maintain supply, build capacity and invest heavily in renewable energy generation, the proposed tariff increases for domestic low users are highly regressive under any of the proposed benchmarks (6.2%, 7.8%, 9.8%, 12%, 16.5%). Such increases would bite heavily into domestic budgets putting further constraints on other basic social goods such as water, housing, food, education and clothing. It is intolerable that the poorest users in society should be asked to bear increased costs of a social service which they already cannot afford[1]. The NERSA documentation on the price hikes quite

clearly states that these users are indigent, and, hence, it is peculiar that increases for this bracket are even being considered.

ELA Jhb made the following recommendations to NERSA:

- 1) That there are no increase in any domestic low tariff bracket, not even 6.2%.
- 2) That the socio-economic tariff (Free Basic Electricity, FBE) be altered from 50kWh per household a month to 100kWh per person per month. This would ensure that poor households would have adequate electricity supply, which is essential for those household to raise themselves out of poverty.
- 3) That a step-block tariff be introduced so that tariffs rise according to usage (the more one uses, the more one pays per unit - kWh). The proposed increases seem to do the opposite with the Domestic High tariffs often less than that of the Domestic Low.

ELA JHB would like to state categorically that it is not opposed to electricity tariffs increases for purposes that we have explained, including that of ensuring access of adequate and sustainable energy services for South African including the poor.

The tariffs are justified by way of a very partial interpretation of the policy of so-called “cost-reflective pricing” that seeks to avoid any “cross-subsidisation” between sectors of electricity consumers. However, government acknowledges, in the 1998 White Paper on Energy Policy, that a substantial portion of the full costs of electricity generation are borne by society as a whole – externalized costs not accounted or paid by the commercial entities involved. The heavy consumers – industry accounts for 68% of demand – gain the most benefit from this indirect subsidy.

To reiterate, the proposed tariff increases for Domestic Low users are unjust and economically repressive. The ELA Jhb strongly opposes increases to this bracket, and has provided positive recommendations to ensure that the basic needs of South Africa’s poorest citizens (who make up the majority of the citizenry) are met. This can be achieved while ensuring enough revenue from other users to contribute to capacity expansion and maintenance of existing generation, transmission and distribution.

Long-Term Mitigation Scenarios Update By Richard Worthington

In May 2006, the Cabinet commissioned the Long Term Mitigation Scenario (LTMS) project as a response to the growing focus, both globally and in South Africa, on the issue of climate change.

The LTMS has three objectives:

1. South African stakeholders understand and are focused on a range of ambitious but realistic scenarios of future climate action both for themselves and for the country, based on best available information, notably long-term emissions scenarios and their cost implications;
2. The SA delegation is well-prepared with clear positions for post-2012 dialogue; and
3. Cabinet can approve (a) a long-term climate policy and (b) positions for the negotiations under the United Nations Framework Convention on Climate Change

A Scenario Building Team involving strategic thinkers from government, business and civil society has engaged in technical work to produce scenarios, informed by the work of four research teams. The outputs will be published after a high-level meeting involving the Inter-Ministerial Committee on Climate Change in the first quarter of 2008. It is envisaged that thereafter a consultative process will be initiated to develop national policy. Further work will be needed to explore our options for adapting to Climate Change, which will probably be undertaken under the process of preparing our 2nd National Communication to the UNFCCC, next year.

Social Movements Indaba
By Lerato Maregale

* Lerato Maregale was involved in the planning of and attended the Social Movement Indaba Dec. 2007

The Social Movements Indaba (SMI) national meeting was held in Cape Town on the 02-05 December 2007. The meeting was attended by various social movements around the country and different NGOs some of which made presentations. Earthlife Africa Cape Town (David Robert Lewis) did a presentation on hydrogen in the SA energy mix. The Ogoni people of Nigeria made their presentations and they asked the SMI to support them in their struggles.

SMI has elected three people to three positions: Makoma Lekalakala from Gauteng was elected as Secretary, Thabang Maseko from East London as Organiser, and Mhlobo from Western Cape as Treasurer. All elected for a term of only a year.

The SMI plan of action for 2008 was drafted and adopted in the meeting.

The plan is as follows:

- * Political Education
- * Unity campaign (Asinamali)
- * Engaging on government policies
- * Basic Income Grant
- * Service delivery

The implementation

1. There will be a circulation of the statement that captures the concept of the campaign before the end of December
2. The statement to be converted into a pamphlet that will introduce the campaign to communities
3. SMI in provinces to liaise with NGO's /groups to:
 - Analyze the national budget
 - Political education around the budget
 - Research around social grant
 - Provide with resources for the mobilization
 - Influence the year plan for support organizations
4. Develop a questionnaire that speaks to various arrears and captures the issues of communities (community centred and action oriented)
5. Educational programmes around the energy sector
6. The launch of the campaign June 16 2008 with the aim of inducing a youth component as the driving force.

Political education

1. Layers-community representatives in the SMI to become mobilizers
2. Focus/Themes-Political economy and how capital works
3. Method-Cell and reading groups-mass, seminars, workshops and public meetings
4. Resources-requesting educational/progressive NGOs to produce a module for SMI

The SMI has agreed on programmes of action starting on the 26th January as an International Day of Action. Anti-xenophobia and International Solidarity were highlighted and the SMI will have a programme on the Refugee Day (20th of June 2008).

Energy Caucus Roundup
By Sibusiso Mimi

The Energy Caucus was convened in Cape Town (14th to 15th of Nov.) by Earthlife Africa Cape Town with the assistance of the Sustainable Energy and Climate Change Project (SECCP) of Earthlife Africa Johannesburg. More than 25 representatives of member organizations attended the Energy Caucus meeting from various provinces including Gauteng, Northern Cape, KwaZulu-Natal and the Western Cape.

The programme of the Energy Caucus was geared towards planning ahead and reviewing the defining principles. It also provided a platform for members to share experiences in projects, programmes and campaigns as well as initiating solidarity action.

Amongst the resolutions taken at this meeting includes:

- Calling for a 50% of total energy supply from renewable energy by 2050;
- Calling for a 15% electricity generation from renewable resources by 2020;
- A separate target for solar water heating (SWH) e.g. half a square meter per person SWH within 10 years, one per person within 20 years;
- 100 KW/h per person free basic electricity (FBE) and;
- Support developing a target for biomass energy utilisation.

As a new resolution, the Energy Caucus called for a “scraping of the developmental electricity pricing programme (DEPP), which opens South African to heavy electricity users in return of investments”.

Earthlife Africa Cape Town was re-elected to continue hosting the coordination of the energy caucus, while the Namaqualand Environmental Alliance was to be the co-hosts of the energy Caucus.

3. SA Sustainable Energy News

Energy efficiency agency pushes for yet more solar
By Christy van der Merwe
Engineering News
16th of Nov. 2007

The National Energy Efficiency Agency (NEEA) hopes to roll out a further 100 solar-operated traffic-light intersections throughout the 20 major metropolitan areas in South Africa, NEEA operations manager Barry Bredenkamp told Engineering News.

“Following the phenomenal success of the pilot project solar-powered eight-robot intersection on Plantation road, in Cape Town, the NEEA has had many requests for solar intersections throughout the country,” he added.

The NEEA has put in a proposal to get funding from the State through the Department of Minerals and Energy for the R15-million required to roll out the 100 intersections. The NEEA has also investigated the possibility of involving corporate sponsors through the National Business Initiative, to assist with the capital costs of installing the solar-powered technology for the traffic-light intersections...

...Solar panels at the top of the light pole are used to power the lights, and surplus power is stored in the battery packs, allowing the system to work throughout the night, and for up to three days of cloudy weather if need be. Solar-powered traffic-light systems have been operational in Europe for years and, more recently, have been manufactured in Japan.

Read more at: http://www.engineeringnews.co.za/print_version.php?a_id=120694

S. African Firm Eyes Uganda's Renewable Energy Market
By Godwin Muhwezi-Bonge
The Monitor (Kampala)
11th of Dec. 2007

UGANDA's deprived energy sector is on the verge of taking off after another company expressed interest in generating power from renewable sources such as small rivers, agricultural waste, wind, and solar.

Okhela Renewable Energy Corporation, a South African energy company with experience in producing energy from natural resources, is negotiating with the government for a power purchase agreement.

"The long term power purchase agreements of say 20-30 years will make it possible to bring a significant change in the market," Mr Jacob Mabena, the chief executive officer of Okhela Renewable Energy Corporation, told Business Power.

In the first phase of the project the company plans to invest 3.5 million euros (Shs6 billion) to produce 10MW of electricity from domestic wastes before exploring other alternatives such as solar and wind energy. The company will also develop micro-hydro power dams that produce about 5 MW of electricity on small rivers around the country.

Uganda has suffered energy deficits following the reduction of water levels in Lake Victoria that has seen the government open up the sector to allow more players.

It is estimated that the current demand for electricity is 360MW. However, the country can only produce 120MW from Kiira and Nalubale Power Stations and 100 MW from thermal power generators. Two more 50 MW thermal power plants will soon be installed in Mutundwe and Namanve. According to the Ministry Energy, the government's long-term is to develop the other Victoria Nile hydropower sites, effect grid connection with as well as developing the renewable energy resources including small hydros, biomass, peat and geothermal...

...OREC South Africa together with their technical partners, Venture SA, and the Stellenbosch are working on developing fourth generation large wind turbines mainly for the African market, which will also be deployed in Uganda.

"Karamoja region has with adequate wind speeds for production of wind energy," Mr Mabena said. "Uganda has enormous natural resources which can be harnessed to produce clean sources of energy, and significantly contribute to Uganda's energy security."

Although the country has abundant natural resources that could be used for clean energy production, the country currently relies on the expensive and environmental unfriendly thermal power generation.

Read more at: <http://allafrica.com/stories/200712101738.html>

4. SA Unsustainable Energy

Paraffin hike leaves poor out in cold
By Chris Makhaye
The Sunday Tribune
9th of Dec. 2007

On Wednesday the price of paraffin rose by 71c a litre. The price has steadily increased since June.

Paraffin users - mainly those living in informal settlements and rural areas - are estimated at between 17 and 21 million, close to half of the country's population.

Nhlanhla Mdadane, KwaZulu-Natal regional manager of the Paraffin Safety Association, said: "We see that these regular increases in paraffin prices are hurting the poor."

He said every year 700 million litres of paraffin were sold in South Africa, most serving as a source of energy for the poor, who had no access to electricity. Mdadane said although paraffin was easily accessible, it was also a dangerous source of energy.

He said a recent study by the Geographical Information System-based surveillance system showed that at least 1 000 people died annually from paraffin burns. The study also found that about 80 000 people suffered from paraffin poisoning. These are mainly children who drink paraffin thinking it is water.

Mdadane said the study also found that there were 40 000 people suffering from chemical pneumonia associated with paraffin use...

Read the rest at: http://www.iol.co.za/index.php?set_id=1&click_id=594&art_id=vn20071209090855365C566842

Activists Slam Sasol Over Low Greenhouse Gas Targets

By Mathabo Le Roux
Business Day (Johannesburg)
3rd of Dec. 2007

PRESSURE is mounting on petrochemicals giant Sasol to bring more urgency to its climate action strategy, with shareholder activist Theo Botha the latest to weigh in on the debate. Known for giving executives a hard time on corporate governance issues, Botha raised concerns at Sasol's annual general meeting on Friday about the level of Sasol's commitment to reducing emissions.

Its aim to reduce greenhouse gas emissions 10% by 2015 off the base of 2005 emissions was "setting the bar too low" and meant it would take 100 years for the company to reach zero emissions, he said. Botha also pointed out that Sasol had already made the commitment to reduce emissions by 10% as far back as 2000.

He said that this target had not been revised over the past seven years, despite a marked shift in the global debate on climate change since last year's release of Nicholas Stern's seminal climate change report. Botha's comments echo similar concerns raised by stakeholder groups.

The biggest emitter of carbon dioxide in SA after Eskom, Sasol was responsible for 71-million tons of carbon emissions this year. With the cost to offset carbon at \$15 a ton, Sasol's 71-million ton carbon dioxide emissions translated into a liability of more than R7bn, said the Worldwide Fund for Nature's trade and investor adviser Peet du Plooy.

"If I were a shareholder I'd be very concerned," he said.

Read the rest at: <http://allafrica.com/stories/200712030814.html>

Sasol's Liquid Fuel Creates Solid Profits

By Christopher C. Williams
Barron's Online
19th of Nov. 2007

WITH \$30 BILLION IN MARKET value, Sasol is puny compared to energy giants like ExxonMobil. But the South African company, which specializes in turning gas and coal into liquid fuel, has

been one of the brightest stars in the oil sector since it was listed on the New York Stock Exchange in 2003. Its American depository receipts (ticker: SSL) have soared about 400%, to a recent 50.28, leaving Exxon's shares (XOM) and those of many other oil producers in the proverbial dust.

Even after this impressive run, Sasol could continue to shine, owing to high oil prices, solid profits and the global roll-out of the company's liquid-fuels technology. Some investors see Sasol's ADRs topping 70 next year, while its more heavily traded South African shares (SOL.South Africa), which change hands on the Johannesburg Stock Exchange, could rally to 465 rand from ZAR338 (a rand is worth about 15 cents U.S.).

Sasol operates through three "clusters": South African energy; global chemicals; and international energy, which houses the company's flagship gas-to-liquids, or GTL, facility in Qatar. The company supplies 37% of South Africa's liquid-fuel needs, and is laying the groundwork to be a major player worldwide as it plans facilities in other countries. Coal-rich and oil-poor nations such as India, the U.S. and China already have turned to Sasol to help lessen their reliance on imports of high-priced crude.

On its home turf, Sasol's liquid-fuel and refining operations are showing signs of accelerated growth. The world's leading coal-to-liquids, or CTL producer, the company converts about 45 million tons of coal yearly into about 160,000 barrels a day of jet, diesel and other distilled fuels for the South African market. Its CTL business, together with other energy and chemical operations at home and abroad, generated a record \$14 billion in revenue for the fiscal year ended June 30, and almost \$2.5 billion in net profits. Those results beat analysts' expectations, and the numbers are likely to keep climbing, particularly if oil stays above \$70 a barrel, as many expect.

Sasol could post a 23% increase in earnings per share in fiscal '08, to \$4.38, from last year's \$3.55, on \$12 billion of revenue. Two wildcards in analysts' earnings models -- oil prices and currency-exchange rates -- seem to be trending in the company's favor. A \$1 gain in the price of oil adds \$43 million in pretax profit to Sasol, while a 10-cent drop in the value of the South African rand (0.10 rand) adds \$87 million. The rand has weakened in recent days to ZAR6.70 to the dollar, and oil, despite a recent sell off, stands at \$95 a barrel. Some analysts raised their earnings estimates for Sasol in the past two weeks, as oil prices topped their expectations...

...That's not to say Sasol's progress has always been smooth. Getting its facilities up and running on time has proved challenging, and the company's first major gas-to-liquids plant, in Qatar, was hobbled by high amounts of particulate matter in the end product. Delays in the project, jointly owned with Qatar Petroleum, pinched Sasol's stock last year, but the company said it fixed the problem earlier this year.

The Qatar facility, called Oryx, is on track to be marginally profitable in the current fiscal year. It is set to produce 34,000 barrels a day of refined petroleum -- and it's economical at oil prices of around \$15 to \$20 a barrel. Irwin of Evergreen estimates Sasol's international synfuels operations -- mainly at the Qatar plant -- will generate ZAR1.5 billion in operating profit in fiscal '09, up from an expected breakeven this fiscal year.

If Oryx gets up to speed smoothly, Sasol's global roll-out will begin in earnest. A second plant is slated to be built in Nigeria by 2010, and potential projects are planned for China and Australia. In the U.S., the coal-rich states of Montana and Pennsylvania reportedly have proposed building CTL plants with Sasol, but the company maintains it would need government subsidies for the technology to succeed here to offset high capital costs. In addition, it would need to cut the heavy carbon-dioxide emissions created by its processes.

Read the rest at: <http://online.barrons.com/article/SB119526441032496583.html>

Nuke ops man shot during gang raid

By Graeme Hosken
The Pretoria News
8th of Nov. 2007

A senior Nuclear Energy Corporation of South Africa (Necsa) employee was shot during an attack at Pelindaba.

It remains unknown how exactly three armed men gained entry to the national key point in the early hours of Thursday morning. It is believed that the three, once inside the facility, used a ladder stolen from the nuclear facility's fire department to scale a wall and so get into the control room. It is suspected that Necsa Emergency Services operational officer Anton Gerber was shot when he surprised the men.

Gerber was rushed to Eugene Marais Hospital where he is reported to be in a serious but stable condition.

The shooting of Gerber comes four months after Necsa's newly appointed services general manager, Eric Lerata, 43, was gunned down in cold blood in outside his Montana home after returning from a week-long business trip in France.

Read the rest at: http://www.iol.co.za/index.php?set_id=1&click_id=15&art_id=vn20071108115931633C145340

PetroSA Makes Plans for New Oil And Gas Facilities

By Linda Ensor
Business Day (Johannesburg)
25th of Oct. 2007

PetroSA, the state-owned oil company, has announced plans to invest about R50bn over the next six years in building a new crude oil refinery and a liquified natural gas receiving terminal.

If both projects are located in Coega, Eastern Cape, as is envisaged, they will represent a major boost for the economy. A state-owned refinery will secure SA's oil supplies and make a favourable contribution to the country's balance of payments.

CEO of PetroSA Sipho Mkhize told Parliament's minerals and energy committee yesterday that partners would be sought for a R39bn oil refinery which was expected to come on stream in 2014-15 with a capacity to produce about 200000 barrels of refined oil a day.

He said Minerals and Energy Minister Buyelwa Sonjica was awaiting the outcome of the feasibility studies -- likely to be concluded in 2009 -- before giving the project the green light.

PetroSA would be looking for an equity investor or a co-investor to either supply crude oil feedstock or take off some of the production. At a media briefing, Mkhize said that Sasol could participate if it wanted to.

PetroSA, which produced a net profit of R2,8bn in the year to end-March, has a cash pile of R10,7bn of its own that it can use for the project and is in negotiations with its holding company, the Central Energy Fund (CEF), about getting a dividend "holiday" over the next few years so it can accumulate more funds. Through the CEF, PetroSA has paid the government about R1,2bn in dividends in the past two years.

The planned refinery will contribute to greater security of energy supply for SA, which is forecast to need about 280000 more barrels a day by 2020.

The refinery project, dubbed Project Mthombo, is a direct response to the government's energy security master plan, which recommended that PetroSA procure about 30% of all crude oil

consumed in SA.

"Based on the current rate of demand growth, the demand for fuel in SA will justify a new crude oil refinery within the next five to seven years. Once the technical specifications and commercial aspects of the project have been clarified, the final investment decision will be made around 2010-11," Mkhize said.

Coega was chosen as a tentative site over Saldanha Bay, Richards Bay and Newcastle. Mkhize estimated the project would generate about 1000 direct jobs, about 5000 indirect jobs during operations and about 10000 jobs during construction.

Read the rest at: <http://allafrica.com/stories/200710250349.html>

5. SA Energy Policy & Analysis

Government ignored Eskom pleas
AFP
12th of Dec. 2007

Johannesburg - President Thabo Mbeki has acknowledged that government under-investment is to blame for a growing number of power cuts that have plunged large parts of the country into darkness.

Addressing a fund-raising dinner for the ruling African National Congress night, Mbeki said his government should have heeded pleas by state power utility Eskom several years ago to invest more in electricity generation to keep up with country's economic growth.

"When Eskom said to the government: 'We think we must invest more in terms of electricity generation', we said no, but all you will be doing is just to build excess capacity," Mbeki said in comments broadcast on public radio.

"We said not now, later. We were wrong. Eskom was right. We were wrong."

Mbeki's rare public apology comes at a time when the country is experiencing the worst power cuts in years, forcing Eskom to start rationing electricity this week as part of a programme that should last until the end of the week.

Read the rest at: http://www.fin24.co.za/articles/default/display_article.aspx?Nav=ns&ArticleID=1518-25_2237324

Africa's pursuit of nuclear power
By Igor Khripunov
Bulletin of the Atomic Scientists
30th of Nov. 2007

In Africa, nearly every aspect of human development (health, agricultural, educational, or industrial) depends upon reliable access to modern energy sources. Therefore, it's worth investigating whether nuclear power can safely alleviate energy shortages and optimize an energy mix consistent with the national interests of African countries.

Several African nations, including Algeria, Egypt, Morocco, Namibia, and Nigeria, are seriously considering nuclear power. Indeed, "nuclear renaissance" has become a catchphrase worldwide, but there's hardly a consensus regarding nuclear power's benefits. Every country's energy mix involves a range of national preferences and priorities that are reflected in national policies.

Hence, these policies represent a compromise between expected energy shortages, environmental quality, energy security, cost, public attitudes, safety and security, available skills, and production and service capabilities. Relevant national stakeholders must take all of these into account when formulating an energy strategy.

Energy shortages. With only two nuclear power reactors on the entire continent, both located at Koeberg, South Africa, nuclear power constitutes only a fraction of Africa's energy mix. Still, South Africa accounts for 60 percent of all of Africa's energy production. (Africa as a whole generates only 3.1 percent of the world's electricity.) Ironically, due to increased electricity consumption and the extension of its power grid to rural constituencies, this relatively developed country has struggled with serious power shortages the last several years.

Furthermore, coal power, the country's traditional energy buffer, is facing rising costs associated with more stringent air-pollution standards. As a solution, South Africa is considering an ambitious expansion of nuclear power, which involves the pebble-bed modular reactor (PBMR)--the South African design reportedly much safer and proliferation-resistant than the design of the current generation of reactors. It hopes to install about 24 units with a total capacity of 4,800 megawatts by 2025.

Elsewhere in Africa, electricity production is unacceptably low. The glaring contrast in energy production between sub-Saharan Africa and North America speaks to the inability of some African governments to provide basic services to their citizens and support development projects.

Uneven regional distribution of energy resources significantly contributes to the energy crisis. Of the 53 countries in Africa, a limited number have large energy potential. Hydropower potential is the most evenly spread, but the highest concentration is on the Congo River. Oil and gas are mostly concentrated in Algeria, Nigeria, and Libya; coal is mostly found in southern Africa; and geothermal potential exists in eastern Africa. Together with South Africa, the Maghreb countries (Morocco, Algeria, Tunisia, Libya, and Mauritania) account for more than 80 percent of Africa's electricity generating capacity. As a result, in the absence of adequate trans-African resource-sharing arrangements and infrastructure, many African countries suffer from scarce energy resources and must pay high prices to import energy.

Nuclear power. The attitudes of African decision makers, experts, and public about nuclear power range from negative/cautious to positive/enthusiastic. Supporters perceive nuclear power as a "silver bullet" that would allow the continent to demonstrate both technical progress and prowess.

The search for cleaner energy sources such as nuclear is also motivated by widespread concern that Africa is more vulnerable than other regions to climate change. Some of the serious consequences of climate change in Africa could include desertification, food shortages, epidemics, insufficient water supply, coastal erosion, and increased refugees. A study by the University of Pretoria estimates that crop failure due to rising temperatures could cost \$25 billion....

...Constraints to nuclear power. A nuclear power infrastructure includes manufacturing facilities, complex legal and regulatory frameworks, expanded institutional measures to ensure safety and security, and appropriate human and financial resources. These arrangements would require careful planning, preparation, and investment over a 10- to 15-year period. Nuclear power plants also require a large, upfront investment--usually \$2 billion to \$3.5 billion per reactor. These are daunting tasks and requirements for any country.

And sadly, a prevalence of interstate conflicts, ethnic strife, insurgencies, corruption, and crime create a hostile environment in some African countries for the safe and secure implementation of nuclear power. Examples of such risks are abundant. Heavily armed Nigerian insurgents continue to disrupt oil production in some parts of that country. As recently as April, armed men attacked a uranium prospecting camp maintained by the French company AREVA in northern Niger, killing a security guard and wounding three other people. In the Congo, only a thin barbed wire fence protects Africa's first nuclear research reactor, which possesses a "totally outdated" control

room and an unguarded radioactive waste storage building. Through decades of war, dictatorship and political upheaval, the Congo has repeatedly been accused of illegally selling its natural uranium or not preventing smuggling schemes. As recently as November 2007, armed gunmen gained access to a major nuclear research facility in South Africa and reached the emergency control room before guards chased them away. Subsequently, instilling law and order must be a prerequisite for nuclear power development.

Technically speaking, safety and security assistance comes from international institutions. The IAEA is working with its African member states to enhance nuclear security by improving controls and detection equipment, upgrading physical protection, and providing emergency assistance and training staff. For their part, African states must get more closely integrated into the international regimes. For example, 23 African states still haven't fulfilled their obligation to conclude comprehensive safeguard agreements under the Nuclear Non-Proliferation Treaty. And only 25 African states acceded to the 1987 Convention on the Physical Protection of Nuclear Material. Worse yet, just two have ratified the convention's 2005 amendment, which contains 12 fundamental principles of nuclear security.

Options. Since Africa hasn't achieved economies of scale, the most rational approach to nuclear power would start with small reactors whose output would better match existing grid capacity. One such reactor is already on the market: A Russian floating nuclear power plant, operated by a Russian team and, by cable, connected to a country's grid. (It's in discussions to sell such reactors to Namibia.) The reactor for the floating plant would be based on the original reactor designs for nuclear submarines. More largely, Russia is offering medium-sized nuclear plants to Egypt, Morocco, and Namibia, planning to sell downblended weapons-origin uranium as reactor fuel to these countries, and hoping to participate in Namibia's uranium mining projects.

Another reactor on the market is the PBMR. South Africa wants to export its design to its neighbors, while China is rapidly finalizing a somewhat different PBMR design that it will attempt to export to developing countries. Hungry for natural resources, China has launched a massive campaign to exploit Africa's riches, focusing on Niger as a strategic source of uranium. As a fledging giant with a self-sustained nuclear record, India is also highly visible in uranium-rich African countries (Zambia to name one), offering to help develop nuclear strategies and policies and hawking its competitively priced pressurized heavy water reactor. Finally, Iran is making generous offers to share its expertise of "using nuclear power for peaceful purposes." Iran has targeted Algeria, a high-profile state in good standing with the IAEA, as a useful partner in the ongoing standoff over Tehran's nuclear program.

Read the rest at: <http://www.thebulletin.org/columns/igor-khripunov/20071129.html>

State to Force Cities to Spend On Power Plant

By Linda Ensor

Business Day (Johannesburg)

23rd of Nov. 2007

The government will compel municipalities to invest a fixed percentage of their electricity revenue into electricity distribution infrastructure because of their own failure to do so.

The move is likely to meet with stiff resistance from municipalities, which jealously protect their areas of jurisdiction. Huge backlogs in investment in municipal infrastructure exist and the dilapidated systems have been one of the main causes of power cuts. The other major cause has been the shortage of electricity supply relative to the consumption requirements of a growing economy.

Read the rest at: <http://allafrica.com/stories/200711230184.html>

6. African Energy News

Energy Scarcity, Primitive Agriculture Fuel Global Warming, Says Museveni

By Jane Nafula

The Monitor (Kampala)

10th of Dec. 2007

President Yoweri Museveni has said low consumption of electricity and primitive agriculture are among the major factors responsible for global warming in Uganda and other African countries. Mr Museveni said the phenomenon of climatic change is concurrent with the problem of energy scarcity and farming practices.

"The greatest causes to the environmental degradation that have resulted into climate change in Africa are two: scarcity of electricity and primitive agriculture that cause farmers to encroach on the forests in order to eke out a wretched living," he said.

The President was presenting a paper on Energy needs of Africa and Climatic change during the second edition of the European Union Development Days conference held in Lisbon, Portugal on Saturday.

"If you look at the global consumption of electricity per capita, you will find that the rest of Africa has got very low consumption," he said.

Power consumption

The annual per capita consumption of electricity in Uganda is 58 Kwh, Tanzania's is 85 Kwh. Nigerians use 111 Kwh, while South Africa uses 4,162 Kwh.

USA consumes 12,187 kwh, United Kingdom consumes 5,784 kwh, People's Republic of China consumes 2,140 kwh, Thailand consumes 1,731 kwh, Norway consumes 22,859 kwh, Indonesia consumes 473 kwh .

Mr Museveni said countries facing electricity scarcity usually depend on bio-mass, an alternative by destroying trees and vegetation for cooking and light. He said in the case of Uganda, 41 billion cubic metres of bio-mass are destroyed per annum. Mr Museveni said once the biomass is destroyed, gases that trap radiation waves of heat are forced into the atmosphere, thereby blocking the escape of the heat leading to global warming.

Read the rest at: <http://allafrica.com/stories/200712101256.html>

Power Outages to Increase After South Africa And Zambia Cut Power Supplies

By Henry Makiwa

SW Radio Africa (London)

6th of Dec. 2007

More power outages are expected after South Africa and Zambia announced that they would be cutting power supplies to Zimbabwe. The situation will leave only Mozambique and the Democratic Republic of the Congo as the main suppliers of power to Zimbabwe, according to a report presented to parliament last week.

It has been established that Robert Mugabe's cash-strapped regime has a combined outstanding debt of US\$42 million to Zambia and South Africa. Observers say the withdrawal of these two countries will grind industry to a halt and cause massive job losses.

Read the rest at: <http://allafrica.com/stories/200712061065.html>

Sentula's \$16bn coal deal may ease fuel woes
By Justin Brown
Business Report
5th of Dec. 2007

Johannesburg - Sentula Mining had joined two partners in a coal project in Botswana that could result in expenditure of as much as \$16 billion (R109 billion) by 2015 to solve South Africa's power and fuel shortages, chief executive Robin Berry said yesterday.

Berry said Sentula, along with Aquila Resources and Jonah Capital, had three project areas in Botswana. Aquila has a 50 percent stake in the project, while Jonah and Sentula, formerly Scharrig Mining, are contributing development and cash to build up a stakes of 25 percent each by March 2009. Jonah Capital is owned by former AngloGold Ashanti executive Sam Jonah.

Aquila Resources is an Australian iron ore and coal mining junior. It is looking to explore for iron ore in South Africa and has coal tenements in Botswana.

Each of the sites could house complexes that could involve coal mining, a coal-to-liquids (CTL) plant, a coal-fired power station, as well as coal exports via Richards Bay or Walvis Bay. The three sites have a total resource of 6.7 billion tons of coal. However, the extent of the coal resource needs further exploration. By March 2009, 30 000m of drilling exploration is planned as part of a \$10 million prefeasibility study at one of the sites.

The most viable of the three sites will be identified by next February.

"This is the first milestone in the project," said Berry.

The feasibility study is expected to be completed by late 2011, with construction to start within a year on a \$1 billion coal mine producing up to 20 million tons of coal a year.

Berry said Sentula and its partners had based their coal project model on a combination of Sasol's complex in Secunda and Toronto-listed CIC Energy's complex in Botswana.

CIC Energy is exploring a project that would involved coal mining, power generation and a CTL plant...

Read the rest at: <http://www.busrep.co.za/index.php?fSectionId=&fArticleId=4160696>

Biodiesel Plant - Milestone for Country
The Herald (Harare)
OPINION
26 November 2007
Posted to the web 26 November 2007
By Sifelani Tsiko
Harare

The commissioning of Zimbabwe's first biodiesel plant is a major milestone in the country's efforts to harness available energy resources and promoting the use of renewable energy as a long-term strategy to mitigate the effects of climate change.

The new US\$80 million biodiesel fuel plant, located about 15 kilometres north-west of Harare, is a joint venture between the Reserve Bank of Zimbabwe and a South Korean energy technology firm.

President Mugabe commissioned the plant, which has the capacity to produce 100 million litres of biodiesel annually at its peak from cotton seed, soya beans, jatropha and sunflower seed. Of course, the new plant is not going to end the fuel challenges but will serve as an important

starting point for harnessing renewable energy resources and for promoting increased market penetration into the global biodiesel market and offering scope for scientific and technological research into future energy options.

Energy experts say it is important to support efforts aimed at harnessing renewable energy resources as part of addressing energy challenges in Zimbabwe and on the entire African continent.

"The energy challenge for Africa requires a diversified approach and the need to recognise the potential contribution of various energy resources," an energy expert at the African Development Bank said.

"Renewable energy technologies provide practical and feasible options for providing sustainable energy to the majority of the people." Wind energy, solar energy, biomass energy, geothermal and hydro energy remain largely untapped in Africa and energy experts say only 4 percent of Africa's huge hydropower potential has been tapped.

Government critics will say a lot of negative things about the biodiesel plant, but it is important to note that Zimbabwe is not the only country embarking on such projects.

Zimbabwe is just joining the growing list of countries which are harnessing renewable energy resources primarily to reduce greenhouse gas emissions. Global trends indicate that emerging projects and markets for jatropha, palm, and soya-based biodiesel ventures in Asia, Africa, and Latin America are on the rise...

Read the rest at: <http://allafrica.com/stories/200711260272.html>

Energy overhaul for Africa
I-Net Bridge
15th of Nov. 2007

The World Economic Forum and World Energy Council have joined forces to promote sustainable energy supply and use in Africa. The two organisations have signed an agreement to co-operate on reducing energy poverty in Africa.

The overall objective of the agreement, signed during the World Energy Congress 2007 in Rome, is to pool resources from the two institutions to promote a sustainable supply and use of energy in areas with little or no access to electricity.

The World Economic Forum and the World Energy Council view energy poverty as an important development issue. As both institutions work with many of the same member companies on energy poverty, it was recognised that a partnership is beneficial to develop a shared expertise of the topic.

As part of the agreement, the two institutions will jointly work on the Energy Poverty Action (EPA) project - a private sector initiative which delivers business expertise and best practices to reduce energy poverty by developing innovative, scalable and replicable electrification projects.

It was initiated at the World Economic Forum Annual Meeting 2005...

...The three initiating partners of EPA - British Columbia Hydro and Power Authority (Canada), Eskom (South Africa) and Vattenfall (Sweden) - are committed to developing two initial projects in Lesotho and the Democratic Republic of Congo.

The EPA objective is the successful completion of the first projects and the replication of business driven alliances with commitments to new projects by involving additional business partners.

The CEOs of the three initiating partners, namely Bob Elton from British Columbia Hydro and Power Authority, Jacob Maroga from Eskom and Lars Josefsson from Vattenfall, have welcomed the partnership with the World Energy Council.

"This collaboration will help to scale up our efforts by gaining access to many more organizations whose objectives are to reduce energy poverty in the developing world," said Josefsson.

Read the rest at: <http://www.thetimes.co.za/News/Article.aspx?id=613719>

7. Events

January 2008

ENERGYTECH-AFRICA

Venue: Cape Town, RSA

Date: 23-24th January 2008

Website: <http://www.smi-online.co.uk/events/overview.asp?is=5&ref=2778>

March 2008

URANIUM MINING AND EXPLORATION

Venue: Johannesburg, RSA

Date: 10-12th March 2008

Tel: 011 669 5000

web: www.iqpc.com/za/uranium

ENTERPRISE RISK MANAGEMENT

Venue: Johannesburg, South Africa

Date: 10-13th March

Tel: 011 516 4051

Email: jaylene.naidoo@terrapin.co.za

3rd AFRICAN BIOFUELS

Venue: Midrand, RSA

Date: 10-13th March

Tel: 011 771-7000

Website: www.africanbiofuels.co.za

3RD SUB-SAHARAN OIL, GAS & PETROCHEMICAL EXHIBITION & CONFERENCE

Venue: International Conference Centre, Cape Town, South Africa

Date: 17 – 19 March

Contact: Mark Burridge, Sales Manager

Tel: +27 21 713 3360

Fax: +27 21 713 3366

Website: www.fairconsultants.com

8th EUROPEAN CONFERENCE ON INDUSTRIAL FURNACES AND BOILERS (INFUB-8)

Venue: Vilamoura, Algarve, Portugal

Date: 25 – 28 March

Contact: Prof. Albino Reis, Chairman, INFUB

Tel: +351 22 973 4624 / 0747

Fax: +351 22 973 0746

E-mail: cenertec@cenertec.pt

Website: www.cenertec.pt

2008 EUROPEAN WIND ENERGY CONFERENCE

Venue: Brussels, Belgium

Date: 31 March – 3 April

E-mail: info@ewea.org

Website: www.ewea.org

April 2008

PLANNING AFRICA 2008 – SHAPING THE FUTURE

Venue: Sandton Convention Centre, Johannesburg, South Africa

Date: 14 – 16 April

Contact: Karen Feuilherade, Precision Conference Organisers

Mobile: +27 83 378 9883

Fax: +27 86 6087 645

E-mail: karen@precisionconferences.co.za

Websites: www.precisionconferences.co.za and www.saplanners.org.za

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