

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

Ever heard of the paraffin mafia? No? Well, until lately, the good boys and girls at SASOL were the head of Europe's paraffin mafia, fixing prices on paraffin wax for fifteen or more years. The European Competition Commission took such a dim view of this—given paraffin wax's multiple uses—that they handed down a 318.2 million euro fine (R3.7 billion), stating that SASOL was the mafia's top boss.

Oddly enough, it was another member of the cartel (Shell) that blew the whistle on SASOL's role as the

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brains of the mafia, and, thus, wasn't awarded a fine. No doubt this has caused much grinding of teeth and gnawing of bones in SASOL boardroom; maybe, along with its contract on the climate, the SASOL mafia will figure out a way to take care of the rat in its kitchen.

Even though R3.7 billion may seem a large amount, it is worth remembering that SASOL's profit from paraffin wax last year was R627 million; the fine, therefore, representing a mere 6 years profit, while SASOL pricing fixing started from 1992. Crime, it seems, does pay.

Oddly enough, if I had committed a similar economic fraud, I'd not only be fined but also thrown into jail. I'd be a criminal. It seems that donations to the Springboks is a method of public redemption for an organisation that purposefully engaged in illegal activity for profit.

On a related note, I wonder how much SASOL should pay for poisoning the Vaal Triangle over fifty-odd years. Maybe we should fine SASOL the mother of all fines: In this edition of SENSE, Jeremy Wakeford argues that SASOL is a liability and that it should pay a windfall tax. He also gives us a vital analysis of South Africa's declining coal stocks.

The bad news (for environmentalists, there's always bad news, a never-ending, prozac-snorting, litany of apocalyptic events) is that South Africa is seeking to ship its nuclear waste to other countries, Eskom may not keep the lights burning for too much longer, and R4 million in taxpayers' money was wasted in a campaign to make nukes sexy.

However, before you reach for that bottle to drown away the sorrows (SENSE tip #34: red wine helps to prevent radiation poisoning, hence its popularity in the Cape), there a bushel full of good news. South Africa has a home-grown electric car, the Joule. Yeah! Right on! There's also been a race of solar cars around the country, and the solar-water heating industry is booming. Renewable energy does make for good economics.

This edition of SENSE also follows trends previously reported on: Namibian nukes, Algerian solar exports, and SASOL's expansion plans. Two new CTL plants for China. SENSE also highlights two very bizarre news stories: First, South Africa is to send fuel to Nigeria (coals to Newcastle, if you'll excuse the cliché). Second, Ghana is aiming to build a coal-fired power station to fuel the Valsco Aluminium Smelter, despite not having great coal reserves.

The last issue to report on is the Long-Term Mitigation Scenarios. The next edition of SENSE will present our critique of the LTMS. For now, let us at least recognise that South Africa does have a plan for climate change, something of a first.

Tristen Taylor  
Energy Policy Officer  
Earthlife Africa Jhb  
30th of Septmeber 2008

## 2. SECCP News

Press Release: New Research Shows Renewable Energy is the Least-Cost Option  
Earthlife Africa Jhb  
5th of September 2008

Earthlife Africa Jhb extends an invitation to a public lecture on the potential of Renewable Energy in South Africa.

On the 9th of Sept. 2008 and at Wits University, Jason Schaffler of Nano Energy will be presenting the latest findings (with cost analysis) of the potentials of renewable energy. Not only can Renewable Energy (wind, solar, wave) provide over 50% by 2050, it will also be cheaper than continuing on with the dirty, old fossil fuel economy.

In fact, this research indicates that costs of delaying action on the promotion of renewable energy is greater than the current capital cost differential. In other words, spend more today so that less has to be spent tomorrow. By contrast, in a terminal situation of global resource scarcity (in particular coal and oil), the current practise of building more coal-fired stations and planned nuclear reactors is akin to buying a V8 car without considering petrol costs.

Furthermore, this research firmly points out that, "The main constraints [to renewables] are neither resource availability nor techno-economics but a limiting mindset focussed on the supply-side, partial energy costing, low (indirectly subsidised) energy prices and short-term thinking favouring low initial costs. Dominance of the state-controlled power monopoly and the influence of vested interests (particularly of the minerals sector) on key stakeholders are exacerbated by a lack of awareness and informed leadership as well as a real shortage of person power. It is concluded that the most important constraint is not money, men, machines, materials or management, but the motivation, the inspired political will."

To download a copy of the research, go to:

<http://www.earthlife.org.za/Files/REBriefingPaperFinal5Aug08.pdf>

Press Release: National Energy Bill  
Earthlife Africa Jhb  
30th of July 2008

Today and tomorrow, the Parliamentary Portfolio Committee on Minerals and Energy will be hearing verbal submissions on the National Energy Bill, which is an important bill for South Africa's long-term energy matrix and supply. Unfortunately, this is a flawed piece of proposed legislation.

The Centre for Applied Legal Studies (University of the Witwatersrand) and Earthlife Africa Jhb have made a joint written submission to Parliament on this Bill. Earthlife Africa Jhb will be making verbal submissions on the 31st of July 2008.

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The objects laid out in the proposed Bill are commendable, especially the promotions of a diversity of energy supply, capacity for a balanced consideration of security of supply, including consideration of consumer protection and sustainable development, provisions for safety, health, and environmental matters, and the promotion of sustainable development for South Africa's economy. The Bill aims to develop energy plans for the country with 25 year horizons.

There is concern, however, that the Bill does not adequately focus on the needs of South Africa's poor. The Bill does empower the Minister to implement programmes that may realize some progress the areas of affordable access, continued electrification, and the safety of electricity substitutes such as coal and paraffin. However, the Bill should recognize that these programmes are not mere political policy, but reflect entrenched constitutional rights to adequate housing and environmental protection. Furthermore, the Bill should recognize shortcomings with regard to the inclusion of externalized costs of alternative sources, such as fuel wood, coal, and paraffin; current policy ignores such costs as the increased air pollution in households and the increased risk of fires and burns.

Earthlife Africa Jhb is further concerned that the Bill will establish a series of agencies that are not necessary to achieve the objectives of the Bill, and which would further do the function of the Department of Minerals and Energy. This looks likely to be a waste of taxpayer money.

Tristen Taylor, Energy Policy Officer at Earthlife Africa Jhb, states, "Parliament should see this Bill to be an opportunity to affirm the rights of citizens to be able to access electricity as a human right and necessity for household development in the modern context. Parliament should also see the Bill as a chance to set defined targets for job creating and environmentally clean energy sources, and for greater freedom of information within the energy sector."

Earthlife Africa Jhb specifically suggests that:

- The DME should be given a mandate to account for externalized costs of energy generation and distribution, such as paraffin fires and pollution from coal.
- The Bill should refocus its attention on the provision to and affordability of electricity to the poor.
- The Bill should acknowledge that there is a constitutional right to access affordable electricity services.
- This right is implicitly acknowledged by the government's inclusion of electricity in its free basic package, but that it should be explicitly acknowledged in the Bill.
- This right should be acknowledged in the Bill in order to keep South African law in line with international law.
- The Bill acknowledges that there is a constitutional right to have the environment protected, and to live in an environment that is not harmful to one's health.
- By acknowledging such a right, the bill should secure and guarantee poor households the constitutional right to a healthy, protected environment.
- DME should be given the legal power to obtain the information necessary to its functions.
- The Bill should ensure that all information used to formulate the energy master plan is in the public domain, and thus available for public consumption.
- The Bill should explicitly set a renewable energy target of 15% of electricity supply by 2020 to come

from renewable energy sources such as Wind, Solar, Wave, and Tidal, on a non-cumulative basis.

### SECCP Staff News

The SECCP is pleased to announce that our part-time Finance Manager, Janet Jackson, will be joining the SECCP on a full-time basis from the 1st of October 2008. Janet can be contacted at [janet@earthlife.org.za](mailto:janet@earthlife.org.za), 011 339-3662.

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### 3. SA Sustainable Energy News

DST gives electric car R35m

By Paul Vecchiatto

ITWeb

1st of October 2008

The Department of Science and Technology's Innovation Fund has contributed R35 million of the R50 million needed to develop SA's first electric car that will be unveiled at the Paris Motor Show later this week.

Called the “Joule” and pronounced “jewel”, the car is a six-seat mini-multipurpose vehicle. South African-born car designer Keith Helfet, who made his name by designing the Jaguar line of vehicles, is the creative force behind the Joule.

Also involved in the company, called Optimal Energy, are a group of engineers who were involved in the Southern African Large Telescope, who have now turned their expertise to developing an alternative energy solution for commuter vehicles.

“You have one chance in life to design and build a telescope and now we figured we have one chance at developing a car that can really help to reduce the cost of transportation and reduce pollution,” says Optimal Energy executive manager for development Jian Swiegers.

At a presentation to the media last month, science and technology minister Mosibudi Mangena said: “The launch of a South African-designed battery-operated electric vehicle marks a watershed moment in the development of our national system of innovation. On a practically shoestring budget, a small company of talented South Africans has developed a product that is now poised to enter a multibillion-rand industry.”

#### Battery power

Kobus Meiring, Optimal Energy CEO, says: “We have capitalised on the opportunity presented by the exponential increase in oil costs and the dramatic improvement in battery price, life and performance. Joule's value proposition is made more compelling when environmental influences, such as increasing

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pollution and the global warming phenomena caused by the rapid increase in urbanisation, are also considered.”

According to an Optimal Energy statement, Joule's chassis has been designed to accommodate two large-cell lithium ion battery packs, which employ chemistry similar to that used in mobile phones and laptop computers. This chemistry is inherently safe; lithium is found in many medicinal applications and the batteries do not contain any heavy metals.

Using a normal 220-Volt home outlet and Joule's onboard charger, it will take approximately seven hours to recharge Joule's battery for a 200km driving range, with two packs providing 400km in total. Joule's large battery bay is able to accommodate a number of different battery configurations from different suppliers, giving the customer the choice of performance and cost.

Enough capacity

“Studies show that 99% of urban users drive less than 150km a day; Optimal Energy recommends that only one battery pack is necessary to power Joule,” Meiring notes.

He adds that independent analysis of Eskom has confirmed the South African grid has enough capacity to supply electrical energy to millions of cars without affecting its customer base, or requiring any additional infrastructure.

According to Meiring, Eskom has vast amounts of excess energy between 11pm and 6am; this will be the recommended recharging time.

Gauteng is being evaluated for Joule's first assembly plant as it has the biggest cities and has expressed interest in placing the first fleet orders. Although supplier lists are not yet final, it is expected that the local content of Joule will be more than 50%.

Joule will be sold in all major South African centres; and will be available towards the end of 2010. It will also be on offer for export.

<http://www.itweb.co.za/sections/quickprint/print.asp?StoryID=189933>

Solar-powered cars start epic race around SA

By Laura Grant

The Sunday Independent

28th of September 2008

Six solar-powered cars set off from Pretoria on Sunday on an epic, two-week race around South Africa. The cars, which were all designed and built by teams in the race, range from what looks like a modified golf cart to something that wouldn't look out of place in an episode of Star Trek. But they are all feats of engineering.

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The idea behind the race is to show people what fun science and engineering is, says Winstone Jordaan of the Advanced Energy Foundation, the Pretoria non-profit organisation that organised the race.

'It's cool to be an engineer'

"We're not just talking about technology, we're pushing the fact that it's cool to be an engineer." So the idea behind this race is to get teams to "design it, build it and prove that it works", he says.

The cars taking part are prototypes that combine technologies such as electric motors, batteries, solar energy and, in one case, hydrogen fuel cells, says Jordaan. Three South African teams are taking part, two are from India and one is from Japan. A hydrogen-fuel-cell motorbike built by a Malaysian team is also racing.

Although more South African teams, particularly students, wanted to take part, they were unable to raise funding to build their cars, says Jordaan. This is the first race of its kind in South Africa, he says, so there was a bit of scepticism about whether it would take place at all. In the end he and the foundation put up the money needed to stage the race.

Jordaan believes that once people see the cars racing there will be a lot more interest in this country. He really wants to see South Africa enter two or three cars in the solar challenge in Australia next year. If all goes well, the next South African Solar Challenge will be staged in 2010, he says.

The cars will first make their way to Cape Town with overnight stops in Kimberley and Beaufort West. They will be on show at the Canal Walk shopping centre for two days, then they'll head back to Gauteng, passing through Plettenberg Bay, East London, Port Shepstone, Durban and Ermelo.

The public is welcome to see the cars at the start and finish lines.

Source:

[http://www.iol.co.za/index.php?set\\_id=1&click\\_id=14&art\\_id=vn20080928092714322C686042](http://www.iol.co.za/index.php?set_id=1&click_id=14&art_id=vn20080928092714322C686042)

South Africa waking up to solar, as well as its business and employment spin-offs

By Guy Copans

Engineering News

26th of September 2008

South Africa is in the fortunate position of having one of the best climates in the world. Many South Africans, especially those living in the interior of the country, have become accustomed to monthly stretches of sun-drenched days. In fact, a study by Johannesburg's City Power shows that, in Gauteng, there are only about 56 days a year when it is not sunny.

It is highly ironic – especially considering the energy crunch that the country is facing – that an obvious alternative source of energy, the sun, has been largely ignored.

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But, perhaps, one of the virtues of the prevailing electricity crisis is the fact that it has forced government, Eskom and the private sector to relook at this obvious source of energy. And one of the lowest-hanging fruits in this regard is emerging as the conversion of electric geysers in South African homes and businesses into solar water heaters (SWHs). It is reaching a point, in fact, that this process could well spawn a whole new industry in the country.

### A New Industry

Chief director of industrial policy at the Department of Trade and Industry (DTI) Nimrod Zalk says that the electricity emergency presents a sizeable new industrial development opportunity for South Africa, with solar water heating a prime example of this.

“We expect the SWH industry to expand exponentially, deepening its value chains and industrial structure. Additional tiers to the value chains can also be created through facets such as a components industry and skills development organisations. The expansion of the local production of SWH components will also reduce pressure on South Africa’s balance of payments, as imports are substituted.”

This, he says, could put South Africa into an export position in the Southern African Development Community region, which is also experiencing an electricity shortage. Another potential economic benefit for South Africa, he notes, will be a reduction in the cost of SWHs for consumers as the industry achieves economies of scale.

State-owned power utility Eskom GM: distribution Andrew Etzinger says that there is vast untapped potential in the SWH industry, and the training of new SWH installers would amount to thousands of permanent jobs, and the creation of a new industry.

At the moment, small manufacturers and installers are involved in the SWH industry in the country, with only about 10 000 systems being installed a year. Etzinger says that Eskom wants that number to climb to over 200 000 systems a year, which would be “a massive change”. It also wants to stimulate the SWH industry to be able to manufacture and install the heaters, with installation the biggest bottleneck at the moment.

“If the country could achieve a mass roll-out of SWHs, it would go a long way towards stabilising the electricity grid, which allocates quite a disproportionately high amount of power to electric water heating,” he says...

Read the rest at: [http://www.engineeringnews.co.za/article.php?a\\_id=143220](http://www.engineeringnews.co.za/article.php?a_id=143220)

Progressive Climate Change Strategy Announced for Country

By Shaun Benton

BuaNews

29th of July 2008

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South Africa is making moves to become a low-carbon economy, says Minister of Environmental Affairs and Tourism Marthinus van Schalkwyk. The minister announced on Monday that a progressive policy on climate change had been agreed upon by Cabinet that would help ensure that the country was helping prevent global temperatures from rising a further two percent.

The world is currently experiencing a mean global temperature rise of 0.7 percent above pre-industrial levels, measured from about the year 1750, this allows about 1.3 percent of leeway in which to make concerted efforts to halt the global rise of temperature. One of the solutions is the possibility of a carbon tax being imposed on business.

At the moment South Africa's per capita output is about nine tons of carbon dioxide, said Mr van Schalkwyk.

The country is a relatively large emitter of the greenhouse gas carbon dioxide, largely because 90 percent of the country's energy comes from burning its large coal deposits. The Minister of Finance, Trevor Manuel, introduced the country's first carbon tax in his Budget Speech in February. And now, Cabinet has mandated the National Treasury to study a further carbon tax as a potential option.

Carbon capture and storage (CCS) is likely to become mandatory for all new coal-fired power stations, said the minister. While this technology is still in development, all new coal-fired power stations will have to display a readiness to implement this technology, reporters heard. Alternative market mechanisms besides a carbon tax or carbon storage options are also being studied.

Under the scenario planning presented by the minister, which is the result of more than two years of work by his department, South Africa will see its greenhouse gas emissions gradually increasing over the next few years before reaching a plateau of about 550 megatons of carbon equivalent. Once a plateau of about 100 megatons carbon equivalent above the current level (measured in 2003) of 446 megatons of carbon equivalent is reached there will be a decline, towards a low-carbon economy, if action is taken now.

And this will not cost the country any jobs, said Mr van Schalkwyk.

Studies by his department have shown that there will be no net loss of jobs for the economy as it undergoes a transition to a low-carbon economy. Certain traditional jobs will be shed, but new jobs in the industry will be created. The minister described the overall approach to climate change mitigation and adaptation adopted by government as "progressive, ambitious and far-reaching".

The scenario outlined by the minister points to a ceiling of a maximum of two degrees Celsius in temperature rise above pre-industrial levels, around the year 1750, that government is working with. Mr van Schalkwyk said greenhouse gas emissions must peak, plateau and decline for the country to survive the onslaught of global warming.

"This means it [greenhouse gas emissions] must stop growing at the latest by 2020-2025, stabilise for up to ten years and then decline in absolute terms," according to the department.

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South Africa is taking strong steps as a developing country, which it is not obliged to do as in terms of international protocols. It is seen as a developing country with concurrent voluntary deviations from baseline emissions encouraged. However, the country believes that "substantial" deviations below business-as-usual baselines [emissions] are required by developing countries.

For the developed world, South Africa is insisting that 1990 levels are the required baseline for their mandatory reductions in greenhouse gases, with greater action on emissions reduction expected particularly from the United States, said Mr Van Schalkwyk. Citing the International Panel on Climate Change report, the minister said that avoiding dangerous climate change requires developed countries to reduce their emissions compared to 1990 levels by 80 per cent to 95 per cent by 2050, and by 25 per cent to 40 per cent by 2020.

South Africa, for its part, will continue to strive towards usage of renewable energy and nuclear energy, while preventing new coal-fired power stations from going ahead without the requisite technology to minimise the damage the cause.

Nuclear energy remains a central plank of South Africa's energy planning.

"As government we strongly believe in the potential of nuclear [energy] to be part of the solution," he said, adding that government is keen to scale up the use of renewable energy sources as well, as long as the cost-gap between renewable, coal and nuclear energy production could be reduced.

Source: <http://allafrica.com/stories/printable/200807290362.html>

Sea could solve SA's electricity woes

By Barry Bateman

The Pretoria News

30th of August 2008

Harnessing the immense power of the sea to generate electricity is still a long way off for South Africa, but international research co-operation could close that technological gap.

This was said by Professor Ian Bryden, chairperson of the Department of Renewable Energy at the University of Edinburgh in Scotland and leader in the field of wave technology, who was in the country to establish links with local academics and institutions. The British national has spent nearly 30 years researching the viability of marine renewable energy and using waves and tides as a means of generating electricity.

He does not consider himself an expert in the field because of the continuous development. "Being an expert would imply that the technology is static," he said during an interview arranged by the British High Commission in Pretoria.

Over the past week, Bryden met with South African National Energy Research Institute (Saneri), engineers from Eskom and the Stellenbosch University's energy resource centre. "We exchanged

information and held open talks on wave power.

"There is a real possibility of joint research work. This is the start of the process and, when I get back, I will look at common areas in which the two institutions can work on together," he said.

Bryden said the wave climate in South Africa was excellent, but not as good as on the west coast of the British Isles. However, it is better than most of Europe. He said with the local waves about 50kw could be generated per metre of wave front, but the technology was still a long way off from being a commercially viable alternative to current power sources.

"We are still doing tests off the coasts of several countries."

Bryden said the technology still needed to prove economical. "That's the biggest challenge, not proving that it works."

He said to make the technology economically viable would require sizable government input because it was expensive to generate electricity this way. Bryden said with cash injections, the entire wave farms could be constructed and would inevitably bring the costs down.

"There is a large gap between technological proof and economic viability, but most industries go through this phase." A concern for the public with most new technology is the environmental impact.

Bryden said the devices setup offshore would be largely benign to the ecology and only make changes to the wave climate behind the device.

"Research is being conducted to determine the effect, but I predict the impact should be largely minimal. The devices installed on the coastline would be installed in areas where you want to change the coast, like a breakwater," he said.

The UK has set its own goal of generating 3GW from marine renewable energy and Bryden predicts that within two years they will be near commercial development of the technology.

"It will become viable because of government enhanced payments. But there is enormous technical and fundamental work still required to reach these targets," he said. "South Africa is an attractive research partner because of the high level of technical capability and good quality universities."

Waves are a form of renewable energy and this energy is harnessed by using devices that float on the surface of the water and rely on the tides to move, and devices installed on the coastline that use the breaking waves to generate power. Last year, Canadian-based energy company Finavera Renewables embarked on a five-year project to build a 20MW wave-energy power plant off the Western Cape coast to the tune of \$40-million (R308,5 million). The company is presently assessing the required government permits and conducting site assessments to determine the energy infrastructure, wave resource, and environmental characteristics of the location.

Source:

#### 4. SA Unsustainable Energy

Sasol led the 'paraffin mafia'

By Marcia Klein

The Times

2nd of October 2008

Oil company fined R3.7bn

SASOL is mulling its options after the European Commission slapped it with a EU 318.2- million (R3.7-billion) fine and branded it the leader of a "paraffin mafia". The fine relates to anti- competitive behaviour by Hamburg-based Sasol Wax GmbH and eight other members of the European paraffin wax industry. The nine companies were fined a total of EU 676-million for forming a cartel and violating anti-trust laws. This was the fourth-highest fine ever imposed by the commission.

Sasol said it was "surprised by, and does not understand, the reasons for the magnitude of the fine and will be studying the reasons for the finding with a view to lodge an appeal against it".

The commission said Sasol was granted a 50 percent reduction under its leniency notice, and would pay a fine of EU 318.2-million, indicating that its initial fine was € 636.4-million . According to Sasol, the fine was reduced as a result of its "co-operation and support in the investigations".

The Sasol 2007 annual report shows that its wax operations had a turnover of R5.6-billion and operating profit of R629-million. The fine, therefore, appears to be relatively onerous. Paraffin is used in many products including candles, waxed paper, tyres, gum, paper plates, and the wax coatings around cheese.

The Competition Commission's Neelie Kroes said: "There is probably not a household or company in Europe that has not bought products affected by this 'paraffin mafia' cartel, with all that implies in terms of paying over the odds, higher costs and economic damage.

"Such illegal cartel behaviour will not be tolerated by the commission, and companies' managers and shareholders should take note," she said.

Sasol said it was "unaware of these infringements before the European Commission started its investigation at the wax business in Hamburg in April 2005".

The commission said the infringements started in 1992 or earlier. Sasol said it became a co-shareholder of the wax business in Hamburg, Germany, in 1995 and bought the remaining shares in 2002. Sasol has now "intensified its competition and anti- trust law compliance programmes in all its businesses including joint ventures". The commission said Shell did not get fined because it had blown the

whistle.

But Total, Exxon Mobil, RWE, ENI, Hansen & Rosenthal, MOL, Repsol and Tudapetrol were all fined.

Kroes said the cartel was known inside Shell as the “paraffin mafia” and in Sasol as “Blauer Saloon” (Blue Saloon) after the hotel bar in Hamburg where the first meetings of executives from the companies were held. She said the companies held regular meetings “to discuss prices, allocate markets and/or customers and to exchange sensitive commercial information”.

Meetings took place at top hotels all over Europe.

The Sasol share price dropped by 5.12 percent to R332 yesterday.

Shan Ramburuth, South Africa’s commissioner for the Competition Commission, said Sasol was the dominant player in the local market for paraffin wax, so collusion was not an issue that concerned the commission in this case. There have, however, been concerns about excessive pricing and exclusionary conduct. In 2005, Sasol and Total abandoned plans for a wax joint venture after European competition authorities raised concerns about the proposed deal.

Source: <http://www.thetimes.co.za/News/Article.aspx?id=854500>

### Sasol Cuts Stake in \$6 Billion Project

By Siseko Njobeni

Business Day

5th of September 2008

PETROCHEMICALS group Sasol had reduced its interest in the Escravos natural gas-to-liquids project in Nigeria, from 37,5% to 10%, the company said yesterday. As a result of the reduction in the interest, Sasol -- due to release its year-end results on Monday - has suffered an impairment of R362m in operating profit this year. The group said the impairment related to interest previously capitalised on the project.

Sasol said yesterday it and its partners in the project agreed that Chevron would buy an additional 27,5% interest, while Sasol retained 10%. The group did not indicate the value of the transaction. Sasol said the reduction of its interest related to the rising costs of the project. In May this year, the group said it expected the capital cost of the project to increase to \$6bn and it was reviewing all factors that affected the project's economics.

Sasol GM for international energy Lean Strauss yesterday reiterated the group's commitment in the project.

"Sasol remains fully committed to the Escravos gas-to-liquids project, which continues to utilise our technology under licence, by providing our full range of technical and skills support," Strauss said.

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Sasol said definitive deals would be finalised "in due course" and would be subject to regulatory approvals. The 34000-barrels-a-day project's construction schedule has been delayed. The completion date has been shifted to 2011 from a previous start-up date of 2010. Escravos is among various projects Sasol has embarked upon recently.

It is ramping up production at the Oryx gas-to-liquids project in Qatar, where it is in a joint venture with Qatar Petroleum.

Last week it announced it would proceed with a feasibility study on the 80000-barrels-a-day coal-to-liquid project in China's Ningxia Hui Autonomous Region. Sasol this week announced plans to start exploring for hydrocarbons in Papua New Guinea next month after acquiring a 51% interest in four hydrocarbon prospecting licences in the country. Sasol closed at R380,50 on the JSE yesterday, up 0,13%.

Source: <http://allafrica.com/stories/200809050328.html>

Sasol adds fuel to SA trade with China

By Edwin Naidu

The Sunday Independent

10th of August 2008

Petrochemicals giant Sasol's plans to build the equivalent of two Secunda plants in China at a cost of R96 billion will be the cherry on the top of a successful decade of trade between South Africa and China. Last year, trade between the two countries was worth more than \$14 billion (R100 billion), according to Zhong Jianhua, the Chinese ambassador to South Africa. The diplomat has described the proposed investment by Sasol, which is in the second phase of feasibility studies, as being the biggest foreign direct investment in China.

"During the past 10 years, high-level visits have been conducted frequently and areas of co-operation between our two countries have been greatly broadened. President Nelson Mandela and President Jiang Zemin exchanged state visits at the beginning of the diplomatic ties.

"In the last two years, Premier Wen Jiabao and President Hu Jintao paid important visits to South Africa, and President Thabo Mbeki and Deputy President Phumzile Mlambo-Ngcuka visited China," he said.

The diplomat said that during the past 10 years China and South Africa enjoyed rapid growth in trade and economic co-operation, which benefited both nations. Last year, bilateral trade amounted to \$14,04 billion, eight times more than in 1998.

Chinese imports from South Africa reached \$6,61 billion last year, a 61,9 percent increase compared with 2006.

Last year, the Industrial and Commercial Bank of China invested \$5,46 billion in Standard Bank, the

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largest investment by China in Africa. At the beginning of this year, Sinosteel added a further \$440 million to its investment here.

"All this is clear evidence of the confidence China has in the development of South Africa.

"From the South African side, enterprises such as Anglo American, Sasol, SAB-Miller and MIH have operated in China for a long time and made investments of great importance," Jianhua said.

The two countries are making a concerted effort to build a "partnership for growth and development".

John Armstrong, president of Sasol China, said: "We plan to build two plants that together will produce the same amount of fuel as Secunda."...

Read the rest at:

[http://www.iol.co.za/index.php?set\\_id=1&click\\_id=594&art\\_id=vn20080810082345471C870953](http://www.iol.co.za/index.php?set_id=1&click_id=594&art_id=vn20080810082345471C870953)

Warning to save electricity

Sunday Independent

By Eleanor Momberg

28th of September 2008

The electricity crisis is not over, and only full co-operation by all users of power will ensure there is no load shedding this summer. After a winter almost free of power outages following the blackouts in January, South Africans have begun to rest on their laurels and are starting to consume more electricity. This as the summer maintenance season by Eskom gets into full swing, with some units already being shut down for repairs.

Fani Zulu, an Eskom spokesperson, said because there was a low reserve margin, the electricity supply remained strained. "As long as we do not address that, we remain in a vulnerable state," he said.

This means that unplanned power cuts could happen at any time.

While electricity consumption in winter is traditionally higher during the evening peak hours and during cold spells, the summer months hold different dynamics, including the fact that many units are shut down for maintenance.

Zulu said that, for now, Eskom had enough money for the maintenance work that needed to be done. But securing financing for its multibillion-rand expansion project, including two nuclear power stations, was proving difficult. Moody's Investors' Service had lowered Eskom's local and foreign currency ratings in August, as well as its baseline credit assessment, following a review initiated in May.

Ratings agency Standard and Poor's this week placed Eskom on credit watch after it applied for government guarantees on existing and future debt. Earlier this year the power utility was granted a

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27,5 percent tariff increase, which was substantially lower than the amount it had initially requested to meet primary energy costs and fund its demand-side management programme. The government also agreed to grant Eskom a R60-billion loan over five years.

Zulu said Eskom at present found itself in "a bit of a tricky situation because most South Africans had instituted savings following the pronouncement of the electricity crisis. As a result, there were no blackouts during winter. Because we went through winter without interruptions, there is a sense of comfort and people are starting to slow down in their savings."

Bheki Khumalo, the minerals and energy department spokesman, said that at the last electricity stakeholder advisory council meeting the question of maintenance and the spectre of load shedding were high on the agenda. Khumalo warned that South Africa was "not out of the woods yet" as far as the electricity crisis was concerned.

The council had expressed concern that with summer approaching most people did not realise the devastating effect that air conditioning, geysers and swimming pool pumps had on electricity consumption. "Unless we save energy, we run the risk of experiencing a situation not dissimilar to the one we were confronted with last summer," the council said.

Khumalo said that if demand was not reduced, Eskom would be forced to embark on emergency measures. These included planned and unplanned power outages.

Zulu emphasised that if everyone played their part and reduced their electricity consumption, Eskom would be able to build up a comfortable reserve margin to meet any demand increases and to continue supplying power when systems did unexpectedly trip.

Source:

[http://www.iol.co.za/index.php?set\\_id=1&click\\_id=594&art\\_id=vn20080928092800185C567785](http://www.iol.co.za/index.php?set_id=1&click_id=594&art_id=vn20080928092800185C567785)

Eskom Out in the Cold  
By Edward West  
Business Day  
18th of September 2008

THE decision to cut the electricity consumption of big industry users has come back to haunt Eskom's efforts to encourage cogeneration.

Industry players are operating at reduced levels and are unlikely to increase consumption to enable them to enter power purchase agreements with Eskom - the single buyer for cogenerated power. Akash Prakash, head of Eskom's pilot national cogeneration project, this week admitted that several companies had withdrawn from the bidding process for cogeneration projects. This dealt a blow to the utility's hopes of an additional 900MW from cogeneration projects .

It has not helped that there are cogeneration players - notably Suez Energy - that feel they are getting

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the short end of the stick in power purchase agreements with Eskom. Suez's Cliff Lewis feels that cogenerators are being made to take on too many risks. The utility said it has received expressions of interest for more than 100 cogeneration projects - which could generate up to 5000MW.

Source: <http://allafrica.com/stories/200809180780.html>

Erwin confirms R4m nuclear awareness plan

By John Yeld

The Cape Argus

8th of September 2008

The government is spending R4-million to "promote an open and honest discussion" about nuclear energy in South Africa, but the ID calls the move "a blatant propaganda campaign".

And the ID particularly wants the government to can the controversial Pebble Bed Modular Reactor (PBMR) project that it is planning to build at Koeberg. "We call on government to put South Africans' safety and money first, by bringing to an end the R31,9-billion PBMR nuclear madness," said the ID spokesperson on energy affairs, Lance Greyling.

However, the project is still firmly under way: the draft environmental impact assessment (EIA) report and copies of specialist studies of the proposed PBMR demonstration plant at Koeberg that were to have been released to the public last month but which were then withdrawn at the last moment are now available. They were released on Friday.

Public Enterprises Minister Alex Erwin confirmed the "discussion" in response to parliamentary questions posed by Greyling. He said brand consultants Freedthinkers had been hired not to build support for nuclear energy, but to undertake research "into the current levels of awareness, perceptions and attitudes towards nuclear and related issues - for example, climate change - among key stakeholder groups and the population at large".

"The purpose of this research is to promote an open and honest discussion around nuclear (energy) to ensure that the public are well informed about the pros and cons of nuclear and why the South African government has chosen to use nuclear as part of the energy system."

A parallel project was under way to develop a nuclear vocabulary in the 11 official languages, "to ensure that public discourse on nuclear-related issues is accessible to all South Africans".

Erwin confirmed the R4m price tag for the research, the nuclear vocabulary and developing the communications strategy, saying it was an eight-month project covering six provinces. He also confirmed that the government's Nuclear Energy Policy and Strategy for South Africa had been published for comment from August 15 to October 17, 2007, after being approved by the Cabinet for consultation.

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"It has since been approved, in its amended form, by Cabinet on June 11 this year."

Greyling slammed the "discussion" spending as "wastage", and accused Erwin of contradicting himself.

"On the one hand, he says he hired the consultants 'to promote an open and honest discussion' around nuclear so that the public are well-informed about its pros and cons, while on the other hand he admits that the decision to spend R700-billion on nuclear power stations has already been made.

Source: [http://www.iol.co.za/index.php?set\\_id=1&click\\_id=6&art\\_id=vn20080908121836406C100010](http://www.iol.co.za/index.php?set_id=1&click_id=6&art_id=vn20080908121836406C100010)

South Africa plans LNG plant to ease power shortage, Poten says

[www.tehrantimes.com](http://www.tehrantimes.com)

21st of August 2008

SINGAPORE (Bloomberg) -- South Africa plans to build a liquefied natural gas import terminal and hire two tankers which can process the gas onboard to meet demand for the fuel from power plants and prevent power cuts, a consultant said.

Eskom Holdings Ltd., which generates about 95 percent of South Africa's electricity, and PetroSA, South Africa's national oil company, plan to build a LNG import terminal and power plant at Coega Industrial Development Zone in the south, and hire two so-called floating storage and re-gasification vessels, Poten & Partners said in a report e-mailed on Wednesday.

Power blackouts earlier this year cut output at South Africa's gold and platinum mines and the country faces shortages until 2012. Eskom relies mainly on coal-fired generators and aims to increase the use of gas, with the planned LNG projects supplying as much as 3.4 million tons a year of the cleaner-burning fuel.

PetroSA may announce a winner for the tankers in September after inviting bids from Golar LNG Ltd., an LNG shipper whose chairman is Norwegian billionaire John Fredriksen, and Bluewater Energy Services BV, the report said.

Eskom plans to bring another 293 megawatts of gas-fired generation online by the middle of 2009 in addition to the existing 445 megawatts.

Liquefied natural gas is gas chilled into liquid form for shipment by tankers to destinations not connected by pipelines. It then gets reheated, a process known as re-gasification, for distribution to users.

Source: [http://www.tehrantimes.com/index\\_View.asp?code=175885](http://www.tehrantimes.com/index_View.asp?code=175885)

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5. SA Energy Policy & Analysis

## What Future for Coal in South Africa?

The Oil Drum: Europe

12th of August 2008

# This is a guest article by Jeremy Wakeford. Jeremy is an economist specializing in energy and sustainable development and is Research Director of ASPO South Africa. South Africa has been in the news a lot recently because of its electricity supply problems throughout 2008. Most South African electricity comes from coal-fired power stations. Jeremy discusses the role of coal in South Africa's energy mix, long-term trends in production and consumption, and how underground coal gasification might help solve South Africa's energy problems.

### Can and should our dependence continue?

South Africa's energy economy is overwhelmingly dependent on coal. The fossil fuel provides nearly three quarters of total primary energy, supports almost 90 per cent of electricity generation, and provides feedstock for close to a third of the country's liquid fuels via Sasol's coal-to-liquids process. Coal is also used directly as a fuel by certain industries (e.g. steel production), and indirectly as feedstock for Sasol's petrochemical products. In addition, roughly a third of the nation's annual coal output is exported, generating an important source of foreign exchange earnings.

There are two major risks inherent in this heavy dependence on coal: one is the finite nature of its supply, and the other is its contribution to global warming. This article takes a broad look at some of the key issues concerning the outlook for coal in South Africa, including demand, supply, prices and environmental concerns. It concludes with a brief discussion of a promising development called underground coal gasification, which could potentially address both of these risks to some extent. Demand for coal is growing

Production and consumption of coal in South Africa have grown reasonably steadily over the past two and a half decades, at average annual rates of 2.9% and 2.5%, respectively (see Figure 1). Consumption in 2006 is estimated by the US Energy Information Administration at 177 million metric tonnes (mt). The largest share of this, about 64%, was burned by Eskom in its power stations, with Sasol consuming another 24% and industry and small consumers accounting for the remainder. Eskom's consumption of coal grew to 125 million tonnes in 2007.

This growth in coal use – especially by Eskom and Sasol – is expected to continue or even accelerate over the next few years. Eskom is in the process of returning to service three coal-fired power stations (Camden, Grootvlei and Komati) with a combined capacity of 3800 megawatts (MW). It has also begun construction of the new 4800 MW Medupi power station, whose first unit is due to begin generation in 2012, while a second plant called Project Bravo (5400 MW, scheduled to start generating power in 2013) was recently given the go-ahead. The combined consumption of these five power plants could raise Eskom's coal use by over 50 mt (assuming they use the average amount of coal burned by existing power stations in 2007).

For its part, Sasol has announced that it is conducting feasibility studies for an expansion of its existing

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synfuels plant at Secunda by 20 per cent (or 30,000 barrels per day) and for the construction of a new plant (called Mafutha) with a capacity of 80,000 barrels per day. If both of these projects come on stream, they could raise the demand for coal by approximately 25 million tons a year (again extrapolating from past consumption patterns).

Thus the domestic demand for coal could rise by 75 million tonnes or over 40% over the next decade. Only from about 2025 when the decommissioning of older coal-fired power plants begins could one expect consumption of coal to start falling (provided no further coal-fired plants are built). This raises an important question: for how long might South Africa's coal reserves be able to sustain current and projected rates of consumption?

Can reserves sustain this growth?

The electricity crisis has already thrown a spotlight, so to speak, on the status of the country's coal reserves: Eskom attributed a part of its electricity supply problems at the start of this year to difficulties it experienced in sourcing sufficient quantities of suitable grade coal. This prompted the Minister of Public Enterprises, Alec Erwin, to say that the government would if necessary intervene to ensure Eskom's coal needs were met. Could this be an indication of moves towards resource nationalism, as are increasingly being observed across the globe in relation both to energy (especially oil) resources as well as food production? There is probably little immediate chance of this happening, for two reasons. First, Eskom uses low-grade coal while export-quality coal is high-grade and unsuitable for burning in existing power stations. Second, coal mining companies have long-term supply contracts to fulfil. Outright nationalisation of the coal industry would seem a remote possibility given the need for financial capital, management expertise, etc. possessed by the mining companies. However, it is still possible that growing domestic demand could at some point in the future come into conflict with exports.

According to BP's Statistical Review of World Energy 2007, South Africa's proved reserves of coal stood at 48,750 million tonnes at the end of 2006, representing 5.4% of the world total (the sixth largest national share). BP estimates a reserve to production ratio (i.e. the number of years production could be sustained at current rates) of 190 years. The Statistical Review defines proved reserves as "those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known deposits under existing economic and operating conditions." This figure seems to be based on the 1987 Bredell report. However, the official government figure for reserves has been revised downward sharply to only 28.6 billion tonnes (South Africa Yearbook 2006/7), giving an R/P ratio of about 115 years.

David Rutledge, a Professor at the California Institute of Technology, has used the 'Hubbert linearization' method to estimate that there could be as little as 10 billion tonnes (Gt) of recoverable coal reserves remaining in Africa (most of which is in South Africa). If true, current production could be sustained for only about 40 years.

The R/P ratio is however of limited usefulness, for a couple of reasons. First, as mentioned already, the annual rate of consumption is expected to grow in the medium term, not remain constant. More fundamentally, production cannot maintain any particular rate indefinitely and then suddenly collapse to zero. Because coal is a finite resource, its production will of necessity reach a peak at some point and

then decline gradually toward zero....

Read Rest at: <http://europe.theoil Drum.com/node/4383>

How we can change our energy economy

By Harald Winkler

Cape Times

13th of August 2008

South Africa is among the world's worst emitters of greenhouse gases per capita and per unit of production. As international pressure to reduce or limit emissions increases, our emissions profile will become a more serious disadvantage.

We must take urgent steps to change our energy economy, both to mitigate global climate change, and to mitigate the economic risk of increasingly severe international curbs on emissions.

The Intergovernmental Panel on Climate Change found that global emissions should peak by 2015 to avoid severe impacts, and then rapidly decline. Caps on emissions apply only to developed countries, and have been agreed until 2012. Negotiations on a future multi-lateral climate agreement should aim to reduce global emissions to 50 percent of 1990 levels by 2050.

Developing countries must make a fair contribution. South Africa's emissions growth will have to slow down, level off between 2015 and 2020, and then start to decline. Because almost 80 percent of our emissions come from the supply and use of energy, this is where we should focus our efforts.

The use of coal to make electricity and synthetic fuel accounts for 45 percent of total emissions. The problem cannot be solved without Eskom and Sasol, but it cannot be solved by looking at them alone. Our use of energy accounts for 35 percent of the total, industrial burning of coal for 14 percent, and transport for 11 percent.

There are three clear areas of mitigation in our energy sector:

# Energy efficiency and conservation (using less energy for the same service and reducing the demand for energy);

# Changing the fuel mix (to lower carbon or zero-carbon sources of energy); and

# Making a transition to a low-carbon economy.

Energy efficiency pays back within years, sometimes months. Changing the fuel mix takes longer because power stations and refineries have lifetimes measured in decades. Changing the underlying structure of the economy takes the longest, but it is the most fundamental change we must make if we are to stay competitive in a carbon-constrained world. Energy efficiency is a no-brainer - using less saves money over time (although there is a set-up cost), and it can be started immediately. The

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electricity supply crisis has focused attention on the need to improve efficiency.

The challenge is to sustain this momentum after the electricity crisis is over. A wide range of end-user savings is possible, for example, in buildings. Possible supply-side measures include making power generation less wasteful.

Stronger policy support for energy efficiency could be provided in many ways. Examples include appropriate standards for new buildings; incentives to retrofit; mandatory energy and fuel efficiency standards; and the promotion and provision of public transport.

The key is that we have to move from voluntary agreements to mandatory standards for efficiency.

Changing the fuel mix requires a phased move away from our historical dependence on coal for our energy needs.

The choice is between coal, nuclear and renewables. For as long as we use coal, carbon capture and storage may be a viable technology for reducing our emissions.

It seems the government has decided to use nuclear power in our future energy mix. While nuclear has much lower carbon emissions than coal, the problems of radioactive waste disposal, security and cost must be addressed. Renewable energy technologies have the potential to become a far larger part of the fuel mix.....

Read the rest at:

[http://www.iol.co.za/index.php?set\\_id=1&click\\_id=143&art\\_id=vn20080813055523309C565234](http://www.iol.co.za/index.php?set_id=1&click_id=143&art_id=vn20080813055523309C565234)

Is Sasol an asset or a liability?

By Jeremy Wakeford

IOL

7th of August 2008

Writing for the Policy Matters series, Terry Bell initiated a debate on the pricing of liquid fuels in South Africa ("Sasol rakes in profits while SA feels the pinch", July 29). He noted that local synthetic liquid fuel producer Sasol - to which should be added state producer PetroSA - is reaping record profits as the volatile international price of crude oil trends upwards, periodically setting new records.

Meanwhile, South Africa's fuel consumers are not benefiting directly from indigenous production, as local retail prices are benchmarked on international costs.

This raises two related policy questions. First, should domestic fuel producers be subject to a windfall tax? Second, should domestically produced "synfuels" be sold at a discount relative to international prices?

Bell argued that the government has discretion when it comes to the pricing of liquid fuels and that the

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current formula might not be in the interests of the majority of South Africans, who are "being held to ransom" by suppliers and high prices.

However, from a sustainability perspective, the answers to the policy questions posed above are "yes" to a windfall tax and "no" to discounted synfuel prices. To understand why, one first has to consider the global energy context, which is dominated by two interconnected issues. In the first place, as Bell noted in passing, there is convincing evidence that the world has reached, or is perilously close to, the all-time peak of global oil production.

Probably within the next three years, according to many experts using a variety of forecasting techniques, the annual output of oil will begin to fall inexorably as old wells dry up faster than new ones can be brought on stream. Moreover, the amount of oil available for importing countries such as South Africa will shrink even sooner and faster than total world production, since domestic consumption of oil is growing rapidly in most oil exporting countries.

The stark implication is that South Africans will face further oil price spikes and, before long, actual shortages.

The biggest near-term threat would be if military action were taken by Israel and its allies against Iran, which along with Saudi Arabia supplies over 80 percent of South Africa's crude oil imports - or half of our liquid fuel supply. At first glance, the impending oil crisis might seem like a rock-solid motivation for expanding domestic synfuel production in order to boost energy security. However, the flip side of burning up fossil fuels like coal is their emissions of carbon dioxide, which contribute to global warming.

The most recent scientific evidence shows that the process of warming and melting is accelerating, placing us dangerously close to a "point of no return", after which humans will lose any ability to prevent catastrophic climate change. Some researchers are saying the Arctic could be completely free of ice in summer by 2013. This implies that the Greenland icecap could disintegrate much sooner than is commonly expected - releasing enough water to raise sea levels globally by up to seven metres. Reducing CO2 emissions drastically and rapidly is, therefore, essential - in all countries with significant emissions, not just in the main historical polluters.

Another probable implication is that carbon taxes of one form or another are likely to be imposed globally in the not-too-distant future.

Sasol alone emitted over 70-million tons of CO2 in 2007. At a price of \$20 (about R140) per ton of CO2 - a conservative estimate - this translates into a potential liability of more than R10 billion.

Sasol generates vast amounts of greenhouse gases by converting some 20 percent of the country's mined coal into liquid fuels. As Bell wrote, the company satisfies in the region of a quarter to a third of South Africa's liquid fuel demand.

PetroSA contributes about 7 percent of liquid fuels through its gas-to-liquids process, plus a small amount of domestic crude oil. The remaining two-thirds or so of liquid fuels are imported, mostly as

crude oil which is then refined locally.

Irrespective of the fuels' origins, retail petrol and wholesale diesel prices are regulated by the Department of Minerals and Energy according to an import parity pricing formula. This means the prices of local fuels are based on the costs of crude oil and refining in other parts of the world. Thus, whenever the international price of crude oil rises - or the rand weakens - South Africans pay more at the pump. The impact of rising fuel prices is plain to all. It squeezes the budgets of everyone who depends on motorised transport, while pushing up the prices of most goods and many services. As usual, the poor bear the brunt of the cost increases.

Sasol, on the other hand, is profiting handsomely from the high fuel prices. Its production costs - variously estimated at between &USD;15 and &USD;35 per barrel - have risen far more slowly than the price of crude oil, which in recent months has been fluctuating between &USD;125 and &USD;145 per barrel. Sasol is expected to post an after-tax profit of R25-billion for 2008 to June, a 47 percent increase from the previous year. Sasol's share price on the JSE has climbed from R180 at the end of 2005 to just shy of R400 at present.

The company's directors are also making a fortune, even taking advantage of July's Inzalo empowerment share issue. Furthermore, as Bell points out, 40 percent of share dividends flow out of the country to foreign investors. The SA Revenue Service will collect about R10-billion in normal company tax revenue from Sasol in 2008 - its single largest corporate tax receipt. Should an extra windfall tax be imposed on synfuel producers on top of this?

PetroSA is a state-owned enterprise and thus its profits accrue to the government, so a windfall tax is not strictly necessary - although it affects the fungibility of revenues.

On the other hand, while Sasol was created and funded by the apartheid state in the 1950s, it was privatised in 1979 and is now listed jointly on the JSE and the New York Stock Exchange. Some argue - and Bell hints - that it should now be pay-back time for Sasol.

In fact, a task team appointed by the National Treasury in 2006 recommended the imposition of a windfall tax on synthetic fuel producers. However, Finance Minister Trevor Manuel opted not to follow this advice, out of fear that it would undermine further investment in the synfuel industry, which he saw as necessary for bolstering energy security.

An additional reason cited by the Treasury was that it could not be sure whether the windfall profits were of a cyclical or structural nature. Clearly, they did not anticipate a near-term global oil peak. At the time, crude oil was selling for about USD60 per barrel - less than half of what it costs today.

Manuel has recently expressed regret at the Treasury's decision not to impose a windfall tax, and yet he says there is still no plan to implement one. Presumably this is because the government would still like to see an expansion of synfuel production capacity.

Sasol is conducting a prefeasibility study for a proposed new CTL plant dubbed Mafutha, with an intended capacity to produce 80 000 barrels of liquid fuels per day - nearly half of its current volumes.

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Sasol has indicated that it would not be the sole investor in such a large-scale project, which is estimated to cost in the region of R50-billion. The company is holding investment talks with the Industrial Development Corporation, as well as with the departments of trade and industry and minerals and energy.

Clearly, such a project will proceed only if sufficient coal (or natural gas) feedstock can be secured. This cannot be taken for granted, given the unfolding global energy crunch and Eskom's recent warning that South Africa might face a deficit of coal production of 100-million tons (mt) a year by 2017 - compared to total domestic consumption last year of about 180mt.

Another risk is continued cost escalation for new plant construction in the energy sector.

Should the Mafutha project go ahead, it will be bad news from a climate point of view and in stark contrast to Environment Minister Martinus van Schalkwyk's recent announcements about the government's climate mitigation plans. Energy security is not merely about ensuring adequate supply, but is also about demand management and restructuring. South Africa needs to reduce its dependence on liquid petroleum fuels by adopting a more sustainable transport system.

Revenues from a windfall synfuels tax could assist this transformation, for example by subsidising buses and trains, as well as by boosting investment in renewable energy sources. A similar argument applies to the question of whether to scrap or modify the practice of import parity pricing.

From a climate and long-term energy security perspective, it makes more sense to maintain a high price for synfuels so that motorists and businesses are incentivised to use fuel more efficiently and to shift to more sustainable alternatives. To protect poor consumers, other forms of support from the state could be considered, such as larger subsidies for public transport or direct income support.

Furthermore, in anticipation of dwindling fuel supplies following the oil peak, it may be wise for the government to put in place legislation that would allow a portion of Sasol's and PetroSA's liquid fuels to be allocated strategically for priority areas. Chief among these would be ensuring that food produce gets to people in cities and that essential services - such as police, fire, ambulance, the defence force and even refuse collection - keep functioning.

To conclude, whether or not the price of synfuels is too high depends on what you mean by price. From a sustainability point of view, the retail price is not too high, but the price paid by the environment and future generations is excessive.

Sasol is a short-term asset, but in some ways a long-term liability. Its once-off exploitation of part of the nation's coal reserves should benefit - and not harm - the long-term interest of the country.

Consequently, the Treasury should impose a "syn" tax - a windfall tax on synthetic fuel profits - while consumers should wean themselves off this addictive and polluting substance.

Source:

[http://www.iol.co.za/index.php?set\\_id=1&click\\_id=594&art\\_id=vn20080807061618230C735068](http://www.iol.co.za/index.php?set_id=1&click_id=594&art_id=vn20080807061618230C735068)

SA's nuclear waste to be sent overseas  
Dispatch Online  
2008/08/28

GOVERNMENT planned to send highly-radioactive spent fuel rods stored at the Koeberg nuclear power station overseas for reprocessing, Parliament's minerals and energy portfolio committee heard yesterday.

This was a short-term solution to disposing of it, in terms of policy approved by Cabinet "but not announced yet", Minerals and Energy Department nuclear safety director Schalk de Waal told MPs.

"In the longer term, Necsa (the Nuclear Energy Corporation of South Africa) will investigate the possibility of developing an indigenous reprocessing facility," he said.

Senior officials from the department were briefing the committee on the National Radioactive Waste Management Agency Bill, which seeks to establish such an agency to take responsibility for the safe storage of nuclear waste.

Minerals and Energy chief director for nuclear energy, Tseliso Maqubela, informed MPs that the cost of decommissioning Koeberg's reactors when they reached the end of their working lives would run into "tens of billions" of rand. Responding to a member's question, he said: "The estimate for decommissioning... certainly, I think, for a nuclear power plant, the costs are in the tens of billions. Whether it's R20 billion or R30 billion in the SA context is another matter."

According to the department, in June this year, there was a total of 1150 tons of highly radioactive waste – mainly in the form of spent fuel rods – in South Africa. About 95 percent of this total is spent fuel stored at Koeberg, with the balance at the Necsa-operated Safari-1 reactor at Pelindaba, near Pretoria.

De Waal said that in terms of the country's nuclear energy policy, spent fuel was not considered waste because it could be reprocessed....

Read the rest at: <http://www.dispatch.co.za/article.aspx?id=242431>

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## 6. African Energy News

The Saudi Arabia Of Solar Energy  
By William Pentl and Forbes  
22nd of August 2008

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In the wake of the first Gulf War, the U.S. Army assessed Saudi Arabia's solar energy resource potential in a classified effort to determine how oil fires had affected the region. The results were clear and surprising. In addition to being a vast petroleum repository, the desert nation was also the heart of the most potentially productive region on the planet for harvesting power from the sun. In other words, Saudi Arabia was the Saudi Arabia of solar energy.

Sitting in the center of the so-called Sun Belt, the country is part of a vast, rainless region reaching from the western edge of North Africa to the eastern edge of Central Asia that boasts the best solar energy resources on Earth. With the cost of oil skyrocketing, this belt is attracting the attention of a growing number of European leaders, who are embracing an ambitious proposal to harvest this solar energy for their nations.

The irony is inescapable and the story a familiar one, as the developed world again turns to the less developed countries in hopes of powering their economies. More important, it highlights an unappreciated implication of a solar-powered economy: The end of the oil age will not necessarily bring an end to the ugly geopolitics, resource wars and national rivalries that oil created...

...While speaking at the Euroscience Open Forum in Barcelona, Spain, in July, Arnulf Jaeger-Walden, one of Europe's leading energy authorities, said that less than 0.4% of the solar energy that falls on the deserts of North Africa and the Middle East would satisfy all of Europe's energy needs.

The opportunity isn't lost on Sun Belt countries. In March, Saudi Arabia's oil minister, Ali al-Nuaimi, said the country hopes to become as expert with solar energy as it is with oil. While Saudi Arabia has long toyed with solar power for small projects, such as a 1980s "Solar Village" program to develop the use of the technology in remote regions, its aspirations appear to be growing.

"For a country like Saudi Arabia ... one of the most important sources of energy to look at and to develop is solar energy," al-Nuaimi told the French oil newsletter *Petrostrategies*. "One of the research efforts that we are going to undertake is to see how we make Saudi Arabia a center for solar energy research, and hopefully over the next 30 to 50 years we will be a major megawatt exporter."

In Hassi R'mel, Algeria, 260 miles south of Algiers, construction has begun on a new power plant using a combination of solar and natural gas. The hope is to generate 150 megawatts of electricity by 2010, with 25 megawatts from a solar array stretching nearly 2 million square feet. The long-term goal is to export more than 6,000 megawatts of solar-generated power to Europe by 2020.

"Our potential in thermal solar power is four times the world's energy consumption, so you can have all the ambitions you want with that," Tewfik Hasni, managing director of New Energy Algeria, or NEAL, a company created by the Algerian government in 2002 to develop renewable energy, told the Associated Press last year.

This is why, barring a major technological breakthrough, the economics of solar energy may someday look much like the economics of fossil fuels. Energy security ultimately means more than access to energy; it means access to cheap energy. And like it or not, the Sun Belt has the cheapest solar energy in the world in vast quantities.

"In the same way we are an oil exporter," said Saudi Arabia's Ali al-Nuaimi, "we can also be an exporter of power."

Read the whole article:

[http://www.forbes.com/home/2008/08/21/saudi-arabia-solar-biz-energy-cx\\_wp\\_0822solar.html](http://www.forbes.com/home/2008/08/21/saudi-arabia-solar-biz-energy-cx_wp_0822solar.html)

Nigeria may import refined petroleum products from S/Africa

By Olusola Bello

Businessday Online

23rd of July 2008

Since Nigeria has failed to utilise available material and mineral resources and provide the desired leadership in the supply of petroleum refined products for the continent, South Africa has moved in to fill the vacuum and bridge the gap created by the non performance of the country's four refineries to provide the much needed refined products for the continent.

Nigeria, energy sector watchers fear, may have finally lost it in the West African market to South Africa, just as the telecom market is now being taken over by South African companies such as MTN, even if and when it finds its feet and get its refineries working again.

Informed sources disclosed that the coming of the South African company would create a huge competition, which ultimately would translate to Nigeria being the greatest loser.

Energy experts, for instance, lament the fact that "the country has not been able to take advantage of its huge and vast resources both in the West African sub region and the African continent as whole, despite the fact that it has what it takes to provide the African market with the necessary refined products."

Explaining the latest move of the South Africans to corner the market, a market source further reveals that a South African national oil company, PetroSA, has concluded plans to build a \$10 billion refinery which is expected to be the single largest refinery in the continent. It would have the capacity to refine 400,000 barrels of crude oil per day.

The supply of crude oil to the refinery is expected to come from Nigeria, Brazil, Angola and Venezuela. The final investment decision on the project is expected to be concluded by 2010.

According to Jorn Falbe, vice president of New Ventures Midstream, "Petroleum, Oil Gas Corporation of South Africa is moving ahead for a world class refinery in South Africa that will enhance the region's energy supply and security as well as boost the local economy."

He noted that the strategic and economic logic for South Africa is also clear. "We have a choice, invest in import logistics, which does not help security of supply or invest in a refinery"

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Falbe added that this has become the priority project for the South African national oil company. "The country needs it and commercially, it looks attractive," he stressed.

The company, it was explained, is going into partnerships in order to strengthen the commercial base and mitigate risk, says Siphso Mkhize, president and chief executive officer of PetroSA.

BusinessDay meanwhile, gathered that discussions with several international and local parties regarding potentials of financial and operating partnership are already underway.

Growth in African products consumption between 2007 and 2012 is expected to average five percent a year compared to world average of three percent

"Nigeria has a total installed capacity of 445,000 for refining of petroleum products but the four refineries have been comatose for years on account of insensitivity by officials of the Nigerian National Petroleum Corporation (NNPC) and government officials that have seen importation of petroleum products as means of enriching themselves," lamented an energy sector source.

"Even after the refineries are brought back on stream, the quantity produced will still be a far cry from what the country needs," he concluded.

Source: <http://www.businessdayonline.com/energy/13402.html?print>

### Kenya looks to geothermal power to fuel development

By Hereward Holland

Reuters Africa

11th of August 2008

NAIVASHA, Kenya, Aug 11 (Reuters) - For Maasai tribesman Charles Kamami, Kenya's drive to boost its geothermal capacity spells environmental destruction which threatens his pastoralist way of life.

But for east Africa's largest economy, geothermal energy could be a saviour as it struggles to increase power generation to keep up with soaring demand driven by years of robust growth. With proven potential of 7,000 megawatts, geothermal energy from Kenya's geologically active Great Rift Valley forms the cornerstone of a government scheme to double total energy production by 2018.

That's key to luring foreign investors. According to a recent World Bank report, the price of electricity is a leading factor in making Africa uncompetitive, relative to other emerging economies like India and China.

"The problem in the past has been the expense of geothermal energy generation," said Nick Nuttall, spokesman for the United Nations Environment Program, by telephone from Britain.

Nuttall said that when oil prices spiked above \$140 a barrel this summer, people began to look at

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geothermal energy "with new eyes". Oil has since come off its highs, to trade around \$120 a barrel.

Kenya produces 130 MW of power from geothermal sources in three sites in the Rift Valley. A new plant is being built in Hell's Gate National Park to increase capacity by 35 MW. The energy is produced by trapping steam released by hot rocks with water reservoirs deep in the earth and using it to power turbines. Geothermal power is seen as one of the most reliable and comparatively cheap renewable energy sources....

...Many African countries, including economic powerhouse South Africa, face serious supply challenges which have caused debilitating power outages from Senegal's Dakar on the Atlantic Coast to Tanzania's Dar es Salaam on the Indian Ocean. The International Energy Agency says Africa needs to spend an estimated \$560 billion by 2030 to generate an additional 260,000 MW of power.

Kenya gets 60 percent of its electricity from dams, 30 percent is fuel-generated and the rest comes from geothermal -- but the total is not enough. Kenyans use up 1,050 MW of electricity at peak hours, just 50 MW shy of the country's maximum capacity, and demand is growing 8 percent annually. Blackouts across the country are frequent: in its report, the World Bank said that Kenyan firms suffered 7 percent losses in sales due to power disruptions in 2007. And around 80 percent of Kenyans are not even linked to the electricity grid. Kamami is among them....

Read the rest at: <http://www.reuters.com/article/latestCrisis/idUSL17147811>

### Nuclear giants target Namibia as their playground

By Brigitte Weidlich

The Namibian

12th of September 2008

As companies line up to prospect and exploit Namibia's rich uranium endowment, the green lobby warns of detrimental effect to the ecology. The worldwide scramble for energy sources due to dwindling fossil fuel reserves has placed renewed emphasis on nuclear energy as a solution for future needs. As a result, Namibia is again in the spotlight as the world's sixth-largest uranium producer.

With about 3 800 tons annually, Namibia's delivery of 7 per cent of world uranium production has led to a boom in interest from global players that wish to secure supplies for their nuclear energy expansion plans. Spot prices doubled in 2007, reaching US136 per pound but recently levelled at US\$82 dollars.

Over 40 foreign companies obtained exclusive prospecting licences (EPLs) from Namibia's Mines and Energy Ministry (MME). Two uranium mines are operational and 12 more are in the pipeline.

The MME has stopped issuing EPLs and will lift the temporary ban only once it has drafted a nuclear policy with the help of the International Atomic Energy Agency.

"The interest in uranium is a boost for Namibia's economy," says Joseph Iita, MME's permanent secretary. "The increase in local uranium mining enables Namibia to contribute towards resolving the

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global energy shortage." French nuclear group Areva managed to slip through the ban on EPLs...

...Environmental non-governmental group Earthlife Namibia called for greater public consultation between the government and the public before the ministry approves new uranium mines.

"We want the processes of the Areva mine to be transparent and to have no secrecy about their plans and operations," says Earthlife Namibia spokesperson Bertchen Kohrs.

Read the whole article at:

<http://www.namibian.com.na/2008/September/marketplace/0828486ADB.html>

### Mozambique to Build \$2.5 Billion Electricity-Transmission Line

By Fred Katerere

Bloomberg

23rd of September 2008

Electricidade de Mocambique, the state-owned power utility, will spend \$2.5 billion on a new electricity-transmission line from the western province of Tete to the capital, Maputo, Energy Minister Salvador Namburete said. The link will reduce the country's dependence on neighboring South Africa, which is experiencing an energy shortage, Namburete told reporters in the city yesterday.

Mozambique currently sends electricity from the Cahora Bassa dam on the Zambezi River to the Apollo sub-station in South Africa, before it is retransmitted to Mozambique's capital Maputo. Namburete didn't say how the project would be funded.

Source: <http://www.bloomberg.com/apps/news?pid=20601116&sid=alQrMUQeq7tg&refer=africa>

### Africa awash in sunlight, but not solar energy

AFP

28th of September 2008

From household solar panels to thermal generators big enough to power a town, sun power has enjoyed explosive growth around the world. Everywhere, that is, except on the sun-drenched continent of Africa.

With an average daily dose of five-to-seven kilowatts per hour (kWh) for every square metre (10 square feet), Africa has more potential for producing energy from the sun than almost anywhere on Earth, with the possible exception of northern Australia or the Arabian peninsula. Yet the continent accounts for only a miniscule percentage of the world's solar energy output. And most of what it does generate is produced in one country, South Africa.

"In Africa, there is a growing awareness of the potential benefits of solar, especially as the conventional grid continues to prove unreliable. Lots of people are looking for alternatives," said Lawrence

Agbemabiese, a Paris-based energy expert at the United Nations Environment Programme (UNEP).

And the need for energy could hardly be more urgent: in sub-Saharan Africa barely one person out of four has access to grid electricity. And in the region's rural areas, this falls to just a tenth. At the micro scale, grassroots groups are pushing solar through simple, low-tech applications. One such example is the solar cooker, in which a polished concave dish focuses sunbeams onto a pot, slowly heating water.

But on a macro scale, solar power is almost untapped. Why so?

Most reasons boil down to money.

Solar panels, or photovoltaic systems, use semiconductors to generate electricity, and can be used for individual buildings or villages. Another solar source, but in a collective role, is solar thermal, which uses the sun to create steam that turns a turbine to generate electricity. Both technologies are sprouting across wealthier economies, but only thanks to tax breaks and discounts that remain beyond the reach of the planet's poorest continent.

"The photovoltaic boom in Europe and Japan depend on a very generous pricing structure. It is a policy found only in rich countries," explained Yves Bruno Civel, head of France's Renewable Energy Observatory, based in Paris.

"One has to be realistic: Africa will not be able to surf on the current wave. That will happen when economies of scale result in a drop in prices," said Agbemabiese.

Beyond financial constraints, solar technologies suffer from an image problem in parts of Africa, because they usually operate on a small scale and in isolation. Indeed, some rural areas continue to resist solar energy out of fear that it will preclude later access to national or regional electricity networks.

But there is a silver lining: in the same way that cell phones are a cost-efficient alternative to laying telephone lines, the very fact that solar panels can be installed in the remotest of regions can make them a more affordable solution than connecting to existing power grids. There can be hidden costs of depending on a centralised source of energy, explained Agbemabiese. For rural hospitals, for example, an eight-hour power cut by the electricity grid can destroy thousands of dollars' worth of medicine, he said.

Some governments have initiated policies to promote use of solar energy at village level. In west Africa, for example, Burkina Faso offers state-backed micro-credit loans, paid back over two or three years, that make it possible for a family to purchase a solar panel. Ghana is also looking at how to set up a system of financial incentives.

The continent is also making its first tentative steps towards large-scale solar generators big enough to power an entire region.

A "solar plan" sketched by the newly-minted Union for the Mediterranean -- a grouping of European

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Union (EU) nations and non-EU countries -- aims to create gargantuan thermodynamic generators in the middle of the Sahara Desert. With a projected output of 100 gigawatts by 2050, a project initiated by Middle Eastern and North African nations called "Desertec" could not only help power large swathes of northern Africa, but parts of Europe as well via trans-Mediterranean cables.

One gigawatt is enough to power a city the size of San Francisco.

Concerns about soaring oil costs, dependence on Russian natural gas, and climate change have made some EU nations keen to push the project forward.

But sub-Saharan Africa -- far from Europe, lacking infrastructure and in some places prone to chronic instability -- will have a hard time attracting such investments, experts say.

Source: [http://afp.google.com/article/ALeqM5iMM7je0c\\_5HgWo2\\_K64Ptt-BRdyg](http://afp.google.com/article/ALeqM5iMM7je0c_5HgWo2_K64Ptt-BRdyg)

### Coal-Fired Power Plant for Valco?

By Asks Kofi Asante

Public Agenda (Accra)

4th of August 2008

The news report that the Volta Aluminium Company Limited (VALCO) is to construct a coal-fired power plant at Tema to generate electricity for its use (Daily Graphic, July 2, 2008) calls for public debate. I must make some preliminary comment on VALCO's decision.

First, coal is the dirtiest fossil fuel for electric power generation in terms of pollution. Coal power plants emit harmful particles and gases into the environment. The emissions can only be reduced to an extent by investing in cleaning equipment for harmful particles and gases (such as carbon) and by using coal with little sulphur content.

There are no compelling reasons for the use of coal as fuel for power generation in the country. Ghana does not have coal as South Africa, India or China, the use of which would create jobs. We do not have carbon capture and storage technologies to reduce the harmful effects of carbon. In this day and age, we should be mindful of the impact of coal-fired power plants on the environment and the climate.

South Africa, unlike Ghana has abundant coal resources. For years, it has had coal-fired power stations as part of its energy mix. Eskom of South Africa, the counterpart of the Volta River Authority, operates coal-fired (base load) power stations, hydro, pumped storage and gas turbines (which make up the peaking group of power stations), and nuclear energy. Eskom has over the years, pioneered the development of modern technologies for coal-fired power plant activities such as coal stockyard handling, ash handling and cooling systems which directly impact on the environment and affect everyday living.

Ghana's principal sources of electricity are water (hydro); light crude oil; and natural gas. Each source

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has its peculiar challenges. Should we add coal, the dirtiest fuel for power generation, in the face of general concern for the environment and climate change? Should we add coal when nuclear energy, arguably the cleanest after wind power, is being seriously considered?

Second, the West African Gas Pipeline project (WAGP) has a critical place in power generation, energy sufficiency and security. Natural gas as the fuel for power generation at the Aboadze, Takoradi thermal plants is eminently superior: It is kinder on the environment and much more efficient. Further, gas flaring in Nigeria, the emission of green house gases in our region, will be reduced. Whatever the current status of the gas pipeline enterprise, Ghana is bound to ensure that the project is completed and natural gas, the fuel of choice, is made available for power generation at the Takoradi plants.

Under the terms of WAGP, Ghana is committed to a take-or-pay contract in the case of Nigerian natural gas. If the Takoradi power plants are not run at capacity, the take-or-pay contract would create enormous cost of the gas. That in turn would result in exceedingly high tariff for all consumers, industrial, commercial and domestic. The only way to avoid excessive tariff is to have VALCO as a consumer as envisaged.

Assuming the cost of electricity generated at the Takoradi power plants is US\$42/MWH at the proposed cost of gas, the point of the WAGP is to have a full load operation of 600MW net generation of power (80% availability). Now the effective use of the net 600MW would only be achieved with maximum supplies (about 300 GWH per year) to VALCO. We seem to forget that the early construction of the Takoradi complex was driven by the electric power requirement for VALCO.

If VALCO is allowed to opt out of the supply of power generated at the Takoradi plants by its construction of a dedicated coal-fired plant at Tema, the cost of electricity produced at Takoradi from natural gas under the WAGP terms would be too much for consumers. Without VALCO as a consumer, the take-or-pay for the WAGP would be underabsorbed for years.

Third, now that Ghana owns VALCO, a carefully crafted power contract with the owner of the gas pipeline, the West African Power Company of which Ghana has 16% shares, should engage the attention of VALCO. It should also use its considerable influence to exert pressure to bring the gas pipeline project to fruition so that it and other consumers would begin to enjoy the benefits to be derived from the WAGP investment.

The minimum that the VALCO leadership could do in the circumstances is to stop the imminent construction of a coal-fired power plant. Put it on hold, at least for further consideration.

Fourth, the question whether or not Ghana should construct a coal-fired power plant to serve the power requirement of VALCO, regardless of the WAGP, should be left to the incoming administration. A decision as to Ghana's fuel sources and energy mix would doubtless be made within the framework of a national energy policy.

As recently as April, 2008, four presidential nominees took turns to discuss publicly their ideas on energy at the Great Hall, Kwame Nkrumah University of Science and Technology, Kumasi. The platform was made available by the university. It was a refreshing experience. If VALCO's leadership

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was then seriously considering the construction of a coal fired power-plant, the WAGP regardless, it should have seized the opportunity to attend the forum on 11th and 18th April to tell the presidential nominees about it. The minimum that VALCO should do now is to defer to the wisdom of our presidential candidates, individually and collectively. It was clear from all four presentations at Kumasi that come January 2009, energy will get priority attention at the highest level.

New VALCO should not tie the hands of our new political leaders and policymakers behind their backs in the important area of energy. A coal-fired power plant once started must be completed. Otherwise, it would be money turned into ash.

Source: <http://allafrica.com/stories/200808041603.html>

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