

## SUSTAINABLE ENERGY NEWS on EMAIL (SENSE) number 6

Welcome to the sixth edition of the email newsletter – Sustainable Energy News (SENSE) – a service of the Sustainable Energy and Climate Change Partnership (SECCP), a project of Earthlife Africa Johannesburg, in partnership with WWF, Denmark.

SENSE is published monthly and we welcome any feedback and submissions. It is edited by Erika Schutze (Research and Information Co-ordinator) and Mette Nedergaard is assistant editor based in Denmark.

Please let us know if you wish to be removed from this list or suggest recipients for the list or if you would like to receive our separate Climate Change email newsletter, CCEN, edited by the climate change facilitator, Mamashoabathe Noko.

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### 1. SECCP News

#### **Forthcoming workshop on energy issues**

SECCP will be organising a civil society workshop on energy issues, primarily in preparation for WSSD but also with a view to making input to the National Strategy for Sustainable Development (NSSD) – a process government has promised to resume after WSSD. One objective will be to review the energy position paper drafted by an informal NGO working group, which was sent to government immediately before PrepCom 4; most of the key components were also included in the 'Bali Declaration' that Secretariat and NGOs have taken to PrepCom 4.

SECCP has been promoting the position paper under the heading/description: 20/20 energy vision.

The workshop is proposed for the third week of June – civil society representatives interested in participating should contact: [richardw@earthlife.org.za](mailto:richardw@earthlife.org.za) preferably before noon of 5 June

#### **SECCP report sounds warning on SA's heavy reliance on coal exports and energy intensive industries**

On May 15 SECCP hosted a well-attended press conference to launch the Civil Society Energy position paper and the SA Energy Sustainability Indicators report. Director of EDRC, Professor Ogunlade Davidson also gave

an outline of the Heinrich Böll Foundation's Global Energy Strategy process, and Lars Georg Jensen of WWF Denmark outlined some international dynamics surrounding energy in the lead up to WSSD.

According to the report, SA may have performed well in increasing the share of households with access to electricity from about a third to two-thirds, but the sustainable energy use is poor. It also describes how the carbon emissions of SA's energy sector, on a per capita basis, are more than double the world average. SA also performs poorly on energy intensity due to SA's heavy reliance on energy intensive industries, high dependence on coal, the higher energy-intensity of synthetic petrol made from coal and the low level of energy efficiency of final consumers.

Although these factors contribute toward favourable position when it comes to energy exports, the report indicated that the country's coal sales abroad could suffer as countries cut emissions under the Kyoto protocol. The report, by Randall Spalding-Fecher of the Energy and Research Centre at the University of Cape Town, was commissioned by SECCP to inform advocacy efforts and Integrated Energy Planning; it also feeds into a global effort by French organisation Helio to assess energy trends. For a copy of the report email [Erika@earthlife.org.za](mailto:Erika@earthlife.org.za).

### **SECCP makes input into energy position for PrepCom 4 in Bali**

Richard Worthington of SECCP was only available to attend part of the workshop convened by the Civil Society Secretariat to WSSD 17-19 May, but managed to present the civil society position paper on energy that had previously been endorsed by SESSA, EJNF and various other Western Cape organisations. All key elements were integrated into the Bali Declaration that was taken through to PrepCom 4 in Indonesia. The section of the declaration on energy reads as follows:

1. In pursuit of the twin goals of: sustainable access to energy and reduction of the adverse social and ecological impacts of energy service delivery, we call for:
2. Adoption and/or commitment to national, regional and global targets for achieving sustainable access to energy, including:
3. A universal commitment to reduce by half the number of people without sustainable access to locally appropriate energy services by 2012
4. A commitment by industrialized nations (OECD) and transnational corporations to support provision of free basic electricity supply in developing countries or communities;
5. Adoption of national, regional and global energy efficiency targets and commitment to introducing sector specific standards including:
6. A universal commitment to a four-fold increase in energy efficiency for all economies, national and transnational, relative to year 2000 baselines, by 2012;
7. Development of per capita fuel efficiency targets and reporting of energy use and efficiency trends for particular population groups, to raise awareness of individual impacts, particularly among the affluent, and encourage behavioural change and more responsible purchasing.
8. Adoption and/or commitment to national, regional and global targets for the deployment of renewable energy technologies, with differentiated targets according to development status, affluence and impact on regional and global environment, including:
9. An OECD commitment to achieve 10% of primary energy supply from renewable sources by 2010 and 25% by 2020;
10. A South African commitment to 10% of electricity generation by renewable energy technologies (RETs) by 2012 and 20% by 2020;
11. We call for an integrated approach to energy supply, where all existing hydrocarbon, biomass, wind and solar sources need to be developed equally along with measures to enhance energy efficiency and energy conservation in every sphere of the economy, public, private and household.
12. Nuclear power is not to be considered as an option for future energy generation.

### **SECCP comments on 'An Integrated Electricity Outlook for South Africa'**

(as developed by the National Electricity Regulator in conjunction with Eskom)

According to international practises, Integrated Resource Planning is the balancing or optimisation of electricity supplies and energy-efficiency improvements to provide energy services at minimum cost, including environmental and social costs. According to this definition, the Integrated Electricity Outlook for South Africa does not qualify as an Integrated Resource Plan as stipulated in the introduction.

The report stipulates to have generated electricity sales forecasts, investigated a full array of demand- and supply-side options and determined an optimal combination of demand- and supply-side options. There is, however, no documentation of this process and no explanation of a number of strategic decisions. Social and environmental costs, as well as certain market dynamics, do not appear to have been given due consideration. The IRP will be revised every year. The public comment process will be followed by a public workshop, initially scheduled to be held in June 2002 (possibly July). For a copy of SECCP's critique of the "Outlook" email [Erika@earthlife.org.za](mailto:Erika@earthlife.org.za)

### **Economic instruments in energy and climate change policies compared**

Mette Nedergaard, SECCP's Danish staff member based at WWF in Denmark (and assistant editor of SENSE) has completed her survey of the application of economic instruments in energy and climate change policies in selected EU and OECD countries. The paper analyses two major groups of economic instruments: taxes and subsidies and is intended to stimulate discussion on the viability of applying economic instruments in developing countries as a means of promoting sustainable development. The focus is on identifying possibilities that may support specific developing country priorities such as the provision of modern energy services to rural and peri-urban communities. Experiences from the North are presented in order to inspire and foster discussions on the development of Southern ways of designing policies and measures for promoting sustainable development. A final version of the paper is now available from [Erika@earthlife.org.za](mailto:Erika@earthlife.org.za).

## **2. SA's renewable energy progress**

### **SA's First Wave Energy Project and Renewable Energy Demonstration Centre coming to the Cape**

The Oelsner Group in Darling, near Cape Town, has long sought to connect sustainable energy with sustainable employment under the Darling Sustainable Energy and Employment Scheme (SEES). To this end it plans to develop a large scheme in the field of renewable energy applications. The Darling National Wind Farm Demonstration project is the core project of this vision and is to be augmented by a Visitor, Training and Education Centre opposite the Wind Farm. This will serve as a basis for detailed analysis and input is invited from all parties that may have an interest, or will possibly be affected by the scheme.

SEES consists of the following components:

- A feasibility study for a 10 MW wind farm using the modern design megawatt class wind turbines on Moedmaag Koppie, 12 km West of Darling has been concluded. The study was undertaken by the OELSNER GROUP and has the support of the Department of Minerals and Energy, which declared the project a National Demonstration Project. The first phase of 5 MW is intended to be in operation by September 2002, just before the World Summit.
- Just opposite this site, in full view of the wind farm, a Visitor and Renewable Energy Demonstration Centre will be erected.
- A solar hot water system for 850 sub economic houses (first phase) is in planning stage, to be followed by a solar cooker demonstration project.
- A Rutland 913 (220 W) wind charger will be installed and tested on a domestic property in Darling for comparison of photovoltaic, solar, and wind power for battery charging, bore hole pumping and electric farm fencing systems (as standalone devices and in combination with diesel generation).
- In addition a test installation of a Proven 2,5 kW wind turbine generator (standalone) and as hybrid solar/photovoltaic/diesel is planned on the same site, on which an ecologically designed domestic dwelling will be erected and the garden layout will accommodate indigenous plants, bio-feeding and water saving devices.
- Biogas-extraction from local refuse disposal is also under consideration.
- There are project extensions planned which will cover energy efficiency in commerce and industry; rational use of energy in buildings; energy saving products and appliances; electric storage systems; net metering systems; desalination plants powered by renewable energy, fog water recovery systems; ocean wave electricity generators.
- A feasibility study has commenced in five rural communities near the West Coast area to investigate electrification by means of wind diesel hybrid generating plants and mini grid systems.
- Finally and most important a feasibility study is in progress for the establishment of an Industrial Park on 45 000 m<sup>2</sup> of industrial land for small to medium industries, with activities which are, if possible, related to sustainable energy technologies and will include a wind turbine test field. One of the main aims of the Industrial Park is the basic training and employment of local residents encompassing trades

as builders, electricians, plumbers, mechanics, fitters and turners and other associated trades. Buildings to accommodate guests, trainees and students are planned with a kitchen and canteen facility, where training for students in the catering and tourism business can take place.

Furthermore the Oelsner Group has plans for a fossil fuel free Robben Island to serve as a model of a potential future energy mix in the Western Cape. It entails experimentation in wave energy projects on Robben Island in collaboration with the Swedish company Inter Project Service AB – one of the leading companies in the use of wave energy.

### **Strong pro-renewable sentiment with emphasis on wind power from DME budget speech**

On May 7 the honourable Minister of Minerals and Energy Ms Phumzile Mlambo-Ngcuka gave her annual budget speech. A brief extract from her speech follows:

"Our IEP (Integrated Energy Plan) projections show that South Africa does not have the luxury of writing off any of our energy sources. For many more years we will be heavily dependent on coal, nuclear and hydrocarbons. All have controversy, both environmental and safety. The use of gas and renewables will increase and both are good environmentally but have real limitations, that is, available size of reserves on the former and technology limitations of the latter. We are poised to push renewables much higher and even people with grid electricity need to be given a choice. Renewables currently cannot replace or compete with either coal or nuclear. For coal we intend to encourage even greater investments by industry in clean coal technologies through our new renewable energy policy. Intensive coal users and producers will in future contribute towards renewable energy investments. Investment by both the private and public sector over the past five years in renewables was R255 million and for nuclear, R778 million."

Ms Mlambo-Ngcuka referred to the honourable Deputy Minister Ms Susan Shubangu for further news on renewables: " We need a balance between utilising energy resources and environmental considerations to promote sustainable development. I am convinced that renewable energy could play a small but important role in the development of a sustainable energy system. The Draft White paper on Renewable Energy will supplement the White Paper on Energy Policy of December 1998. The government's policy for renewable energy is intended to provide focused support for the development of renewable energy sources for both small and large applications. Large-scale renewable energy supply schemes can increase the diversity of supply and minimize environmental impacts. Presently other energy carriers such as coal and oil do not include the costs of their environmental externalities and therefore do not reflect their true costs of consumption to our society. We cannot continue on a 'business as usual' basis. Polluting energy carriers will have to take their responsibilities more seriously by assisting in the establishment of a renewable energy. They will have a number of options."

The Draft White Paper on Renewable Energy proposes:

- A Renewable Energy Fund, administered by the Central Energy Fund (CEF). The Fund will also be used to mobilise financial resources and "green financing".
- Financial and fiscal incentives to stimulate the implementation of renewable and energy saving technologies."

Both Ministers stressed their full support to the Darling National Demonstration Wind farm Project, for possible implementation in view of the upcoming summit.

MP, Ms E Ngaleka of the African National Congress, gave to the Parliament a description of the Danish history on wind energy, starting from two decades ago, and expressed her hope that South Africa will go the same way by creating a strong new industry for wind power applications.

From trustworthy sources we are assured that the Draft White Paper will include a target for electricity to be generated by renewables of 5% of total installed generating capacity by 1012. The Paper is to be issued very soon for public comment and submitted to Cabinet for approval before the World Summit.

### **DME-DANCED Capacity Building project**

The DME-DANCED Capacity Building project in energy efficiency and renewable energy is a joint project between the South African Government and the Danish Government. The Project is aimed at building capacity within the Department of Minerals and Energy in the Renewable Energy and Energy Efficiency sections. The Directorates of Energy Planning and Renewable Energy are the implementing agency of the Project which is funded by DANCED to the tune of R6 million over the coming four years.

Representatives from various stakeholders on the renewable energy side, including officials of the Department of Minerals and Energy left for Denmark on the 28 April 2002 to embark on a Renewable Energy Study Tour. The aim of the tour was to better capacitate stakeholders on the issue of renewable energy and for them to

implement what they have learnt in subsequent efforts in drafting policy. The Department had already successfully initiated projects that the strategy had aimed to encourage.

On the energy efficiency side, stakeholders from the National Energy Regulator and Eskom have sent representatives to Denmark in order to help facilitate the project. Additional information regarding the project is available at: [www.contacttrust.org.za/Documents/DME/DME-DANCEDProject.htm](http://www.contacttrust.org.za/Documents/DME/DME-DANCEDProject.htm)

#### **Light testing initiative underway**

Sustainable Energy Society of SA (SESSA) is launching an initiative with ESKOM TSI to test lighting products currently available on the South African market. The aim is to provide user information with regard to life expectancy and performance of product as well as the energy efficiency of the various products. SESSA would like to invite all members of the lighting industry to participate in this exciting and worthwhile project. – SESSA, [marlett@pdevc.co.za](mailto:marlett@pdevc.co.za)

#### **Study on the regulatory options for accelerating the phase out of leaded petrol in SA**

Research is planned to undertake a cost-benefit analysis (CBA) of the most sensible option(s) to accelerate the phase out of leaded petrol. The researcher, Glenn Hodes has called for any information or knowledge of other studies that have attempted to value the health-based cost externalities from airborne lead emissions (or next best, high blood lead level concentrations) in South Africa or Africa as a region (besides the older US EPA study -1985). Glenn Hodes; [info@ceruleanconsultants.com](mailto:info@ceruleanconsultants.com).

#### **Research on the status of industrial greenhouse gas emissions in South Africa**

The Minerals and Energy Policy Centre is conducting the above research and is looking for any information on the following issues:

- Existing programmes, projects and other initiatives in the field of industrial GHG emissions, mitigations and policy in South Africa.
- Past, present and future activities in this field in specific industries, industry organisations, educational institutions, research institutions and government.
- Overview of the current status of industrial GHG emissions reductions in SA, policy and project implementation.

All replies should be sent to Shomentree Moodley at [shomen@mepc.org.za](mailto:shomen@mepc.org.za).

### **3. World Summit on Sustainable Development (WSSD)**

#### **Green Energy initiative at WSSD promises to develop a mechanism for trading green electricity**

AGAMA Energy, a green energy services company based in Cape Town, is to co-ordinate the supply of Green Electricity to the main venues at the WSSD. This is a civil society and Department of Environment & Tourism initiative and is supported by the United States Agency for International Development (USAID). In addition to being a component of the 'Greening the Summit' initiative, the project aims to establish mechanisms and institutional arrangements to allow for the marketing of green power after WSSD.

South Africa has excellent renewable resources, and in regions like the Western, Eastern and Northern Cape provinces, which import the bulk of their energy, renewable electricity generation close to the demand makes good sense – including lower transmission costs, greater reliability and, of course, reduced environmental impact.

At present there is more than 50Megawatts of green generation capacity in the Southern African Power Pool – this is enough energy to fulfil the needs of 20 000 households. South Africa itself presently has a small and un-coordinated installed capacity of green generation plants, including the hydro plants in the Eastern Cape (owned and operated by Eskom) and a number of Independent Power Producers in KwaZulu-Natal and Mpumalanga.

While there is as yet no mechanism for trading green electricity in a regulated market in southern Africa, a likely mechanism is 'green power certificates'. A green power producer (certified and monitored by the National Electricity Regulator) will acquire green power certificates for any green power supplied onto the national grid. Any distributor or supplier (also licensed by the NER) that desires to offer a green electricity 'product' will be able to buy green power certificates to back up the sales to discerning customers. Green electricity sales will be regulated within a green electricity tariff structure to be established and regulated by the NER. In addition to its environmental, safety, water-saving and health benefits, Green Electricity offers opportunities for small investors and entrepreneurs. The National Electricity Regulator (NER), national government's electricity

'watchdog', is developing certification criteria and procedures for any potential green power producer to obtain certification of their electricity production. – [www.agama.co.za](http://www.agama.co.za)

### **Eskom to move against sustainable energy fund**

SECCP has lashed out at ESKOM's decision to table a concept proposal for an "African Sustainability Fund (Energy)" at an international event it organised as a side event to the Preparatory Committee (PC4) meeting for WSSD in Bali on May 29. It apparently has the support of the Department of Minerals and Energy (DME), and might have been a testing ground for NEPAD – the New Partnership for African Development – as well as for DME Minister Mlambo-Ngcuka's recently stated commitment to "...push renewable energy much higher.." and ensure that "...even people with the grid [need to] be given a choice." But more likely "It appears that Eskom will try to use the World Summit on Sustainable Development (WSSD) to leverage development aid to underwrite their expansion throughout the continent, as well as to legitimise and entrench the long-term use of socially and environmentally harmful technologies and practices," says Richard Worthington, project co-ordinator of the SECCP.

Coming in the context of widespread support for the establishment of a Sustainable Energy Fund – which would serve to prioritise financing of energy efficiency and the development of local industries in renewable energy technologies – this competing initiative is clearly part of big business' rejection of the concept of sustainable energy and the need to re-direct energy development.

Eskom claims its African Sustainability Fund (Energy) is "...aligned with the priorities laid out in NEPAD". According to promotional materials for the Bali event: "This concept proposal combines development funding with institutional investors and credible implementation partners in the financing and execution of long value chain projects..." The suggested equity partner is Eskom and the fund will require "Overseas Development Assistance core funding to cover risk and guarantee returns". Whatever one's opinion of NEPAD as a whole, or of the prospects for a meaningful 'Global Deal' at WSSD, such initiatives must provide more than simply a basis for justification of corporate ambition presenting itself as public interest.

The proposal completely ignores the NEPAD text: "Africa should strive to develop its solar energy resource[s] which is abundantly available." It also seeks to by-pass the NEPAD mandate to: "Establish a task force to recommend priorities and implementation strategies for regional (energy) projects..." Such a body should be established and include multi-sectoral representation to ensure that priorities and strategies serve all Africans, and are not simply dictated by the company with the largest financial interest. Such requirements are part of long-standing proposals for a Sustainable Energy Fund, which is fully consistent with current DME policy and is well placed to become a core component of WSSD outcomes.

"Providing affordable access to energy will have to involve decentralised energy generation and involvement of communities in implementation and ownership of locally appropriate technologies. New international financing arrangements should not be co-opted to further entrench vested interests," says Worthington. "We hope the DME will re-assess participation in any promotion of such attempts to compromise a positive outcome of WSSD."

### **Johannesburg Climate Legacy Project – Climate Neutral Summit or window dressing exercise?**

There are still many issues to be resolved regarding the WSSD climate neutral initiative, now officially dubbed: the Johannesburg Climate Legacy project (JCL). The idea is to raise funds for sustainable development projects that avoid or reduce greenhouse gas emissions by selling the 'carbon off-sets' that the projects achieve to companies, delegates and any others interested in compensating for the emissions caused by the Summit, including air and other travel. Initial estimates indicate that these emissions – the *climate footprint* of the Summit – will be about 500 000 tonnes of carbon dioxide equivalent.

Representative of environmental NGOs continue to participate in the governing body deliberations, but are not prepared to endorse promotion of the initiative before finalisation of details such as budget, formal adoption of sustainable development criteria (for screening projects) and terms of reference for service providers – who are insisting that they be called partners. Contracting of various players, including the UK-based Futureforests and US-based Climate Neutral Network, as well as local consultants, was expected to be concluded by the end of May. International players will be tasked with building local capacity as part of the process.

With little time left before the Summit, the initiative is already being marketed by the World Business Council for Sustainable Development (WBCSD – seen by many as more interested in sustainable domination) and other players keen to capitalise on the image-improvement opportunities. A lot of work has been done on a speculative basis, with support from the 'Greening the Summit' initiative of Gauteng provincial government, and the IUCN is providing secretariat support. The main incentive to contribute funds to the JCL is the opportunity

to generate positive public relations, but it is also hoped that personal conscience and accountability will prompt many modest contributions. (For full article, email [sa-can@earthlife.org.za](mailto:sa-can@earthlife.org.za))

#### 4. General Sustainable Energy News

##### **Energy Risk – Oil Supplies To Decline After 2010**

Global supplies of crude oil will peak as early as 2010 and then start to decline, ushering in an era of soaring energy prices and economic upheaval, according to an international group of petroleum specialists. They hope to persuade oil-dependent countries to stop what they view as a squandering the planet's finite bounty of fossil fuels. Americans, as the biggest consumers of energy, could suffer a particularly harsh impact on their lifestyle, warned participants in the two-day conference on oil depletion that took place late in May at Uppsala University in Sweden.

Colin Campbell, a retired geologist who helped organize the conference, argued that governments are too caught up in short-term issues to focus on the long-term threat of depleted oil reserves. Oil companies prefer not to talk about it for fear of upsetting their investors, he said. Their warning defies the more commonly held view that global crude reserves will remain plentiful for decades. Critics say similar predictions of scarcity at the time of the 1973-74 Arab oil embargoes didn't come true.

The dispute centers on the precise timing of what is variously described as "peak oil" or "the big rollover" which is the predicted date when existing oil production, together with new discoveries of crude, can no longer replenish the world's reserves as quickly as consuming countries are depleting them. Roger Bentley, head of The Oil Depletion Analysis Center in London, insisted that the predictions made in the 1970s were basically correct. About 50 countries, including the U. S., have already passed their point of peak oil output.

The world's total reserves of crude, excluding oil found in shale and tar sands, are estimated to exceed 3 trillion barrels, according to the U.S. Geological Survey and other conventional sources of data. Campbell insisted the true figure for reserves is closer to 2 trillion barrels, due partly to what he described as overstated reserves reported by Saudi Arabia and other OPEC nations.

He played down the significance of new oil discoveries in the Caspian Sea region of central Asia and in deep waters off the coasts of Brazil and West Africa and in the Gulf of Mexico. Now that geologists have effectively surveyed the globe for crude, Campbell and others at the conference said they doubted that any giant new oil fields still await discovery.

As a result, Campbell forecast that oil output would peak by 2010, at least 26 years sooner than the rollover point predicted in a U.S. government study prepared in 2000. "It's not a cataclysmic event," he said. "But oil will become scarcer and more expensive. That's undeniable." Campbell estimates peak-year production at about 87 million barrels a day, compared to daily output last month of 74.5 million barrels, as calculated by the International Energy Agency, a watchdog agency for the world's wealthiest nations. – [www.riskcenter.com](http://www.riskcenter.com)

##### **G8 ministers emphasise renewable energy**

In early May energy ministers of the G8 countries held a meeting that resulted in a published statement that shows considerable support for the roles of energy efficiency and renewable energy in meeting the world's energy needs. The ministers from the leading industrialised countries noted that energy security, economic growth, environmental protection and sustainable development are supported by improved energy efficiency and diversified energy sources. They reaffirmed the importance of renewable energy for diversifying energy supplies. The ministers vowed to continue to encourage the development and introduction of cleaner energy technologies and noted that significant investments would be needed. They noted that private investments could be facilitated by sound policies and affirmed the importance of working with developing countries to help them achieve such policies. The keynote speech by UK energy minister Brian Wilson emphasised the role of renewable energy in eliminating poverty pointing out that a billion people currently with no access to energy could be supplied with renewable energy over the next decade. – [www.caddet-ee.org](http://www.caddet-ee.org)

##### **Gbp66 million capital grants for biomass projects**

UK Energy Minister, Brian Wilson, launched a GBP66 million-support scheme for bio-energy projects on 30 April. The money will support the establishment of up to six power stations to produce electricity from burning fast growing crops such as straw, willow or miscanthus (elephant grass), and up to a hundred smaller power and heat plants. The Bioenergy Capital Grants Scheme, jointly funded by DTI and New Opportunities Fund,

will support power generation and combined heat and power projects using energy crops and other biomass. It is expected to lever in approximately GBP200 million of private sector investment. – [www.nds.coi.gov.uk](http://www.nds.coi.gov.uk)

### **Let oil prices go higher, say renewable energy makers**

World market oil prices have steadily risen since the start of this year, at one point even going beyond \$28 per barrel, and while this is worrisome to most people, one sector of German industry is expectantly rubbing its hands: the renewable energy companies. "An increased use of renewable energies and a change in consumer behaviour...will first set in when the 30 dollar (per barrel) mark is exceeded," says Norbert Allnoch, director of the International Economic Forum for Regenerative Energy (IWR). But reports from the sector in Germany show that, increasingly, thought is being given to combinations of these technologies, as well as to further fine-tuning of them. Thanks to improved wind power engineering technology, wind generators are starting to become cost-competitive under the right conditions, notes Dietmar Kestner, chairman of the Nordex AG company in Norderstedt, just north of Hamburg. A wind power park which Nordex has built at Zafarana, 200km southwest of Cairo and where wind conditions are favourable, electricity costs have been reduced to just three cents (2.4 U.S. cents) per kilowatt-hour. Jochen Twele of the Berlin-based federation notes how over the past decade, wind generators have seen a ten-fold growth in performance, from 250 kilowatts in the early 1990s to up to 2,500 kilowatts (2.5 MW) at present. "(This expansion) is virtually unprecedented in machinery engineering and can be compared more with the pace of development in the area of computers and information technologies," he said. – [TheNewsmexico.com](http://TheNewsmexico.com)

### **Wind power can meet 12% of global electricity within two decades**

At the Bali pre-WSSD meeting Greenpeace and the wind industry released a global blueprint to provide 12% of the world's future electricity by 2020. This is to prove that the only thing that stands in the way of a renewable energy revolution is the lack of political will. 12% is the equivalent total amount of electricity used today in Europe, or twice that of China. "Wind power works, it's time for politicians to do the same, the only barrier is political blindness and the woeful ignorance of what wind power can deliver for the world. If governments ceased their perverse subsidies to fossil fuels and nuclear power (\$250-300 billion world-wide a year) we will have clean affordable energy for the world." – [www.greenpeace.org](http://www.greenpeace.org)

### **All-weather windmills**

A WIND turbine that produces three-and-a-half times as much electricity as conventional turbines has been tested by researchers in Croatia. The trick, they say, is to enclose the turbine in a cowling. The key to the turbine's efficiency is the shape of its cowling, which increases the speed of the air flowing over the blades. This has two consequences. First, it increases the output from the turbine at normal wind speeds. Secondly, the turbine is able to generate electricity in winds that are too light for conventional turbines to work. Researchers found that the time that the prototype could produce useful electricity was 60 per cent more than a conventional turbine. – [www.newscientist.com](http://www.newscientist.com)

### **U.S. bill passed to avoid corruption in energy markets**

California: Enron-like trading schemes that wreak havoc on the energy market were outlawed under a bill passed by the Senate Energy and Utilities Committee May 21. The definition of activities that would be illegal under state law has been revamped. The provision that previously set a "competitive benchmark" for determining whether trading conduct was illegal, defined as the heat rate times the fuel price of the last unit bid, was replaced with a laundry list of prohibited activities. The "SB 2000 list" (as it is known) includes physical and economic withholding of power, refusing lawful dispatch orders, knowingly creating congestion, misrepresenting supply and creating an artificially increasing natural gas demand. If any of these actions were found to have been taken, the guilty party would be required to disgorge profits and be liable for damages. Consumer advocates, including The Utility Reform Network, the Office of Ratepayer Advocates and the Foundation for Taxpayer and Consumer Rights (FTCR), supported the bill. "The state is in dire need of tools to protect consumers and curb the excesses of generators," said Doug Heller, lobbyist for FTCR. – [www.energycentral.com](http://www.energycentral.com)

### **Power cuts loom in UK as power stations prove unprofitable and become privatised**

Dynegy, the troubled American energy group which last year tried to rescue Enron, yesterday warned that British industry could face power rationing as early as next March because of all-time low electricity prices. Michael Flinn, the new head of Dynegy's European operation, has raised his concerns with both the Government and industry regulator Ofgem. He predicted that it would continue to be more economic for

electricity generators to mothball their power stations than produce power. Two British-based American generators, TXU Europe and AES, shut down some of their power stations earlier this year for that reason. AES's Fifoots Point coal-fired station in South Wales, which was mothballed in January, has since collapsed into receivership.

In the absence of bids, power stations could fall into the hands of the banks, which will find it more economic to switch them off, he said. This in turn could cause a power shortage at the end of next winter if cold weather persists, creating demand for gas for both heating and power generation, according to Mr Flinn. – *The Daily Telegraph*

## 5. SA Energy Bills & conferences

### Free basic Electricity Supply

In order to relieve the financial strain from energy consumers, on 26 April 2002, Minister Mlambo-Ngcuka directed the National Electricity Regulator (NER) to find mechanisms of keeping electricity prices affordable. Government announced its intention to provide free basic services as a means of poverty alleviation during the third quarter of 2002. The objective of free basic services is to provide social relief to those who earn less than the minimum national level as determined from time to time. The Department has thus far initiated 11 pilot projects on free basic electricity. Poor households that are currently receiving electricity will qualify for free basic electricity. A basic amount of 50 kWh per household per month has been considered as a national standard. A total cost saving of R180-00 per household's connection per year will result from the provision of free electricity of 50kWh per household per month. Plans are in the pipeline to initiate five further projects: two non-grid and three grid projects. More than 9550 households were benefiting from the pilots. Cabinet is expected to take a policy decision on free basic electricity by the end of June 2002. The objective of free basic services is to provide social relief to those who earn less than R800 per month per household. This will affect paraffin, electricity and solar home systems. Poor households that are currently receiving electricity will qualify for free basic electricity. Regarding rural households currently using solar energy, a limited operation and maintenance subsidy to a maximum of R40.00 per household will be made available. The end user will pay any amount above R40.00 per month. In order to make paraffin more affordable, Value Added Tax (VAT) has been removed. Contact Nelisiwe Magubane at (012) 317 9239

### Electrification Programme

The Minister on the 10 May 2002 conducted electricity switch-ons in the Mafeking municipal areas. Originally forged as part of the reconstruction and development programme, the aim of the project is to uplift the poor and under serviced communities by providing them with electricity. The first leg of the programme was completed in 2000 and has cost R7bn to date. This was initially financed by Eskom but now the Department of Minerals and Energy is funding the programme. The Minister noted in her budget vote speech on the 7 May 2002 that the electrification programme included both grid and non-grid energy sources. A total of 34% of SA still remains without electricity with rural areas being the most difficult and costly to electrify. As a result the Department launched a pilot project last year to find ways of reducing the cost of non-grid electrification in these areas. The project was initiated at the Hluleka Nature Reserve in the Eastern Cape and utilises solar energy, water heaters and liquid petroleum gas. The Minister said that the combination of energy carriers increases energy efficiency and this was what was expected from no-grid operators all over the country.

**Australia New Zealand Society for Ecological Economics 2002 Conference** in Sydney, Australia from 2. December 2002 to 4. December 2002. Further information at:  
<http://incres.anu.edu.au/anzsee/ANZSEE2002.html>

### White Paper on Renewable Energy

The Department of Minerals and Energy is scheduled to release the White Paper for public comment early in June 2002. The commenting period is to last for 4 weeks. It is hoped that the White Paper would be tabled for approval by Cabinet by the end of June or early July 2002. The draft document is available at:  
<http://www.dme.gov.za/energy/renewables.htm> - *Contact Trust*

## 6. Questions and Answers

### Are photovoltaic solar panels so costly that only wealthy or rural households (off the grid) can opt for them?

Solar systems are expensive mainly because, unlike grid electricity, they receive no subsidy on capital and, secondly, when comparing the cost with Eskom prices, of course Eskom is cheaper because these costs don't take full life cycle and environmental costs in consideration. The price of the actual photovoltaic panels varies depending on where they are manufactured, so while the price determines the market, the market to an extent also determines the price. If there were more local manufacturing of such panels, the price would come down, hence the need for subsidies.

A typical one-panel solar system is sufficient to provide enough electricity for lighting and radio/TV for an average house. In terms of energy efficiency, it is better to use solar water heaters for heating water, and other fuels such as Liquid Petroleum Gas (LPG) for cooking. The supply from the panel is small, but if the electricity consumption of rural and low-income households is analysed, this is more than what they use on a monthly basis (this is supported by various research reports). There is more efficient solar technology available, but it is not available in South Africa. (Besides, technology adoption almost always starts with the wealthier sectors of society.)

Photovoltaics are promoted for use in rural areas where consumption patterns are normally well below 50kw per month and not for rich middle class households which consume 100 or more per month. There are farmers however who have systems consisting of 20 panels who also use the electricity to weld, for example. Hunting lodges and camping lodges also use panels because the load is only for lighting and it is obviously a positive environmental choice, that is, they are prepared to pay the premium. Likewise, some households might opt for the higher price of solar powered energy because they value cleaner air.

For rural, low-income areas far from the grid, a system where your lighting and radio/TV is powered by solar but cooking and other thermal options supplied by LPG [or sustainably harvested biomass in efficient stoves] is recommended. Solar panels only make sense economically where people are far from the grid or in a remote area destined never to receive grid electricity. Generally, if you are more than 5km from the grid, the cost of installing solar is cheaper than grid extension.

In the non-grid electrification programme, solar is implemented as an interim measure with the firm understanding that if grid electricity to the area becomes possible, the solar systems will be removed in favour of grid.

### Assumptions

Daily bright sunshine	5.5hrs (daily average over a year)
Power output of panel	55W
Cost of Panel	R3 000
Minimum lifespan of panel	5 years
Maximum lifespan of panel	10 years
Efficiency	80%

### Calculations

Energy per day	0.242 kWh
Energy during min lifespan	441.65 kWh
Energy during max lifespan	883.3 kWh
Cost per kWh for min lifespan	R6.79
Cost per kWh for max lifespan	R3.40