

## SUSTAINABLE ENERGY NEWS on EMAIL (SENSE) number 12

Welcome to the twelfth edition of **SENSE – Sustainable Energy News by E-mail** – 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 Elin Oettle 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.

## CONTENTS

1. SECCP news: Staff news; Research Launch; Commissioning Research; Study Tour
2. SA's sustainable energy progress: Moosa Criticised for Misrepresenting NGO position on RE; eThekweni Municipality methane recovery project; EMG hosts Conventions Working Group Meeting; Eskom wind farm launched; South African researchers develop new 'green' generator; Hydrogeothermal energy potential in Cape Fold Mountains; Unleaded petrol may still be harmful; Eskom's DSM to increase energy efficiency;
3. Unclean Energy: Cape Town rejects EIA for pebble bed modular reactor; Nuclear Energy under the spotlight; Mercury poisoning threat from Coal-fired power stations; Industry told to clean up or face international shaming
4. General Sustainable Energy News: Flexible Solar Cells; Growth in world PV markets; Green Energy Future for the UK; EU citizens support renewable energy, international wind power capacity grows; Tanzania to produce power from natural gas
5. SA energy bills, conferences & services: Air Quality Bill; NEAF; National Electricity Regulator; Changes to National Environmental Act will prevent access to information
6. Questions & Answers:

## 1. SECCP News

### **Staff News**

SECCP has recently taken on a new staff member – Elin Oettle – as Information Co-ordinator and editor of this newsletter. Elin has been with the project as an intern since December last year, and now takes over the full-time position left by Erika Schutze. The production of this newsletter should be back on track and with you monthly once again.

John Soke has also joined more permanently us for the next few months as an intern for four days a week. He is assisting by providing general administrative support while Lerato, our office manager is on maternity leave.

### **Launch of the 'Independent PAMs Study'**

The launch of the final report of the research study on 'Policies and Measures for Renewable Energy and Energy Efficiency in South Africa, known as the 'Independent PAMs Study', is due to take place on the **15<sup>th</sup> April**. The launch will take the form of a Symposium, where the researchers will present pertinent findings from the report, followed by a panel discussion. Invitations for the event and a two-page summary document have been distributed, and are available on request. A ten page Civil Society Briefing Document will also be available next week.

And all interested parties are welcome to attend the launch, with attendance to be confirmed by the 8 April. The event will take place at the George Bow Conference Centre, Mineralia Building in Pretoria. The Symposium will be preceded by a capacity building workshop for those unfamiliar with energy issues on the **14<sup>th</sup> April**, and will be followed by a Civil Society workshop on the **16<sup>th</sup> April** to interrogate the report and the current context and to consider options for taking the outcomes forward. All those interested in attending, please contact John at (011) 339 3662; [seccp@earthlife.org.za](mailto:seccp@earthlife.org.za)

## **Commissioning Research**

We have commissioned a further research study: 'Employment Potential of Renewable Energy Development', to supplement the PAMs study, which will be carried out by the Minerals and Energy Policy Centre (MEPC). The study will give a detailed breakdown of jobs associated with various technologies, including consideration of different levels of local production and the training needed for workers to transfer from conventional energy jobs to the renewables sector. MEPC will be consulting stakeholders as part of the research process; if you would like to be consulted please contact Khamarunga Banda: (011) 709 4018; [Khamarunga@mepc.org.za](mailto:Khamarunga@mepc.org.za) (or speak to Noel Sellick).

## **Study Tour to Denmark**

The SECCP is organising a Study Tour to Denmark in May this year. Besides project staff, the tour will include two government officials and two parliamentarians working on energy issues. The aim of the Study Tour is to broaden our understanding of sustainable energy practice in the North, and bring back these experiences to share in South Africa. The project partners WWF Denmark have organised a packed itinerary, which includes meeting with local energy authorities and industries, and a visit to Samsø Renewable Energy Island. The Heinrich Boll Foundation has also supported an extension of the study tour for 4 days in Germany.

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

### **Moosa Criticised for Misrepresenting NGO position on RE**

A recent letter to New Agenda by David Hallows took Minister Moosa to task for misrepresenting NGO positions on renewable energy in his discussion of the WSSD. Hallows emphasised that the majority of those calling for renewable energy are most concerned with the issues of access and distribution of energy, not only the seemingly remote problem of climate change. He stated that the government's current approach to renewable energy does not take it seriously or fully value its possible contributions.

Hallows said that the government's approach does not recognise the mix of energy poor people in particular rely on - the focus has remained squarely on electricity supply. Access to electricity has also remained uncertain since cost recovery resulted in massive electricity cut-offs. This situation is only likely to deteriorate with the planned restructuring and implementation of 'commercial returns' to Eskom and its successor companies.

Hallows also pointed out that access is not just a matter of consumption. Renewables present great potential for access to participation in production and can provide more jobs for less capital outlay, and would thus contribute more to local economic development. He points out that several renewables can and should be associated with other services. Bio-gas generation, for example needs to be developed together with water, sanitation and waste services and should feed into cultivation. Where new infrastructure needs to be built, people should be presented with the option of alternative technologies that add value in the community.

Moosa had stated that the government has no idea what a globally agreed renewable energy target would cost South Africa. Hallows observes: "This isn't really surprising since it has made no effort to find out. Its thinking on renewables has been as a peripheral application - solar electricity in areas where consumption will not pay for the costs of extending the grid, or the odd solar cooker funded by donors."

SECCP trust that, in light of his observation, Minister Moosa will welcome the launch of the 'Independent PAMs Study' (see project news, above) as much needed and well-timed, since it presents concrete options regarding policies and measures for achieving a renewable energy target and spells out the costs involved for various strategies.

### **eThekweni Municipality methane recovery project**

(by Richard Worthington, Project Co-ordinator)

SECCP recently received a phone call from Lindsay Strachan of the eThekweni Municipality (incl. Durban), in his capacity as the team leader for the landfill methane recovery and electricity generation project. The proponents are keen to develop good relations with civil society due to on-going controversy concerning the

Bisasar Road dump, where the project is intended take place, and because this is the a first of its kind in the region and the largest project of the Prototype Carbon Fund (PFC) facility of the World Bank.

Strachan was eager to convey that a full Environmental Impact Assessment will be carried out: a meeting will be held on 9 April to consider consultants for the process and people with relevant expertise and interests can contact him to attend. He also conveyed that the project development team will be happy to share information and learnings with interested parties, since they have built up considerable experience in designing the project.

The project will have a total capital cost of around R62 million and the carbon finance deal includes a component that will be set aside for social benefits. Strachan emphasized the importance of structuring the deal (regarding sale of carbon credits) to ensure that benefits go to project proponents and not just carbon finance consultants. The municipality will apparently also be setting up pilot projects to explore alternative waste management strategies. You can contact Strachan at 031 263 1371/2 or [lindsay@dwms.durban.gov.za](mailto:lindsay@dwms.durban.gov.za)

[This project has also been covered in the bi-monthly CCEN - Climate Change E-mail News - as they intend to sell credits for 3.8 million tonnes of CO<sub>2</sub>equivalent avoided greenhouse gas emissions. Local residents campaigning for closure of the landfill site believe that the methane-recovery project will mean that the dump stays open longer than it should.]

### **EMG Hosts Conventions Working Group**

(by Richard Worthington, Project Co-ordinator)

The meeting hosted by EMG early in March to consider reactivation of Conventions Working Group (CWG) provided a useful forum for discussion and information-sharing, but did not result in specific plans for formal activation of the group. There are no plans to raise funds for CWG but the nineteen people present committed to continued co-operation and EMG will post any information on international conventions and relevant developments on their site: [www.emg.org.za](http://www.emg.org.za). Another meeting should be held, with even broader participation if possible; SECCP will investigate holding this back-to-back with the next meeting of the South African Climate Action Network (SACAN) in late June or July, dependent on funding.

The energy and climate change cluster highlighted two processes i) Renewable Energy White Paper and Strategy and ii) National Climate Change Response Strategy, as well as the Disaster Management Bill. The privatization of services, particularly linked to energy, water and waste, through the WTO's General Agreement on Trade in Services (GATS) and through bilateral pressure, was identified as a critical process for most issue clusters.

### **Eskom Wind Farm launched**

Eskom recently launched South Africa's first experimental wind energy farm at Klipheuwel in the Western Cape. The first of three Eskom-sponsored wind turbines, a 660kW unit, is already up and running. The project has an experimental focus and will be exploring the use of different wind-based technologies and storage systems, and will produce data for the design of future large-scale wind farms.

Jeff Radebe, Minister of Public Enterprises said at the launch, 'In very practical ways wind power is beginning to make a significant impact around the world ... The technology has developed by leaps and bounds over the past five or so years, bringing with it dramatic efficiencies and reduced costs.' He said that by 2005 the cost of wind energy would drop significantly bringing it to below the energy cost per kilowatt hour of coal-fired power stations.

The wind farm will run as a three-year demonstration project and will help determine the technical aspects of building wind turbines for South African conditions. Eskom has appointed Intens Lesedi (a Black Empowerment Company) and Vestas (an international organisation) to supply the wind turbines. Eskom say they view this as an opportunity for technology to be transferred to South Africa, enabling sustainable development of the local wind industry should the technology prove to be viable.

Eskom is assessing wind energy as only one of several alternative energy sources as part of their SABRE-Gen (South African Bulk Renewable Energy Generation) programme. Eskom claim that they foresee wind energy fulfilling a niche role in the future, as it has a range of benefits as a clean energy source that is sparing on land-use and has low environmental impacts. However, they also loudly voice the opinion that wind is a limited resource in South Africa with current costs too high for feasibility.

(Thanks to Green Clippings)

### **South African researchers develop new 'green' generator**

Researchers at the University of the Western Cape are working on a prototype 'green generator', which is to produce cheap electricity from hydrogen. The originality of the South African design lies in its using nanoscale technology to split the methanol molecules to produce the hydrogen, rather than using a finite resource such as water. The researchers, funded by the government's National Research Foundation, plan to have a commercial hydrogen-powered electricity generator available in just over three years. The advantage of using hydrogen as a fuel lies in that it is a very clean-burning fuel compared to traditional fuel sources, and is not limited to the extraction of fossil fuels. (Thanks to Green Clippings)

### **Hydrogeothermal energy potential in Cape Fold Mountains**

The Southern Cape Fold Mountains apparently have great potential for use as a source of hydrogeothermal energy. Naturally superheated water trapped in fault lines in the region could be used as a new source of 'green' energy. John von Wiese, a retired lecturer in applied geology from the University of the Western Cape, has said that the Southern Cape Fold Mountains have the right kind of listric fault line for subterranean water accumulation, and that hot springs in the area prove that there are significant resources to be tapped.

Geothermal energy has been used elsewhere in the world in countries such as the US, Mexico, Italy, Japan, New Zealand and China. More research would be required to determine the size of the reservoirs in South Africa before geothermal energy is considered a viable option. The Department of Minerals and Energy does not currently consider geothermal energy to be a viable option, but would also be interested if further studies proved otherwise.

(From an article in Engineering News)

### **Unleaded petrol may still be harmful**

The South African government's long overdue commitment to phasing out leaded petrol by 2006 has raised various practical issues regarding unleaded petrol production. Major changes may be required in the refineries at high cost to the producers, and recent concerns have been raised that alternative additives may be equally harmful. Ethanol, which could be locally produced from renewable energy sources, has not received support from the DTI, which claims that SA crops could better be used as a food source than a fuel.

Alternatives to lead include liquid oxygenates (like methyl tertiary butyl ether (MTBE), ETB and TAME, and ethanol) or metal-based additives (such as tetra ethyl lead, MMT, Ferrocene and certain compounds of potassium). Another option is catalytic reforming, alkylation and isomerisation. Concerns have been raised that one of the metal-based additives, MMT could result in severe neurological disorders, and MTBE is known to be a persistent groundwater contaminator and resistant to biodegradation. Ethanol, by contrast, is derived from renewable energy sources such as sugar and maize, may contaminate groundwater, but biodegrades quickly. The DEAT have stated that they would still require that refineries provide evidence that alternative additives would not have harmful effects, especially for metal-based additives.

(Thanks to Green Clippings)

### **Eskom's DSM to increase energy efficiency**

Eskom has been taking steps to increase energy efficiency in South Africa through the implementation of their demand side management (DSM) strategy. By using Internet-based technologies through their "virtual power stations" (VPS) Eskom is seeking to influence the time, pattern and amount of electricity used. Eskom customers, such as large industrial plants, can control the operating hours of high-consumption electricity items such as boilers, turbines and geysers through the VPS. Heavy usage can be shifted to off-peak periods, with customers choosing their control regimes to suit their needs. Eskom hopes that by shifting some of the energy load to off peak user periods, the need for new peaking load stations can be deferred.

The Eskom DSM strategy also includes advice on energy efficient building, energy efficient lighting plans, and advice and support to companies on energy-efficient load-management technologies.

(From Engineering News)

### **3. Unclean Energy**

#### **Cape Town rejects EIA for pebble bed modular reactor**

The City of Cape Town has stated that it does not support the findings of the final EIA for the proposed Pebble Bed Modular Reactor (PBMR) that Eskom wants to build on the Koeberg site. It has raised concerns about the proposed demonstration project at Koeberg for the past two years, yet none of its concerns have been adequately addressed.

Eskom will have to apply to the city for land use rights, and current land use rights at Koeberg do not allow for another nuclear reactor to be built. The current EIA report ignores this fact. The one of the major issues of concern is the storage of high level nuclear waste at Koeberg that will add to the growing stockpiles of nuclear waste. The City wishes to protect the health of residents from the long-term risks and impacts on the environment. One suggestion from the City is that the EIA be reviewed by an independent, internationally recognised expert in nuclear EIAs. They hope that such an impartial review will remove the emotional and subjective feelings from both sides of the nuclear debate.

#### **Nuclear Energy under the spotlight**

The independent scientific group European Committee of Radiation Risk has released a study stating that previous figures had drastically underestimated the impact on human life of the nuclear industry. Its report argued that previous risk models had failed to explain the huge amount of evidence of ill health in populations that had been exposed to nuclear pollution. Using a new risk assessment model, the report concluded the present cancer epidemic was a result of pollution from nuclear energy and of exposure to global atmospheric weapons fallout that peaked in the period 1959-63. It predicted that radioactive releases up to 1989 had caused, or would eventually cause, the deaths of about 65 million people.

#### **Mercury poisoning threat from Coal-fired power stations**

A recent report to the governing council of the UN Environment Programme warned that coal-fired power stations and waste incinerators still pose the threat of mercury poisoning, despite reductions in mercury discharge. Power stations and incinerators produce 1 500 tons, or 70 percent of new mercury emissions into the atmosphere, most of it from developing countries.

Mercury, a heavy metal, is one of the most toxic of all elements, is hazardous to human health and the environment, and causes serious brain damage. Acid rain, which often results from coal-fired power stations, could be exacerbating the mercury problem by raising acidity levels in the environment and triggering mercury release from soil and converting it to highly dangerous methylmercury.

Recommendations include reducing pollution from coal-fired power stations. The report was presented to national environmental ministers who attended UNEP's governing council.

#### **Industry told to clean up or face international shaming**

Deputy environment minister Rejoice Mabudafhasi recently spoke out against polluting industries who profit at the expense of people's health. She threatened to "shame" polluting industries nationally and internationally if they fail to clean up their act. Mabudafhasi personally delivered Thor Chemical's R60 million clean-up bill to their lawyers last month, and went on to speak to poorer South Durban communities. In Merebank, which lies between the Sapref and Engen oil refineries and the Mondi paper mill, the minister met families who keep nebulisers and oxygen tanks in their homes to relieve respiratory disorders. A local resident said she was happy to see the minister, *"But ministers have visited us before (and) nothing has been done."*

### **4. General Sustainable Energy News**

#### **Flexible Solar Cells**

Researchers at the Fraunhofer Institute for Solar Energy Systems have been developing a new type of solar cell that is so thin and flexible that they can be used as a removable piece of film to cover an uneven surface -

or brushed on to a surface like a sort of paint. The new solar cells are not only cheaper but also more flexible in application than the older generation of cells. They are currently powerful enough to power a small portable radio, and in the future a tiny solar power plant may be worn on the jacket arm to supply the cell phone or laptop with electricity. They can also be used to tint windows, turning the glass surfaces of office buildings into power plants.

In contrast to the traditional silicon modules, the materials used in the so-called organic and dye-based solar cells as well as the production of the cells themselves is cheap. Organic solar cells work differently from traditional silicon cells, as the organic version consists of electricity-conducting special plastics that do not need to be as comprehensively worked as the silicon cells. On the down side, dye-based cells currently only have an 8 per cent effectiveness, compared with 14 percent for silicon cells, although the aim is to increase this to 14 per cent. The dye-based cells use a similar process to photosynthesis to capture sunlight energy, but use more resilient metal compounds instead of chlorophyll.

### **Growth in world PV markets**

The world market in solar photovoltaic installations saw record growth in the last year. Installations of 436 Megawatts occurred last year, up by 21% from 2001. This growth was largely driven by solar energy incentive plans in Japan, Germany and the US. Due to investment in the industry, prices are projected to continue to decline in 2003. (Thanks to caddett-ee)

### **Green Energy Future for the UK**

The UK Department of Trade and Industry recently released a new White Paper on Energy Policy. It sets out four main goals for the government to achieve, namely to work towards cutting emissions of carbon dioxide by 60% by 2050; to maintain the reliability of energy supplies; to promote competitive energy markets in the UK and beyond; and to ensure that every home is adequately and affordably heated.

Practical measures include the aim to double the share of renewables by 2020 from the 2010 10% target, to spend £ 60m more than current commitments on renewable projects, to remove planning barriers to renewable energy, and to introduce a new carbon trading system from 2005 as an incentive for cleaner energy. In terms of energy efficiency they aim to speed up changes to building regulations, set tougher standards for new homes, refurbishments and electrical products, and provide new incentives for energy suppliers to help customers improve energy efficiency. They also aim to create a new Energy Research Centre to develop new technologies, set up Fuel Cells UK to lead in clean fuel technologies, support cleaner coal technology and improve vehicle efficiency.

The UK renewables industry is expected to receive a big boost from both the Renewables Obligation, which will require that power companies provide increasing amounts of renewable energy, and the climate change exemption levy, together worth around GBP 1 billion a year.

### **EU Citizens support renewable energy, international wind power capacity grows**

European citizens have indicated their support for renewable energy in a recent international survey by the European Commission. The *Eurobarometer* survey indicated that 69% of EU citizens supported renewables, and favoured research into renewable energy technologies such as wind and solar over other energy research. There was also an overwhelming concern over global warming and climate change, requiring immediate action.

The European Wind Energy Association (EWEA) Policy Director Christian Kjaer noted that in two decades Europe will be importing 70% of its energy unless currently policies change and shift the emphasis to available renewable energy resources. "Energy policy should catch up with public opinion. The powerful public support for renewable energy over fossil fuels and nuclear power expressed by EU citizens should form an important basis in the shaping of future European energy policies."

Meanwhile, the last year saw a massive international growth in wind power capacity, which grew 28% according to EU and US industry groups. Global wind power capacity has quadrupled in the last five years, reaching 31 000MW and making it the fastest growing energy source.

### **Tanzania to produce power from natural gas**

Tanzania aims to be the first East African country to use natural gas to produce electricity next year.

PanAfrican Energy, a UK-based investor, will operate the project in partnership with local companies. They aim to take over most of the local thermal electricity production in the country from the current sources of oil,

industrial diesel and jet fuel. They also plan to build refilling stations to sell compressed natural gas (CNG) which can be used instead of diesel or gasoline in vehicles. Natural gas as a fuel has relatively low polluting exhaust gases and is good for heating purposes. (Thanks to Green Clippings)

[NOTE: Natural gas is not a truly sustainable energy source, but we mention developments as it is a major improvement on oil and coal use and thus will be needed as an interim source within the transition to sustainable energy.]

## **5. SA Energy Bills & conferences**

### **Air Quality Bill**

The long-awaited Air Quality Bill will come to parliament. Dr. Matshile (DEAT) told parliamentarians that this should happen between May and June. Apparently: "The Bill sets norms and standards for concentration into the atmosphere. It also seeks to make sure that stakeholders do manage pollution related to their activities and that government must monitor as well. A reporting system has been created. The reports would be sent to government and the Department of Environmental Affairs and Tourism where they would be synthesised before made public." [Quote recorded by Contact Trust]

While the departure point will be standards for ambient air quality, there should also be pressure for more effective limits on emissions at source and improved emissions reporting. This legislation should serve to increase motivation for sustainable energy, provide useful information on the emissions of facilities such as power stations, as well as facilitating the introduction of pollution taxes on air-borne emissions.

There is increasing discussion within government of "environmental taxes" and while a document produced by the Treasury includes many traditional revenue-raising mechanisms under this category, there should be increased space for promoting well-targeted taxes (or better still: levies – where income can be ear-marked for specific purposes, such as energy efficiency codes and standards e.g. for low-cost housing). Any mechanism that serves to internalize the true costs of conventional energy, in line with government policy that requires cost-reflective pricing, is good news for sustainable energy. [One of the recommendations of the 'Independent PAMs study' (see Project News) is the introduction of pollution taxes.]

### **NEAF**

DEAT has committed to the establishment of the long-awaited National Environmental Advisory Forum (NEAF) this year. This statutory body, provided for in the National Environmental Management Act of 1998, should provide opportunities to inform the development and implementation of a range of policies and measures to promote sustainable energy and challenge the tax breaks and other incentives offered to energy-intensive industries such as aluminium smelting.

### **National Electricity Regulator**

Initiatives announced at Parliamentary Portfolio Committee to which civil society should be able to make input – (check the website for developments: [www.ner.org.za](http://www.ner.org.za)):

The NER is developing a licensing framework for contestable customers and beginning to revise and implement the pricing policy for special deal customers consistent with the policy framework for Regional Electricity Distributors (REDs). The REDs that will take over all distribution in South Africa will be by-passed by the largest users - the 'contestable customers' - that use so much electricity that they can command special deals.

"NER places a special focus on promoting renewable energy through policies like the Home Systems Programme. To this end, it has started developing a regulatory framework for renewable energy." Collin Matjila NER [Contact Trust record]

### **Changes to National Environmental Act will prevent access to information**

The Department of Environmental Affairs and Tourism has proposed amendments to the National Environmental Management Act. Of particular importance to civil society is the proposed amendment to Section 31 that governs access to information. *If passed, the proposed amendments would significantly curtail civil society's access to information around environmental and pollution issues.* Angela Andrews of the Legal Resources Centre has prepared a submission to government that states: 'The amendment of s 31 as proposed will sign the final death knell of access to environmental information ... Poor and disadvantaged communities ... will be further disadvantaged by being unable to have much access to information about polluters in their midst.'

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