

SUSTAINABLE ENERGY NEWS on EMAIL (SENSE) number 27

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

SENSE is a monthly publication, edited by Claire Taylor. We welcome any feedback and submissions. Also let us know if you wish to be removed from this list, know someone else who should be receiving SENSE, or if you'd like to receive our separate Climate Change email newsletter, CCEN.

CONTENTS

1. **SECCP News:** Note from SENSE Editor; Johannesburg + 2 demonstration: 'Renewable energy is people's power! Don't let big business rule the world!'; Sustainable Energy Briefing 2: renewable energy = jobs, Waste to energy info share, SECCP hosts regional meeting of Climate Action Network.
2. **SA's Sustainable Energy Progress:** DME calls for submissions to monitor meeting SA's RE target; Belville civic centre becomes more efficient; DME, Eskom and SESSA in row over R19m off-grid solar project; MEETI energy policy and industry course; Renewable energy for rural SA Conference
3. **Unsustainable Energy:** Eskom Watch – Pearly Beach can breathe easy, says Eskom; Decision on Pebble Bed Modular Reactor 'months away'; Eskom may invest in new Mozambican power station
4. **General Sustainable Energy News:** **South Africa:** Eskom to take over municipal power supplies **Africa:** African Development Bank Finesse Programme **The Rest of the World:** Dung power – electricity from cow dung gains popularity in Nepalese villages; Asia rushes to save energy; Green power grows 12-fold among OECD nations; World's largest solar PV facility opens in Germany; First offshore wave generator supplies power to UK grid
5. **SA Energy Policy:** National Energy Regulator Bill adopted; Energy Draft Bill; Renewable Energy Strategy
6. **Upcoming Events:** A preview of energy events in October and November in South Africa, Africa and the rest of the world

1. SECCP News

Note from SENSE Editor

The SECCP office is back to normal after a crazy time preparing for a demonstration outside the Sandton Convention Centre to coincide with the first day of the Johannesburg + 2 conference. Jhb+2 was organized by the Department of Environmental Affairs and Tourism to mark the second anniversary of the World Summit on Sustainable Development and review progress in implementing its outcomes.

In reflecting on the impact of the demonstration, we need first, to emphasise that it was not a protest. Instead it was held to "call on government to play a stronger role in increasing access to and affordability of energy services, coupled with development of

local industries in renewable energy technologies.” Indeed, Earthlife Africa would not have protested against government holding the Johannesburg + 2 summit, because it was an invaluable opportunity to take a frank look at what achievements have been made since the World Summit on Sustainable Development held two years ago, particularly around issues relating to access and affordability of energy services. Thus, while 85% of South African households are currently connected to the electricity grid, over 80% of poor households cannot afford their electricity bills, so highlighting the need for government to promote renewable energy as a safe, affordable and accessible alternative.

Second, the demonstration was a resounding success. We got permission from the Johannesburg Metro Police Department for 60 demonstrators to be part of the demonstration – and over 80 participated – close enough not to cause official concern. Those participating represented numerous organisations, including Earthlife Africa, and the Environmental Justice Networking and Anti Privatisation Forum – all united in their call for recognition that renewable energy is people’s power, because:

- It **creates jobs** – 36 400 jobs would be created if just 15% of SA’s electricity came from RE sources – **see SE briefing 2: Renewable Energy = jobs below for more information.**
- It’s **decentralised** – close to the people and energy service needs, thus increasing access from the bottom up;
- It allows for **community participation** – unlike nuclear and fossil fuel plans which belong to big companies, governments or state-owned enterprises like Eskom, RE can be set up in small units. This means that people can participate in ownership of energy projects at a community level, which is particularly relevant in SA as the electricity grid doesn’t extend to remote areas;
- It’s **safe** for workers and neighbouring communities;
- It’s **environmentally-friendly** – because RE technologies don’t pollute, they don’t damage the environment by causing acid rain or climate change;
- It’s **endless** – the resource base will never run out, which means there’s security of supply.

For more information on the demonstration and government’s response see article ‘Renewable Energy is People’s Power! Don’t Let Big Business Rule the World!’ below.

Remember too that we’re always looking for news and views on energy issues to include in SENSE. So, if you have anything you want to share please send it to me at: Claire@earthlife.org.za

Johannesburg + 2 Demonstration: Renewable Energy is People’s Power! Don’t Let Big Business Rule the World!

Claire Taylor

Renewable energy is people’s power! Don’t let big business rule the world! These were the two messages uniting civil society, including Earthlife Africa, the Environmental Justice Networking Forum and the Anti-Privatisation Forum, in a demonstration on 1st September, to coincide with second anniversary celebrations of the World Summit on Sustainable Development – called Johannesburg+2.

Over 80 demonstrators, holding placards reading ‘renewable energy is people’s power’ stood in front of the Sandton Convention Centre, while abseilers dropped a 6 storey high yellow banner reading ‘don’t let big business rule the world’ from the top of the Centre – though this was quickly cut down by security. The demonstration called on government to play a stronger role in increasing access to and affordability of energy

services, coupled with development of local industries in renewable energy technologies.

Failure to agree on global targets for sustainable access to energy and for the use of renewable energy was one of the noted failures of WSSD in Johannesburg in September 2002. The Summit emphasised the role of the private sector, but two years on there has been little progress on either issue and it is largely left to national governments to provide energy services to the 1.5 to 2 billion people in the South without adequate energy and to initiate a just transition to sustainable energy.

“Two years after the WSSD, millions of South African households are still without access to affordable and safe energy,” says Richard Worthington, branch co-ordinator of Earthlife Africa Johannesburg, which organised the demonstration.

“While South Africa has made impressive progress in extending the national electricity grid, our energy pricing policies favour business and industry at the expense of the people. Although nearly 85% of households in SA have access to the electricity grid, studies show that the vast majority (over 80%) of poor households cannot afford to pay their electricity bills, leading to debt and large-scale cut-offs.”

Although the importance of de-centralised development of renewable resources to provide access to energy has been universally recognised, business has yet to include social and environmental issues into their core operations and planning, and government has been slow in supporting the renewable energy market. Says Worthington. “The concept of sustainable development has been co-opted by the corporate sector to improve its public image, without any real change in business practice. We need government to exercise the responsibility vested in it by the people, to establish regulations and market mechanisms to support sustainable energy.”

Did government listen?

It seems that both the Minister and the Director General of Environmental Affairs and Tourism did, as *Siseko Njobeni, Business Day 2 September 2004* and *Sheree Russouw of This Day, 2 September 2004* report:

According to Minister Marthinus van Schalkwyk, South Africa needed to address the contradiction between its over-dependence on coal-based energy and the need to improve environmental quality. Despite overwhelming environmental and health concerns, SA still generates about 95% of its power from coal. The country is also one of the highest emitters of carbon dioxide in the world because of its reliance on fossil-based energy.

Speaking at the opening of a sustainable development conference in Johannesburg, Van Schalkwyk said that SA had to diversify the country's energy sources to "reduce our over-dependence on coal by exploring other options like gas, solar power, wind generation, hydroelectric power and nuclear energy.”

Responding to the Earthlife Africa organised demonstration, which urged government to speed up the introduction of renewable energy technologies, Van Schalkwyk acknowledged the demonstrators' concerns, saying there was a need for a national approach to sustainable development which would integrate the country's environmental, economic and social priorities. He said there was a contradiction between the need for investment, jobs and development and the long-term benefits of conserving biodiversity.

Meanwhile, director general Dr Crispian Olver noted “it is imperative that we shift away from coal that contributes to climate change.” However, he then went on to say that

“solar and wind energy sources will not power industry. Nuclear energy, though controversial, is an option.” **Editor: This move would be in direct contradiction to countries like Germany, that are phasing out and replacing nuclear power with wind and solar energy – must SA go the same route before acknowledging that RE can power industry?”**

Sustainable Energy Briefing 2: Renewable Energy = Jobs

Claire Taylor

SECCP developed and distributed its second Sustainable Energy Briefing, which summarises the findings of a research project undertaken by AGAMA Energy in 2003 into the employment potential of Renewable Energy. The findings? Using renewable energy means thousands more jobs than business as usual.

According to the research:

- If South Africa generates just **15% of total electricity** use in 2020 using Renewable Energy Technology, it will create 36 400 new direct jobs, without taking any jobs away from coal-based electricity.
- Over 1.2 million direct and indirect jobs would be generated if a portion of South Africa’s **total energy needs**, including fuels, were sourced with Renewable Energy Technologies (RETs) by 2020 (see table 2 below).

The study first looked at the employment rates to generate 205 Terawatt hours¹ of electricity (which is how much SA currently generates) in terms of both installed capacity and electricity generated. It then looked at the number of people needed to generate the additional 62 Terawatt hours of electricity that SA is predicted to need in 2020, when this is generated with diverse energy technologies – including conventional technologies like coal and RETs like solar and wind. The target chosen for RET use is 15% of the total 267 TWh to be consumed in 2020. A 15% target was chosen because previous research showed that this share could be achieved at no additional cost to the economy as a whole (**see the sub-heading: Costs to the SA economy below**).

Using data from developing as well as OECD countries and applying these to South African conditions, the researchers are able to show that generating electricity from renewable energy means many more jobs than when using conventional energy. The study also reports the kinds of jobs involved, e.g. in manufacturing, operation and maintenance etc. and the scale of development needed to ensure that the jobs are all in South Africa. The key results are summarised in the tables below:

Conventional Energy Technology	Total		Renewable Energy Technology	Total	
	/MW	/GWh		/MW	/GWh
Coal (current)	1.7	0.3	Solar thermal	5.9	10.4
Coal (future)	3.0	0.7	Solar Panels	35.4	62.0
Nuclear	0.5	0.1	Wind	4.8	12.6

¹ Note on units: The standard billing unit for electricity use is the kilowatt-hour (kWh) – 1 000 Watts used for one hour. One thousand kW is a MegaWatt (MW) and one thousand MW is a GigaWatt (GW), so using a million kW for one hour is a Gigawatt-hour (GWh) and a thousand of these are a Terawatt-hour; thus 267 TWh is 267 billion units.

Pebble Bed Modular Reactors	1.3	0.2		Biomass	1.0	5.6
Gas	1.2	0.1		Landfills	6.0	23.0

The left columns of Table 1 show that for every 1 GWh of electricity produced from coal, 0.3 jobs are currently created, though this may increase to 0.7 jobs in the future; 0.2 jobs are expected for every GWh of electricity produced from a pebble bed modular reactor, while 0.1 jobs will result from every GWh produced from gas. Job creation is also reported per Megawatt (MW) of installed generation capacity, in the middle column.

The columns on the right show jobs created when electricity is generated from various Renewable Energy Technologies. When solar thermal energy is used to generate 1GWh of electricity, 10.4 jobs are created; using wind results in 12.6 jobs; biomass in 5.6 jobs and landfills in 23 jobs. Because a great number of photovoltaic panels are needed to generate a million units of electricity, at least 62 jobs are formed when 1GWh of electricity is generated from solar panels, which is equivalent to 35.4 jobs for each MW of installed capacity.

The researchers distinguished between direct jobs and indirect jobs to show how many direct and indirect jobs would be created through RE technologies contributing to SA's total energy mix by 2020:

Technology	Direct Jobs	Indirect Jobs	Total Jobs
Solar thermal (10% of target)	8 288	24 864	33 152
Solar Photovoltaic (0.5% of target)	2 475	7 425	9 900
Wind (50% of target)	22 400	67 200	89 600
Biomass (30% of target)	1 308	3 924	5 232
Landfill (5% of target)	1 902	5 706	7 608
Biogas <i>Where 150 000 residential biogas digesters are installed in rural areas</i>	1 150	2 850	4 000
Solar Water Heaters <i>Includes the manufacture and installation of the equivalent of a 2.8m² solar water heater on each house in the country</i>	118 400	236 800	355 200
Biofuels <i>Includes 15% ethanol and diesel substitution</i>	350 000	350 000	700 000
TOTAL	505 923	698 769	1 204 692

As shown in table 2 above:

- In addition to the 505 923 direct jobs that will be created, 698 769 indirect jobs will result if 15% of South Africa's electricity is generated from Renewable energy (six different technologies contributing to the total – jobs not analysed or shown for micro-hydro, contributing 4.5% of target), where 150 000 small biogas digesters are installed in rural areas, 2.8m² solar water heaters are installed on each house in the country and 15% of South Africa's diesel is from biofuels.
- In total, 1 204 692 jobs can be created by 2020.

Why does RE offer so many more jobs?

Generating electricity from RET is more labour intensive than generating electricity from conventional energy – in other words, you need more people. And not only highly skilled people, as is the case in developing the pebble bed modular reactor – where very specialist skills are needed. Further, because RE is decentralised it means that jobs will be created in rural areas of SA, where unemployment and poverty rates are highest. This is good news in South Africa, where unemployment is estimated to be as high as 40%, and where 546 000 jobs need to be created every year for SA to halve unemployment by 2014.

The potential for RE to address SA's high unemployment rate is especially striking when placed against the backdrop of thousands of job losses in the electricity sector in the last 20 years. In this time, 70 000 jobs have been lost (130 108 to 59 987) even though the amount of electricity generated increased by over 60% between 1980 and 2000.²

Recommendations:

The researchers into the employment potential of RE, make the following conclusions and recommendations in their research report:

- The South African economy needs a higher target for Renewable Energy than what is outlined in White Paper on Renewable Energy (2003) to get the maximum employment benefits. The current RE target for SA is 10 000 Gigawatt hours by 2014, which is less than 0.5% of SA's total energy needs, and less than 4% of SA's electricity needs.
- Differentiated targets need to be made for the different energy sources or technologies, in consultation with developers, so that the targets that are set stimulate investment in that industry. For example, while the researchers considered the employment potential of a 15% renewable energy target to meet SA's electricity needs in 2020, industry experts in the wind sector have shown that if up to 1% of South Africa's electricity needs were met by wind energy within the next 10 years (e.g. 1 000 MW installed over 10 years), that this would be a high enough target to stimulate 100% local production for such a project.
- The South African Government can stimulate massive employment almost immediately and easily by investing in solar water heaters and biofuels.
- While more investment (money and skills) is needed in renewable energy technology the long-term benefits – economically and socially – are quantifiable and dramatic.
- The findings of this research project must be included in the Integrated Energy Planning process that government has committed to starting this year, having acknowledged that the existing IEP is inadequate.

Costs to the SA economy:

Previous research undertaken by the University of Cape Town has established that with the right combination of government policy and market mechanisms to support both RETs and energy efficiency interventions, the 15% electricity target and a reduction of energy use through efficiency and conservation can be achieved at less over-all cost to the economy than following a business as usual energy path.

Copies of the research document, [Employment Potential of Renewable Energy in South Africa](#) can be downloaded from SECCP's WebPage, see www.earthlife.org.za/seccp/ Choose the research option on the main menu, and then

² Policies and Measures for Renewable Energy and Energy Efficiency in South Africa (2003), Energy and Development Research Centre

choose the sub-topic *Employment Potential of Renewable Energy in South Africa*. Alternatively, request copies from seccp@earthlife.org.za

Policies and measures to support renewable energy and energy efficiency are outlined in research undertaken by the University of Cape Town - Energy & Development Research Centre with modelling by the Energy Research Institute. The document, [Policies and Measures for Renewable Energy and Energy Efficiency in South Africa](#) can also be downloaded from SECCP's WebPage or requested from SECCP.

Waste to energy info share

Richard Worthington and Claire Taylor

SECCP held an info share earlier this month to look more closely at waste to energy projects. Speakers noted that because of growing opposition to waste incineration and the prospect of improved air quality management under new legislation (though the test will be in implementation), many promoters of thermal waste treatment technologies are re-packaging their initiatives as 'waste to energy' projects that lay claim to recycling, or even masquerade as renewable energy. While some agricultural residues and by-products may indeed constitute a renewable resource – providing they are the product of sustainable land use practises – the big money is going into promoting cheap and dirty 're-use' of industrial wastes, including a wide range of hazardous wastes.

The cement industry has for some time been wanting to burn hazardous wastes in cement kilns, displacing a portion of the coal that is their staple fuel while providing a cheaper 'disposal' option than a suitably licensed landfill, and thus removing the incentive to design such waste products out of production processes. It may make economic sense for cement producers, but it would be considerably less energy efficient than cleaner production allowing for maximum materials reclamation for productive use – the energy that might be utilised through burning (the calorific value) is far less than the inherent energy of such wastes (the energy used to produce such materials).

In addition to not making 'energy sense' to burn waste, thermal waste treatment generally concentrates much of the hazardous content in ash, which must still be dispatched to a landfill, which in time will eventually leak. It also disperses a substantial portion in our air. In addition, most of the toxic material is captured in the cement, with poorly understood or documented impacts of its use e.g. for offices or homes.

Holcim is one such cement company wanting to displace coal with hazardous waste. Earthlife Africa Johannesburg is registered as an interested and affected party in the Environmental Impact Assessment process currently underway, and is today finalising a response to the EIA Report that the consultants to the process, Bohlweki Consulting, have developed. To see copies of the EIA report or to find out more about the initiative, visit Bohlweki's WebSite at www.bohlweki.co.za

SECCP hosts regional Climate Action Network

SECCP hosted a meeting of CAN in SADC in the last week in August, at which a constitution was adopted and a board elected. The regional node and secretariat will now be provided by Maudesco in Mauritius, with Rajen Awotar leading fund-raising efforts. The national node and secretariat remain the responsibility of SECCP. The full story is available in the next Climate Change E-mail News available from Elin at sa-can@earthlife.org.za

[Top](#)

2. SA's sustainable energy progress

DME calls for submissions to monitor meeting SA's RE target

Claire Taylor

The Department of Minerals and Energy's Capacity Building in Energy Efficiency and Renewable (CaBEERE) Project has called for pre-qualification materials to monitor the implementation of renewable energy in SA, in order to meet government's target of 10 000 GWh of RE by 2013. According to the DME's call for submissions, "the draft strategy for renewable energy states that this target will be achieved by utilising a mix of different renewable energy resources and applications...The strategy will need to be monitored on a periodic basis to determine the effectiveness of the measures and technologies employed to meet the overall target of 10 000 GWh by 2013. Therefore, an effective monitoring model needs to be installed and used."

The CaBEERE Project is offering ZAR 300 000 to the successful applicant.

The deadline for applications was 13 September 2004. Once a Project Task Team (PTT) has evaluated the submissions, it will then undertake tendering and implementing the project. According to the DME's call, the PTT consists of representatives from the DME, the Local Renewable Energy Adviser and reps from other relevant government departments and organizations.

Belville Civic Centre becomes more efficient

eSeed August 2004, Volume 3 Number 3, www.sustainable.org.za

As part of the City of Cape Town's initiative to improve energy efficiency in government buildings, an electricity saving campaign is currently underway at the Bellville Civic Centre.

An energy audit was conducted to determine the potential energy saving opportunities, and the results recommended a number of ways to improve energy management, reduce electricity use and expenditure and reduce impact on the environment. Air-conditioners, lighting, and water heating are the main saving opportunities identified.

In July this year, the Bellville Civic Centre retrofit began with the following technological interventions:

- 6 timers installed to electric geysers, so that water is only heated when needed
- Replacement of 8 inefficient urns with insulated electric water heating systems
- Replacement of over 1000 ordinary fluorescent tubes with energy efficient fluorescent tubes
- Replacement of a 6kw electric geyser with a 300L solar water heater that uses the sun rather than electricity

From the results of the audit, there is an estimated 20% monthly savings of total electricity use. That means savings of 24476 kWh per month, amounting to a global emissions reduction of about 323 tons CO₂ per year. To reach the council's 20%

reduction target, measures to influence behavioural change in staff energy use will be introduced.

DME, Eskom and SESSA in row over R119 million off-grid solar project

Summary of article by Chris Yelland, EE Publishers (Pty) Ltd, <http://www.ee.co.za>

A row involving the Department of Minerals and Energy (DME), Eskom and the Sustainable Energy Society of Southern Africa (SESSA) has flared up over a R119-million DME funded off-grid solar project currently being managed and implemented by the TSI Division of Eskom Enterprises to electrify some 1 150 rural schools in South Africa.

SESSA is an industry association whose members comprise a significant portion of established manufacturers, suppliers, and consultants in the renewable energy industry of the region, as well as various utilities (including Eskom).

The organisation has written two formal letters to Minerals and Energy minister Phumzile Mlambo-Ngcuka expressing its deep concerns in respect of:

- excessive contract prices, said to be about 30% above market value, resulting from bypassing competitive tender procedures in the appointment of the contractors and project manager;
- the poor standing of the appointed contractors within the solar energy sector;
- issues relating to compliance with relevant technical specifications and standards; and the lack of transparency and communication involved.

To date, no acknowledgement or response to SESSA's letters has been received from the minister.

The project for the off-grid solar electrification of 1 150 rural schools was initiated by a request from the Independent Electoral Commission (IEC) of South Africa at the end of January 2004 for the electrification of polling stations at rural schools for the general election on 14 April 2004. Support at cabinet level for the request resulted in the formation of a high-level task team to meet this need.

The DME's chief director - electricity, Ompi Aphane, indicates that in view of the time constraints and urgency, a special dispensation was authorised by the DME director general Adv. Sandile Nogxina to dispense with the public tender process and to proceed through existing contracts after obtaining three quotations, for the specific purpose of meeting the election date.

Thereafter, on 5 March 2004, letters from the DME signed by Ompi Aphane, with copies to Eskom's corporate consultant - electrification, Isaac Sokopo, were issued, instructing two favoured contractors to proceed urgently with procurement of the materials to meet the target completion date, and advising that formal orders from Eskom would follow in due course.

The contractors nominated in the DME letters were Mountainview Labelling cc (trading as Pumakwelanga), for the electrification of 500 schools at a price of R50,58-million excluding VAT, and a joint venture comprising Resource Recovery Systems (Pty) Ltd and Neppa Roads and Signs (Pty) Ltd, for the electrification of 650 schools at a price of R68,71-million excluding VAT.

Eskom TSI's acting general manager, Gerrie Bronkhorst, insists that Eskom TSI was not involved in selecting the contractors or negotiating the contract prices. He indicates that Eskom TSI only became involved after the appointment of the contractors, and

indeed, after the general election itself. Furthermore, he says that before accepting its assignment as employer and project manager for the contract, Eskom TSI drew its concerns on all these matters to the attention of the DME.

Those in the industry scoff at the suggestion that this project, conceived in late January 2004, with the instructions to proceed given on 5 March 2004, could ever have been supplied, installed and handed over by the election date of 14 April 2004. They indicate that everyone, including the senior officials involved at the DME and Eskom, knew this very well. As it happened, contracts between Eskom TSI and the contractors were only established in June 2004, some two months after the general election!

Gerrie Bronkhorst further indicated that, five months after the general election, only 30% of the material for the project has been delivered to Eskom warehouses, and not a single school has yet been electrified under the contract. SESSA therefore considers the reasons of urgency given by the DME for circumventing the normal procurement procedures as being disingenuous and spurious.

Solar off-grid electrification of rural schools is not new in South Africa - two such projects have previously been completed, both managed by Eskom. The first was a Reconstruction and Development Programme (RDP) project for off-grid solar electrification of 1 340 schools from 1996 to 1998, and the second a similar European Union (EU) funded project for 1 000 schools from 1998 to 2001. Eskom's corporate consultant for electrification, Isaac Sokopo, confirms that research reports on these projects indicate that about 90% of the systems previously installed at a price tag estimated at about R200-million, are no longer functional. He further notes that grid electrification of rural schools could be achieved at half the capital cost, and points out that the costs of ongoing maintenance and periodic battery replacement for the off-grid solar electrification systems are significant.

Yet, in proceeding with the new project, with all the benefits of hindsight, past experience and research into the shortcomings of the previous two projects, no cognisance seems to be taken by the DME, and/or Eskom as its implementing agent, of the important lessons previously identified. If anything, SESSA suggests that the lack of: transparency; consultation; a competitive tender process; a broad-based involvement of the solar energy sector; planning; community involvement; and financial provision for ongoing maintenance and periodic battery replacement, have even further reduced the chances of success for the current project.

SESSA is concerned that further project failures resulting from poorly conceived, planned and executed projects of this nature damage the reputation and credibility of the South African renewable energy sector in its ability to provide sustainable solutions to meet the real needs of society, and that this will impact negatively on international donor funding available for such projects.

MEETI: Energy Policy and Industry Course

MEETI

MEETI is running a course from 1 to 5 November 2004 on energy policy and the energy industry. The course offers an opportunity to learn more about policy implementation in the restructuring of the electricity industry, and new legislation in the petroleum industry

All mid-career and senior professionals employed in the energy sector, including government, labour, industry, NGOs and BEE companies should participate

Enquiries: Fumani Nkuna, Meeti Training Co-Ordinator
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Renewable energy for rural SA Conference

Trade Conferences International

Trade Conferences International has assembled expert speakers to discuss the huge opportunities available in renewable energies for rural people for South Africa. The conference, which will address the ideas of accessibility, acceptability and usage of different types of renewables available for underprivileged communities, is being held at the Indaba Hotel, Johannesburg, on the 18 & 19 November 2004.

For more information please phone 011 803-0009 or e-mail info@tci-sa.co.za

[Top](#)

3. Unsustainable Energy

Eskom Watch

Summary of articles by Bloomberg, Business Day 7 September 2004, This Day 7 September 2004 and Douglas Carew, Sunday Argus 12 September 2004

Pearly Beach can breathe easy, says Eskom

Eskom has acted quickly to allay fears that it is preparing to build a nuclear reactor on the coast just 10km from the Overberg coastal town of Pearly Beach.

Although Eskom spokesperson Carin de Villiers confirmed that the parastatal had years ago identified and bought the 1 838 hectare farm Bantamsklip between Pearly Beach and Cape Agulhas as a future site for a nuclear reactor, it did not intend building a nuclear power station there within the next 10 to 15 years.

Rumours that Eskom was preparing to build a reactor had been sparked by news of a road to be built in the area, but the road connecting Gansbaai and Cape Agulhas was a tourism initiative and had nothing to do with Eskom.

But Liz McDade of Earthlife Africa said Pearly Beach residents were worried about Eskom's intentions. McDade said if Eskom were to go ahead with plans to build a power station at Bantamsklip, Pearly Beach residents should follow the lead of the people of Jeffrey's Bay who "rose up, shouted and screamed" and forced Eskom to back down on plans to build a reactor near the popular Eastern Cape surfing town.

Asked why Eskom did not look for out-of-the-way places to build its reactors, De Villiers said that would raise the costs of infrastructure, including overhead lines. "The next reactor we build, if it goes ahead, will be at Koeberg," she said, referring to a plan to build a pebble bed modular reactor beside the existing nuclear power station at Koeberg.

Earthlife Africa has objected to the pebble bed reactor and is waiting for Minister of Environmental Affairs and Tourism Marthinus van Schalkwyk to make a decision on whether the project can go ahead.

Decision on Pebble Bed still 'months away'

Summary of article by SAPA, printed in Cape Argus, 15 September 2004

The long-awaited decision on whether South Africa will build a prototype pebble bed modular reactor (PBMR) is still months away, with no specific date set, says Environment Minister Marthinus van Schalkwyk.

Speaking in Cape Town, he said experts had been brought in to provide technical advice on the issue, but declined to elaborate. "There is no specific date and it is a complicated issue and I am applying my mind to it. It will be in the next few months."

In 2003, the department of environmental affairs approved an environmental impact assessment for a PBMR at the Koeberg site.

Among the parties which appealed at the time against the so record of decision is Earthlife Africa, which is taking the matter to the Cape High Court on November 29.

Eskom may invest in new Mozambican power station

Eskom will consider investing in the construction of a new 1 000MW power station in Mozambique, Fani Zulu, an Eskom spokesman has said.

The Mozambican government has proposed that the new power station, in the northern province of Tete, be an adjunct to the Moatize coalfields. BHP Billiton, Anglo American, Rio Tinto and Companhia Vale do Rio Doce are bidding to develop the deposit, which contains both thermal and coking coal. Some of the electricity generated will be exported to neighbouring countries.

Eskom has an agreement with Electricidade de Mozambique, the state owned power utility, to co-operate on the construction of new power plants in Mozambique. "South Africa and Mozambique have bilateral agreements which include Eskom and EDM co-operating on these kinds of projects" Zulu said. He said Eskom would make its decision whether to invest in the Moatize power station in the "later stages of development."

[Top](#)

1. General Sustainable Energy News

South Africa

Eskom to take over municipal power supplies

Robert Laing, This Day 7 September 2004

An end to frequent blackouts caused by dilapidated infrastructure is one thing the government hopes will come from its restructuring of electricity distribution. The establishment of six regional electricity distributors has been on the drawing board for more than a decade. These are companies that are to be created by merging the electricity departments of municipalities with Eskom's transmission divisions. In his state of the nation address President Mbeki set a deadline of the middle of next year for the first regional distributor to be established and for all six to be established by the beginning of 2007.

Cape Town has volunteered to be the first local authority to move its electricity

reticulation business to a regional distributor. It will do so by merging its electricity department with Eskom's western region. Once fully developed, this regional distributor will amalgamate the electricity departments of all the municipalities in the Western and Northern Cape. But this is not likely to be completed by Mbeki's deadline. Willem de Beer, chief operating officer of Electricity Distribution Industry Holdings, a company formed by the department of minerals and energy to oversee the restructuring of electricity distribution, said that the municipalities and Eskom will be compensated for their contributions to the regional distributors by being allocated shares in them.

Shareholdings in the regional distributors will eventually be broadened to the private sector so that the financing of the expansion of South Africa's power grid will not be limited to government spending. Waheed Patel, spokesperson for Cape Town municipality, said moving electricity billing from municipalities to distribution companies meant the money residents paid for electricity would be spent on maintaining the infrastructure.

Consumers would also benefit from the economies of scale the regional distributors hoped to achieve. The plan to create the regional distributors was originally prompted by Eskom's frustration with the inefficient billing systems of many municipalities. The local authorities blamed rates boycotts and residents refused to pay because, they said, they did not receive bills and they were incorrectly metered.

Africa

African Development Bank: Finesse Programme

Claire Taylor

The African Development Bank launched its Finesse Programme in Bonn during the renewables2004 conference in June this year. Finesse – Financing Energy Services in Small Scale Energy Users in Africa – aims at “mainstreaming sustainable energy systems in poverty reduction interventions in Africa.” To do this, the bank’s strategy involves “capacity building measures and policy and regulatory measures”

As part of this Programme, the bank has developed a Finesse Africa newsletter, the first issue of which deals with Wind Energy in Africa. There are many interesting articles in the newsletter, including a description of the Darling wind farm in SA, and a look at the manufacture of small wind energy turbines in Africa see http://www.afdb.org/about_adb/finesse_newsletter.htm for a copy.

Below is a summary of the lead article written by Yousef Arfaoui, which looks at the development of wind energy in Africa.

In order to:

- Evaluate the wind energy potential in Africa
 - Analyse the legislative, regulatory and institutional frameworks of countries to support wind energy projects,
 - Develop a plan to develop wind energy investment in Africa within 2004 and 2012,
- The African Development Bank commissioned a study into the deployment of wind energy in Africa.

The study found first, that many African countries have immense wind resources. Second, although countries like South Africa, Algeria, Cape Verde, Egypt, Morocco, Mauritania and Tunisia have shown interest in developing wind energy, none of them have the appropriate framework to support wind projects. According to the author, the benchmarks of this framework are:

- Market liberalisation, and the authorising of independent power producers
- The guarantee of the purchase of electricity from renewable energy
- Access to the grid by independent power producers through “a transparent and equitable technical tariff system.”

Thirdly, the study recommends that full advantage be taken of wind energy project opportunities in 4 countries – South Africa, Morocco, Mauritania and Tunisia.

In order to start implementing the findings of this study, the ADB is organising an investors conference in Tunis on the 28th and 29th of October – for more information contact Yousef Arfaoui at y.arfaoui@afdb.org

The rest of the world

Dung Power - Electricity from Cow Dung Gains Popularity in Nepalese Villages

Source: Kantipur, 24 August 2004, Translated and Summarized by Clean Energy News, Vol 4, Number 39, August 2004, www.cen.org.np

The use of cow dung in an old battery to generate electricity is gaining popularity in Sindhuli. The technology, which is also called Biocell, is gaining popularity among rural people with no access to electricity.

According to Sashi Shrestha, who was the first to use this technology in Kamlamai Municipality, he learned about the technology from Delhi. The light is brighter than an ordinary kerosene lamp and it can be used for reading. The power can also be used for operating a radio.

Cow dung is mixed with a little water and salt and used as an electrolyte. Once prepared the dung mix can be used for approximately 15 days.

Surya Lal Adhikari of Sirtholi Village Development committee says that he has stopped using kerosene lamps. He says that the system can be set up with a bulb, which can be bought locally and five to seven meters of wire. About three dozen people in Sirthole village are now using this technology.

According to Shrestha, within a month, the technology has become popular in Marin, Chukmike, Phiting, Dudhali and Kamalakhoch and he has sold more than 3000 bulbs and continues to sell about 100 bulbs per day.

Asia Rushes To Save Energy

Source: Reuters News Service, 20 August 2004

Asian countries are scrambling to limit the impact of record-high oil prices on their growing economies through energy conservation, but analysts say such moves are unlikely to dampen strong demand for fuel imports.

The region is trying to curb its burgeoning oil consumption by cutting subsidies or raising prices, and boosting investment in renewable energy such as wind, solar or bio-gas power. China, India and Southeast Asia have vowed to pour billions of dollars into developing so-called green power.

With the U.S. oil price racing towards \$48 a barrel, energy conservation is becoming more important for a region that imports two-thirds of its oil needs.

However, the low per capita energy consumption in most Asian countries and the strong economic growth expected for the region in coming years mean that the impact of energy conservation will have limited impact on energy demand. Asia's oil demand is rising as its economy has recovered from the 1997/98 Asian crisis. Oil demand, led by China, which overtook Japan last year as the world's second-largest oil consumer, is expected to grow more than 4 percent this year. Strong oil prices are raising concerns about inflation in some countries such as India, forcing Asia's third-largest oil consumer to slash duties on oil products this week.

But other countries are moving to rein in consumption. For example, Thailand will order service stations to shut down by midnight, and shopping malls and convenience stores to close earlier. Bangkok has decided to scrap subsidies on gasoline from next week, but the prime minister shot down a proposal to make motorists pay to use the main roads in the capital.

Vietnam is considering allowing distributors to raise retail rates by up to 10 percent if oil prices hit \$50 a barrel. It has requested all state agencies to cut fuel usage by 10 percent this year and by up to 20 percent next year.

Yet China's demand for diesel remains strong as it grapples with the worst power crisis since the 1980s, even after wholesale prices along the bustling east coast have risen 4 percent in the past three weeks. China has been rationing electricity and restricting the use of air-conditioners. Lights on Shanghai's famed waterfront Bund have been turned off for several weeks over the past two months, while the city government has told some 3,000 factories to switch production to the graveyard shift.

South Korea, the world's fourth-biggest oil importer, is discussing ways to give further financial support to companies that switch to more energy-efficient systems.

Educating the public on energy savings is key, analysts say. Resource-deficient Japan, which has been pioneering energy-saving schemes since the oil shock of the 1970s, has seen a significant rise in public awareness. "It is the result of the long-term energy-saving efforts, not just some short-term measures as a response to recent high oil levels," said Koichi Sasakai, a researcher at the Institution of Energy Economics, Japan.

Green power grows 12-fold among OECD nations

Refocus Weekly, 1 September 2004

The generation of non-hydro green power has grown 12-fold in OECD nations since the OPEC crisis, according to the International Energy Agency, as shown in the table below:

Area	Geothermal 1973	Geothermal 2002	Solar Electric 1973	Solar Electric 2002	Wind, Tide and Wave 1973	Wind, Tide and Wave 2002
North America	2,612 GWh	20,337 GWh	0	626 GWh	0	11,194 GWh
Europe	2,506 GWh	6,250 GWh	0	293 GWh	559 GWh	37,370 GWh
Pacific	1,512 GWh	6,250 GWh	0	11 GWh	0	1,570 GWh
Total	6,530 GWh	32,889 GWh	0	930 GWh <i>Solar PV = 361 GWh & solar thermal electric = 569 GWh</i>	559 GWh	50,143 GWh <i>Wind = 47,616 GWh</i>

As shown, green power grew from 7,189 GWh in 1973 to 83,962 GWh in 2002.

Combustible renewables (biomass) and waste generated 7,152 GWh of electricity in 1973, and was 168,366 GWh in 2002.

Hydroelectricity has always been the major technology in renewable energy; contributing 925,557 GWh in 1973 and rising to 1,300,846 GWh in 2002, lower than the peak of 1,386,618 GWh in 2000.

Total generation among OECD nations in 2002 was 9,827,451 GWh, the report shows, of which nuclear was the largest single technology at 2,275,676 GWh, followed by hard coal, natural gas and hydroelectricity.

World's largest solar PV facility opens in Germany

Refocus Weekly, 15 September 2004

A 5 MW solar facility in Germany has been officially opened as the world's largest grid-connected PV power plant. The 33,500 modules were installed by GEOSOL, Shell Solar and WestFonds on a former dump site for lignite coal ash in Espenhain. The 22 hectare site uses 16 ha for the solar system, with the modules mounted on a wooden system of six rows.

The output will be fed into the grid to serve 1,800 homes, and will displace the emission of 3,700 tonnes of CO₂ each year.

"We need this development so that solar power can become cheaper more quickly through the mass production of solar cells," says German environment minister Jurgen Trittin who commissioned the Euro 22 million project. "In around 20 years, the global annual turnover is going to be over Euro 100 billion; therefore it is important that Germany achieves long-term success in building up the local market."

Germany is the leading nation in Europe in solar energy, with 500 MW of capacity installed at 20 solar sites. In 2002, output was 195 MW. Solar generates 0.05% of the country's electricity, with wind and other renewables accounting for 10% of the total. Germany wants to double that share to 20% by 2020.

First offshore wave generator supplies power to UK grid

Refocus Weekly, 1 September 2004

The first commercial-scale floating wave energy converter is feeding electricity to the UK grid. The 750 kW Pelamis was developed by Ocean Power Delivery and installed at the new European Marine Energy Centre in Orkney. Development took six years and each turbine can generate sufficient power for 500 homes.

Since its launch earlier this year, the Pelamis has undergone extensive sea-trials to test and commission systems prior to installation at EMEC and connection to the grid. In August, an anchor-handling vessel towed the unit into position where it was connected to pre-placed moorings and power was feeding into the grid on the same day.

The Pelamis is the first full-scale machine to be installed at the EMEC test centre, which will verify and test the full-scale machines. The unit is 120 m long and 3.5 m in diameter, and weighs 750 tonnes.

The Pelamis unit being tested is a pre-production prototype, and satisfactory testing is expected to lead to commercial orders for multiple units in wave farms that share a common submarine power cable to shore. A 30 MW wave farm would need 40 machines over an area of one square kilometre, to generate sufficient electricity for 20,000 homes and 20 farms could power a city such as Edinburgh.

EMEC was established at a cost of £5 million.

[Top](#)

5. SA Energy Policy

National Energy Regulator Bill Adopted

Source: Contact Trust, 18 August 2004, www.contacttrust.org.za

The Minerals and Energy Portfolio Committee adopted the National Energy Regulator Bill after changes suggested by the Department were made, these changes include:

- Providing that the Minister of Minerals and Energy should publish the commencement date of the Act in the Government Gazette;
- Providing for the Minister to designate a Deputy-Chairperson for the Energy Regulator (ER);
- Enabling the Chairperson to designate one of the part-time regulators to chair meetings in the absence of both the Chairperson and the Deputy-Chairperson

The Bill creates a single energy regulator for the electricity, gas and petroleum pipeline sectors in South Africa in order to increase efficiency and synergy and to cut costs.

The Bill has been approved by the National Assembly, and is currently sitting with the National Council of Provinces.

Energy Draft Bill

Contact Trust Update, 19 August, 7 September 2004, www.contacttrust.org.za

The draft Bill aims to promote research and development within the energy industry. It covers all aspects of energy and aims to ensure that the supply, conversion and utilisation of energy are efficient, economic and environmentally sound. Integrated energy and resource planning, the utilization of environmentally sound energy sources, energy use efficiency and data collection are some of the issues the Department of Minerals and Energy is hoping to deal with in the draft Bill.

Latest Developments: The Energy Bill has been sent to Cabinet for approval. Once approved, the Bill will be released for public comment. While this was expected to be in late August/ early September, by the end of September cabinet has still not approved the Bill, meaning that it will probably be released in October. For more information contact: Lara Scott at: 021 426 1413

Renewable Energy Strategy

Claire Taylor

The release of the Renewable Energy Strategy has been delayed until November 2004. The Strategy, which will outline how the Renewable Energy White Paper will be implemented, was supposed to have been launched in September.

[Top](#)

6. Events

South Africa

Nov 18-19 Renewable energy for rural South Africa

Trade Conferences International

Tel: (+27) 11 803-0009

E-mail: info@tci-sa.co.za

Africa

Nov 21-27 Energetic Solutions

An international conference on making renewable energy a reality

Port Harcourt, Nigeria

Tel: 250 877 6030

Fax: 250 877 6040

E-mail: nikki@onesky.ca

Website: www.onesky.ca

Rest of the World

Oct 05-07 Power-Gen Asia Conference and Exhibition

Bangkok, Thailand

Contact: Seonid Thomas, PennWell

Tel: (+44 1992) 656 629

Fax: (+44 1992) 656 704

E-mail: powergenasia@pennwell.com

Website: <http://www.powergenasia.com/>

Oct 06-08 1st International Conference on Renewable Energy

New Delhi, India

Contact: G.N. Mathur,

Central Board of Irrigation and Power & National Power Training Institute

Tel: (+9111) 2611 6567

Fax: (+9111) 2611 6347

E-mail: cbip@cbip.org

Website: <http://www.cbip.org/>

Oct 19-21 2004 Sustainable energy, energy efficiency and environmental solutions expos

London, United Kingdom

Website: www.energy-expo.info/

Oct 21-24 RENEXPO 2004

International trade fair and congress for renewable energy and energy efficient building and reconstructing

Fairground Augsburg, Germany
Tel: 0049 / 71 21 / 30 16 0
Fax: 0049 / 71 21 / 30 16 100
E-mail: redaktion@energie-server.de
Website: www.energy-server.com

Oct 27-28 5th international conference on cogeneration and decentralized energy

Beijing, China
World Alliance for Decentralized Energy
E-mail: www.china5e.com

Oct 31-Nov 4 World Wind Energy Conference & Exhibition

Beijing, China
Contact: Mr Zhen Yingjun, Room 710, 86 Xueyuan Nan Road,
Beijing 100081, China
Tel: (+86-10) 62 180 145
Fax: (+86-10) 62 180 142
E-mail: registrar@wwec2004.cn
Website: www.wwec2004.cn

Nov 22-25 2004 European Wind Energy Conference & Exhibition

London, UK
Contact: European Wind Energy Association
Tel: (+322) 546 1980
Fax: (+322) 546 1944
E-mail: info@ewea.org
Website: <http://www.ewec.info/>