

eSEED

Note from the Editor

Welcome to this year's summer edition of eSEED. This year is the time to have your say in energy policy. We cover the progress of two important national policy documents: the Revision of Regulatory Rules for Energy Efficiency and Demand Side Management (EEDSM) including Standard Offer Programme (SOP) and the Integrated Resource Plan 2.

One of our city partners received the opportunity of climate change training through a SIDA-funded (Swedish International Development Agency) programme, and recounts his experience. Other articles in this edition include the proposed piloting of Free Basic Alternative Energy to informal households; public building energy efficiency made affordable through performance contracting; and the very first public building to aspire to a Green Star rating from the Green Building Council.

Happy reading!



-Zanie Cilliers (SEA)

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CITY ENERGY SUPPORT UNIT

a south african sustainable energy and climate protection initiative

1. Planning for our future electricity

Recently the public had an opportunity to comment on a very important component of national energy policy of South Africa: the Department of Energy's Integrated Resource Plan, version 2 (IRP2). The IRP2 essentially lays out a plan that details the electricity mix to be implemented in South Africa over the next 25 years, i.e. the amount of electricity to be generated by wind, solar, coal-fired, nuclear, etc.

The first round of public participation took place in June 2010. Many were concerned about the timing of the IRP2 release, citing that the decision over Eskom's tariff increase should not have been taken without the knowledge of the future power plant build plan, which is to be set out by the IRP2. The IRP2, a plan for the country's future electricity supply, also predates an updated Integrated Energy Plan, which would lay out the entire energy supply future (not just electricity, but all other energy sources as well). It is a bit like putting the cart before the horse.

Most respondents of the first round of public participation were strongly against coal and nuclear as future electricity sources; calling for a low-carbon economy focusing on renewable energy sources such as wind and solar. The South African wind industry has called on government to set an ambitious 25% renewable energy contribution to electricity consumption by 2025.

All public comments from the first round of public participation on the IRP2 can be found here: <http://www.doe-ivp.co.za>

The second round of public comment is currently underway. The deadline for received comments has been extended till 10 December 2010.

Sustainable Energy Africa comments on the first draft of the IRP2 include:

1. IRP2 advisory/technical committee: clarify who they are, who they represent, and their role in guiding decisions.
2. There are substantially differing ideas on future possible electricity paths. Clarify how this will be addressed, and document the rationale behind the final decisions.
3. Demand side management, energy efficiency and renewable energy options should be costed on an equal basis with conventional supply side options.
4. Obtain expert opinion on the likelihood of a carbon tax. If considered inevitable, it must be a part of the base-case scenario.
5. Engage with the Department of Trade and Industry on introducing renewable energy technology manufacture into the economy before it's internationally mainstreamed, otherwise South Africa will become a technology importer instead of a job creator.
6. Cities must be adequately represented amongst stakeholders advising the IRP2, as they make decisions that affect electricity use in the city, e.g. energy efficiency, tariffs and distribution infrastructure planning.
7. Consider distribution cost savings as a result of energy efficiency and demand side management.
8. The IRP2 needs to align with national policies/strategies, particularly the LTMS (Long Term Mitigation Scenarios) and the Renewable Energy White Paper.
9. Job creation needs to be an explicit and strong criterion in generation choice
10. It is assumed energy efficiency will not improve by more than 8% by 2010. A more sound approach would be for this to be an output of the IRP2 options costing process, not an upfront assumption. Alternatively, if this figure is based on sound information this must be specified.
11. Include the broad implications of a decentralising electricity supply trend.
12. World-wide, nuclear costs have historically escalated hugely (by a factor of 3 or 4) during construction. Be sure to use realistic nuclear generation plant costs based on this reality.
13. Nuclear waste storage costs should be noted to ensure that there is no significant cost burden on society for the duration of its toxicity (many thousands of years).
14. Note economies of scale for newer generation options, i.e. implementing larger projects will cost less per MW generated.
15. The IRP2 questions whether 34% carbon emissions reduction by 2020 is feasible. If this is not achieved by the IRP2, the Cabinet-endorsed LTMS carbon profile and the IRP2 would part ways – this is significant.

- Zanie Cilliers (SEA)

2. New proposed rules for accessing energy efficiency funding

NERSA, South Africa's National Energy Regulator, has released the new proposed regulatory rules for energy efficiency and demand side management in its EEDSM (Energy Efficiency and Demand Side Management) consultation paper. This paper outlines how funds can be accessed by Energy Service Companies for energy efficiency projects and programmes, via its Standard Offer Programme (SOP).

The SOP offers a predetermined rate in c/kWh for verified annual electricity savings over a set number of years. Qualifying technologies include energy efficient lighting and lighting motion sensors; efficient heating, ventilation and cooling systems; and improved insulation amongst others. The SOP also provides for solar water heaters and, as such, replaces the proposed National Solar Water Heater Strategy. There appeared to have been plans for it to also replace the Eskom solar water heater subsidy, but this has been challenged by Eskom.

The process of accessing funds from the SOP is no mean feat, especially if the project implementer is interested in a solar water heater (SWH) project. The process is as follows:

1. Is the project under consideration a SWH project? If yes, check whether the SWH technology meets the Request for Proposal criteria established by the Department of Energy. This can be checked with the Development Bank of South Africa (DBSA), who is the custodian of the criteria.
2. Plan your project and source your own capital funds.
3. Is the project a SWH initiative? If yes, submit a proposal to the DBSA, who will check whether it meets the Request for Proposal criteria mentioned in Step 1.
4. Implement the project.
5. Submit your claim to the DBSA.

Sustainable Energy Africa presented its comments on the proposed EEDSM rules at the public hearing held on 5 August.

General comments included:

- A local-level programme should be considered, as municipalities are major energy efficiency implementers and therefore require assistance.
- Too many players are involved, which could cause bottlenecks and chase away investors. The process should be greatly simplified.
- There is an overall lack of clarity in the document. This includes monitoring and verification rules, the monitoring and verification time period, Request for Proposal criteria, the approval process and time frames, criteria for project prioritisation, and how financing of the SOP would work.
- Despite being called the EEDSM paper, Demand Side Management projects are not included in the SOP and are not mentioned in the EEDSM.
- Provision should be made for the funding of awareness-raising projects and behavioural-change campaigns.

Comments directed specifically towards the provision for solar water heater (SWH) projects in the EEDSM include:

- There is no mention made of what would happen to the Eskom SWH rebate. The rebate should not be abandoned, especially since it has recently started building momentum. The SOP provides a good working model for SWH rollout to low-income areas (if simplified), but not for mid- to high-income areas, and this is where the Eskom rebate should be retained.
- The SOP rebate is placed at a set amount per SWH, regardless of system efficiency or size. This acts as a disincentive for quality control.
- The SWH rebate will be paid over 5 years. Possible legislative and political changes during this time frame will be perceived as increased risk for most investors and to this end will limit investment in such projects.
- The SWH will belong to the project implementer until the full rebate is received, despite the household/property owner making a sizeable contribution towards the SWH cost. A binding maintenance contract may be more suitable.

- Zanie Cilliers (SEA)

6. NERSA sends out a verification team to verify your project's electricity savings.
7. NERSA instructs Eskom to release funds to the DBSA.
8. The DBSA pays the project implementer.

The EEDSM rules have yet to be finalised. Public comment has been received and the revised draft should be available by the end of November at the latest.

3. Learning to tackle climate change

Since 2007 the Swedish Meteorological and Hydrological Institute (SMHI) in partnership with the Swedish International Development Agency (SIDA) has convened capacity building programmes on climate change adaptation and mitigation.

The SIDA programme is targeted at decision-makers in environmental agencies, universities, industry, urban planning authorities, local authorities and consultancy organisations in developing countries. The programme is of great importance, as it aims to increase participant managerial and technical skills, and cover subjects of strategic importance to economic and social development.

The programme was designed both to highlight the specific problems the participants' home countries will face when the local climate is affected, and to indicate the various measures to mitigate climate change and adapt to severe climate conditions. The central feature of the course was the support given to participants in adapting their knowledge and experience gained to situations in their own country.

Desmond Lang from the Sustainable Energy and Climate Change Unit at Sol Plaatje Municipality was selected among the 25 successful candidates shortlisted out of the initial 200 applicants in the African region to attend the International Training Programme on Adaptation and Mitigation in Climate Change organised by SIDA. Desmond's successful selection was based on his submission of a project proposal on the integration of Energy Efficiency in Low Cost Housing, emanating from a strategic energy target set out in the Sol Plaatje Energy and Climate Change Strategy.

The course was made up of a diverse group of participants from different sectors, such as agricultural ministries, national environmental protection agencies, meteorological institutes, energy sectors and economists.

Participants were primarily from Southern African countries, with some from North Africa and the Middle East.

The training programme started with a 4-week course in Sweden in October-November 2009, and was followed by regional follow-up seminar in May 2010 in Botswana. In Sweden, leading national and international experts covered several different aspects of a changed or changing climate, which included scientific background on climate change and its effects. The course also included climate modeling; paying attention to urban climate change mitigation and alternative energy sources, coupled with urban climate change adaptation planning on floods, droughts, water supply and sanitation. A discussion focused on measures aimed at counteracting the consequences of a changed climate and the effects on coastal areas, as well as agriculture and integrated water resources management. A broad overview was presented on the clean development mechanism (CDM) and other financing mechanisms for climate change projects.

The main objectives of the regional seminar held in Kasana, Botswana, were to present findings from participants' individually assigned projects, and to obtain an increased focus on climate change related issues in the region.

Each participant had to carry out a project assignment that began during the course in Sweden, and was presented in May 2010 at the Botswana seminar. The individual's project needed to relate to climate change, energy issues and their field of work, and be located in their home country.

Due to the nature of climate change issues, the regional seminar held in Kasana, Botswana, had an interdisciplinary approach. The curriculum contained expert lectures, demonstrations, group discussions, exercises and study visits to relevant industries and institutions. Leading regional experts gave a broad overview on recent and future climate change in Botswana and the Southern African region. The course also covered how to develop a smallholdings community to mitigate/adapt to climate change; carbon financing opportunities; and the experience and results from COP 15.

Desmond managed to successfully complete the advanced international training programme on Climate Change – Mitigation and Adaptation.

- Desmond Lang (Sol Plaatje Municipality)

4. Helping a city finance energy efficiency

Sustainable Energy Africa (SEA) is partnering with the Clinton Climate Initiative (CCI) of the Clinton Foundation in facilitating the implementation of energy efficiency projects in municipal buildings through performance contracting.

Performance contracting is seen as an important tool for the financing of energy efficiency projects carried out by energy service companies (ESCOs) in public buildings. In essence, it consists of an ESCO implementing energy efficiency measures in a public building, with the municipality paying back the capital costs on a monthly basis through the electricity savings realised. In this way, large capital up-front costs are avoided.



John Less from CCI

A meeting was held by the City of Cape Town with John Less from the Clinton Foundation to explore the possibility of providing technical assistance to Cape Town. The Clinton

Foundation will share their experience on the introduction and workings of performance contracting in international cities. CCI is currently working with the City of Johannesburg in the implementation of energy efficiency in their public buildings through performance contracting. It is planned that the Clinton Foundation, in partnership with SEA, will hold capacity-building seminars with key officials from the building management, procurement, special technical services, electricity and finance departments of the City of Cape Town when the Johannesburg project is finalised.

5. Energy service delivery to informal urban communities

Through its 12-year-old award-winning DANIDA-funded Programme – Sustainable Energy for Environment and Development (SEED) – Sustainable Energy Africa has embarked on a project to identify key elements of urban resilience in informal urban communities, as well as to seek ways of practically mainstreaming these communities within city and national service delivery frameworks

“Informality is here to stay” and is growing; as acknowledged by academics, practitioners and more recently by the Minister of Human Settlements. Many poor households will remain inadequately serviced in terms of formal housing and access to basic services. Approximately 23% of households in South Africa’s nine largest cities are estimated to be without adequate shelter. There is a need to support cities with practical and implementable options and action plans to improve the welfare of this marginalised sector of society.

To this end, the SEED Programme is concentrating primarily on energy welfare and the implementation of the Free Basic Alternative Energy (FBAE) Policy, as this is a key focus of the DANIDA Urban Environment Management Programme partner projects. FBAE entails the supply of free energy sources, such as LPG and solar, as an alternative to free basic electricity. Three cities have been identified to pilot the project: Cape Town, Johannesburg and eThekweni.



Workshop discussions were held throughout this year with civil society, national government (COGTA & Treasury) and Johannesburg and Cape Town city officials on issues relating to service delivery in informal urban communities. The aim of the discussions was twofold: firstly, it sought to highlight FBAE as a mechanism for cities to address energy poverty (in line with City Energy and Climate Change Strategy goals) and, secondly, it sought to improve stakeholder understanding of the problem and postulate steps needed to take forward the implementation of the policy at the city level.

Similar meetings are afoot with the eThekweni and Mbombela municipalities. On completion of these workshops, a cities network meeting will be convened in which all our 15 partner cities (including the metros and smaller towns) will be brought together to discuss the challenges associated with energy service delivery to urban informal settlements, and explore solutions and develop a course of action to be taken by municipalities.

- Sivuyile Maboda (SEA)

6. New Manenberg housing office shooting for four Green Stars!

The City of Cape Town is undertaking a pioneering effort in designing a new Housing Office complex along sustainable design principles for the Cape Flats area. The Office will be located in Manenberg. The City intends to achieve a 4 Star green rating for the building according to the Green Building Council of South Africa (GBCSA) rating system. This will be the first time a municipality has taken on the challenge of building a green building to be certified by the GBCSA and we hope that this is just the start of sustainable public buildings taking root.

The project team approached Sustainable Energy Africa (SEA) to assist with the design and management of the 'green and sustainable' aspects of the project and we welcomed the opportunity to work with the city on such an exciting and innovative project.

Designing the building proved challenging, but not insurmountable, as a balance had to be found between cost, security and the green aspects of the building, with all three aspects pulling in different directions. Eventually a design was achieved that provided the safety and security required by the employees, who will be working in one of the most notoriously dangerous parts of the city, as well as meeting the criteria for a resource efficient and sustainable building that will also create an environment in which people are happy to work.

Efficiency interventions included in this project, amongst others, are:

- At least 70% of the electricity requirements of the building will be met by renewable energy sources (solar PV and micro-wind).
- Even though security was a top priority, natural daylighting is maximised through the use of strategic window placement and skylights.
- Electric lighting was optimised to maximise efficiency by using efficient fixtures such as LED and CFL lights, as well as by providing intelligent task and area lighting, and daylight controls.
- Water efficiency was maximised by rain water harvesting, re-use of grey water and filtering of black water. This comprehensive water saving system will also be used to irrigate the indigenously landscaped areas and therefore keep almost all water on site and dramatically reduce run-off.
- The heating and cooling system installed is extremely efficient and uses coolants that minimise environmental impact while providing ample amounts of fresh outdoor air to the buildings occupants.
- The site was specifically chosen to maximise access to public transport by locating itself on taxi routes as well as on one of the city's future Bus Rapid Transit routes. Employees will be encouraged to car pool and use bicycles or motorbikes, by providing priority parking for these transport modes.

At the time of writing this article, the building has been designed, the tender has been sent out and the team is in the process of evaluating the various tenders that have been received. Once building commences, we will be sure to update you on the progress!

SEA hopes to use the insights gained from this experience to feed into minimum standards for other municipal building projects and to try to encourage other cities to follow suit and take up the challenge in building their very own green buildings.

-Stefan Wiswedel (SEA)



A 3D representation of the new Manenberg Housing Office

7. A network of energy efficiency initiatives

Sustainable Energy Africa recently ran a SEED/CESU (City Energy Support Unit) Network Meeting in Nelson Mandela Bay to tackle the issue of energy efficiency implementation in municipalities. The workshop was well-attended by municipal representatives from electricity, energy and environmental departments across South Africa.

Updates were provided on energy efficiency technologies; energy efficiency policies and programmes, both local and national; and potential municipal funding sources for energy efficiency were discussed in depth. Input was received from the National Department of Energy, the Development Bank of South Africa, the Clinton Climate Initiative, the Council for Scientific and Industrial Research, and Eskom's Demand Side Management division.

City representatives were given the opportunity to share and discuss their experiences on energy efficiency implementation; highlighting key barriers and opportunities. The Network Meeting drew together a range of recommended actions suggested by delegates towards enhancing and fast-tracking energy efficiency implementation. These actions will be taken forward by our city partners and the City Energy Support Unit of Sustainable Energy Africa.

Delegates at the SEED/CESU Network Meeting



The municipalities present also gave feedback on some exciting energy efficiency initiatives, either planned or currently underway, during one of the feedback sessions. The main focus was on solar water heating during that particular session:

Cape Town

- Request for proposals being developed for the rollout of 300,000 solar water heaters over 5 years
- Retrofitting of 4 municipal buildings with energy efficiency interventions, as well as libraries, nature reserves and clinics
- A creative and comprehensive residential energy efficiency campaign kick-started in August

Johannesburg

- Working with Clinton Climate Initiative on a guaranteed savings model contract with ESCOs to undertake building efficiency retrofitting
- Investigating financing mechanisms for solar water heater rollout in mid- to high-income sector

Tshwane

- In process of procurement of solar water heaters for retrofit of RDP housing, using Department of Energy DoRA funding

Ekurhuleni

- Plan for 1 MW PV solar plant (currently in concept phase)
- Solar water heater rollout to low-income housing funded through ring-fencing of a portion of the electricity tariff: RFP to be sent out later this year

eThekwini

- Feasibility study being undertaken, investigating the effects of large-scale smart meter rollout on the technical and business operations of the Electricity Department, to be completed early 2011
- Investigating financing mechanisms for solar water heater rollout in mid- to high-income sector
- Pilot solar water heater and heatpump installations in 10 hostel complexes to determine differences in efficacy between these technologies

Nelson Mandela Bay

- The installation of 100-120,000 solar water heaters to low-income housing has commenced, with 4000 installed so far
- Rollout of 60,000 solar water heaters to mid- to high-income households through CEF funding: installations to commence shortly

Sedibeng

- 1000 solar water heaters via DANIDA funding (concept phase)

Sol Plaatje

- Plan to use DoRA funds from Eskom for rollout of 8-10,000 solar water heaters in low-income housing

-Zanie Cilliers (SEA)

course on offer: tomorrow's cities

Sustainable Energy Africa is offering a course on energy and sustainable urban development in partnership with the African Centre for Cities and the University of Cape Town's Energy Research Centre.

The energy field is dynamic in nature; hence this course will be offered as an update to a previous course held in 2008 on the same topic. Course content will cover the global, national and city energy picture, as well as key energy and development challenges and opportunities from a local government perspective. Insight will be given into a city's energy and climate mandate and an analysis of pioneering work at the city level.

The course consists of five continuous days, and includes presentations by energy and urban specialists, small group discussions, debate, videos, site visits, and a range of South African-specific case studies.

Date/Time

15-19 November, daily 08:30-17:00

Venue

University of Cape Town

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Please let me know if you would like to be removed from the list or suggest recipients to whom eSEED would be of interest. You can also send news of projects relating to housing, environment and energy in which you are involved. Comments and suggestions are welcome.

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