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➤ **ENERKEY GOVERNING BOARD ESTABLISHED**

On June 21 a board to coordinate the EnerKey activities, the **EnerKey Governing Board** was established. The board is responsible for the strategic outline, advisory and monitoring of the project. At the first inaugural board meeting 15 members of the EnerKey consortium took part, coming from the cities authorities, universities, Eskom and NGO like SESSA and Peer Africa.

Mr. Joe Matsau was appointed chair of the Governing Board. Mr. Matsau is a board member of the Eskom Pension and Provident Fund and a board member of the World Wildlife Fund - WWF South Africa. Mr. Matsau retired from Eskom after twelve years of service in various responsible positions in December 2004. Taking over this task he appealed



Joe Matsau

to all participants to work together in this vital project "Hold my hand and I will enjoy any support".

➤ **ENERKEY PROGRAMME MANAGEMENT COMMITTEE (PMC) FORMS TECHNICAL WORKING GROUPS.**

To foster work on the operational level a **'Programme Management Committee – PMC'** was formed. During their first meeting on June 21 the PMC appointed **Jerry Mafereka** from Eskom as directing chair. Thereafter several technical work groups and responsible heads and members for these groups were formed. Among these is the group for **'Building Energy Efficiency'**, split in activities on 'retro fitting'



Jerry Mafereka

and 'prospective and standard settings'. This group represents an activity of high importance and attention and forms a core within the **EnerKey** project. Also a group on **"Solar Water Heaters"** under strong support of SESSA and a group on **"Traffic and Air Quality"** were formed. These activities were accompanied by presentations of Philip Goyns and Patience Gwaze from the University of Johannesburg on their work.

➤ **DR. ROLF LINKOHR, BRUSSELS, AS GUEST SPEAKER AT UJ'S VICE-CHANCELLOR'S DISTINGUISHED LECTURE**

On June 21 a UJ's Vice-Chancellors's Public Scholarship Distinguished Lecture was held at the Arts Centre of the University of Johannesburg. The topic on **"Energy Innovation & Security of Future Supplies in an Era of Global Change"** highlighted one of the key issues of current global energy policy and also a main working field of **EnerKey**. Two distinguished speeches were given, one by **Dr. Rolf Linkohr**, Head of the **Centre of European Energy Strategy** in Brussels and former Member of the European Parliament and the second by **Dr. Steve Lennon**, the Managing Director of the Resources and Strategy Division of Eskom.



University of Johannesburg

Vice-Chancellor's Public Scholarship Distinguished Lecture Series

The Vice-Chancellor & Principal, Prof Irwin Rensburg hereby invites you to attend a Public Seminar on "Energy Innovation & Security of Future Supplies in an Era of Global Change"

| | |
|------------------|--|
| Speakers | Dr Rolf Linkohr Director of the Centre for European Energy Strategy, Brussels and Dr Steve Lennon Managing Director: Resource & Strategy Division, Eskom |
| Date | Thursday, 21 June 2007 |
| Time | 17:00 for 17:30 |
| Venue | University of Johannesburg Art Centre, Kingsway Campus c/o Kingsway & University Rd Auckland Park |
| Rsvp | by Tuesday, 19 June 2007 Ingrid Waisbeck: Tel 011 859 2708 e-mail: ingridw@uj.ac.za |
| Programme | 17:00 Welcoming Drink at Art Centre 17:30 Welcome and Opening - Vice Chancellor 17:40 Official launch of the "Energy Sustainable Megacities (Soutleng) Programme" - Mr T.S. 'Joe' Matsau 17:50 Dr Rolf Linkohr - Innovation: The Best Solution to our Energy and Climate Problem 18:30 Dr Steve Lennon - Energy Strategies and innovation: A South African Perspective to a Global Problem 19:30 Cocktail Function |



Co-sponsored by the Goethe Institute, Johannesburg and the South African German Alumni Association (SAGAA). An event in association with the Metro Africa Institute Science Tunnel Exhibition, Newtown, Johannesburg, from 18 May to 28 July 2007.



The speakers pointed out that energy and climate protection related problems may best be solved by increased research, promoting innovation for many technologies.

Rolf Linkohr described global warming and climate change as the gigantic problem of the near future. One of the answers is innovation, innovation as a key element to sustainable development. Technologies have to be found that we do not yet know. He also stressed the point that in order to become an innovation a technology has to be put into practice. It needs commercialization. It needs a market.

Steve Lennon identified the two main challenges in the South African electricity market as first, avoiding mismatch between demand and supply and second a correct choice of capacity to be constructed from an array of the available options.

Both speeches are a strong support for the approach of the **EnerKey** project: to provide research and innovation in an integrated, practical and collaborative way.

⇒ [speeches at the EnerKey-website](#)

➤ **BMBF PROGRAMME "MEGACITIES": SECOND CALL DELAYED**

The German BMBF had announced the second call for the 'Megacities' programme for earlier this year 2007. However, after the establishment of the new federal government the long term initial programme had been reviewed and new political priorities were taken into consideration. Now changes become clearer and are incorporated into the programme. The main new feature is a focus on 'climate change' and 'energy'. This 'new' focus is already in the main line and work area of **EnerKey**. This means that we can continue and follow the planned work and initiatives. However, due to the new focus the time schedule for the programme and the call for the next phase is delayed. We will inform you as soon as possible about the call and time frame.

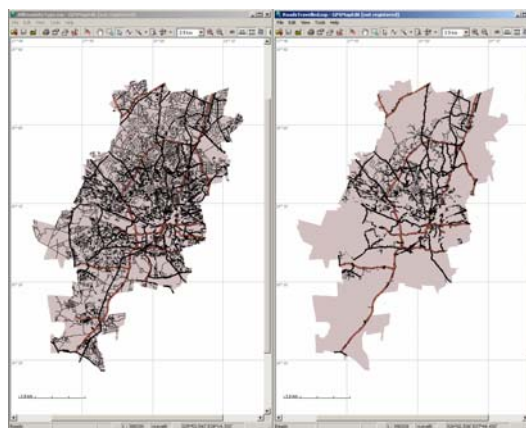
➤ **RESEARCH AND STUDENT EXCHANGE SA – GERMANY ENFORCED**

You may have run into some students working in the EnerKey programme in the

last months. Now especially the exchange of these students between Germany and South Africa has been enforced. After Philip Goyns from UJ had been in Germany and a short return visit by Doruk Özdemir of IER in Joburg in 2006, this year Victoria van der Land from IZT Berlin is visiting SA. Victoria spends four months working with Peer Africa in the fire prevention project in Alexandra and the eco-housing project in Witsands/ Atlantis (Cape Town). Victoria is a sociologist and will write a master thesis on conflict management. Later this year Collins Imoh from the University of Cape Town will come to IER Stuttgart to start a work on solar thermal and a technical and economic evaluation of advanced technologies. In the same field Mathias Fink is working, a master student from IER, who will spend four months at UCT and UJ to study and exchange data and information on integrated project implementation in solar water heating, also at Cosmo City.

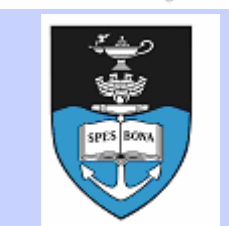
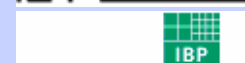
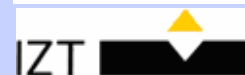
➤ **NEW METHOD TO ASSESS GRID EMISSIONS FROM MOBILE SOURCES**

Emissions on a grid of 1 km by 1 km are necessary input data for dispersion modelling as part of the new air quality act (2004) in South Africa. In a research study within the EnerKey module 'Traffic + Mobility' and a collaboration with TÜV Rheinland Philip Goyns from UJ has done a field test to develop an alternative method to establish an Emission Inventory for Mobile Sources (EIMS) for the City of Johannesburg.



Johannesburg's road network (left) and roads travelled by volunteers (right) (PG)

PROJECT PARTNERS



Press Coverage



New safe appliances and materials, although costly, will not catch alight and may save lives

BY PHILIP GOYNS
 Alex shack dwellers are being shown how to use new safe appliances and materials, although costly, which will not catch alight and may save lives. The new appliances and materials are being distributed to shack dwellers in Alexandra.

and the fire will stop." The fire prevention program is a joint effort between the Department of Housing and PEER Africa. The program aims to reduce the number of shack fires in Alexandra.

"The Star" 8.7. 2007



New + old type stove

The approach was, with the experience from a three months research visit in Germany, to develop a generic emission and fuel consumption model, which can be used for a variety of driving conditions and vehicle types for 'real world driving'. As initial results differences in diurnal driving conditions and speed distributions for this road types were shown. The results are useful for both: emissions modelling and/or traffic monitoring and planning. GPS and OBD are effective in helping to estimate emissions and fuel consumption from road transport and identifying the location of emissions.

The effectiveness of the data collecting in the future can be improved by using telemetry and a centralised database to automate the process. In this way a fleet of vehicles can be monitored continuously for a more detailed emission modelling and instantaneous traffic monitoring. After verifying the Johannesburg data in the short term within EnerKey, in the medium term this methodology could be transferred to the whole Gauteng region.

Contact: Philip Goyns UJ philip@goyns.com
 Josef Brosthaus TÜV Rheinland, brosthaus@compuserve.com

➤ SHACK FIRE SAFETY PROGRAMME OF PEER AFRICA SUCCESSFULL

As part of the domestic energy programme, EnerKey has supported to introduce safe energy practices into informal housing.



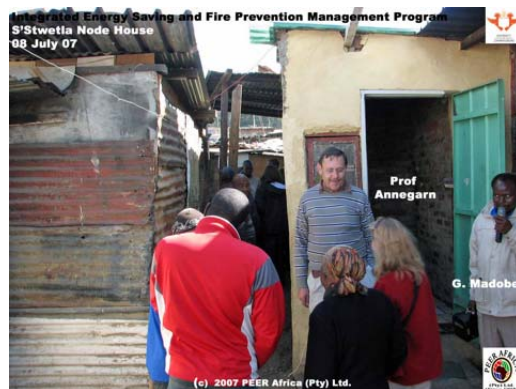
Launched on Sunday 8 July, a programme on fire safety was introduced in Alexandra. In 2004 Peer Africa won a tender from the Department of Housing to develop a fire-treatment programme and chose to focus on fire prevention. As a main part the project introduces new pressure stoves, called Parasafe, which are designed to stop working when tipped over.



Dr. Rolf Linkohr and Doug M. Guy (Peer Africa) in Alexandra

It also saves up to 30 percent on fuel. Dough Guy from Peer Africa shows the critical points: "It takes only 90 seconds before the whole place catches alight. Emergency services can't get here in that time. By the time they get here in, say, 20 minutes, 50 shacks will have caught alight."

The project is run by PEER Africa, The city of Johannesburg and in conjunction with the EnerKey project.



Harold Annegarn and student group at Alexandra fire safety project launch.

Dough Guy referred to "hot spots"- areas in settlements where a fire could happen quickly and in which there appeared to be no way out for people nearby. Now Peer Africa is identifying hot spots and training leaders in each to show others where there is an emergency exit if a fire breaks out.

Reference: www.joburg.org.za and "The Star" on July 08, 2007

for more information
 ⇒ www.peerafrica.co.za

ENERKEY PROGRESS MEETING JOHANNESBURG (5 MARCH 2007)

The German and SA partners met in Johannesburg from 5 to 8 of March. The meeting was meant to tie the bonds tighter between the corresponding partners and to define and outline more in detail the tasks and duties in the work packages.



EnerKey Meeting, March 2007

The meeting agenda

This objective was approached by a 3-step meeting structure. A **plenary meeting** was held on March 6 with prominent speakers. The second part consisted of five **work**

group meetings, in which the objectives and methodological approaches the five working fields of the project were introduced and discussed. These technical meetings were thirdly completed by **visits to the schools** which are taking part in the EnerKey schools projects. On Thursday March 8th, EnerKey partners visited the Emmarentia primary school in Joburg and the Garsfontein primary school in Tshwane. Agreements were made between the school board and the working team on the topics of the cooperation and procedures.



EnerKey visit to Laerskool Garsfontein school in March 2007

➤ CITIES PERSPECTIVE ON ENERKEY INITIATIVES - CITY OF TSHWANE

Sam Mutswari, Dept. of Health and Social Development, City of Tshwane

The City of Tshwane is participating in the "Enerkey Project" in association with research institutions in both South Africa and Germany, the three Metropolitan areas of Gauteng Province, the Universities of Johannesburg & Stuttgart and the City of Stuttgart. Enerkey is a research based project and covers issues such as sustainable energy, integrated energy modeling, traffic and mobility, socio-economic aspects of energy and assessing appropriate technologies and GHG inventory tools in the energy supply systems.

The City of Tshwane is assessing the thermal performance of school buildings through the use of a simple computer-based tool called the Energy Concept advisor, which was developed by Fraunhofer Institute of Building Institute, Germany through its partnership with the Department of Architectural Technology, University of Johannesburg. School buildings represent a large stock of similar-use buildings and provide opportunities for demand side management and overall reduction in energy consumption. The Energy Concept Advisor is presently in the process of being administered to two schools in the City of Tshwane, i.e. Garsfontein Primary School in Garsfontein and Motsweding Primary School in Atteridgeville.

The results of the study will inform the interventions to be applied to the buildings and may include retrofitting of lights with low energy consumption bulbs, insulation or filling of cavities in prefabricated building. The results will be monitored and communicated to the twinning school in Germany called Uhlandschule under the administration of the City of Stuttgart.

www.enerkey.info

The plenary meeting

The plenary meeting was opened by **Prema Naidoo**, Councillor for Environmental Planning and Management in the City of Johannesburg. Naidoo pointed out the challenges for the City of Joburg in the area of energy and environmental planning, particularly in improving air quality and energy efficiency and securing a social equitable access to energy for all.

The CEO of the South African National Energy Research Institute (SANERI), **Kevin Nassiep**, pointed out that at present in the energy industry no consideration of energy efficiency exists. Thus binding targets have been setup for the use of renewable energies and in stimulating energy efficiency. Special focus will be on the traffic sector

Megan Anderson-Brown from Sustainable Energy Africa (SEA) presented the 'State of Energy in SA Cities 2006' report. In this work energy indicators for sustainable city development have been analysed and compiled on the energy related parameters of 16 cities in SA. The report is available at www.sustainable.org.za.

The EnerKey project and the related working fields were then presented by **Ludger Eltrop**, project manager from the University of Stuttgart. The EnerKey project aims to develop a long term strategic view and wants to set up a cost-benefit analysis of various possible future scenarios. An integrated energy and climate protection

plan shall be developed for the urban region of Gauteng. For settlement development geographical information system (GIS) is proposed. The experiences and competences in integrated planning are seen as the strength and core competence of the EnerKey partners.

The cities of **Tshwane**, **Ekurhuleni** and **Johannesburg** presented their views and initiatives on energy related issues. See the city perspectives for details.



Sam Mutswari from City of Tshwane

As a concluding presentation, **Ulrich Fahl** presented the integration approach using the TIMES model and Advanced Local Energy Planning (ALEP) approach.

Later, **Joachim von Zimmermann** (head of environmental protection, Stuttgart city) explained the principles of the energy management, followed in Stuttgart. Finally he renewed the offer of Stuttgart to host

➤ CITIES PERSPECTIVE ON ENERKEY INITIATIVES - CITY OF EKURHULENI

Deborah Ramalope, City of Ekurhuleni

Building capacity to implement sustainable energy project is one of the priorities of the Metro. Having completed EMM's Energy and Climate Change Strategy, it remains a challenge for the municipality to implement projects due to lack of capacity in line departments. Although EMM has started implementing small scale projects, employee training on energy efficiency and renewable energy is critical to implement large scale projects. The Enerkey partnership presents an opportunity to get universities of Stuttgart and Johannesburg to assist in building capacity required to implement the strategy. EMM's research needs:

- Cost and operational effectiveness of solar driven traffic signals with LEDs and the relation thereof with battery driven LED traffic signals to be trickle charged by main supply;
- The effect of ineffective traffic signal settings on energy wastage; and
- The effect of delays caused by heavy vehicles on energy wastage.

interested city people for a while in Stuttgart and to show them the transfer from theory to practice.

In a short but remarkably clear talk **Chris Cooper** (UJ) stressed the necessity of integrated energy planning.

Finally **Harold Annegarn** (UJ) concluded the plenary session by showing that the approach has already yielded some success. He has been awarded several bursaries for students and also got financial support from

NRF. He also expects supporting money from SANERI. Harold Annegarn concluded that the preparation period for the project had been a valuable process to put together a sound programme.

All the related materials of the EnerKey project meeting (March, 2007) are available at:

www.enerkey.info

► CITIES PERSPECTIVE ON ENERKEY INITIATIVES - CITY OF JOHANNESBURG

Flora Mokgohloa: Department of Environmental Management, City of Joburg

City of Johannesburg describes itself as a safe, clean, green Africa's world-class city. To keep up to this statement that underlines its vision and mission, the City has embarked on several initiatives addressing environmental protection and sustainable energy.

The City will be installing Solar Water Heaters (SWHs) to the low-income households at Cosmo City in the first quarter of 2007. The first phase of the project will provide SWHs to approximately 200 household units. This initiative embraces the national policy on Renewable Energy, while also supporting the Demand Side Management (DSM) objectives. The Cosmo City project is an approximately R 2.3 billion mixed use housing development which covers an area of approximately 1200 hectares of land. This development will incorporate the provision of services and social facilities (such as schools, clinics, parks, large conservation area, etc.). The aim is to create a community based on the principles of sustainable development. Cosmo City will accommodate the identified housing beneficiaries from the informal settlements of Zevenfontein and Riverbend, while providing additional opportunities for housing on a market-related basis (i.e. fully bonded units) to individuals willing to purchase property in the area.

The City of Johannesburg (CoJ) has been very keen in implementing energy efficiency measures within the City since 2004. In the current financial year 2006/2007, the City has set a target of retrofitting five large Municipal Owned Buildings with energy efficient lighting. The Eskom Demand Side Management (DSM) Department is appointed by the City to undertake this activity. Buildings identified for this energy-efficient intervention include: Sandton Civic Centre in Sandton, Jabulani Civic Centre in Soweto, Eureka House in Rosettenville, Metropolitan Centre in Braamfontein and Old Putco Depot Building in Soweto. Retrofitting at these buildings is already complete, except Old Putco Building, which is planned to be completed in the first quarter of 2007. The audit study will be undertaken in the later stage to calculate the amount of carbon dioxide (CO₂) equivalent avoided as a result of implementing these energy efficiency interventions.

CoJ has recently advertised in the local newspapers a Call for Proposals from relevant service providers to assist the City to compile its first State of Energy Report (SoER). The SoER will provide a snapshot overview of energy supply and demand patterns within the boundaries of the City. This energy picture will also inform the future City's Energy Strategy, which is considered fundamental to the successful implementation of sustainable energy systems and practices.

EnerKey Project Meeting, March 2007, Johannesburg



- **NEWS AND UPCOMING EVENTS:**
- **SUSTAINABLE CITY DEVELOPMENT**

Johannesburg, South Africa
27-28 August 2007

www.marcusevans.com

This conference will address many inter-related aspects of the urban regeneration from transport to infrastructure and crime prevention from crime prevention to economy boosting.

- **BIOFUELS MARKETS AFRICA**

Cape Town, South Africa
5-7 November 2007

www.greenpowerconferences.com

The objective is to improve access to information enabling agricultural and rural development, as well as economic benefits to the attending nations and companies.

- **CITY DEVELOPMENT WORLD AFRICA**

Johannesburg, South Africa
19-22 November 2007

www.terrapinn.com

Broad conference topics range from urban regeneration and sustainable cities to traffic management and security.

- **AFRICA POWER AND ELECTRICITY CONGRESS**

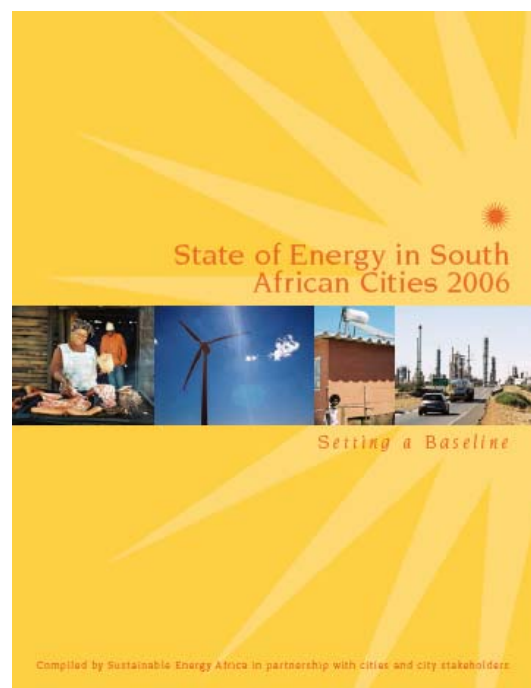
Johannesburg, South Africa
15-16 April 2008

www.terrapinn.com

The Africa Power and Electricity Congress is a 3-day director-level conference providing Africa's power sector decision makers the perfect platform to drive the industry forward.

- **STATE OF ENERGY IN SA CITIES REPORT IS PREPARED BY SUSTAINABLE ENERGY AFRICA (SAE)**

Sustainable Energy Africa (SEA) which promotes sustainable energy approaches and practices in the development of South Africa and Africa has prepared the "State of Energy in South African Cities" recently.



This review emphasizes again the key role that dense city nodes have to play in the development of South Africa. The review includes 13 of the 17 cities considered to be the "backbone" of the South African economy. It also includes cities that, by contrast, show the issues of poverty and economic marginalization confronting areas of South Africa. In total the study cities contribute some 60% of national GDP and account for nearly 40% of national energy consumption. The study shows that city energy should be a key area of any national energy strategy and that, within this, transport may be the key city energy issue.

The Report is available at:

www.sustainable.org.za/

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