

## SANEDI / RECORD RENEWABLE ENERGY RESEARCH EXCELLENCE (RERE) AWARDS 2014

### SANEDI RECORD RERE Commercial Application Award 2014

#### ECOVEST –

For their ECOLite solar home lighting product

The modular ECOLite is a unique solar home lighting system that aims to replace the current use of paraffin, kerosene and candle lighting in low income areas of developing countries. The locally produced product is both rugged and cost effective, and comprises a solar PV panel, controller with battery, and lamp. The modular design allows the consumer to buy only the lamp; the battery/controller portion of the system is then charged from a different location (micro energy vendor) as an alternative to an inclusive solar panel. The technology seeks to become the preferred lighting solution for 120 million off-grid homes with 600 million users across Africa, and thus avoiding the dangerous use of open flame lighting solutions. Other products in the Ecovest range include ECOstove, a biomass and biofuel cooking solution, as well as various lifestyle products in household services and entertainment.

### SANEDI RECORD RERE Young Researcher Award 2014

#### KAREL MALAN

Stellenbosch University

Karel is an electronics engineer with experience traveling and working abroad. Karel's master's project was to develop the control system for a single heliostat, which he then converted to a full research master's dissertation and developed South Africa's first heliostat control system capable of controlling thousands of heliostats. He demonstrated this with an 18 heliostat prototype. This success led to a special grant in 2013 to scale the heliostat system into a full size heliostat facility. The Sasol Helio40 system is now complete and provides part of an impressive facility for CSP research at the university. The TIA Helio100 project commenced in April 2014 and it is funded by the Technology Innovation Agency. Karel is now part of a team of 10 people developing this exciting project which will establish a heliostat field demonstrator capable of driving a 100 kW turbine.

#### MOLELEKOA JAMES MOSESANE

Tshwane University of Technology

This work documents the product Fuel Performance Catalyst (FPC) as a homogeneous catalyst in diesel engines. It also builds a business case for a specific company in South Africa and if implemented will reduce running costs through a proven reduction in fuel consumption. Experimental data was collected where diesel consumption was interpreted as fuel consumed in litres per 100km travelled. While the trucks had no designated drivers and the payload and routes varied daily, the test conditions were not as controlled as in a laboratory environment. Inferential statistics, linear and power trend equations were employed for the analysis of the data. The paper has been accepted at the International Conference on Advanced Technology and Sciences to be held in Antalya, Turkey and will be presented later this year for it to be published in the journal Intelligent Systems and Applications in Engineering (IJSAE).



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Energy People Working Together  
1924-2014

## SANEA ENERGY AWARDS 2014

### Banquet & Awards Ceremony

21 August 2014

Brian A Statham  
Chairman of SANEA

and

Kevin Nassiep  
Chief Executive Officer of SANEDI

Welcome the SANEA ENERGY AWARDS 2014 Nominees  
and the SANEDI / RECORD RERE AWARDS 2014 Nominees

Energy People Working Together



## SANEA ENERGY AWARDS 2014

### SANEA ENERGY AWARD 2014

#### PROF JL (WIKUS) VAN NIEKERK –

*For his contribution to renewable energy in South Africa (particularly in the field of solar energy)*

Professor van Niekerk has a long history in energy and environmental academics, and now heads the Centre for Renewable and Sustainable Energy Studies (CRSES) at the University of Stellenbosch. The centre was established in collaboration with the government, and boasts sustained income from the Department of Science and Technology, Sasol and Eskom. The overall objective is to develop and enhance national capacity in support of accelerated and shared economic growth within the area of renewable and sustainable energy. This is being achieved by building human resource capacity, creating and disseminating knowledge, and by stimulating innovation and enterprise in this exciting field. The centre has a growing staff of young engineers, scientists and policy researchers and delivers contract research and feasibility studies.

Wikus is well known for his active participation in national energy planning activities. He is a Board Member of the International Solar Energy Society (ISES), the South African Solar Thermal Electricity Association (SASTELA), and created the Southern African Solar Energy Conference (SASEC). He was part of the solar resource spinout success, GeoSun Africa. He is involved in collaborative research across multiple universities, and has coordinated results leading to several Technology Innovation Agency Awards, and multiple patents.

### SANEA ENERGY PROJECT AWARD 2014

#### EXXARO RESOURCES AND TRONOX NAMAKWA SANDS –

*For their Co-generation Project*

In 2007 Exxaro's leadership decided to deal with energy in its broadest context, including shortages, rising costs, climate change, and environmental concerns. One of Exxaro's initiatives has come to fruition in the commissioning of the Namakwa Sands Co-generation Plant in December 2013. Board approval was obtained in 2011 for the construction of the 13MW co-generation power plant at the Namakwa Sands operation. Construction began in June 2012, while the ownership and operation was handed over to Tronox Limited, in which Exxaro has a 44,4% equity interest, following the broader deal between Exxaro and Tronox. Design capacity is 1.7MW per Jenbacher gas-engine, while up to 2MW per engine is expected. Target output for the plant is 6GWh per month, and 70GWh per annum.

The overall objective of this project is to minimise energy waste, thus increasing energy efficiency. The carbon footprint of electricity from this co-generation source is virtually zero and is one of the first co-generation projects to qualify under the Clean Development Mechanism project under the Kyoto protocol.

#### HOTEL VERDE –

*For their all-encompassing approach to operating a green hotel*

Hotel Verde is Africa's greenest hotel, and has trail-blazed its way to setting a benchmark for sustainable tourism and energy efficient business practice in South Africa. It was the desire of owners Mario and Annemarie Delicio, and their dedicated team, to build a hotel that would lead the way for other new hotels to be built and operated in a far more sustainable and energy efficient manner. Being based at Cape Town International Airport provides the hotel with the ability to showcase South African energy innovation to many international guests. Designed, built, and operated with sustainability and efficiency at its core, Hotel Verde received international exposure at the international trade show, Internorga in Hamburg for "demonstrating with great intuition, innovation, courage and passion how business practices and sustainable management can work together for optimal results", and won the international trendsetter company award.

#### KHANYISA PROJECTS –

*For the Illembe Rural Domestic Biogas Project*

SANEDI is implementing a biogas project in Ndwedwe in the Illembe District Municipality in KwaZulu Natal, and Khanyisa Projects were appointed as the project developer. Twenty six (26) biogas digesters have been rolled out in wards 14 and 18 for the benefit of indigent households. The provision of these 26 biogas digesters begins to meet the needs of the thousands of homesteads in rural KwaZulu Natal that have limited access to safe energy for cooking, lighting, heating water and other household needs. The benefits are a clean, efficient, and convenient fuel which improves quality of life, and provides bio fertilizer for food gardens while reducing deforestation. The project also creates access to safe and hygienic sanitation systems, while reducing the distances walked to collect firewood. Biogas building skills have been initiated within the targeted areas, to enable replication of the project.

#### WOOLWORTHS –

*For their Good Business Programme that formalises the company's sustainability commitments*

The Woolworths Good Business Journey (GBJ) Programme was launched in April 2007 as a formalisation of Woolworth's sustainability commitments. The Good Business Journey is a comprehensive plan to make a difference in 6 key areas: Energy, Sustainable Farming, Water, Waste, Social Development, and Transformation. From an energy perspective, the commitment is to reduce relative electricity use and carbon footprint by 40% across the business by 2015 (off a 2007 benchmark). Current progress for relative electricity consumption stands at 31% reduction. Other elements of the Good Business Journey include a focus on innovation, transport route optimisation, fridge temperature optimisation, and the incorporation of clean energy production from photo voltaic panels on rooftops.

### SANEA ENERGY EDUCATION AWARD 2014

#### CARBON FOOTPRINTING GUIDE –

*Dr Marco Lotz and Prof Alan Brent for this publication*

Dr Marco Lotz (Nedbank Sustainability Carbon Specialist) and Professor Alan Brent (from The University of Stellenbosch's Sustainability Institute) developed a publication "Carbon Footprinting Guide: A practical footprinting calculation guide focusing on measuring, monitoring, reporting and verification". This guide, published by Nedbank in collaboration with The Sustainability Institute (University of Stellenbosch) in February 2014 and available for free download, is an informative and valuable tool to build an understanding of carbon footprinting and GHG emissions, and assists the reader in reducing their carbon emissions. The Guide is both educational and topical, particularly in light of the proposed carbon tax and a growing demand for sustainability reporting.