

Event report – Sustainability Week 2018

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Sustainable Energy Seminar – 6th June 2018

Time: 14h00pm

Introduction:

The session was opened by the honourable councillor Darryl Moss of the city of Tshwane – a member of the mayoral council responsible for Services and Infrastructure. He said that sustainability needs to take top priority in cities and noted that the city of Tshwane is committed to providing clean and affordable energy to its 3 million plus citizens. Whilst the energy mix remains a complex issue to manage, with two coal-fired power plants within its city boundaries, there is a need to transform the energy mix and look at the generation of large- and small-scale alternative solutions that include biogas and biomass producers. The city is working on transforming the energy supply bylaw and was also conducting a feasibility study of the generation of energy from sewerage sludge that can generate 70% of the energy required to power water treatment plants and reduce its carbon footprint – a first of its kind initiative. He is encouraged by the new dawn announcement by Geoff Radebe, who has stated that ZAR 56 million is to be given to new energy projects. He looked forward to the seminar being able to offer guidelines and solutions to enable the city to address its energy needs and reduction of its carbon footprint.

Wendy Green – CEO Fusion Energy: “Building South Africa’s new energy future”

Addressing the fact that energy is a major engine of political and other growth in the country, her suggestions were to re-design the supply of the power sector that would see an integrated grid approach to support lighting, heating, cooling and that would support a thriving market of energy users, traders and transporters and promote new jobs in the energy sector. The current restrictions on energy producers of less than 10 MW should be released and the trade in energy should be encouraged with a simplified access to a multi-faceted grid. The recommendation for Eskom to be unbundled and restructured to create transmission and operational functions and encourage a universal plan that prioritises low cost and low carbon energy solutions.

Professor Roula Inglesi Lotz – President of the South African Association for Energy Economics and Associate Professor in the Dept of Economics at the University of Pretoria: “Who are the winners and losers in SA’s changing energy mix”

Who wins and loses in the job creation and investment opportunities is a result of the current placement of coal fired power stations across the country. Using complex computer-generated modelling systems, she looked at four scenarios in reducing the dependence on coal and noted SA is not the only country looking to reduce its dependence on coal. Whilst mines will close, and this will cause significant economic impacts in Mpumalanga, the northern Cape would stand to gain with new generation power plants. The role of city planning was vital in addressing the losses and gains to be had and as to how the new labour

would be supported and the change in living conditions. Policy makers needed to consider the changes ahead based on the modelling projections.

Muzuvukile Mkhize – Regulatory Member responsible for Petroleum Pipelines Regulation at the National Energy Regulator of South Africa (NERSA): “Are long term petroleum assets worth the investment?”

Noting that 25% of Mpumalanga’s GDP is dependent on coal production, the country is facing severe inequalities in access to energy and resultant job losses when the energy mix moves away from a dependence on coal. He looked ahead to the new IRP that will be in place from August and discussed the regulatory approach to petroleum pipelines and supply. The Petroleum act seeks to promote employment and that new entrants to the petroleum market need to be provided for previously disadvantaged players. It is a high-risk environment that needed a regulatory approach, which is what NERSA provides to facilitate the development of new infrastructure like pipelines that can balance capacity and demand. He noted that government will be reviewing how cleaner fuels can be regulated later in 2018.

Maloba Tshehla – Innovation Specialist at the Climate Innovation Centre South Africa (CICSA): “Supporting Green Energy Start-Ups in SA, their challenges and opportunities “

Start-ups play a major role in job creation and the regulatory environment is key to enabling investments in new sectors. The Innovation Hub is championing new businesses in the bio-economy space and is enabling the township economy and green economy to be energised. Their open-door policy enables entrepreneurs with great ideas in the water, waste and energy sectors to seek support that can help their ideas to flourish. He acknowledged the importance of energy in driving development and to re-dress inequality at all levels. Good ideas need robust support to transform them in to profitable businesses, and the role of the Hub is to provide this both from a business and technical perspective. The case study of EcoView was discussed and its success after three years of incubation in the Hub. The energy sector has completely changed in the past ten years and all entrants in the energy sector during that time are considered new. Unlocking finance to support ideas is another way the Hub guides new businesses. He said the procurement process needs to be stimulated and made easier so that new ideas could be presented to decision makers and referred to the waste sector that was once a ‘mess’ but now a resource due to new technology and solutions to provide energy.

Louiza van Vuuren - Engineer at GIBB Engineering and Architecture: “Development Potential of Solar- Hydro Hybrid Schemes in Africa”

Renewable energy systems used for independent supply can be intermittent and unpredictable

Potential projects led GIBB to investigate integration of two or more independent renewable energy systems to develop Hybrid Energy Systems.

She referenced two case studies undertaken to explore the gains of PV-Hydro systems. Integration of these two renewable power source components aims at complementing each other.

During cloud cover or periods of little or no energy production, the PV system normally relies on batteries. Inclusion of a hydropower plant to the system allows for the reduction in the number of batteries or possible exclusion of batteries.

Project A (West Africa) aims to develop a hybrid scheme from inception to obtain optimum energy output. Project B (Southern Africa) is a potential hydropower scheme that has a fixed location with environmental, developmental and economic limitations. Each project factored in the following considerations: Meteorological, hydrology, environmental, topography, geology, access to site, transmission, power demand and technical verification. The conclusions drawn were that renewable energy systems can be integrated to optimize energy output, overcome individual renewable energy source limitations, increase system efficiency, and improve economic returns. The two sites were investigated in a case study and initial results show that it is plausible, and it warrants further investigation.

Initial results from this investigation show that similar studies for larger hybrid projects could also be done.

Belinda Mills – Professional Officer: Low Carbon Cities at ICLEI: “Monitoring, Reporting and Verification: Reporting from the Covenant of Mayors Sub-Saharan Africa and Global Covenant of Mayors for Climate and Energy”

ICLEI represents 1500 local governments around and supports 10 agendas in the quest for more sustainable cities. Reporting on the reduction of GHG emissions is a burden for local governments that have few resources to dedicate to the task, but it is a vital aspect of monitoring the reduction promises of national governments. The data provided needs to be transparent and mayors can support each other with their key learnings. How to collect data and what data will be used is constantly being worked on but the call to action is for mayors to unite in this endeavour so that a world standard can be agreed upon. The global covenant of mayors enables small and marginalised municipalities to connect with metropolitan municipalities to enhance support networks and share valuable insights. Building a sustainable and resilient city contributes to the SDG's, NDCs and more. Developing decentralised, city to city cooperation mechanisms increases the visibility of Local Government's actions on climate and energy.

The benefits for African cities joining this network include: Best practices and knowledge exchanges activities, providing general information and technical support through the help-desk office and networks of peer-to-peer exchanges in sub-Saharan Africa. Once a city signs up to the covenant it remains committed regardless as to when the mayor leaves office.

Faith Mkhacwa Energy Efficiency Specialist and Regional Project Manager for the Industrial Energy Efficiency (IEE) Project at the CSIR: “ISO 50001 (Energy Management Standard): A Double Reward for Companies”

ISO 50001 offers double rewards for companies undertaking to manage their energy efficiency using the ISO 50001 guidelines. The presentation emphasised that energy issues are multi layered in organisations and each employee has a role to play; it's all about the company culture and what perspective the leader has as well as that it is from the top management that new principles of behaviour are motivated. Questions about efficiency needed to be looked at for the long term; staff turnover can impact how far an organisation can go along this road. If kwh were equated to rands per hour in terms of earnings and spending then this would enable real incentives to be set to help an organisation to reach its goals. Sharing case studies of some remarkable (and unlikely) companies to have gone through the process, the trend to undertake standards to help improve energy management was clear around the world; top brands taking on this work in turn were influencing their supply chains.

Conclusion:

The energy seminar was attended by over 50 delegates with great interest in the innovations, energy mix, support structures and reporting frameworks that will enable a new generation of energy minded businesses to thrive during the next 5-10 years. During this period SA will work out its legislative framework to bring in a healthy mix of renewables and unlock funding for the support of new technologies and power mixes that will support SA's power grid and continued economic and social growth.