

# THE FUTURE OF ENERGY CONFERENCE 2016

"RETHINKING THE ALTERNATIVES"



It is a pleasure that, on behalf of Amabhusesi Conferencing & Training, we invite you to be part of our Conference on: **The Future of Energy.**

This two day Conference covers several topics that are vital to all parties involved in developing, investing in, implementing, generating and/or managing energy in Africa. The event will blend together classroom theory and case studies with interactive worked examples. These sessions will be led by industry leaders and experts.

## OVERVIEW

In recent years the global demand for energy has escalated exponentially with pressure on power supplies resulting from rapid population growth and increased international economic production. Not only is this straining the limited traditional energy sources such as coal and gas, but it is also creating a grave environmental burden on the planet. The current state of electrification in Africa is critical with two thirds of people having no access to electricity - In the Democratic Republic of the Congo, Liberia, Malawi and Sierra Leone, fewer than one in ten people have access to electricity. Based on current projections Africa will only experience universal electrification by 2080.

Not only is Africa experiencing a *lack of energy* but the poorest in Africa are experiencing some of the *highest global energy costs* as a result of the elevated expenses involved in providing power to rural households. There is mounting pressure on African governments and the private sector to re-evaluate their energy policies and strategies. **Traditional power plants are becoming redundant. They take an extensive amount of time to site and build,** they have large carbon footprints, they are difficult to put near customers, and require stringent permitting.

With this in mind both renewable and alternative energy generation is fast becoming a lucrative investment opportunity. Already sustainable energy is proving viable in Africa. Kenya is now the world's ninth largest producer of geothermal energy and the world's fourth largest solar facility is under construction in western Ghana.

25th - 26th May 2016

Amabhusesi Training Centre,  
Randburg, Johannesburg

## FEATURED INTERNATIONAL SPEAKER:



**Mr. Rod Welford**

Executive Chairman  
Ensign/ Australia

## FEATURED SPEAKERS:



**Silas Mzingeli Zimu**

Energy advisor to the RSA State President.



**Dr Tobias Bischof-Niemz**

The Centre Manager Energy, Council for Scientific and Industrial Research (CSIR)



**Dr Karen Surridge Talbot**

Centre Manager: Renewable Energy  
Centre of Research & Development Clean Energy - (SANEDI)



**Jose Luis Bobes**

Team Leader KfW facility, Green Industries SBU



**Mr Muhammad Essop**

Assistant Director - Strategic Infrastructure Development: Department of Environmental Affairs.



**Dr. Kamaluddien Parker**

International Energy Expert



**Mr. Phumzile Tshelane,**

CEO NECSA

organised by



This conference aims to explore both the common energy alternatives that are being used with their successes and shortcomings as well as the newest scientific research that is underway at world-renowned universities. The conference will use case-studies; theory and a site tour to give delegates the best understanding of global and African trends and investment opportunities as well as insight into the Future of Energy.

Delegates will gain up-to-date information and a comprehensive understanding of: new and revised legislation; current best practises; strategies which address challenges that face the industry and; new innovations and technologies. There will be ample opportunities for discussion, network and interaction with our experts. We are excited to be hosting this Conference and look forward to warmly welcoming all delegates to Johannesburg, South Africa in April 2016.

## OBJECTIVES:

- To gain a comprehensive understanding of the types of popular and unconventional sources of energy.
- To improve the skills necessary to implement alternative energy strategies within an organisation.
- To develop tools for analysing the feasibility of implementing various alternative energy sources.
- To explore how to identify and retain your top performers during times of change.
- To unpack the processes involved in managing organisational change during the Implementation of SSMs
- To examine the various alternative energy sources and how to apply them to your organisation, households.
- To explore how to develop a widespread governance framework

## TARGET AUDIENCE:

Government related ministries And entities from Energy, Electricity and Transport sectors

- Energy related NGOs
- Climate change related NGOs
- Technology providers
- Energy efficiency specialists
- Consultants
- Manufacturers and equipment
- Suppliers
- CEOs
- Executive Management
- Entrepreneurs
- Banks/Investors
- Municipal Electricity Personnel
- Independent Energy Producers
- Government officials
- Engineers
- Academics
- Researchers

## SPEAKERS:



### Silas Mzingeli Zimu

Energy Advisor to the RSA State President

Mr. Zimu started his career in the electricity industry when he joined Eskom in 1992 where he worked as an engineer in the generation group. Amongst areas that he was involved in is the normalisation of Soweto. He was also appointed as a contract manager for key projects like Alusaf and Matimba-Bulawayo. While still at Eskom, he was later appointed as a Key Customer Relations Manager looking after the mining industry.

He joined City Power as a General Manager - Planning and Technology and was soon promoted to Vice President, Customer Services. He acted in the CEO position since February 2006, until being appointed Managing Director of City Power.

Mr. Zimu has held the position of CEO of Suzlon Wind Energy South Africa (Pty) Ltd since October 2011 and shares with us the vision for a greater tomorrow. Mr Zimu, has recently been appointed as the energy advisor to the RSA State President. advisor to the RSA State President..



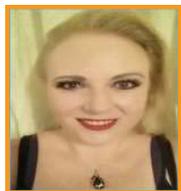
### Dr Tobias Bischof-Niemz

Centre Manager:  
Energy at the Council for Scientific and Industrial Research (CSIR)

He leads the establishment of an integrated energy research centre and a growing team of scientists and engineers. Before joining the CSIR, he was with South Africa's electric utility Eskom in the Energy Planning Unit, where he was part of the team that developed the power-capacity expansion plan (IRP) for South Africa until 2030/2050.

## SPEAKERS

Before he first came to South Africa in 2011 to join Eskom, Tobias was for five years with The Boston Consulting Group in their Frankfurt office, where he worked with the top management of leading European energy players on solutions to the challenges from integrating more fluctuating renewables into the energy system. Dr. Bischof Niemz is member of the Ministerial Advisory Council on Energy (MACE) that advises Minister Joemat-Pettersson on long-term,



### Dr Karen Surridge Talbot

Centre Manager: Renewable Energy Centre of Research & Development Clean Energy (SANEDI)

From November 2011 to present, Dr Surridge-Talbot was engaged as Centre Manager for the Renewable Energy Centre of Research and Development (RECORD) at the South African National Energy Development (SANEDI). This centre is mandated, through the government act (National Energy Act 2008, no. 34) that established SANEDI, to coordinate renewable energy research and development in South Africa. During 2012 Dr Surridge-Talbot visited many solar installation and research facilities in Spain and Germany to observe and learn from global expertise and experience in this sector. Finally, Dr Surridge-Talbot is also currently serving on the council of the South African Coal Ash Association (SACAA) as well as on the executive committee of the South African Solar Energy Association (SASEA).



### Jose Luis Bobes

Team Leader KFW Facility Green Industries SBU

- Team Leader KFW facility, Green Industries SBU, seconded to the Industrial Development Corporation by GFA Consulting GMBH, Hamburg, under contract from KFW
- Experience as Team Leader of Renewable Energy and Energy Efficiency financing for loan facilities, funds and guarantee programs sponsored by the World Bank, UNDP IFC, EBRD, KFW, USTDA in Central & Eastern Europe, Africa and the Americas.
- Served as Managing Director of Honeywell ESCO Polska (Central Europe).

Multicultural experience having led renewable and energy efficiency projects in: United States, Poland, Czech Republic, Slovak Republic, Estonia, Lithuania, Latvia, Russia, Kazakhstan, Spain, South Africa, Argentina, Colombia, Dominican Republic, El Salvador, Chile and Hungary. MBA from University of Chicago, Graduate School of Business. Masters in Engineering from Universidad Politécnica de Madrid. Fluent in Spanish, English, German and French. Basic knowledge of Russian. His professional passions are the Energy Efficiency and Renewable Energy technologies and their financing.



### Mr Muhammad Essop

Assistant Director - Strategic Infrastructure Development: Environmental Affairs

Started in the Department of Environmental Affairs at the KwaZulu-Natal Department of Agriculture and Environmental Affairs office. He received a promotional transfer to the National Department and is currently an Assistant Director for Strategic Infrastructure Developments focusing specifically on Renewable Energy applications. Mr Essop holds a BSc Honours in Environmental Science from the UKZN Westville Campus. He has expert and practical knowledge in the review and consideration of Renewable Energy applications as well as theoretical and practical knowledge in aspects of Environmental Law and NEMA EIA Regulations. Mr Essop readily shares his expertise and enthusiasm for sustainable alternative energy with numerous stakeholders and organisations on a day to day basis.



### Silvana Claassen

Climate and Energy Professional

Is a climate and energy professional, based in Johannesburg. After four years she relocated to South Africa in 2011 where she started specializing in climate change and energy. Her first appointment was as an auditor of CDM, VCS and Gold Standard projects at an UNFCCC accredited Designated Operational Entity. Subsequently she further developed her carbon and energy expertise as a senior advisor working for a climate consultancy firm in Sandton.



### Mr. Phumzile Thselane

CEO  
NECSA

He was appointed as the CEO of the South African Nuclear Energy Corporation Ltd (Necsa) with effect from 01 September 2012. Prior to his appointment, Mr Thselane served as Acting General Manager in the Eskom Nuclear New Build Division from June 2010.

He joined Eskom in 1996 as a Senior Physicist, having previously served on the Secretariat of the South African Council for the Non-Proliferation of Weapons of Mass Destruction. Mr. Thselane worked in Eskom's Pebble Bed Modular Reactor (PBMR) project from 1999 to 2005, where he was the Reactor Physics Group Manager and subsequently, General Manager: Corporate Services in October 2003. He then joined the Eskom Generation Division in April 2005 as Technology Strategy Manager and became Senior Manager: Nuclear Project Development in December 2007.

Mr. Thselane has held a number of key positions in other entities, namely:

## SPEAKERS

- Vice-President, Nuclear Industry Association of South Africa (NIASA)
- Non-executive Director of (NIASA), acting as Eskom representative. He also served in the Finance committee of the NIASA Board.

Founder member and Steering Committee Chairperson of the South African Nuclear Human Asset and Research Programme (SANHARP).



### Dr. Azwindini Ernest Tshibalo

Deputy Director:  
DCLD - UNISA

A researcher and M & D student supervisor in the Department of Environmental Science at the University of South Africa (UNISA). He is the Deputy Director in the Directorate for University Teaching and Learning Development. Academic qualification include: PhD Environmental Management (Unisa) in 2012; MSc (University of Pretoria) in 2004; MED (Unisa- 1999); BA Hons (Geography) Univen in 1988).

His interest in geothermal energy was prompted during his PhD study which was focused on the development of thermal springs. In 2007 he presented his first paper in New Zealand on the topic: "South African Geothermal Resources". At the conference he met Dr. John Lund, a member of the executive committee of IGA (International Geothermal Association), and the Director of the Geo-Heat-Centre in Oregon USA motivated him to continue with the study. In Feb 2009, the Director for the Department of Mineral and Energy in SA invited him to join a team of scientists and to present a paper on "South African Geothermal resources and potential for electricity generation" in the New and Renewable Energy Seminar for Africa in Tokyo, Japan.



### Louise Scholtz

Manager:  
Specialist Projects: policy & Future Unit, WWF SA

Louise Scholtz is a qualified attorney with a MBA and MPhil in Sustainable Development and Planning. She is employed as Manager in the Policy and Futures Unit at WWF-SA. Her focus areas include research relating to energy policy and infrastructure, sustainable strategies and development, and the green economy. She is also the lead on the following WWF-SA programmes/projects: WWF China/Africa Programme with a particular focus on engagement with the Forum on China/Africa Cooperation (FOCAC); Climate Solver; 'Greening' of Social Housing' project - partnering with NASHO and Communicare; and Sustainable Public Procurement Project - partnering with IISD and the Government of the Western Cape.



### Manisha Gulati

Energy Economist  
WWF SA

Manisha is the Energy Economist at the World Wide Fund for Nature (WWF) in South Africa. She has 15 years of multi-disciplinary experience drawing on development, resource and environmental economics covering India and South Africa. She specializes in policy-oriented research in energy, low carbon development, and resources nexus. Manisha is an economics graduate from St. Stephen's College, India and holds a Masters Degree in Business Economics from the University of Delhi, India.



### Dr. Agathe Maupin

Senior Researcher  
South African Institute of  
International Affairs(SAIIA)

A policy advocacy research think tank located in Johannesburg, at the University of the Witwatersrand. Prior to joining SAIIA in 2012, she successfully completed a PhD in Geography on hydro-political challenges and climate change in transboundary river basins in Southern Africa, at the University of Bordeaux, France, where she also taught Resources Management, Development and Climate Change studies.

Given her expertise, she participated in several international conferences, such as Rio+20, COP19 and COP20, and more recently, she attended to the International Scientific Conference on 'Our Common Future under Climate Change' at UNESCO, and to COP21 in Paris. Her most recent publications document water and energy linkages and the evolution of the South African, Congolese and Ethiopian respective energy sectors in a context of global change.



### Nthateng Mphofu

Renewable Energy Engineer

Nthateng obtained her BSc Mechanical Engineering degree at the University of Cape Town in 2014. She joined the Emergent Energy team to pursue her interest in renewable energy and project management, where she deals with the design, the technical, as well as the financial aspects of commercial and industrial solar PV systems.

She applies her acquired skills and knowledge to help advance the success of Emergent Energy and with her experience and exposure to Engineering Project Management, she is dedicated to delivering projects that will not only ensure sustainable development, but also satisfy customer needs.

## SPEAKERS



**Mr. Patrick Kulati**  
CEO Household Energy Safety  
Association South Africa

Is consummate leader and manager with a responsibility to provide strategic direction, stakeholder management, fundraising, financial stewardship and operational efficiency of the organization. He served as Managing Director of the Paraffin Safety Association of Southern Africa for 8 years before taking over as the Chief Executive Officer of HESASA. Previous to that he served as Africa Regional Manager working primarily in Southern and Eastern Africa for the International Council for Local Environmental Initiatives (ICLEI), Africa Region.



**Knox MSebenzi**  
Managing Director  
Nuclear Industry Association of South  
Africa (NIASA)

Is a qualified Electrical Power Engineer, which he received from the University of Cambridge and Rensselaer Polytechnic as well as having an MBA (Wits), Pr Eng. Msebenzi is the Executive Director of the Power Institute of East and Southern Africa (PIESA) and Managing Director of the Nuclear Industry Association of South Africa (NIASA).



**Ferrial Adam**  
Environmental Justice Activist  
Campaigner

Ferrial is an energy and climate change campaigner, focusing on nuclear energy.



**Eng Bo Barta**  
Professional Engineer

Bo Barta is registered Professional Engineer as per requirements of the Engineering Council of South Africa. His professional career spans more than 45 years working primarily on the water engineering and energy/water resources development and management projects scattered around the Southern Africa region (e.g. Botswana, Lesotho, Namibia, South Africa and Swaziland).

His key experience and accumulated expertise are primarily in planning, design and construction as well as rehabilitation of the water services infrastructure assets (i.e. mainly water transfer schemes including dams and water conveyance components). He, most recently, concentrates on the implementation of renewable energy technologies with emphasis on the small hydropower and extraction of hydroelectricity by the hydropower retrofit to hydraulic structures.



**Tarik Höppener**  
Managing Director  
Re-Energise Africa (Pty) Ltd

Tarik Höppener is the managing director of re-energise Africa (Pty) Ltd. since 2014. His responsibilities cover the functions of business administration, marketing, project and operation management as well as procurement. He obtained his extensive experience in international energy business starting with E.ON Kraftwerke GmbH in Germany (2001 -2009) and temporarily with E.ON Benelux N.V. (2006) in the Netherlands. Within the energy utility he performed various duties with an initial focus on commercial power plant operation management elevating towards corporate development and large-scale power-plant project development



**Dr. Luke Havemann**  
ENSAfrica Team

Dr Luke Havemann specialises in oil and gas law and he is a member of the ENSAfrica team that won the Law Firm of the Year award at the Africa Oil & Gas Awards 2014. Luke is the only practicing attorney in South Africa who holds a PhD in the field of oil and gas law, which he received from the University of Aberdeen, Scotland, and where he was awarded the CB Davidson scholarship. He is currently drafting the first South African textbook on Oil and Gas Law, which will be published during the course of 2016.



**Norman Ndaba**  
Director  
EY

Norman Ndaba is EY director and Africa Sector leader Power & Utilities and has been with EY since 1998. Ndaba serves as Global Client Services Partner to Eskom Holdings. Norman has comprehensive operational and management consulting experience in the energy industry. He spent 15 years in various positions and locations in the downstream oil business of Royal Dutch Shell. Norman is a B.Com (Economics), University of South Africa (UNISA) graduate and holds a post graduate Managerial Advancement (MAP) qualification from the Witwatersrand Business School (WBS).

## SPEAKERS



**Mr. Rod Welford**  
Executive Chairman  
Ensignt

Rod Welford is the Executive Chairman of an international, award-winning sustainable energy design practice, Ensignt, based in Brisbane Australia. Ensignt delivers energy transformation programs with some of the world's largest energy intensive and resource industry corporations. Prior to this, he was CEO of the Australian Council of Recycling, the national peak industry body for the recycling industry.

He retired in March 2009 from the Parliament of Queensland after nearly 20 years as a leading legislator and policy maker.



**Kubeshnie Bhugwandin**  
Technology Strategy Manager  
Eskom

Kubeshnie Bhugwandin received her BSc and BSc Honours degrees from the University of Natal and began her career with Eskom as a graduate in training in the Distribution Division in 2002. She has obtained her MSc degree from the University of Witwatersrand and has over 14 years of experience at Eskom. Kubeshnie is a registered professional with the South African Council for Natural Scientific Professions.

From 2010 to 2012 Kubeshnie held the position of Renewable Technologies Manager in the Eskom Research, Testing and Development Business Unit and was accountable for the research and demonstration of a number of solar, wind, biomass and ocean energy projects. Since 2012 she has occupied the position of a Technology Strategy Manager.. In this capacity she leads and manages the Eskom Research Generation Portfolio for Eskom which includes Clean Coal & Alternative Fuel Resources, Renewable Energy, Applied Chemistry & Microbiology and Plant Materials & Integrity.

She also leads and manages various national and international research memberships and collaboration agreements and serves as a technical director at various universities and technical institutes around the country



**Dr. Kamalluddien Parker**  
International Energy Expert

Dr Parker is currently MD at ZRW Mechanika, a specialist solar EPC company specialising in application of renewable and alternate energy to solutions in rural electrification, energy efficient lighting, and mobile power plants. The company has designed and installed up to 5MWp of distributed (rooftop and ground based) Solar across Southern Africa with adapted solar solutions. In 2013 over 25 000 informal settlements were electrified by innovative ZRW solar DC lighting kit.

Nelson Mandela/Rhodes Fellowship holder with a PhD in Aerospace Engineering Science from Monash University in Australia. Postdoctoral Fellow from California Inst. Technology (USA). Financial Masters Program from University of Johannesburg, MSc, BSc Electro-Mechanical Engineering, University of Cape Town, with majors in electromechanical robotics.

Has an established and noted track record in struggle for democracy in South Africa within the grassroots ranks of freedom movement pre-2004 democracy. Appointed 2006 as South African National contact point for Aerospace in the EU €240BN framework program representing South African interest at international level. Worked in various senior executive decision-making and policy development roles within the South African National Government between 2006-2012. Appointed Expert Projects Evaluator: European Commission Transport Technology Projects Directorate 2006-2013. Several local and international awards in the field of aerodynamics, fluid mechanics, experimentation and propulsion.



## Day 1 – Wednesday 25 May

### Registration

### Opening remarks by the chairperson

#### 08:30 – 09:15 Dr Karen Surridge-Talbot, SANEDI

Renewable Energy: African Trends

- The state of renewable energy in South Africa and Africa
- Future projections
- innovations

#### 09:15 – 10:00 Knox Msebenzi, PIESA/NIASA

Nuclear Energy as an alternative energy source:

- The challenges
- Opportunities

The state of nuclear energy in South Africa

#### 10:00 – 10:45 Luke Havemann, ENS AFRICA

Oil and Gas Regulation

- The use of shale gas in South Africa

- The regulatory

- the regulatory state of Renewable energy in South Africa and the whole of Africa

#### 10:45 – 11:00 Tea break

#### 11:00 – 11:45 Muhammad Essop, Department of

##### Environmental Affairs

*Update of Wind Energy Applications in terms of the National Environmental Management Act*

The presentation will cover the following aspects:

- 1) I will provide brief stats on the applications received and processed to date (which will be broken down in terms of technologies, provinces, and the different years)
- 2) I will provide comparative stats in terms of the applications received and processed vs the applications awarded preferred bidders in round 3 and round 4.
- 3) I will provide an overview map of the applications in the country.
- 4) Lessons learnt over the years and issues to take note of from DEA perspective.

#### 11:45 – 12:30 José-Luis Bobes, GEEF (IDC)

OVERVIEW FINANCING SUSTAINABLE ENERGY IN SOUTH AFRICA

Several commercial banks, development finance institutions such as IDC, DBSA, IFC, etc. and development agencies, such as USAID, offer financing solutions that support the growth of sustainable energy projects in South Africa, yet many of them are not known by many. Developers, entrepreneurs and any business, may benefit from a better understanding of the solutions available in South Africa.

José Luis Bobes will review the financing solutions available and will run a small benchmarking to illustrate which are the best for your project. Which ones offer longer tenors? Which ones offer better interest rates?, what facilities provide Technical Assistant and or investment grants.

#### 12:30 – 13:15 Eng Bo Barta, Consultant

Hydro Projects - "An overview of Hydro Electricity Projects in South Africa: Past Developments and New Opportunities".

#### 13:15 - 14:00 : LUNCH BREAK

#### 14:00 - 14:45 : Norman B Ndaba, Ernest and Young

##### Transformation

- The Title –Sector in Transformation
- Currently, there is a huge demand for electricity globally of which the highest demand is in Africa.
- Clear picture of the various drivers for transformation, current & future and the changes required and areas of opportunities.
- Infrastructure Investment section shows the required investment from 2014 – 2040.
- Renewable energy demand growth which again highlights an opportunity with regards to renewable energy from a global perspective.
- The highest demand will be from Africa and a nice breakdown of demand per region is provided – opportunities in the market.

## AGENDA

- A breakdown of electricity supply sources and how the supply of electricity source will transform from 2012

- 2014, - clear picture of opportunities with regards to source requirements.

- Digitization! Let's take the information we have, and we have lots! Now we are going to analyse this data and we will show you how we can help you to make better decisions, we will make sure that you meet your customers demand and not only that we will show you how to improve your business – what does this mean? You will be more efficient, with more satisfied customers and more time to focus on what really matters, how to improve your business!

- Again explaining transformation of different areas based on another factor to consider and as you can see Africa portrays a very different picture from the rest of the world and we can change that.

- Overall picture of where we should focus our attention and why.

- Summary. Based on all the information we have to grab this opportunity. We have the information, we know where to focus and if we do not adapt to the emerging changes and transformation we will miss out on a tremendous opportunity.

### 14:45 - 15:30 : Ernest A. Tshibalo (UNISA)

Geothermal Energy as a source of renewable

Energy:

The theory and practicality of producing geothermal based energy in South Africa. Uses of thermal springs include the generation of electricity. Chena hot spring in Alaska was given as an example of the hot spring generating electricity at 74°C using binary cycle system. Using the NRF funding, I started attending geothermal conferences around the world (mention countries and years) Water Research Commission (WRC) and the SA thermal spring's project (Unisa and the Council for Geosciences)

#### The South African situation

South Africa is rich in thermal springs. They are of meteoric origin rather than volcanic. Hot springs are very good indicators of deep water circulation and active hydrothermal systems linked to specific geological structure. Map of South African hot springs

- **Geology and geological energy potential**
- **Potential for geothermal sites**
- **Economics of geothermal energy plant**
- **Need for forming Partnerships with other institutions interested in the project.**

### 15:30 – 15:45 TEA BREAK

### 15: 45 – 16:30 Nihateng Mphofu, Emergent Energy

South Africa, like most cities in Africa, has high irradiation levels, and for a Solar PV system, this implies a high yield in energy. A solar PV system is valuable since its energy peaks during the peak of consumption of energy, especially in Large consumption environments such as office parks, Shopping malls, where there is a high need of energy. At Emergent energy, we are dedicated to providing systems that are both sustainable, and also have limited risks on long term financial viability. The benefits of Solar power in South Africa are enough to demonstrate the need to install more systems and finding more ways of improving on the already existing systems. Both the environment and society are considered in the sustainability of usage of this type of energy source.

#### Closing Remarks

#### END OF DAY 1

### Day 2 Thursday 26 May

#### Registration

### 08:30 – 09:15 Ferrial Adam, 350.org

#### Renewable Energy, Best Development Path for South Africa?

- Overview of *Depending on role wind-based energy can contribute in Africa,*
- opportunities and challenges
- processes involved in implementation and on what type of scale implementation is viable

climate change and renewable energy

### 09:15 – 10:00 Agathe Maupin, SAIIA/WITS

**Hydro Energy** Linking water and energy in a sustainable Way. Sustainable development summits and climate change negotiations have steadily paved the way to the recognition of the inextricable linkages between water, energy and climate change. It is undeniable that water and energy resources share a strong interdependence, and both are equally perceived as stressed, precious and with the potential to trigger conflicts. Consequently, poor governance of one sector or in one country has knock-on effects for both water and energy multi-leveled security.

With these resources turning into an increasing concern on Africa's government agendas, notably to respond to growing industrial development needs, harnessing the continent hydropower potential has become a key feature of recent large electric scheme initiatives. However, apart from large dams' hydroelectricity, other options have emerged that link water and energy in a more sustainable way.

Innovations such as amplified hydro- power generation technology, as well as technologies gearing wave and tidal power towards a 'next generation' electricity production, such as hydraulic turbines floating in riverbeds - illustrate how water and energy have learned to speak to each other. These innovations will be briefly explored here.

Bridging the gap between inventions stemming from public and private research labs and their industrial production to benefit our societies and turning these innovative solutions into climate actions are two essential steps. Governance patterns have started to transform significantly to reflect systemic water and energy linkages, but these attempts have been tepid, partly because most institutions operate under a complex system of overlapping mandates and short-term funding.

## 10:00 – 10:45 *Dr Tobias Bischof Niemz, CSIR*

### Wind Energy

- The role of wind based energy in South Africa energy

- An overview of the best path for South Africa in renewable energy

## 10:45 – 11:00 **Tea break**

## 11:00 - 11:45 : *Silas Zimu, Energy Advisor to the President*

### RSA Energy Outlook

## 11:45 - 12:30 : *Louis Scholtz & Gulati Manisha, WWF*

### Cleaner Energy

## 12:30 - 13:15 : *Patrick Colati, HESASA*

### Waste to Energy

## 13:15 - 14:00 : **Lunch Break**

## 14:00 - 14:45 : *Phumzile Tshalane, NECSA*

### Nuclear Energy as an Alternative Energy Source for South Africa.

#### Presentation Overview

- Overview of Necsa's History
- Current Necsa Activities
- SA's Nuclear Energy Policy
- Background to SA Nuclear New Build Programme Development
- SA's IRP 20102030; Our Experience as a Nuclear Operator; and Why We Require Nuclear Power
- Proposed Nuclear Energy Programme for South Africa
- What is Necsa's plan to ensure it is prepared for the proposed nuclear new build programme and progress to date?
- Necsa's Role in Enterprise Supplier Development in SA
- Necsa's Plans for Nuclear Skills Development
- Necsa's Manufacturing Capabilities

## 14:45 - 15:30 : *Tarik Hoeponeimer, Re-Energise Africa*

## 15:30 - 15:45 : **Tea Break**

## 15:45 - 16:30 : *Silvana Claassen, CES*

### Funding Various Energy Sources

Finance for Alternative Energy Projects plays a critical role in accelerating the growth of South Africa's share of Alternative Energy in its energy mix. Investments in renewable energy projects can come from a multitude of sources: subsidies, international aid agencies, funds, loans, etc. At the same time provision of relevant, regulatory and implementation frameworks is needed to ensure that investments in the sector take place in an effective manner. During this session I want to discuss initiatives that were taken in South Africa to stimulate the take up of renewable energy projects in the past and compare these actions to measures implemented in other countries such as Germany.

I will continue with presenting an overview of current finance options for South African renewable energy projects, which include: subsidies; tax-incentives; official development assistance; and private investments, and look at trends in finance structures abroad like established energy cooperations. A final item I wish to touch on, is how the proposed carbon tax might generate opportunities for funding of renewable energy projects through the generation of carbon credits tradable on the domestic and international market.

## 16:30 – 16:45 **Closing remarks - Chairperson**