



**Patron's Address By**

**Hon Mr Jeff Radebe, Minister of Energy of the Republic of South Africa at  
Windaba (*delivered on his behalf by Mr Thabane Zulu – Director General –  
DoE*)**

**Cape Town International Conference Centre, Cape Town, South Africa**

**8 November, 2018**

**Time: 09:00 – 10:30**

Moderator, the Chairperson of the Board of Directors for SAWEA, Ms  
Tebogo Movundlela,

Chief Executive Officer of Europe & Sub-Saharan Africa (SSA), Onshore  
Wind, General Electric Renewable Energy, Mr Peter Wells

Head of Department for Managing Infrastructure Investment, Reform and  
Regulation in Africa (MIRA), University of Cape Town, Graduate School  
of Business, Prof. Anton Eberhard

Excellency's and Members of the Diplomatic Corps,

Senior Government Officials,

International Partners,

Distinguished guests,

Ladies and Gentlemen.

Good Morning,

Let me express gratitude to the South African Wind Energy Association (SAWEA) for inviting me to Windaba 2018. It is my pleasure to address you today in this annual conference under the theme “**Investment for an integrated Power transition**”. I would like to commend SAWEA and the Global Wind Energy Council (GWEC) for consistently delivering a successful Windaba every year and keeping the momentum in ensuring that key stakeholders regularly deliberate issues confronting the sector as we search for various solutions in this sector.

**Ladies and gentlemen**, while the conference is primarily about economic opportunities and social benefits that investments in renewable energy bring, we dare not ignore the South African context. The year 2018 marks the celebration of 100 years of two of our stalwarts and icons, Tata Nelson Rolihlahla Mandela and Mama Albertina Nontsikelelo Sisulu, in direct action towards the achievement of their shared vision of a better society. Both stalwarts dedicated their entire lives to the struggle of liberating the people of South Africa and beyond. We continue to draw from their inspiration in holding the fort.

### **Sustainable Development Goal 7 Progress Tracking Report**

The Sustainable Development Goal 7 calls for us to ensure “access to affordable, reliable, sustainable and modern energy for all, by 2030”. According to the SDG 7 progress report released in June 2018, the number of people gaining access to power has been accelerating since 2010 by around 118 million each year, but progress has been uneven. It

further stated that if current policies and population trends continue, as many as 674 million people will live without electricity by 2030. This is a serious concern.

To make it worse, the report further states that the current progress falls short on all four SDG targets, which encompass universal access to electricity as well as clean fuels and technologies for cooking, and call for a doubling of the rate of improving of energy efficiency, plus substantial increase in the share of renewables in the global energy mix. While overall progress falls short of meeting all the targets, real gains have been made in other areas. Expansion of access to electricity in poorer countries has recently begun to accelerate, with progress overtaking population growth for the first time in Sub-Saharan Africa.

While it is stated that energy efficiency and renewable energy are making impressive gains in the electricity sector, these are not being matched in transport and heating – which together account for 80 percent of global energy consumption. Lagging furthest behind is access to clean cooking fuels and technologies. The use of traditional cooking practices among a large proportion of the world's population has serious and widespread negative health, environment, climate and social impacts.

**Programme Director**, South Africa is not immune to the concerns raised in the latest SDG 7 progress tracking report based on its current access to electricity of 87% since 1994 when access at the time was at 36%. By 2016, South Africa's access to electricity as a percentage of the urban population was 93% while rural was 68%. Access to Clean Cooking in the same year was 85%. Evidence of this is in the statistics of fatalities in informal settlements caused by fires attributed to paraffin stoves and braziers especially during cold winter days. It is indeed concerning that

Sub-Saharan Africa and South Asia continue to have the largest access deficit. Collectively, we have to do our bit to address this.

For us there is a clear nexus between our economic emancipation and the provision of energy to our people, because there can never be economic liberation without universal access to energy being achieved.

Climate change is one of the foremost challenges facing human-kind today and should we ignore this challenge, we would be doing that at our own peril.

Energy is inextricably linked to climate change. South Africa as a developing country has relatively high greenhouse gas (GHG) emissions when measured per capita. According to the World Resources Institute Climate Analysis Indicator Tool, South Africa's GHG profile is dominated by emissions from the energy sector which accounted for 84% of the country's total emissions in 2012. Of this, 60% of the emissions were due to the electricity and heat, 15% from manufacturing and construction, 12% from transport, and to the balance from other energy subsectors. Therefore, the diversification of our national energy portfolio becomes very critical.

### **Renewable Energy Investment**

We boast about the success of the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) in bringing in an investment of almost R193 billion (or \$20,5 billion) from 92 selected projects and the procurement of 6328 MW between 2011 and 2015. With the recent Investment Summit, we are on track to surpass the target of US\$100 billion that the President has set. Of this target, we believed that US\$25 billion could come from the energy sector. Based on increasing performance in the Wind and Solar Energy sectors, I continue to invite

investors to consider South Africa as an investment destination with huge potential to grow in a politically stable environment.

## **Wind Energy Resource Assessment and Mapping**

Let us consider some of the things we have done to facilitate investment in the wind sector. It will be difficult to plan thoroughly if one does not have certainty on resource availability. The Department of Energy supported by the South African National Energy Development Institute (SANEDI), CSIR, South African Weather Service, University of Cape Town (UCT) Denmark Technical University, and the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP) embarked on improving the wind energy resource mapping of South Africa, through the South African Wind Energy Programme (SAWEP). This was precisely to enable a conducive planning environment for investors.

Phase 1 of SAWEP resulted in the following:

- (1) Completion of Wind Atlas for South Africa (WASA 1) covering the Western Cape, some parts of the Eastern Cape and the Northern Cape through the erection of 9 (nine) wind measurements masts across these provinces. The masts have been operational since September 2010 which resulted in the release of the first large scale high resolution Wind Resource Map for South Africa (WASA) in 2013;
- (2) WASA 2 resulted in the construction of 5 (five) wind measurements masts covering the remaining areas of the Eastern Cape Province, Kwa Zulu Natal and Free State Provinces and have been operational since November 2015. They are expected to be completed in

December 2018 thus resulting in an interim resource map of South Africa validated from WASA 1 & 2;

- (3) WASA 3 resulted in the erection of 4 (four) wind measurements masts in 2017/18 covering the remaining parts of the Northern Cape Province and rest of South Africa. Two of the masts are operational and I expect the other two to be online this week. WASA 3 is planned to be completed in 2020. This infrastructure investment will form part of a long term, uninterrupted and quality assured Wind Data bank for South Africa. SA's wind resource data is freely accessible to the public, universities and other research institutions.
- (4) It was worth investing in this infrastructure consisting of 18 masts across the provinces, as well as maintaining them to enable efficient and effective resource assessment and planning. As a result, South Africa is currently actively contributing towards the Global Renewable Energy Atlas led by the International Renewable Energy Agency (IRENA).
- (5) Following the successful completion of SAWEP 1, we continued to look at SAWEP 2 in order to enhance the economic optimisation of the REIPPPP and to support the small scale wind development sector. Through the review study on the small scale wind development sector, we have also confirmed that there is scope to enhance growth in this sector. We must not forget to focus on training and capacity building as we grow the wind sector.
- (6) Building the requisite skills in the sector cannot be over emphasised so we have underscored the importance of forging a strong partnership with the South African Renewable Energy Technology Centre (SARETEC) and the private sector to develop basic wind turbine technology training; basic safety training; and complemented

by training in entrepreneurship and other skills that would increase local participation and investment in the communities.

### **Addressing unemployment and growing the economy**

In line with the State Of the Nation Address, President Cyril Ramaphosa has called on us to urgently draw on the youth in far greater numbers into productive economic activity. We have to intensify our efforts in building a local manufacturing base through localisation programmes. With the Investment Conference just behind us, there is a lot of hope and optimism that we can do it. The power sector has a huge potential to contribute its share to address this high level of unemployment.

In partnership with business, we can introduce youth in the work environment through internships, apprenticeships, mentorship and entrepreneurship. I therefore call upon you to also open up to these initiatives to make a change. Time for action is now to fundamentally improve the position of youth, women, people with disabilities and local communities where we do our business, to bring them into the value chain as owners, managers, producers and service providers.

### **South Africa's participation in Oceans Economy**

South Africa holds many unexploited opportunities and offshore wind and solar energy are currently not being exploited as we ought to. We are very fortunate that Windaba 2018 is hosted at a time when recent drought in the Western Cape is behind us. The drought was an eye opener to some of the possibilities that are available to us, given our vast renewable energy resource base. Think about water desalination plants being

powered by hybrid solar and wind models, and we have solved the challenge relating to the unavailability of cheap electricity.

The recent data and research findings by IRENA titled “Offshore Innovation widens renewable energy options” confirms capacity growth, ongoing cost and performance improvements, increasing technological sophistication and continued need for international standardisation for the proliferation of renewables such as offshore wind power and other nascent ocean energy technologies.

It is estimated that offshore wind capacity could reach 520 GW in 2050, from a base of 20 GW in 2018. This should serve as an encouragement to put more effort on our Ocean Economy. Our commitment to the Indian Ocean Rim Association (IORA) provides us with an opportunity to connect with the rest of countries along the Indian Ocean and derive the full benefits from the Oceans Economy Initiative under Operation Phakisa.

## **Renewable Energy and Climate Change Impacts**

South Africa’s ratification of the Paris Agreement has reinforced our commitment to the deployment of renewable energy to reduce our greenhouse gas emissions contribution. This agreement envisages “*complete decarbonisation after 2050*”. The ambition for decarbonisation and zero greenhouse gas emission entails a far-reaching commitment across economic sectors and activities. In the energy sector, it implies a switch to the highest possible penetration of renewable energy and other cleaner technology measures as soon as possible.

Through the energy sector we are uniquely positioned to drive South Africa’s transition to a low-carbon economy. The goal of integrating and increasing the share of renewable energy and other cleaner sources in

the energy mix requires development of appropriate regulatory framework to attract investors and mobilisation of financial resources to support contributions from the fiscus.

### **Removing Regulatory barriers through Policy Certainty**

With the publication of the draft Integrated Resource Plan, 2018, I hope you have taken some time to look at the document and have provided comments. As government, we use platforms such as the one created by Windaba as support mechanisms for engaging on policy discourse. Globally, it has been proven that a conducive policy environment has the greatest impact on the growth of the renewable energy sector. It is without doubt that we have to adopt enabling policies and regulatory frameworks to catalyse investment and to attract investors.

I could not agree more with the IRENA, 2018 Report titled “Insights on Planning for Power Systems Regulators” citing the need for thorough, well-informed planning as essential for developing electricity systems that are prepared for the increased penetration of renewables. Long term planning will help the country optimise decision-making, amid rapid technological innovation that involves trade-offs over resource and risk allocation.

It was also encouraging to note that IRENA in its effort to identify useful regulatory practices for the era of rapidly improving renewable energy technologies, drew key insights and experiences from South Africa’s integrated resource planning amongst others. We have committed to ensure thorough consultation on the IRP because we recognize that effective power planning systems requires stakeholder engagement in order to align with broader public policy goals.

In line with this approach, we have participated actively in the parliamentary public hearings, roadshows and we will be engaging Nedlac so that all public comments are addressed as part of our process.

We are confident that this approach will assist us to establish certainty in the energy sector, thus creating a conducive policy direction, to expand affordable electricity services to more customers; to promote more reliable services; to address environmental concerns and in particular to reduce air pollution and to reduce water stress.

We are steadfast in our quest to achieve the goal of broader economic development.

**Ladies and gentlemen,** Wind power is extremely attractive and competitive on price. Whilst there is upward pressure on the electricity tariff, we have to ensure that we introduce generation options that will effectively lower the cost of electricity.

Rapidly falling costs and enabling policy frameworks have allowed solar and wind to compete with conventional power generation sources in multiple geographies, enabling the share of renewables in electricity to rise rapidly throughout the world. However, electricity accounted 20% of final energy consumption that year, highlighting the need to accelerate progress in use of renewables for transportation, heating and cooling which are critical if we are to reach the global target. As the electricity decarbonizes more and more, we can switch other energy demand into electricity, such as electric vehicles for instance. I read an article recently that indicated that “As solar panels get smaller, cheaper, and more powerful, Korean automakers Hyundai and Kia announced a plan to put them directly on cars to give electric cars more range and gas cars better

fuel-efficiency. The plan will encompass hybrids, electric cars, and conventional cars in three stages”.

This announcement comes in addition to the recent announcement that Jaguar, in partnership with electric vehicle charging authority GridCars, has laid the foundation for the future of electric and plug-in hybrid vehicles in South Africa with 82 new public charging stations in the country’s major hubs and along frequently-travelled holiday routes. The R30-million infrastructure investment will make day-to-day travel, as well as longer day trips and even very long journeys possible for owners of electric vehicles. Certainly, this is part of transitioning. These investments will build on other investments already made in the electric vehicle sector.

It is clear that, sustaining the growth of renewable electricity will further require additional attention to grid integration issues, including the incorporation of battery storage and smart grid technology to support the management of variable generation resources.

In conclusion, the integration of the power, energy efficiency, heating/cooling, transport and storage sectors offers significant opportunities for increasing the share of variable renewable energy generation into the energy system while expanding the use of renewable energy in other end-use sectors such as heating and cooling

With the coupling of various energy sectors, the prospect for further decarbonisation of the economy becomes a real possibility. Integration of energy sectors will require significant investment in new infrastructure to strengthen grid distribution networks as well as rolling out of charging stations for electric mobility. In addition, infrastructure investment will allow South Africa to exploit fully the country’s abundant renewable energy resources.

I wish you all the best in your deliberations.

**I thank you**