

**SPEAKING NOTES BY DEPUTY MINISTER OF THE DEPARTMENT OF
ENERGY, SOUTH AFRICA AT THE LAUNCH OF THE 1ST VERIFIED
NUMERICAL WIND ATLAS**

VENUE: RIVERS CLUB, CAPE TOWN

13 MARCH 2012

City of Cape Town Executive Mayor, Ms. Patricia de Lille,

Chairperson of the Portfolio on Energy, Mr. Sisa Njikelana,

Ambassador of Denmark, Mr. Dan Frederiksen,

UNDP Resident Coordinator, Dr. Agostinho Zacarias,

Senior Government Representatives,

Industry Representatives,

Esteemed Members of the Media,

Ladies and Gentlemen

Programme Director, when we launched the Department of Energy's "**March 2012 Energy Month**" here in Cape Town last week, we mentioned that today we shall be launching the South African Wind Atlas. Therefore this event forms part of the calendar events we have planned to ensure that we interact with a varied spectrum of stakeholders and role players in our efforts to support and also realize the United Nation's objectives for the international year of sustainable access to energy for all.

Ladies and Gentlemen, we are grateful to have you in our midst today when we launch our 1st Verified Numerical Wind Atlas for South Africa. Some of you may

wonder as to what a wind atlas has to offer South Africans when the country is faced with the difficult challenges of unemployment, inequality and poverty.

As you are well aware, the South African Government prioritized five focal areas which include health, education, rural development, creation of decent jobs and the eradication of crime, There is significant progress towards attaining improvement in almost all these areas. However, keeping our focus in the energy sector, I would like to remind us all that the common denominator in all these 5 focal areas- is energy. This energy must be affordable, secure and sustainable. environmentally sustainable energy sources. We cannot achieve all these key pillars unless we diversify our sources and incorporate environmentally benign energy sources such as wind and other renewable energy technologies. Ladies and gentlemen, we need to always remember that Energy is needed to provide lighting in schools and hospitals, power life saving machines in hospital operating rooms and provide refrigeration for critical medicines. It is also energy that enable men and women to move safely at night particularly in areas where there are street lights which are very critical to the fight against crime etc.

Again let me refer back to what Government said in 2009 in our medium term strategic framework up to 2014. We said, “at the core of the critical activities that can drive faster economic recovery and lay the basis for movement to a higher growth trajectory, ensure protection of jobs and expansion of employment opportunities, and offer social protection are major infrastructure programmes with a large impact on productivity, competitiveness, local industrial development and on the quality of life”.

Government declared 2011 as a year for job creation and was joined in this call by labour, business and the community to realising the principles and actions contained in the New Growth Path, 2012 is dedicated to infrastructure development that will see extensive work being done on new electricity generation plants including the proliferation of renewable energy independent

power producers as per the current bidding process led by the Department of Energy.

You will all recall that in order to implement our national strategic objective of ensuring security of supply and diversifying our energy mix to include clean and renewable energy sources, we want to meet the needs of our fast growing economy without compromising our commitment to sustainable development. Consequently, we have embarked upon the development of a plan that sets this sector on a different trajectory than we currently have.

As you will recall, last year Cabinet approved the Integrated Resource Plan 2010 – 2030 with a 42% compliment of all new generation capacity to be delivered by renewable energy. Wind energy constitutes over 8,000MW of the portfolio of renewable energies to be deployed up to 2030 in terms of the current IRP. For this reason, the accuracy of the wind atlas will assist greatly in identifying the most suitable locations for placing the wind farms.

Ladies and Gentlemen, based on studies done in the past, it is widely acknowledged that South Africa has good wind energy resources along the coast and in some inland areas. It is also a fact that although some studies were done in the past to assess this resource, the results produced from these studies could not be relied upon wholly as the methods used then were different. Since then the techniques that can be used to reach accurate estimates of wind energy potential have evolved and also advanced.

As we embark on our ambitious renewable energy programme, the need for reliable, accurate and representative data on wind becomes critical and it stems from the fact that, according to Scientists, the power output from a wind turbine is directly proportional to the cube of wind velocity. Thus, a slight increase in wind speed will result in a significant difference in wind power produced.

As you may know, one of the major challenges hampering large scale utilization of wind energy is knowing the practical exploitable wind energy potential in the

country and this information is needed for both resource and investment planning. Distinguished colleagues, it is undeniable that we need a good and reliable wind map for the purposes of strategic planning.

Given our strategic objectives, the Department realized that the challenge of accurate and reliable data needed to be addressed urgently so as to be able to confidently move into a low carbon economy using the resources that South Africa has optimally.

It is against this background that in 2009 we embarked on an exercise through the South Wind Energy Programme (SAWEP), a programme funded by Global Environmental Facility with UNDP as the Executing Agent to update our wind atlas. For this component of the project, SANERI is our executing partner. This is a 4 year project covering three provinces, namely Northern Cape, Western Cape and Eastern Cape. This exercise augurs very well with the Grid Capacity Assessment Study which Eskom undertook and released a report in December 2010. Eskom's report covered the same provinces within phase 1 of this study. It is important that we always act in an integrated approach to provide a comprehensive picture for each sector hence we should work very close with Eskom as the National Utility responsible for the national grid. Furthermore, two of the provinces where WASA is being implemented have high levels of poverty which could be done away with by the installation of well-placed wind farms.

The purpose of the project I referred to earlier on is to provide accurate measurements and data for modeling of the wind resource in order to assist planners, the power sector and wind developers to identify sites with sufficient wind resources to set up their wind power generation facilities. The outputs from WASA will also help developers in planning and project preparation of bankable projects, siting of turbines as well as siting of wind farms).

This WASA project also aims to build local capacity in wind resource assessment through the involvement and participation of the South African Weather Service (SAWS), University of Cape Town (UCT), and the Centre for Scientific and

Industrial Research (CSIR) and RISO DTU. The South African National Energy Development Institute (SANEDI) manages the South African WASA team. The work done as part of WASA will go as far as positively impacting on the development of a local manufacturing wind energy industry.

To be able to carry out this all important project, ten wind measurement masts and data collection systems were installed in selected areas of the Eastern, Western and Northern Cape provinces. The project also has five working packages that will culminate into a wind atlas and database for South Africa. The wind resource assessment is done using:

- Meso-scale modeling which was originally used for numerical weather prediction and has now been refined and uses a variety of global, geophysical and meteorological databases;
- Micro scale modeling;
- Undertaking site visits to determine actual wind measurements;
- Application of the numerical wind atlas; and
- Estimation of extreme wind climate in the selected areas.

At the 2nd Wind Energy Seminar (on 28 September 2010), Minister Dipuo Peters and Danish Ambassador Mr. Dan E. Frederiksen launched the wind energy measurement package of the WASA project. Today Ladies and Gentlemen, one of the major milestones on the Wind Atlas for South Africa project calendar has been achieved and we are here to celebrate that. WASA has produced at least one-year's worth of Quality Assured and checked wind energy data that are graphically displayed online and can be downloaded on the following websites:

<http://www.wasa.csir.co.za>

<http://wasadata.csir.co.za/wasa1Data>

The numerical wind atlas has been verified by quality checked wind measurements from all the ten wind measurement masts which have been in operation since September 2010. This Numerical Wind Atlas is useful for comparison and identification of potential viable wind sites. The measurements will continue for the remaining two years of the current Wind Atlas for South Africa project and the numerical wind atlas will be updated accordingly.

The user statistics indicates that the numbers are growing, currently there are 425 Registered users from 35 countries with 14942 downloads, which were recorded by January 2012 and to us this confirms the need and usefulness of this project. We are also happy that we can offer such a service to the public at no cost.

Distinguished Guests, the application of the Numerical Wind Atlas enables and extends beyond the 10 wind measurement mast site areas. It further enables the prediction of key parameters such as the wind speed, frequency, direction, estimated power output with known and traceable accuracy at any site covered by the numerical wind atlas database.

Of significance ladies and gentlemen is that the verification of the Numerical Wind Atlas that has been carried out against the measured data provides essential information about uncertainties and builds knowledge regarding the causes of uncertainties – all of which is shared in the public domain by the WASA project team and presented at the Mid-Term WASA Workshops.

Ladies and gentlemen it is pleasing to see this project attracting attention of both regional and the international community. I am also encouraged by the collaboration and participation of the International Renewable Energy Agency (IRENA) particularly because IRENA is facilitating the Clean Energy Ministerial (CEM) Global Solar and Wind Atlas initiatives. This process will enable South Africa to participate effectively in the Global Solar and Wind Atlas as one of the CEM initiatives we have also endorsed as the South African government. I am

also encouraged by the participation of representatives from Namibia who are also working on developing a Wind Atlas for Namibia at our planned workshops this week. These workshops will provide participants with an opportunity to see in detail how this data and the map can be accessed and used.

Programme Director, let me mention it again that in addition to the workshops where we would be sharing our results with delegates, we are also looking forward to the information session where we would be discussing local and regional expansion and the international cooperation opportunities. We are therefore looking forward to your invaluable inputs. Ladies and Gentlemen, we should also not forget that as part of implementing the Green Economy Accord, the Local Procurement Accord and the National Skills Development Accords which were signed last year by government and its social partners, we are certain that a well developed wind sector value chain will certainly contribute towards the creation of jobs.

Let me end by extending our deepest appreciation to the Global Energy Facility (GEF), United Nations Development Programme (UNDP) and the Royal Danish Embassy (RDE) for collaborating with us on this project. Your contribution both financially and technically has contributed immensely to the transfer of skills and knowledge and has put South Africa on a firm footing to support the global wind atlas project. I also want to extend the Department's gratitude to the participating institutions, i.e. SANERI, UCT, CSIR, SAWS, and Riso DTU for the sterling work that has been done thus far, hoping that your positive collaboration will continue for the remainder of this project.

I thank you