



**Speech delivered by the Minister of Energy, Ms Dipuo Peters, MP, at a Community Meeting**

**15 March 2013, Humansdorp**

Programme Director, Cllr Camealio-Benjamin

The Honourable Speaker, Cllr. Dlomo

Other Councillors from the Municipality

Community Leaders

Distinguished Guests

Ladies and Gentlemen

Good Afternoon

It is truly my privilege and pleasure to address all of you in the beautiful province of the Eastern Cape, home to some of the greatest leaders of our time, Nelson Rolihlahla Mandela, Govan Mbeki, Wilton Mkwayi, Alfred Nzo, Raymond Mhlaba, and many other icons and legends of our struggle against apartheid.

Besides being blessed with the beautiful ocean, this province is known for its biodiversity and history in the freedom of our nation. Due to its location, however, it has always been on the back footing of economic development – in the past because of the political risk associated with close proximity to homelands, and presently because of its majority rural infrastructure and weaker skills development opportunities. Nevertheless, this region is ripe for infrastructure and social development. Access to the sea, as one of the cheapest modes of transport counts heavily in your favour. You are halfway between the East and West, a perfect docking point not only for supplies, but goods as

well. There are niche successes in this area, for example motor vehicle industry, is testimony to prove you have what it takes given the opportunity.

Opportunity is what I speak about today. I trust that this message will live long in your memory, and be realised as one of the turning points in the history of this province and our country.

South Africa is currently home to two nuclear power reactors in the Western Cape, near Cape Town. This power station produces enough electricity for at least 2 million mid-income households. There is also a research reactor in the North West Province, which is not meant to produce electricity, but rather medical products that are used to treat over a 10 million patients annually. It also serves as a research centre for many applications of nuclear from agriculture to industry.

Nuclear Energy is in our everyday life. There are booklets being circulated by my Department for you to better understand Nuclear Energy. But more importantly to demystify the word radiation and radioactivity associated with nuclear energy. Did you know that radiation is all around you? As we speak you are being zapped from all directions with this invisible form of energy. Did you know that the sun is a giant nuclear reaction? Almost all the energy in the universe, including that which you consume through your daily meals, comes from nuclear energy through radiation.

Too much radiation, as with everything, is not good for you. This has been studied extensively, we learnt over the years what the safe limits are of exposure to prevent cancers and other diseases that could result from overexposure to radiation. In fact, the operators of a nuclear plant are exposed to far less radiation than that of a single chest X-ray. Which means you as the public will receive a much lower dose, around natural background levels. Did you know that even the operation of a coal/gas fired plant releases more radiation into the environment than a nuclear power plant?

Should we discontinue the use of nuclear energy because of fears of radiation not based on fact? Can you imagine if in the early days we abandoned the use of fire because it has a potential to injure and destroy our homes through one accident? We

would still be in the dark ages. Even today, our basic fire kills far more people than nuclear power – and I am including Chernobyl and Fukushima nuclear accidents.

People fear nuclear energy because the radiation released cannot be seen, felt, smelt, tasted or heard. I understand this is a natural reaction for us to fear the unknown. But should we not surpass this basic reaction and realise the gifts we have been given, to utilise the resources that God has given us for betterment of our lives?

Did you know that our citrus fruits, such as oranges and naartjies, were previously rejected by many countries due to the high insect infestation or overuse of insecticides to curb this? It nearly destroyed our export market. Today we utilise a technique known as the Sterile Insect Technique based on nuclear radiation, where male insect pests are sterilised and sent into the open to mate with females, producing no offspring and hence curbing the population growth. Because of this home-grown technology, we have regained our position as a formidable supplier of citrus products to world markets. This is just one of many examples of the use of nuclear energy in growing our economy.

As South Africa, we put forward our nuclear ambitions in the Nuclear Energy Policy of 2008, basically this solidified our vision to have a nuclear power programme in the country. Following that, in 2011, just a week after the Fukushima Disaster, we endorsed the Integrated Resource Plan 2010-2030. In this plan, we indicated the need to bring online 9600MWe of nuclear power by 2030. This amounts between 6 to 10 nuclear reactors, depending on the technology chosen.

Ladies and Gentlemen

There are over 400 nuclear reactors operating in the world today, with more than 100 in the USA alone. In terms of new nuclear build, China is constructing more than 25 nuclear reactors as we speak, India and Russia at least another 10 each, USA and Europe another 5. In terms of plans, China plans to have constructed another 50 reactors by 2030, with other countries in proportion. So there is a mixed bag, in the end, it comes down to price and climate change.

German electricity prices have already increased significantly because of its decision, and they have decided to build new coal powered stations to compensate. This also increases their emissions at a time when we are seeking to combat climate change.

Like with our demographics, we are a diverse country, and nuclear is just one of the many energy sources we would like to tap into.

I am sure you know by now that Government, through Eskom is aiming to locate the first new nuclear power plant at Thyspunt, not too far from here. The Environmental Impact Assessment has been underway since about 2007. It's purpose is to demonstrate that the impact on the environment does not outweigh the benefits derived from the deployment of the power station in this area. It considers all factors, including social, economic, geological, climate, natural environment, etc.

If this is successful, Eskom will then proceed with the Safety Licence from the NNR, a process which can take up to four years before full construction work can commence on the site. The purpose of this license is to demonstrate safety of the reactors, taking into account lessons of the Fukushima Nuclear Disaster.

Also remember that the reactors at Fukushima were built in the 1960s and actually scheduled to be decommissioned. These reactors were not designed for the highest levels of safety required today – i.e. they would not pass our licensing requirements. New licensing requirements are such that there should be no need to evacuate within 1km of the plant under even the worst accident conditions.

The reactor is required to shut itself down passively without the need for operator intervention or external power supply. The reactors in Japan melted after just 1 day of no power, this would not be the case for reactors built after 1986 according to new safety requirements. I quote 1986 as this was the year of the Chernobyl disaster that shook the world and forced nuclear suppliers to rethink design and countries to rethink safety criteria.

As a bonus, our country is not prone to earthquakes and tsunamis, or any significant natural disaster I can think of. Is this not a blessing for us? Given the optimum conditions God gave us, and we must use them to benefit our people.

Close by to Thyspunt we have the Kouga Industrial Development Zone – targeted for major industry development due to its close proximity to a beautiful and versatile harbour. This is the perfect location for setting up a nuclear manufacturing hub – where we can produce most of the components that fit into these nuclear power plants. We call this localisation. Some will say that we cannot achieve this, but I have seen no less than 5 countries achieve this successfully. They have taken American technology and localised it to an extent that they are now the dominant suppliers and even beating the Americans.

Some have come from a lesser knowledge base than us and in 30 years become a formidable competitor in the global nuclear market. Nuclear manufacturing is of such a high quality and standard that we would be able to manufacture for any sector once we achieve this. Right now we are importing special coded welders to work on our coal powered stations being built in Mpumalanga and Limpopo. With the nuclear programme we would have these skills in sufficient numbers to also become an exporter of such services.

When companies see high tech skills in our country, and more specifically in this region, they will be more encouraged to invest in setting up industries here and that means more jobs for everyone. The steps towards creation of a local industry around nuclear will be the essential stepping stone towards greater industrial development. I encourage you to look at other countries to see where this has happened.

Right now we know that our economy is mainly resource based, in other words a lot of our income is derived from extraction of minerals and other resources from the earth. WE all know that this is not sustainable. Other countries less blessed with natural resources had no option but to build their economy skills and knowledge. They have done this successfully to an extent that even with our resources, they have outshined us in development and general quality of life of their people.

This type of economy is known as an industry and knowledge based economy. Our history excluded the majority of us from participating in advanced industries such as nuclear power. Whilst this was happening the more advanced countries cherished and built knowledge and skills. Now it is our turn to move towards a knowledge based economy, we know that as the only sustainable way as resources are not sustainable indefinitely.

The harbour is required because some of these components are very large – weighing 300 tonnes plus. This would also minimise road transport – We don't want such large payloads to be damaging our roads and obstructing your daily lives.

In summary, I think that the nuclear programme will bring significant stimulus to the Coega Industrial Development Zone, not only in the form of electricity, but as a significant source of industrial development as well.

During the construction phase of a single nuclear power reactor, there are jobs for around 5000 people at the peak, but this reduces to about 1000 for operations and maintenance. It is our intention to phase in our construction so that the peak jobs can be maintained on a more sustainable basis. Because of the high skills requirement for working on a nuclear power plant, those members of our community that will be trained will be able to apply their skills to almost any other industry or sector.

A boilermaker for a nuclear vessel is able to be a boilermaker for the petroleum or chemicals industry, but not the other way around. When people are skilled for the nuclear industry, we do not speak about jobs, but careers. There is a constant updating and refreshment of skills to keep up with the latest developments and changes from the international community.

The next question you may be asking is where are all the people or workers going to come from? It is our intention, together with the Department of Basic Education and Higher Education and Training, to ensure that the complete pipeline of skills programmes are developed for the communities based around the nuclear power plant and industries. We have learnt from other countries that this is the best practice to ensure sustainability and support for the nuclear industry in the community.

Others are concerned about tourism in the area, and the effect that a nuclear plant will have on this. Current studies abroad indicate that nuclear power plants have a no effect or a positive effect on tourism after construction. The infrastructure developed would increase the levels of accommodation and other facilities for tourists. Property values have also been shown to increase in communities around nuclear power plants. Consider even our very own Melkbostrand area near Koeberg nuclear power station. A very tourist-attractive and sought-after property market.

We are fortunate to be blessed with large reserves Uranium in South Africa, and in our region. As with most natural resources, studies at international agencies are predicting that even by 2050, Africa will be exporting more than 90% of its mined uranium resources to be beneficiated and exploited by powerhouses in Europe and the East. T. Should we continue to accept the exploitation of natural resources of Africa? We now have an opportunity to turn this around. As South Africa, we have a head start. We have advanced nuclear technology; all we wish to do is expand it. This will help us increase our beneficiation of uranium. We are more than willing to work with our neighbours in Africa to do the same in years to come.

There is another benefit of nuclear power to the people of our continent. Nuclear is an advanced technology, and the more of it we localise, the more skilled our people become. The more skills we have, the more we move towards knowledge based economy. This creates quality jobs and adds to beneficiation of our resources. With a well skilled labour force, advanced industries will be attracted to Africa, not to exploit our natural resources, but to make us part of the real global value chain.

With regards to Nuclear, the path to where we are today has not been easy. During the tragic Fukushima nuclear accident, South Africa was finalising the electricity plan called the Integrated Resource Plan (IRP) 2010-2030. The IRP energy mix eventually included 9 600 MW of nuclear power to be added to the grid by 2030.

After the Fukushima accident, the country through National Nuclear Regulator (NNR) needed to find assurance in terms of safety of existing installations and the NNR issued the directive to Necsa and Eskom to perform safety re-assessments of SAFARI-1

research reactor and Koeberg nuclear power station, this was performed in-line with what's known as stress test, a term coined by Europeans just after the Fukushima accident.

The NNR announced that the country's nuclear installations result came out positive with minor recommendations for improvements on the safety of the nuclear installations. Safety of nuclear facilities is very paramount to the safety of the workers, environment and residents and therefore since the Fukushima accident all nuclear installations safety assessment will be closely monitored by regulators.

Since then, Government has approved the establishment of the National Nuclear Energy Executive Coordination Committee (NNEECC) under the leadership of the Deputy President, HE Kgalema Motlanthe. This committee is tasked with making high level decision concerned with nuclear energy program.

The NNEECC is made of Government Ministers relevant to make decisions for the nuclear build programme, including amongst others, my Department, that is Department of Energy (DoE), Department of Trade and Industry (the DTi), Department of Public Enterprises (DPE), National Treasury (NT), Department of Science & Technology (DST), Department of Basic Education (DBE), etc. The NNEECC reports to the Cabinet.

In addition to the NNEECC the Director Generals of the abovementioned Departments forms Nuclear Energy Technical Committee (NETC) chaired by Director General of DoE, Ms Magubane as an advisory body to NNEECC.

In November 2012, Cabinet endorsed the NNEECC decisions of the Owner and Operator of Nuclear Power Plants to be Eskom, as stated in the Nuclear Energy Policy of 2008. Also endorsed was the Communication and Stakeholder strategy and Phase Decision Making Approach for the implementation of the nuclear build programme.

As part of the implementation of the IRP, the Department of Energy (DoE) identified the International Atomic Energy Agency (IAEA) Integrated Nuclear Infrastructure Review (INIR) document as a tool that can benefit the country by evaluating readiness addition

of the 9.6 GW into the grid. The country followed the guidelines from the IAEA and formed the INIR team locally and completed self-evaluation report.

Last month marked the end of another Milestone in the South African nuclear industry where the IAEA ended their peer review Mission of South Africa. The IAEA INIR Missions have never visited a country with existing nuclear program and this classifies South Africa as the first country, while having an existing nuclear programme to use the INIR approach since the program was designed especially for new comer countries. During this same period we hosted the Director General of the IAEA Mr Yukiya Amano, and he had an opportunity to interact with key nuclear industry stakeholders and visited our nuclear installations. This was a memorable occasion for our nuclear industry.

Ladies and Gentlemen, Esteemed Guests

The time has come for me to conclude, and I just wish to say that I hope one day when we look at the nuclear power plant and industry built in this area, we will look at ourselves as the pioneers who ensured the prosperity of nuclear power is shared amongst all in the region.

Thank you