



mineral resources  
& energy

Department:  
Mineral Resources and Energy  
REPUBLIC OF SOUTH AFRICA

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RESOURCES AND ENERGY, ADV THABO MOKOENA**

**DELIVERED BY MR ZIZAMELE MBAMBO, DDG: NUCLEAR ENERGY**

**ON THE SOUTH AFRICAN YOUNG NUCLEAR PROFESSIONALS SOCIETY WEBINAR**

**22 JULY 2020**

Programme Director,

Executive Chairperson of the South African Young Nuclear Professionals Society (SAYNPS), Mr Israel Sekoko

Acting Chief Executive Officer of South African Nuclear Energy Corporation (Necsa), Mr Ayanda Myoli

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Members of SAYNPS

Officials for the Department of Mineral Resources and Energy (DMRE)

Ladies and Gentlemen

Good afternoon

I am pleased to be here with you this afternoon and be part of this strategic and visionary webinar on “**The Role of the Youth in the Nuclear Energy Programme**”. A special gratitude goes to the South African Young Nuclear Professionals Society who invited me to this webinar to deliver my remarks.

This being my first interaction with SAYNPS, let me take this opportunity to commend you for establishing an organisation that strictly serves as a “home” for young nuclear professionals in our country. Indeed, since your formation in 2006 you have actively championed the interests of all young professionals in the nuclear sector, not only influencing debates on the benefits of the peaceful uses of nuclear energy, but also practically providing a pool of dedicated practitioners in the entire nuclear value chain in our country. SAYNPS has been an ardent advocate for youth skills development, preservation and propagation of nuclear knowledge, expertise and its application.

Programme Director

I am reliably informed that SAYNPS hosted a successful 2<sup>nd</sup> African Youth Nuclear Summit in October 2019, which is a bi-annual gathering of African young professionals and diagnostics for a substantive discussion of real-world solutions to key issues facing the nuclear industry today. Let me take this opportunity and congratulate SAYNPS for their outstanding success in establishing partnerships that will increase their engagement with young professionals.

It gives me a great pleasure to congratulate one of your members, Mr Emanuel Montwedi on his appointment as the Executive Secretary of the Board of International Youth Nuclear Congress (IYNC), which happened in Australia in March this year. SAYNPS contribution to the participation of youth in nuclear in the African continent and across the world is undeniably recognized.

Ladies and gentlemen

Nuclear is among the energy technologies available today with the lowest GHG emissions therefore it has a big role in energy transition. To meet the key energy goals of the United Nations Sustainable Development Goals, this country need to consider an energy mix, for the nuclear industry there is consideration to extend the lives of the plants, and considering new builds.

It is significant that this Webinar is happening shortly after the Department of Mineral Resources and Energy (DMRE) released a Request For Information (RFI) in respect of

the Nuclear New Build Power Procurement Programme. It is important to mention that this RFI, which was issued on 14 June 2020, is solely for information and planning purposes and does not commit to any competitive tender. Moreover, the RFI aims to address some of the issues such as; realistic costing, funding and ownership model adopted as raised by many people.

The release of RFI comes after the Minister of DMRE, Honourable Gwede Mantashe, gazetted the Integrated Resource Plan (IRP 2019) in October 2019. The Plan sets out a path for South Africa's long-term energy future, introducing new players and diversifying sources of energy. Importantly, the IRP 2019 envisages a balanced energy mix with nuclear as an integral part of our baseload, as is the case currently.

The IRP 2019 suggests that government should immediately commence with small-scale nuclear build programme to the extent of 2 500 Megawatt (MW) by 2030, at a pace, scale and cost affordable to the country. It also provides for the extension of the design life of the existing Koeberg for another 20 years, subject to the necessary regulatory approvals.

I would like to commend SAYNPS for being one of the stakeholders who contributed by giving inputs and views to the IRP 2019. The importance of your involvement in expanding nuclear program cannot be overemphasized.

As you can see, all of these long-term nuclear plans. It is you, the youth who will have to be prepared to carry out these plans, or be fully equipped to improve and extend them beyond our expectations. That is why your participation is vital for success for SA nuclear programme.

Ladies and gentlemen

As part of the commitment to implementation of the IRP 2019, the Minister has led numerous actions leading to its implementation, which include issuing Section 34 determinations for concurrence by National Energy Regulator of South Africa (NERSA). The first determination directs that 2 000 megawatts (MW) should be procured from a range of energy source technologies in accordance with the short-term risk between 2019 and 2022. The second determination seeks to procure an additional 11 813MW between

2022 and 2027. The issuing of RFI with respect to the 2500MW new nuclear build programme also forms part of Minister's commitment to implementation of the IRP 2019.

The Minister has reiterated that globally, there is a move towards the development of Small Modular Reactors (SMRs) which are considered more manageable investment compared to a large fleet approach. Therefore, the Department has a strong interest in considering the use of these type of reactors for the generation of emission-free electricity once the units become commercially available.

It has been over a month since South Africa celebrated the Youth Month in June. The celebration of the Youth Month and June 16 is recognition of the role and contribution of the young people of South Africa to the general struggle for freedom in our country. This group of the youth paved a way for the education for the youth today. Therefore, you have many opportunities to contribute to the growth of your country. Government has a duty and remains committed to the development of the youth and any initiatives that the young people undertake which contribute to the social, economic and technological growth of South Africa.

Programme Director

This SAYNPS Webinar takes place during the critical time where the world is facing a Covid-19 pandemic. The global pandemic has required dramatic action to be taken in all aspects of life worldwide. Maintaining reliable electricity supplies and 'keeping the lights on' is vital. Just like in many countries, South African nuclear employees have been identified as among the key workers that are essential to maintaining important infrastructure both in Koeberg Power Station and Necsa. There has been no reports of enforced shutdown of a nuclear power reactor due to the effects of COVID-19 on the workforce or supply chains. Operations have continued ensuring safety and security at Koeberg and Necsa even as the pandemic has impacted them in various ways, including their planned outages and maintenance schedules. In addition, since the imposition of national lockdown in late March, NTP had been able to dispatch more than 120 shipments

of medical radioisotopes to customers around the world. We applaud our nuclear industry workforce for their dedication and commitment.

In response to the challenges affecting young people as illustrated in the National Youth Policy, the Department developed the Youth Strategy for the Energy Sector and its implementation plan.

The strategy specifies that Youth unemployment rate in South Africa decreased to 58.10 percent in the fourth quarter of 2019 from 58.20 percent in the third quarter of 2019. The unemployment challenge facing the youth in South Africa is structural, endemic and has a myriad of root causes such as low economic growth; low aggregate demand for labour; slow pace of transformation and a skills mismatch among others.

The strategy recommends the following interventions to advance youth mainstreaming, empowerment and development in the energy sector:

- Employment creation – Infrastructure development, maintenance and energy diversification are necessary to boost job creation, and these factors are at the heart of the NDP.
- Entrepreneurship and access to business opportunities - Measures such as procurement, business ownership, awareness and capacity development, access to funding and market, and removing barriers of entry to the sector will be key to advance entrepreneurship and access to business opportunities.
- Skills development - The energy sector needs skills such as engineers, project managers, researchers, innovators, nuclear technologist and scientists to increase economic growth and play a critical role in creating new products and new ways of producing existing products in the economic, efficient and effective manner.

The strategy recommends the establishment of the Energy Sector Youth Council (ESYC), which will be a youth representative structure, and a voice of young people on issues of development and mainstreaming. The Council will also interface with young people and the Department on range of issues. Furthermore, the council will have an opportunity to interface with the Department at a political level to discuss issues affecting young people.

Ladies and gentlemen

On 7 May 2020, through a Virtual platform, the Department presented the Strategic Plan of the 2020 - 2025 and 2020 – 2021 Annual Performance Plan to the Portfolio Committee on Mineral Resources and Energy. The Medium Term Strategic Framework (MTSF) Priority 2 talks about the Economic Transformation and Job Creation. The interventions to achieve strategic objective of Securing Supply of Energy are outlined as follows:

Implement the Integrated Resource Plan 2019 by:

- Diversifying energy sources, security of supply and diversify liquid fuels, implement the Nuclear New Build Programme at scale and pace that the country can afford to ensure security of energy supply, Koeberg Nuclear Power Plant life extended beyond 2024
- Replacement of SAFARI1 Research Reactor by new Multi –Purpose Reactor
- Establishment of the Centralised Interim Facility for sustainable management of radioactive waste

The targets as per the plan are:

- 20-year extension of Koeberg Nuclear Power Plant's life completed by 2024
- 2500MW nuclear energy procured by 2024
- New Multi-Purpose Reactor procured by 2024
- Centralised Interim Radioactive Waste Storage Facility procured by 2024

These projects serves as a bridge to new build, helping us to preserve core industry capability and competencies, and developing project experience, which in turn can help bring future new nuclear costs down.

On strengthening regulatory framework in the nuclear sector the Department has published draft Regulations on Long Term Operations of Nuclear Installations for public comment and at the end of this financial year we will publish the Radioactive Waste Management Fund bill and the Amendments to the National Nuclear Regulator Act for

public comment as well. I hope you will add your views to these important pieces of legislation.

Ladies and gentlemen

The extent to which nuclear energy can achieve its potential of contributing to peace, health and prosperity in South Africa ultimately depends on the availability of competent, qualified and capable staff. Many of the employees currently operating and maintaining nuclear power reactors both SAFARI-1 and Koeberg are reaching retirement age. This ageing workforce, coupled with the country's plan to launching nuclear power programme, underlines the importance of attracting, training, and transferring knowledge to the next generation of nuclear professionals. Young professionals together with the employers must ensure that there are formalised programmes within organisations to ensure skills development and transfer.

I encourage the youth to use the training opportunities that are available to them from different sources. In addition to national programmes there are other avenues such as the IAEA's Technical Cooperation Programme. South Africa has been actively participating as a training provider but also as a training recipient in the Technical Cooperation Programme and the African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology. These programmes contribute to the development of nuclear skills in this country and other African States.

There are many training programs provided by the IAEA to all the Member States. The trainings range from Post-graduate courses aimed at young professionals at graduate level to fellowships for young women pursuing an advanced degree or who have recently graduated to gain practical international work experience. The participation of young people in such forums must be enabled and encouraged by those responsible.

With the advent of the fourth industrial revolution, there is a need for the youth to acquire the requisite skills, expertise and experience so as to be able to contribute effectively to the development and growth of the economy of our country. As the late former president

of South Africa, Tata Nelson Mandela said: “Young people must take it upon themselves to ensure that they receive the highest education possible so that they can represent us well in future as future leaders.”

I am therefore confident that with the educational opportunities and possibilities that you have access to today, many of you will play significant leadership roles in our society tomorrow and help shape your own destiny. I am absolutely confident that our goal to secure energy future is in good hands.

Ladies and gentlemen

As I conclude, let us return to the central question of how we can demystify nuclear technology for a broader reach to ensure public’ understanding and acceptance. Robust, clear and continuous engagement with the public is key to a successful implementation of nuclear programme. We need to harness all communication platforms at our disposal to inspire and energise South Africans and assert a narrative of hope that nuclear energy can be used to improve our socio-economic lives rather than hopelessness.

Within all of us, lies the power to drive a message to our homes, communities and the rest of our country that South Africa can be powered through nuclear energy and still remain within the climate change necessities. I strongly believe that we are at a point in history when we have the power to create a better future for this country. It is critical that we own our decisions and continuously remind ourselves that there is a promising option to increase access to our energy supply. By the nature of nuclear technology, public, anti-nukes, labour, media and government are often on different sides of the fence. However, South Africa is home to all of us and its future success and growth lies in our collective hands. Being on different sides should not be the reason to push Africa’s development backward.

I would like to thank all stakeholders in the nuclear sector, for their continued support of activities of the youth in the nuclear sector.

Lastly, I want to wish SAYNPS all the best in their future endeavors.

May you have fruitful discussions.

Thank you