

EWSETA'S CONTRIBUTION TO SOUTH AFRICA'S ENERGY TRANSITION

Written By Khetsiwe Dlamini | EWSETA Energy Cluster Manager

Whereas coal fired power plants contribute the lion's share of power generated in South Africa, the Integrated Resource Plan (IRP) 2019, as well as the NDP 2030, envision an energy mix that includes renewable energy, oil and gas, as well as nuclear.

South Africa is a signatory to the Paris Agreement on Climate Change and has ratified the agreement. South Africa's Carbon Tax Act 15 of 2019 seeks to impose a carbon tax on emitters of greenhouse gases whilst contributing to global efforts to stabilise greenhouse gas concentrations in the atmosphere. South Africa's energy sector contributes close to 80% towards the country's total greenhouse gas emissions of which 50% are from electricity generation and liquid fuel production alone.

The NDP 2030, articulates a vision of South Africa that has an energy sector that provides reliable and efficient energy service at affordable rates, as well as energy that is environmentally sustainable through reduced emissions and pollution.

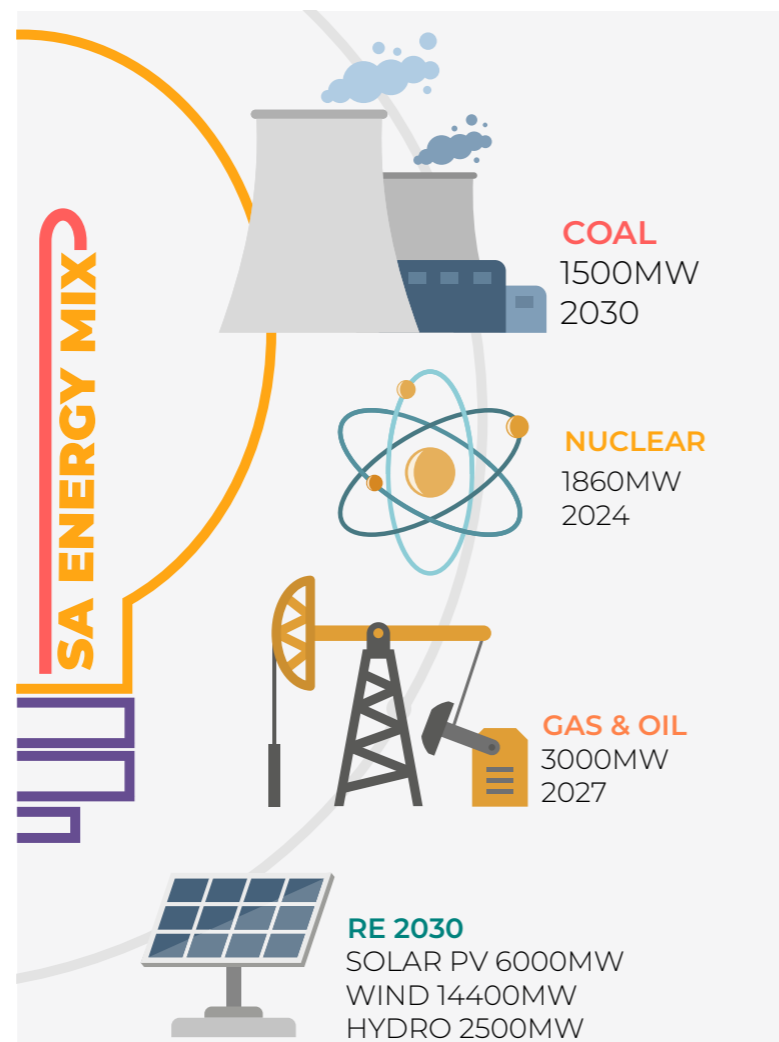
With these facts on hand, what is South Africa doing to address these challenges?

- Very importantly, the decommissioning of coal fired power plants is expected to commence from 2022.
- The IRP 2019 provides an opportunity for the country to transition towards cleaner technology to reduce emissions through driving investment in renewable energy and energy efficiency. The IRP is also an electricity infrastructure development plan that is based on least-cost electricity supply and demand, whilst highlighting the need for security of supply. Energy security in the context of the IRP is defined as; "South Africa developing adequate generation capacity to meet its demand for electricity, under both the current low-growth economic environment and even when the economy turns and improves".

As South Africa continues to pursue a diversified energy mix that not only serves to reduce reliance on a single or few primary resources, extensive emphasis has been placed on developing and consistently improving nuclear, gas and energy storage technologies.

Whilst the IRP 2019 acknowledges that some technology options require long-term planning, what is important is the need for skills programmes that seek to provide top-up skills in renewable energy resources.

The National Skills Development Plan (NSDP) 2030 seeks to ensure a quality skills pipeline that contributes to economic growth, job creation and social development. It highlights the importance of an analysis of sectoral growth and development plans and labour market information. It



also calls for an evidence-based understanding of skills and occupations requirements to support economic and social development priorities.

This can only be achieved when all stakeholders in the energy sector actively participate in the process of planning and provision of skills and occupations to meet the demands of the IRP 2019. The IRP aims to balance cost, water usage, emission reduction and security of supply, whilst the NSDP seeks to ensure that there are adequate skills to implement the plan. The IRP and NSDP are linked to the NDP's aim to eliminate poverty and reduce inequality by 2030 to improve the standard of living for South Africans.

This provides an opportunity for EWSETA to start engaging with all the affected stakeholders (Coal sector) on reskilling

its employees to ensure that there is a managed transition between decommissioning and increasing REIPPPP.

The IRP 2019 calls for government through the Department of Mineral Resources and Energy to manage the transition to ensure security of supply for the period 2030 to 2050. The Minister of Mineral Resources and Energy has issued two Ministerial Determinations under Section 34 of the Electricity Regulation (Act No. 4) of 2006. These determinations give effect to planned infrastructure by facilitating the procurement of the required electricity capacity as gazetted in the IRP 2019. The first draft S34 determination relates to the procurement of 2,000 MW of new generation capacity between 2019 and 2022, and the second draft S34 determination to the procurement of a further 11,813 MW between 2022 and 2027.

The energy sector is a large and diverse one that highlights the importance of strategic planning in the implementation of programmes.

"Our participation in the implementation of the IRP must be characterised by response to industry needs and adopting resilient strategies to mitigate external risks," comments Tsholofelo Mokotedi, Acting Executive for Planning, Reporting and Monitoring at the EWSETA. "We are working closely with energy industry associations to ensure that there is sector buy-in on all interventions, which will assist the EWSETA to maximise the Return on Investment (ROI) on qualification development."

The increased allocation to Small Scale Embedded Generation (SSEG) in the IRP to 2600MW by 2030 presents opportunities to unlock new investment and adds value to the SA economy. This is intended to allow municipalities to diversify the supply of their distribution networks whilst decentralising generation of energy.

Small Scale Embedded Generation (SSEG) refers to power generation facilities, located at residential, commercial or industrial sites, where electricity is generally also consumed. These are mainly solar photovoltaic (PV) systems but also include other technologies such as wind and biogas. An SSEG customer generates electricity on the customer's side of the municipal electricity meter, where the generation equipment is connected to, and synchronised with, the municipal electricity grid (i.e. 'embedded').

EWSETA needs to respond to emerging skills supply and demand needs in SSEG by providing funding for training interventions for unemployed youth. Furthermore, there could also be emerging entrepreneurial opportunities and EWSETA needs to ensure that it has skills interventions for SMMEs to enable their ability to participate in the SSEG market.

The IRP advocates for biomass from waste, paper and pulp, sugar industries to be utilised in co-generation plants and to deliver electricity at a price competitive level with minimal transmission and distribution infrastructure investment.

When deployed together, the link between biomass and a government-backed biofuels programmes could improve the economics of the initiatives and create job opportunities in rural and urban centres. This provides EWSETA with an opportunity to pursue waste to energy training interventions with focus on educational platforms for opportunities in the human waste management space. There are several untapped opportunities in the country for entrepreneurs to capitalise on this ever-available resource.

THE ROLE OF EWSETA

EWSETA has a responsibility to ensure that there is sufficient preparation for the skills planning that will be needed to respond to the proposed energy mix and South Africa's future energy requirements. It has a responsibility to enable 4IR through research funding and partnerships with government departments that will provide funding for industrialisation.

"The SETA must create a credible post school education pipeline by promoting STEM subjects to High school learners," adds Mokotedi.

The NSDP and IRP 2019 are identified as the guiding government plans for stabilising energy supply in South Africa and the EWSETA's strategic objectives should align with these and other government policies and plans to enable skills planning and development in the energy sector.

South Africa's abundant renewable energy sources presents an opportunity for the EWSETA to deliver skills development interventions that will enable communities to participate in job and entrepreneurial opportunities associated with the establishment of renewable energy power plants.

"In addition to ongoing and active interaction with all relevant sector stakeholders, it should be noted that the EWSETA will continue to work with the Department of Higher Education, Science and Innovation, as well as the Department of Mineral Resources and Energy to ensure that we provide the requisite skills to enable South Africa's energy transition," concludes Mokotedi.

IMPORTANT FACTORS FOR CONSIDERATION

The EWSETA acknowledges that:

- Infrastructure related skills development interventions will be achieved through partnerships
- It needs to respond to the skills needs for Small and medium-sized enterprises to enable their participation
- Agility is key to ensuring that interventions for levy payers and non-levy payers respond to the identified pivotal skills as identified in the Sector Skills Plan, whilst addressing transformation of the energy sector.