Ministerial Address by Mr Jeff Radebe, Minister of Energy of the Republic of South Africa on Enhancing links between Energy and Mining Sectors session, Investing in Mining Indaba, held at Stage B, Cape Town International Convention Center, South Africa
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Honourable Ministers present

Senior Government officials,

Industry captains

Ladies and gentlemen

It is my pleasure and honour to address you today on an important subject of the link between energy and mining sectors.

The African continent is home to abundant mineral resources. These minerals offer an opportunity for industrialization of the continent, reduction of poverty, and contribution to economic development. Globally the mining sector contributes directly and indirectly about 45 percent of the world gross domestic products. The mining industry is also a major consumer of energy and is responsible for more than 38% of the total industrial energy use, which translates into the consumption of 19% of coal and coal products, 5% of all gas products, and 2% of the global oil supply. All minerals. UNIDO[1] forecast that the energy consumption in the mining sector is set to double by 2050 compared to 2009 standards if no policy measures are taken to curb consumption.

In Southern Africa, the energy intensive users group alone consumes over 40% of electricity produced in South Africa. About 48 percent of the energy intensive users in South Africa are from the mining sector. Fossil fuels, coal in particular continues to meet the world energy needs. Coal resources are able to meet the world energy needs and play a role in providing affordable energy access for the world's poor mainly in developing regions such as Africa.

South Africa has abundance of coal resources which plays a major role in the South African energy mix. Over 75 percent of

[1] United Nation Industrial Development Organisation (UNIDO), 2010. Global industrial energy efficiency benchmarking.

energy used in South Africa is generated from coal. The use of coal for energy generation is underpinned by availability, accessibility, reliability and affordability to South Africans.

In South Africa, the energy department has to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to support economic growth, development and poverty alleviation, while taking into account environmental management requirements in line with National Environmental Management Act (NEMA), National Climate Change Response White Paper and the United National Framework Convention on Climate Change.

Given the need to increase energy supply in a globally carbon constrained environment South Africa is investing in the development of clean coal technologies such as :- carbon capture and storage, Coal Fluidized Bed Circulation combustion, integrated gasification combined-cycle plant, underground coal gasification and ultra-super critical technologies.

Globally, the energy sector is undergoing a transformation driven by the need to decarbonise, decentralises and digitization. Decarbonisation involves the shifting of generation, transmission, distribution and usage towards a lower carbon future. This is dominated by renewable energy, e-Mobility (electric vehicles), energy efficiency, new and future fuels (biofuels), and demand side management. It is estimated that between 2017 and 2025, 44% of global generating capacity will

be from renewables and a total of 1,600 Giga watts of renewables capacity will be added to the sector.

Furthermore, the renewable energy technologies are now more viable as the costs of both have significantly decreased. For instance, solar production cost have decreased by 73% and wind by 22%. The cost of maintenance of the RE technologies has also declined. The cost of lithium-ion batteries used is electric vehicles has also fallen by 80% since 2010. These decrease in costs should be attractive to deployment of renewables as part of the energy mix and also use in off-grid mines.

South African government considers the need to de-carbonise the economy as strategic to the development of the country. In this regard, government has committed to diversify the energy mix by adding cleaner sources of energy such as renewables. The country has also promoted the deployment of energy efficiency and tax incentives have been provided. We encourage all our mining companies to adopt and invest in energy efficiency measures as part of sustainability measures.

Digital technologies as part of the fourth industrial revolution will enable and provide infrastructure for more flexible, intelligent, connected & responsive energy systems. Smart grid, asset optimisation, demand response, automated trading, and active

energy management, will be applied in the energy sector. This is the impact of the forth industrial revolution. It is estimated that there will be **50 Billion** connected devices – or 'things' - globally by 2025 and of this total, **$1 Trillion** economic value of Internet of Things (IoT) will be invested in the energy by 2025. This will lead to a total change in the sector as we know it today.

South Africa through the Science and Technology Department supports the hydrogen and fuel cell technologies (HFCT). We believe that once these technologies are more developed and commercialized at large scale, they will have the potential to support climate change and energy security goals in several sectors of the energy system, such as transport, industry, buildings and the power sector.

The adoption of RE and related technologies will increase the demand of minerals and metals required for their production. As an example, cobalt is used for wind technology, electric vehicles and storage technologies. More than 60% of the world cobalt supply is from the Democratic Republic of Congo yet access to electricity in the DRC is low. The use of RE and other hybrid technologies will be an enabler for both mining sector and local communities in the DRC and most off grid mining locations in Africa.

Mining sector needs to review its energy consumption patterns to ensure that the sector de-carbonise, decentralise and digitalise. The decreasing costs of renewables, the proven reliability of hybrid power technologies are now driving the interest of mining companies in renewables. The just energy transformation trajectory has to accommodate natural resources endowment, economic conditions and promote our natural competitive advantage as well as embracing new cleaner and sustainable energy technologies.

The mining industry is generally energy intensive. Energy costs are rising affecting profitability of mining companies. This call for action and demonstrates that the mining sector is intricately and inextricably linked to the energy sector. It now more important than ever the two sector conduct more discussions to ensure that as the energy sector goes through a just energy transition and transformation. The mining sector needs to be kept abreast of these changes.

I thank you.

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