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BENEATH THE SURFACE

SOUTH AFRICA'S GROWING NEED FOR RENEWABLE ENERGY SOLUTIONS

ADDRESSING THE ENERGY CRISIS

IN THIS ISSUE:

A PLAN FOR POWER BY THOSE WHO HOLD THE POWER – WILL IT EVER SEE THE LIGHT?.....	02
SMALL BUSINESSES ARE BEING LEFT IN THE DARK WHEN IT COMES TO RENEWABLE ENERGY SOLUTIONS.....	04
WE NEED TO TALK ABOUT SOUTH AFRICA'S 2050 NET ZERO CARBON EMISSION DEADLINE.....	06



A PLAN FOR POWER BY THOSE WHO HOLD THE POWER – WILL IT EVER SEE THE LIGHT?

In a surprise move Cyril Ramaphosa recently approved a renewable energy plan to combat South Africa's worsening energy crisis. Although a step in the right direction. The President's recent announcement is a positive move for the country that has faced rolling blackouts for over 10 years and are only set to worsen in the future as infrastructure failures become critical. The red flag for many was the vagueness in the details as well as lack of definitive timelines for implementation of the plan. A further point of concern - the plan's heavy focus on improving performance of Eskom's existing fleet of power stations, cutting the red tape around purchasing maintenance equipment and recruiting skilled personnel. For many this is simply more lip service in an ongoing saga.

Is renewable energy the answer? Yes and no

So if the country was to successfully implement a renewable energy plan, would we be well on our way to economic recovery with our eyes firmly focused on growth and development free from the shackles of Eskom's legacy? Unfortunately, it is just not that simple.

Yes, solar energy panels hold the limitless possibility of providing power, but renewable energy requires more complex storage and management infrastructure. This is especially prudent in various business sectors. Grid-tied systems for example, store energy in the power grid and even if the bureaucracy ultimately gets to your premises to grid tie, there is still a process

that needs to apply. People and businesses making investments in solar panelling must remember that the process must still be approved, authorised and linked up by the municipality itself. How quickly will this be facilitated? If historic service delivery is anything to go by then it could take years. Even if it does happen timeously, how will the management of these grids unfold because when a system like this is set up to provide power to some of our country's largest electricity users, systematic maintenance must follow suit.

Solar power could be a massive win for the country, but we can't forget that it doesn't begin and end with solar panels – and are we geared for what needs to happen beyond installation?

What about Eskom's pay before you use plan?

As home solar installations gather pace, the utility has proposed that households pay a much larger portion of their electricity bill in the form of fixed charges related to the supply of electricity that would see customers serviced directly by the utility in areas such as Sandton and Soweto paying hundreds of rands per month before using a single kilowatt-hour (kWh) of electricity. The massive breakdown in trust between the power utility and the power using public leaves this plan with many fatal flaws and should it be implemented it will be another push for users to find any means to get

off the grid – meaning added pressure on installation and management of renewable options. This proposal also doesn't address our country's primary power users – business as a whole – who now have the approval from government to self-generate instead of being forced to sustain outdated infrastructure.

Either way we are still left with the glaring issue of the long-term infrastructure management of renewable solutions.

There are options for sustainable solutions

Although there have been promises of "no more excuses", civil society is ready to take the power issue into their own hands. One solution that could nullify government's need to maintain renewable infrastructure and become a game-changer in South Africa would be the creation on 'mini-grids'. Essentially mini-grids are independent, decentralised electricity networks that can function separately from the national grid.

The idea of supplying electricity through mini-grids is not new; communities from the United States to Cambodia have long used this approach to bring local infrastructure into regional or national grids.

The beauty is that mini-grids work best when feeding power into larger distribution networks. They are easier to assemble and deploy in hard-to-reach communities and deliver electricity more reliably. Decentralised solutions such as mini-grids are a cost-effective solution for delivering electricity. The challenge is to convince government, policy-makers and investors of the value in going decentralised because it can be an expensive undertaking. The good news is that funding for mini grids powered by solar, hydroelectric, wind, or a mix of renewables is slowly increasing, but getting the right investment arrangement depends on getting the right policies and regulations in place first – a bottleneck that could hold us back.

There is a private sector ready and waiting to better package and meet the needs of electricity consumers, but the opportunity must be made available for the private sector to become an active part of the solution. Currently Eskom is still holding all the cards and South African's – both residential and business – not being invited to play so are likely to move along and begin their own game.

Nato Oosthuizen
Partner and Renewable Energy Expert at BDO

Christelle Grohman,
Director of Advisory at BDO

SMALL BUSINESSES ARE BEING LEFT IN THE DARK WHEN IT COMES TO RENEWABLE ENERGY SOLUTIONS

A recent announcement by Eskom to lease land in Mpumalanga to renewable energy producers to feed production into the grid could see around 36,000 hectares of unutilised land owned by the parastatal made available to investors interested in renewable energy projects.

Although the plan, originally proposed in December 2021, has already reached the Request For Proposals (RFP) stage, Eskom Group Chief Executive André de Ruyter has explained that the leasing of the land would have to be made subject to production being achieved by a contracted date. Eskom COO, Jan Oberholzer, also cautioned that the initiative must be viewed in context of South Africa's power gap which was recently been estimated at between 4,000 MW and 6,000 MW. According to Oberholzer, the government's energy policy is insufficient to solve the country's worsening energy crisis which requires substantial new generation capacity.

However, this view was challenged in a [report](#) from the International Institute for Sustainable Development (IISD) which found that with the right business strategy and political support it is possible for Eskom to pivot away from fossil fuels and embrace more sustainable and cost-effective renewable energy solutions.

The Renewable Energy Independent Power Producers Procurement Program (REIPPPP), initiated and

driven by the private sector, has demonstrated that competitive funding from both local and international markets is available and could prove to be a substantially more cost effective solution in terms of Rand per MW installed. For example, Eskom's land-leasing plan relies on existing infrastructure in Mpumalanga as opposed to the continued use of expensive state subsidised funds required by Eskom to fund the operation and maintenance of coal-fired power stations.

There are numerous other initiatives in progress for the funding of renewable energy projects in South Africa, but it is a crowded landscape of different government departments and semi government institutions, along with high profile industry players, attempting to streamline projects that are often stalled by policy-makers before any substantial traction can be gained.

So where does this leave small business, who more often than not bear the economic brunt of the energy crisis?

In order for small business to play a significant role in the renewable energy game, government must devise plans to incentivise consumers to "go off the grid" and install solar panels for their electricity requirements. The call for government to provide such incentives is not a new one. For example, The Democratic Alliance lobbied strongly for a tax rebate of R75,000 for this in March 2020 as part of their budget proposals

for the 2020/2021 fiscal year. The advantage of a rebate such as this would be that no government department would hold or administer the funds or manage the associated risk. With service providers estimating that a comprehensive off-grid solution would cost approximately R 100,000 to R 120,000, this proposed scheme would cover around 75% of the cost of the installation.

Although proposals such as this do need to address potential tax implications, the impact of taking pressure off the grid would have exponential economic benefits, specifically within the small business sector.

In addition, there would be substantial investment opportunities in local manufacturing for the required equipment and the potential to create an export market for similar small scale "off grid" projects to be rolled out in Africa. Job creation would be given a much-needed boost as the demand for artisans to install the equipment would rise and once trained in this field, a future workforce could be upskilled and employed within the sector.

A further advantage of incentivising consumers to adopt "off-grid" power solutions is that it will reduce the pressure on Eskom's ability to maintain a constant base load during the hours of 6pm to 10pm when there is no sunlight available to the grid that can be supplied by renewable energy providers.

South Africa also has immense potential to expand into renewable energy production when compared with other regions, as the country boasts some of the most sustained sunlight in the world and an abundance of water along its 2 800-kilometre coastline. Now is the time for government to harness the natural resources we have available to attract large scale investors and reduce the power gap so that small entrepreneurs are no longer left in the dark.

Owen Murphy,
Tax Specialist at BDO

WE NEED TO TALK ABOUT SOUTH AFRICA'S 2050 NET ZERO CARBON EMISSION DEADLINE

South Africa is the 12th-largest greenhouse gas emitter in the world and the worst sulphur dioxide polluter on the planet – surpassing the combined emissions of the US and China. Our emission status can largely be attributed to our reliance on coal to produce almost 80% of our electricity. Yet we have met the Paris Agreement's call for countries to set out long-term climate strategies by agreeing that we'll achieve net zero carbon emissions by 2050. In the face of such an overwhelming reliance on fossil fuels for energy production, just how feasible is that goal?

The deadline is 28 years away, but, for the sake of timeline comparison, load shedding has been with us for 15 years already. In the mining industry - which is responsible for producing the coal on which we currently rely to power the country - mine lifetimes are calculated in decades, so 28 years is the blink of an eye in terms of their projections.

Mining accounts for 1.2% of the country's GDP – and coal mining is responsible for the lion's share of that – so moving away from 'dirty power' and replacing it with renewable energy needs to be managed intelligently. That's where the Just Energy Transition Partnership agreement we signed with the European Union, Germany, France, the UK and the US to support our climate action goals at COP26 comes in. The R131 billion pledge to help finance the move to cleaner and renewable energy sources takes the form of grants, concessional loans and investment and risk-sharing instruments, including mobilising private sector funding. Crucially, in an economy with such a high

unemployment rate, the funding will be used to ensure coal communities and workers are supported as we aim to help prevent up to 1.5 gigatonnes of emissions over the next 20 years.

That is a lot of money – but when you consider that Eskom is nearly R400 billion in the red, it shows you the scale of the task we face. We have to wean ourselves off Eskom while trying to continue to fund Eskom; develop new green sectors like electric vehicles, green hydrogen and train and retrain hundreds of thousands of people who will be affected by cutting our reliance on coal. In the space of 28 years, not to forget need to repurpose the use of these sites

Government has a huge part to play in this transition. We can't expect foreign countries to continue to fund our transition – the Just Transition financing is a nod to our status amongst the world's worst greenhouse gas polluters, recognising that our output doesn't just affect our environment, but the global environment, too. The Government has indicated its intent to adopt greener solutions – the Presidential Climate Commission being one - but the stance is somewhat compromised by the Minister of Mineral Resources and Energy's assurances to the mining industry that coal still has a major role to play in powering the country which practically it does.

The policy shift to allow independent companies to establish their own renewable power plants to produce up to 100MW of electricity has been embraced, particularly by the mining industry. It looks good on



their sustainability report and helps them continue to operate when Eskom falters. The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) has procured a total of 6 329 MW of renewable energy to date – though just 3 876 MW are currently connected to the grid. The sixth bid window is now open and is looking to add 2 600MW. So let's say that, optimistically, all of that sustainable production comes online next year – that's 8 929 MW by 2023, when the country needs just shy of 60 000 MW to function. 'Thermal' – read 'coal' production – is responsible for just over 48 000 MW of that production. We still have a long way to go.

Coal miners need to play their part in the transition too – but we can't simply ask them to stop producing coal. Indeed, as long as the country is reliant on Eskom's fleet of coal plants, they'll need to continue to operate to meet that demand. It's going to be down to public/private partnerships to introduce initiatives that help coal mines transition to producing alternative energy, while they continue to meet Eskom's demand. The two areas of operation will equalise over time and renewables will start to become more of a focus as we get the transition right. The land that they operate on can then be repurposed for other activities. That's going to require a REIPPPP-type program, with incentives.

The 100 000 people employed by the coal mining industry will need support to transition and acquire

new skills in the green space. The narrative amongst employees at coal mines is that their livelihood is being phased out – but that's because of poor communication on the part of Government and the companies who employ them. By properly outlining a plan that will help the country meet the 2050 goal, Government can assure employees of their futures.

There also needs to be incentives for private households, which Government brooked and then pulled back on. There's got to be an incentive for private homeowners when they're looking to install solar power systems to reduce the load on Eskom, because it's currently such a costly exercise. Whether it's encouraging banks to fund these sorts of installations at reduced rates or having the Government intervene directly, there's plenty of space for households to make an impact in reducing demand.

As private individuals, we also need to review our love affair with owning our own vehicles. South Africans love their cars – but that's principally because we don't have safe and effective mass transport solutions. Families own multiple vehicles which are, more often than not, driven by individuals. Each vehicle contributes to congestion on the roads and that congestion increases carbon dioxide emission levels.



Vehicle manufacturing in SA made up 2.6% of the country's GDP in 2020 – more than double the mining industry's contribution – which was largely due to exports. We only produce fossil fuel-burning vehicles, though, so as the countries to which those vehicles are exported make moves to reduce emissions by promoting electric vehicles, we place that industry in tremendous peril. By not producing electric vehicles for local use – and slapping a ridiculous 25% tax on their import when fossil fuel vehicles are only taxed at 18% – Government isn't providing a single convincing reason for motorists to switch to EV's.

So, faced with a challenge that looks insurmountable, how achievable is that 2050 goal? The coal miners aren't going to voluntarily put their hands up and say they're going to shift into other areas. Eskom can't simply stop producing power to cut greenhouse gas emissions.

It's going to take Intelligent, swift action, better communication and clear targets and milestones building up to 2050- from Government. Private sector companies can make their own contributions if they're incentivised to do so. Individual households can contribute, if they're given the opportunity. The effects of global warming are becoming more and more visible, so best we start putting serious plans in place to meet the deadline before climate events like the excessive rains in KZN over the last few months become the norm – but on a global scale.

Zak Sadek,

Partner (Mining sector) and Audit Staff Partner at BDO South Africa

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CONTACT US

FOR A CLEAR PERSPECTIVE, PLEASE CONTACT US:

SERVAAS KRANHOLD

Head of Natural Resources
skranhold@bdo.co.za

BERT LOPES

Managing Partner, Johannesburg
blopes@bdo.co.za

ANTONIE VAN DER HOEK

Head of Renewable Energy
avanderhoek@bdo.co.za



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