

**ECONOMIST  
IMPACT**

# Powering Progress:

Policy shifts and economic  
frameworks to enable South  
Africa's energy transition



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## Foreword by Anglo American

The publication of this report could not be timelier. Power outages have become a regular occurrence in South Africa in recent years, causing significant disruption to households and businesses. At the same time, the need to address climate change – the single biggest challenge of our time – has become ever more urgent.

Globally, and as a society, we must all do everything we can to meet the Paris Agreement's goal of limiting global temperature rises to 1.5°Celsius. That goal looks challenging without a step-change in the supply of critical minerals to enable the global transition to clean energy at pace.

A clear, stable global policy environment that supports a Just Energy Transition is critical to achieving this change, including in South Africa. The shift to clean energy systems is starting to drive a significant increase in demand for many metals and minerals.

This presents an opportunity to take supply to an entirely new level, which itself brings

enormous investment and broader economic activity so essential for economic growth and social prosperity; and intrinsically, is tied to securing investment in clean energy itself, in South Africa and across the continent.

The recent liberalisation of South Africa's energy generation market is a good example of policy change to drive investment. The private sector is now able to invest and build out renewable energy infrastructure at scale. South Africa looked over the cliff edge and made the change, showing that it is possible to make significant progress with political will and stakeholder support.

A catalyst for new and far broader investment can quickly be created by unlocking policy and putting a supportive regulatory framework in place. The opportunity to access pools of global capital to support such investment is almost immeasurable and the time is now for South Africa to show it is ready and willing for that investment.

But it's not only about unlocking investment. Any policy environment must also consider the country's social context.

This report provides a view into how regulatory and fiscal interventions can and must evolve in order to enable not only an energy transition but a just one. The findings call for a greater need for technical expertise to help inform new and existing policies and programmes, coupled with a more agile response and implementation of plans as the transition unfolds.

The mining industry is playing a critical role in supplying the world with the metals and minerals required for this transition — and an even more prominent role in sustainable energy production. A good example of this is Anglo American's groundbreaking partnership with EDF Renewables to work towards developing a 3-5GW regional renewable energy ecosystem



for southern Africa. Once completed, this ecosystem will meet and exceed our expected electricity needs and will significantly reduce our Scope 2 emissions by using solar, wind and storage. In addition to supporting the delivery of our own goal of carbon-neutral operations by 2040, the ecosystem is expected to bring far broader benefits. It is designed to increase grid capacity while furthering the decarbonisation initiatives of host governments.

But beyond that we see this energy ecosystem, and the potential for others like it, having a far greater socio-economic impact.

How can we use the transition to clean and reliable energy as a springboard for unlocking a nation's inclusive economic growth and development potential? The jobs, opportunities and business that flow from using clean power is only one side of the equation. In addition to the jobs, opportunities and commerce that would be expected from having affordable access to clean power, there can be little doubt that increased grid capacity and grid stability would also help attract new investment into South Africa — all the while furthering our collective decarbonisation ambitions.

This is an opportunity that we, as South Africa, cannot miss.



**Nolitha Fakude**

Chairperson of Anglo American's  
Management Board in South Africa

## About the research

*Powering Progress: Policy shifts and economic frameworks to enable South Africa's energy transition*, supported by Anglo American, aims to explore how regulatory and fiscal interventions need to evolve to better enable a just energy transition in the sub-Saharan nation.

The report includes insights from an in-depth literature review focused on key policy missteps that led to the nation's current energy crisis, an overview of the regulatory landscape governing South Africa's electricity sector, and gaps in governing frameworks. In addition, it explores unique opportunities and risks associated with transitioning South Africa towards a low-carbon economy.

The research was further supplemented by an interview programme with activists, government officials, international experts, industry practitioners and finance leaders to gain a deeper understanding of the challenges on the ground. Our thanks are due to the following people, in alphabetical order (by last name), for their time and insights:

- **Saliem Fakir**, executive director, African Climate Foundation
- **Nhlanhla Gumede**, regulator member, National Energy Regulator of South Africa (NERSA)
- **Nazmeera Moola**, chief sustainability officer, Ninety One
- **Jacques Morisset**, lead economist, South Africa, World Bank
- **Jarredine Morris**, senior manager, The Carbon Trust - Africa
- **Neoka Naidoo**, independent climate change consultant
- **Crispian Oliver**, executive director, Presidential Climate Commission
- **William van Wyk**, country manager, FIMER South Africa

The research was managed by the following Economist Impact project team:

**Melanie Noronha**, project director

**Maryam Rasheed**, senior analyst

# Glossary

<b>Department of Mineral Resources and Energy (DMRE)</b>	The department within the South African government responsible for the national mining and energy industries.
<b>Development Bank of Southern Africa (DBSA)</b>	A development finance institution owned by the South African government, designed to promote sustainable economic development within the country and the wider sub-Saharan Africa region.
<b>Electricity Regulation Act (ERA)</b>	An act to determine the regulatory framework for South Africa's electricity supply, making the National Energy Regulator as the custodian of the framework.
<b>Energy Transition Mechanism (ETM)</b>	A collaborative initiative that leverages concessional and market-based funds to support the retirement of coal-related assets.
<b>Independent Power Producer (IPP)</b>	An entity that owns/operates facilities for public electricity generation, and is not an electric utility.
<b>Integrated Resource Plan (IRP)</b>	South Africa's national electricity plan that informs how the supply of electricity is to expand over a given period of time.
<b>Just Energy Transition (JET)</b>	A strategy for economic and social transition away from fossil fuels that is centred on people and communities.
<b>Just Energy Transition Partnership (JETP)</b>	A partnership between South Africa, France, Germany, the UK, US, and EU to accelerate the decarbonisation of South Africa's economy, with a focus on the electricity system.
<b>National Economic Development and Labour Council (NEDLAC)</b>	A committee to facilitate labour market participation in national development policies.
<b>National Energy Crisis Committee (NECOM)</b>	A coalition of relevant government departments and Eskom to lead planning and action to stabilise South Africa's energy sector.
<b>National Energy Regulator of South Africa (NERSA)</b>	A government agency to regulate South Africa's energy industry in accordance with established laws.
<b>Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)</b>	A tender process aimed at increasing power generation and bringing private investment into grid-connected renewable energy.
<b>Resource Mobilisation Fund (RMF)</b>	A collaboration between the government and Business Unity South Africa (Busa) to channel corporate and philanthropic funds towards the national energy action plan to end load shedding.
<b>Transmission Systems Operator (TSO)</b>	An entity that transports power on a national/regional level using fixed infrastructure.

## Executive summary

South Africa is currently in the midst of its worst power crisis in recent decades. The country is set to face 250 days of blackouts this year and a US\$13bn loss to the economy. The crisis has been decades in the making, a result of mismanagement of the monopoly utility firm Eskom, an overreliance on coal and limited power generation capacity.<sup>1</sup>

Once praised for its provision of mass electrification, low-cost energy and low-grade coal combustion, Eskom is now responsible for 15% of the state's total debt. Electricity theft and non-payments by consumers and municipalities continue to drive Eskom's inefficiencies. More broadly, coal dominates South Africa's energy mix, powering 80% of system demand,<sup>2</sup> and ageing coal-fired power plants have led to escalated load shedding. Plant breakdowns have also been linked to attrition of skilled workers and poor quality of plant maintenance.<sup>3</sup> In addition, misappropriation of funds from coal supply contracts and confirmed cases of fraud and corruption further exacerbate the crisis.<sup>4</sup> Overall, systemic bureaucracy and a rigid regulatory framework are obstructing the energy transition.<sup>5</sup>

To address this, South Africa is embracing a just energy transition, an approach that aims to deliver equitable gains while transforming energy systems. Built upon inclusive planning principles, it aims to offer affordable electricity, initiate corporate reforms, involve

communities in power generation, empower society and protect the environment.<sup>6</sup>

In this report, we delve deeper into the state of the power sector in South Africa and explore the policy shifts that need to be prioritised for a sustainable and just energy transition.

### Key findings

**Policy gaps and rigid legislation continue to hold back South Africa's energy transition.** A key framework governing the energy landscape is the 2019 Integrated Resource Plan (IRP), but the consensus among policy experts is that the strategy is incomplete and outdated.<sup>7</sup> Weak political leadership and delays in implementation further contribute to the IRP's shortcomings.<sup>8</sup> The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), designed to attract private-sector investment and expertise into grid-connected renewables, also needs to be transformed. The programme's upfront administrative requirements and bid costs drive up the expenses for participating companies, and are particularly prohibitive for SMEs. Better bidding practices and more favourable terms for participation can enhance the programme. In addition, revising the programme to focus on transmission instead of generation could add greater value to the grid. Agile policies and robust technical expertise must inform regulatory interventions to support the energy transition.<sup>9,10</sup>

<sup>1</sup> <https://www.powermag.com/south-africa-energy-crisis-at-critical-stage-as-load-shedding-continues/>

<sup>2</sup> <https://www.csir.co.za/documents/statistics-power-sa-h2-2021-csirpdf>

<sup>3</sup> <https://www.news24.com/fin24/1922-2019-the-rise-and-fall-of-eskom-20190213>

<sup>4</sup> <https://edition.cnn.com/2023/01/18/energy/ramaphosa-davos-south-africa-blackouts/index.html>

<sup>5</sup> <https://www.reuters.com/business/energy/south-africa-plans-new-law-speed-up-power-projects-2023-01-17/>

<sup>6</sup> <https://90by2030.org.za/just-energy-transition/>

<sup>7</sup> [https://thetricontinental.org/wp-content/uploads/2021/04/Eng\\_working-document-SA-Electricity.pdf](https://thetricontinental.org/wp-content/uploads/2021/04/Eng_working-document-SA-Electricity.pdf)

<sup>8</sup> <https://climateactiontracker.org/countries/south-africa/policies-action/>

<sup>9</sup> [https://insightplus.bakermckenzie.com/bm/attachment\\_dw.action?attkey=FRbANEucS95NMLRN47z%2BeeO-gEFct8EGQJsWJiCH2WUuQVQjpl3o%2BdEHTcBS4rtw&nav=FRbANEucS95NMLRN47z%2BeeOgEFct8EGQbuwypnp-Zjc4%3D&attdocparam=pB7HEsg%2FZ312Bk8OluOIH1c%2BY4beLEAeaKycWa82unk%3D&fromContentView=1](https://insightplus.bakermckenzie.com/bm/attachment_dw.action?attkey=FRbANEucS95NMLRN47z%2BeeO-gEFct8EGQJsWJiCH2WUuQVQjpl3o%2BdEHTcBS4rtw&nav=FRbANEucS95NMLRN47z%2BeeOgEFct8EGQbuwypnp-Zjc4%3D&attdocparam=pB7HEsg%2FZ312Bk8OluOIH1c%2BY4beLEAeaKycWa82unk%3D&fromContentView=1)

<sup>10</sup> <https://energycapitalpower.com/barriers-renewable-energy-south-africa/>

**Without suitable supporting policies, the unbundling of South Africa's energy sector is unlikely to progress at the necessary pace.** Efforts to unbundle Eskom into three subsidiaries for generation, transmission and distribution are following a state-issued plan aimed at energy diversification, revenue maximisation and debt reduction.<sup>11</sup> However, key legislation to drive the unbundling process and establish a competitive electricity market with a dynamic pricing policy is yet to be implemented. Similarly, regulating agencies for the unbundled entities are registered, but not operational.<sup>12</sup> More broadly, privatisation of the utilities sector remains a contentious subject for change-resistant politicians and unions, however there is plenty of evidence to suggest that renewable power will offer inexpensive and reliable electricity for low-income households.<sup>13</sup>

**Engaging in international partnerships can drive accountability, implementation and funding to support a just energy transition.** The most prominent of these is the Just Energy Transition Partnership (JETP), formed with governments of South Africa, France, Germany, the UK, US and EU. It includes US\$8.5bn of concessional loans and investment guarantees to enable favourable borrowing terms and project de-risking. The concessional loans are meant to offer finance at lower rates of interest than would otherwise be available and the investment guarantees could make renewable energy projects more attractive for private investors. Policy dialogues, workshops and governance briefings included in the JETP should offer oversight of how funds are disbursed, driving outcomes and reducing corruption.<sup>14,15,16</sup> However, experts say that little has materialised from the JETP as the South

African government has been slow to develop the investment and implementation plans.

**Paradoxes in the government's energy-related fiscal programmes must be addressed to create a sustainable and diversified energy mix.** While subsidies to support renewables exist, the South African government also supports fossil fuels through tax exemptions for the use of oil, coal and gas.<sup>17</sup> In addition, the Climate Action Tracker has found that the current carbon tax is too low to motivate companies to reduce emissions. Although there are several national policies and tax benefits around renewable energy projects, there is little information available on renewables subsidies.<sup>18</sup> An urgent review of fiscal interventions in the energy sector is required. These can be supplemented with other tools, such as concessional finance, which can accelerate the financing of renewables and the energy transition at-large. The government must take bold and coordinated steps to dismantle regulations that run counter to the principles of a just and sustainable energy transition.

**To deliver a just transition, creative and timely social policies must be deployed, with a focus on the youth.** In the transition away from coal, more than 90,000 jobs are estimated to be lost, which is causing resistance from unions.<sup>19</sup> However, the Brookings Institution shows that the JETP would create as many as a million jobs between 2023 and 2050 - more than three times the number of jobs that will be lost in the transition. To facilitate the transition of people from coal to renewable-energy jobs requires various forms of transition assistance—from temporary basic income to training programmes for reskilling.<sup>20</sup>

<sup>11</sup> [https://thetricontinental.org/wp-content/uploads/2021/04/Eng\\_working-document-SA-Electricity.pdf](https://thetricontinental.org/wp-content/uploads/2021/04/Eng_working-document-SA-Electricity.pdf)

<sup>12</sup> <https://www.afd.fr/en/ressources/unbundling-eskom-how-would-new-distribution-system-impact-energy-poverty>

<sup>13</sup> <https://www.brettonwoodsproject.org/2022/12/world-bank-and-imf-influence-casts-shadow-over-south-africas-just-energy-transition-partnership/>

<sup>14</sup> [https://climateinitiativesplatform.org/index.php/Clean\\_Energy\\_Corridors\\_in\\_Africa](https://climateinitiativesplatform.org/index.php/Clean_Energy_Corridors_in_Africa)

<sup>15</sup> <https://www.climatechangenews.com/2022/10/22/breakdown-who-is-contributing-what-to-south-africas-clean-energy-shift/>

<sup>16</sup> <https://www.fitchsolutions.com/power/financing-momentum-energy-transition-increasing-yet-challenges-remain-08-12-2022>

<sup>17</sup> <https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>

<sup>18</sup> <https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>

<sup>19</sup> <https://www.reuters.com/business/energy/exclusive-safricas-energy-transition-plan-needs-465-bln-five-times-pledges-2022-10-21/>

<sup>20</sup> <https://www.brookings.edu/blog/future-development/2022/11/17/two-reasons-why-climate-skeptics-should-support-south-africas-just-energy-transition/>

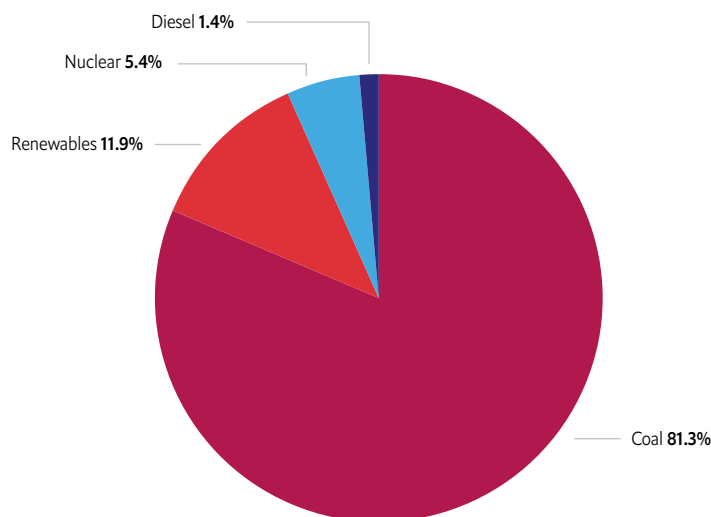


# Introduction

It is nearly impossible to separate South Africa’s legacy with coal-based power from its heritage. In response to anti-apartheid oil embargoes in the 1980s, the nation perfected a process to synthesise oil from coal to meet its energy demand and maintain the political status quo. Today, coal remains a key export commodity and fuels an industry that employs 200,000 people (around 1.3% of the total labour force).<sup>21</sup> Coal dominates the present energy mix and is around seven times greater than that of renewable power (see Figure 1).<sup>22</sup> As such, it is a key contributor to South Africa’s present electricity disaster. In 2022, South Africa saw 205 days of blackouts due to breakdowns at ageing

coal-fired power plants and Eskom’s inability to afford operation of generators. As 11 more power plants ceased operation early this year, load shedding was escalated to 12 hours of outages a day.<sup>23</sup> South Africa’s central bank estimated that the economy loses US\$51m per day due to load shedding, increasing the chance of a recession in South Africa to 45% in 2023.<sup>24</sup> These challenges stem from demand outstripping supply, an overreliance on coal and mismanagement of a vertically integrated monopoly. “[But] the biggest failures have not been so much around a lack of policy”, explains Jarredine Morris, senior manager at The Carbon Trust - Africa, “it’s the [improper] implementation of policies that are in place.”

**Figure 1: Breakdown of energy mix in South Africa, 2021**



Source: Council of Scientific & Industrial Research

<sup>21</sup> <https://www.economist.com/middle-east-and-africa/2022/01/22/south-africa-the-worlds-coal-junkie-tries-to-quit>  
<sup>22</sup> <https://www.csir.co.za/sites/default/files/Documents/20220503-Statistics%20of%20power%20in%20SA%20H2-2021-CSIR-%5BFINAL%5D%20%281%29.pdf>  
<sup>23</sup> <https://edition.cnn.com/2023/01/18/energy/ramaphosa-davos-south-africa-blackouts/index.html>  
<sup>24</sup> <https://qz.com/load-shedding-will-cost-south-africa-1-3-billion-this-1850162228>

### All roads lead to Eskom

Although South Africa has 54GW of installed power capacity, Eskom recently reported that 23GW of generation was offline due to power plant breakdowns and insufficient maintenance. By some estimates, poor workmanship due to inadequate skills has caused almost 40% of breakdowns.<sup>25</sup> Endemic corruption has also been linked to the utility's operational failures.<sup>26</sup> In November 2022, arrests were made at the coal-fired Camden Power Station for coal robbery and fraud, as well as plant damage. Crime syndicates have been tied to coal and plant equipment theft. They have also been accused of sabotaging stations to win contracts for maintenance and repair work. Experts interviewed imply that employees profiting from corrupt practices, for instance involving procurement, restrict Eskom from making positive changes. As such, expansion of power capacity by private providers was limited.

For years, Eskom has been reliant on government bailouts; currently its debt contributes to 15% of the state's total debt. Crispian Olver, executive director of the Presidential Climate Commission, linked this to non-payments, saying, "Eskom's financial crisis is driven by a number of factors, including municipalities not paying Eskom, and businesses and households not paying municipalities." He adds, "the Eskom tariff is not sufficiently cost reflective, they are running their business at a loss."

By replacing coal, supporting privately-produced electricity and dismantling Eskom's monopoly, the energy sector can regain reliability.<sup>27</sup>

### The Just Energy Transition: an opportunity for a brighter future?

In 2021, South Africa revised its nationally determined contributions (NDCs), a climate action plan to reduce emissions, specifying an absolute greenhouse gas emissions target

of 350-420Mt CO<sub>2</sub>-eq for 2030.<sup>28</sup> According to the Climate Action Tracker, these goals cannot be met with existing policies. The organisation highlights that implementing planned policies, expanding the procurement of renewables, switching to low-carbon transport and applying energy-efficiency measures will be key to achieving these targets.<sup>29</sup>

Currently, resource extraction and use drives environmental damage, climate change and poor health outcomes. Fossil fuel companies are often driven by profit and shareholder motives, making them largely unsuitable for social ownership. However, community-ownership of local and decentralised renewables allows a sharing of costs, which reduces upfront expenditure and a larger deployment of clean energies. For example, one community wind power project in Coimbatore, India was set up to deliver 350KW of energy. Selling excess power back to the grid brings the community around US\$27,000 per year.<sup>30</sup> The just energy transition (JET) movement fuels these gains by integrating communities, workers and renewables in decarbonisation efforts to equitably distribute benefits, ultimately driving economic growth. Adequate planning for reskilling and employment will ease the transition's friction.<sup>31,32</sup>

**“Eskom’s financial crisis is driven by a number of factors, including municipalities not paying Eskom, and businesses and households not paying municipalities.”**

Crispian Olver, executive director of the Presidential Climate Commission

<sup>25</sup> <https://www.news24.com/fin24/1922-2019-the-rise-and-fall-of-eskom-20190213>

<sup>26</sup> <https://www.powermag.com/south-africa-energy-crisis-at-critical-stage-as-load-shedding-continues/>

<sup>27</sup> <https://www.ft.com/content/73a5242b-9fb4-47b0-a201-ebacea7cb071>

<sup>28</sup> <https://climateactiontracker.org/countries/south-africa/targets/>

<sup>29</sup> <https://climateactiontracker.org/countries/south-africa/policies-action/>

<sup>30</sup> [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jul/IRENA\\_Community\\_ownership\\_2020](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jul/IRENA_Community_ownership_2020)

<sup>31</sup> [https://90by2030.org.za/wp-content/uploads/2018/08/JET-one-pager\\_31July2018\\_last-version.pdf](https://90by2030.org.za/wp-content/uploads/2018/08/JET-one-pager_31July2018_last-version.pdf)

<sup>32</sup> <https://www.ihrb.org/focus-areas/just-transitions/community-ownership-of-renewable-energy-how-it-works-in-nine-countries>

### Box 1: The Principles of a Just Energy Transition

The Alliance for Just Energy Transformation (AJET) has outlined eight guiding principles to support a transition:

1. Be guided by science and understand the urgency to reduce emissions in line with the goals set out by the Paris Agreement.
2. Be fair and uphold the rights, needs and values of everyone.
3. Be sustainable, ambitious and consistent with wider, holistic strategies that contribute to the energy transition needed to limit global temperature increase.
4. Be comprehensive, transparent and inclusive, which requires just transition strategies developed at the national level to be co-designed and implemented at the local level.
5. Ensure clearly-defined, robust and meaningful stakeholder engagement.
6. Be centred on climate justice.
7. Recognise energy access as an essential contributor.
8. Ensure access to justice, decision-making and information.

Source: UNDP<sup>33</sup>

Apart from the urgent need for climate action, the energy transition in South Africa is imminent for economic reasons. Mr Olver implied that extensive plant decommissioning will take place over this decade, "because they've reached the end of their economic life." Replacing this capacity with renewables and supplementing it with additional renewables capacity will be imperative. The Integrated Resource Plan (IRP), designed to balance electricity demand estimations with electricity supply sourcing criteria, estimates that South Africa will need 78GW of energy capacity by 2030, up from the official capacity of 54GW today.<sup>34</sup>

In August 2022, the nation's cabinet adopted a just transition framework to support the shift to a low-carbon economy and align regulations with the Just Energy Transition Partnership (JETP). But much more needs to be done to accelerate the pace of transition. Rapid implementation

of existing policies, addressing policy paradoxes and adjusting fiscal interventions, among others, will be crucial. We explore the policy landscape in more detail in the next chapter, followed by an assessment of fiscal frameworks and finally priorities for social programmes for a just transition.

**In August 2022, the nation's cabinet adopted a just transition framework to support the shift to a low-carbon economy and align regulations with the Just Energy Transition Partnership (JETP).**

<sup>33</sup> <https://www.undp.org/energy/publications/8-core-principles-just-energy-transformation>

<sup>34</sup> <https://businesstech.co.za/news/energy/633233/meeting-south-africas-electricity-demand-why-the-numbers-are-not-likely-to-add-up/#:~:text=The%20Government's%20Integrated%20Resource%20Plan,bleak%20future%20for%20the%20country>

## Chapter 1: Recharging the regulatory landscape

In recent years, there have been several developments in South Africa's energy policy landscape but governance frameworks have remained rigid, inefficient and opaque.<sup>35</sup> Existing state interventions are inconsistent and incomplete, and policies to enable the transition are insufficiently integrated into broader national strategies.<sup>36</sup> According to Saliem Fakir, executive director of the African Climate Foundation, "nobody's really developing a concrete vision for what the energy system needs to look like." Efforts have been taken to remedy this, such as forming the South African Renewable Energy Master Plan, however no legislation has been formed.<sup>37</sup>

The lack of cohesion extends to plans and policies for the energy transition. "I think the different regulatory authorities are not of one mind," says Mr Olver of the Presidential Climate Commission. "I think there's also a mistaken belief that the transition can be controlled, and a failure to grasp the speed at which it's happening." Indeed, despite publishing commitments to reduce emissions under both domestic policy and international treaties, there is a lack of legislation to support the just energy transition.

In this chapter, we explore the shortcomings of specific policies and programmes in more depth.

### Filling in the gaps

The Integrated Resource Plan (IRP), South Africa's electricity infrastructure development plan, was revised in 2019. It identifies that, based on a least-cost electricity scenario, the country needs to widely adopt renewable

energy technologies to meet expected demand growth from 2019 to 2030, with allocations for solar and wind in particular.<sup>38</sup> But critics point to numerous shortcomings.

"It was out of date almost as soon as it was published," states Ms Morris of The Carbon Trust - Africa, mainly with regard to the energy availability factor mentioned in the IRP 2019. "There have been calls for it to be updated because it informs procurement [specifically, the allocation strategy]," she adds. A commitment was made by the Presidency to review the plan by March 2023, but at the time of writing, an update is still pending. Furthermore, any review of the IRP appears to be taking place in silos with very little transparency with the market, which is vital for market players to adequately prepare. Experts from the South African National Energy Development Institute (SANEDI) have claimed that periodic updates of the IRP can keep the plan up-to-date in terms of energy market trends.<sup>39</sup>

**"I think there's also a mistaken belief that the transition can be controlled, and a failure to grasp the speed at which it's happening."**

Crispian Olver, executive director of the Presidential Climate Commission

<sup>35</sup> <https://www.sciencedirect.com/science/article/pii/S0973082622000928>

<sup>36</sup> <https://www.sciencedirect.com/science/article/pii/S0973082622000928>

<sup>37</sup> [https://green-cape.co.za/assets/SAREM-Emerging-Actions-Discussion-Doc\\_20211103\\_ntt-1.pdf](https://green-cape.co.za/assets/SAREM-Emerging-Actions-Discussion-Doc_20211103_ntt-1.pdf)

<sup>38</sup> <https://www.iea.org/policies/6502-integrated-resource-plan-2019-irp-2019>

<sup>39</sup> <https://mg.co.za/opinion/2023-01-06-practical-steps-to-stop-load-shedding-and-secure-electricity-security/>

Beyond updates, experts we interviewed find the IRP's limit on local embedded generation procurement (at 500MW per year between 2023 and 2030) highly restrictive and detrimental to the rapid expansion of power generation capacity that is required.<sup>40</sup> SANEDI experts have suggested the immediate removal of this limit is considered a quick win to alleviate the current power crisis.<sup>41</sup>

More broadly, the plan must speak to the wider plan to decentralise the energy sector. "We have to first have a vision of what a decentralised model looks like and who participates in that model", outlines Mr Fakir, "then we can build a plan that includes utility scale and decentralised embedded generation and other forms of generation."

Another critical programme for the energy transition in South Africa is the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), a competitive tender scheme that encourages private investment into grid-connected renewable energy projects.<sup>42</sup> Since 2011, the programme has deployed 6.3GW of renewable energy capacity.<sup>43</sup> But despite being an example for other developing economies, the REIPPPP is considered disorganised by many industry players. "Only a small amount of renewables has actually been procured through the REIPPPP process," states Mr Olver. "That's not a policy problem, that's an implementation problem."

The REIPPPP's fourth round of procurement was delayed for several years, whereas the financial close of the fifth bid window was delayed due to complications with grid connectivity and local content rules.<sup>44</sup> In addition, the programme's administrative requirements and bid costs increase the overall costs of participation,

discouraging companies, particularly SMEs, from participating.<sup>45</sup> Experts interviewed mention that the government is slow to understand shifts in energy economics, making the REIPPPP processes an inefficient way to expand power generation capacity. "There's a huge, accelerated process going on, led by the private sector, of investing in renewable and battery technologies, which is now far outstripping what was being procured through the REIPPPP," adds Mr Olver.

This signals that the REIPPPP could soon become obsolete as the private sector supersedes the public sector. But it is evident that the REIPPPP has accomplished its goal of drawing investment into power generation. Nazmeera Moola, chief sustainability officer at Ninety One, affirms, "you're seeing a lot of private-sector activity around the generation. And the vast majority is renewables." Indeed, solar and wind power comprise 83% of total independent power producer (IPP) capacity, contributing to the sustainable energy transition.<sup>46</sup> So instead of closing the REIPPPP programme, shifting the programme's focus to foster investment into the transmission sector, instead of generation, would be more valuable according to market experts.<sup>47</sup>

### Unbundling the electricity sector

Despite delays in policy implementation, the electricity sector in South Africa is in the midst of a major transformation. "We're shifting from a very vertically integrated energy system to including more diversity in the system, not only from a technology point of view, but also in terms of ownership and market participation," says Ms Morris. In 2019, the Department of Public Enterprises shared a roadmap for Eskom's unbundling into generation, transmission and distribution subsidiaries (see Figure 2).<sup>48,49</sup>

<sup>40</sup> [https://www.engineeringnews.co.za/article/era-amendment-lifts-threshold-but-irp-imposes-limitations-2022-10-28/rep\\_id:4136](https://www.engineeringnews.co.za/article/era-amendment-lifts-threshold-but-irp-imposes-limitations-2022-10-28/rep_id:4136)

<sup>41</sup> <https://mg.co.za/opinion/2023-01-06-practical-steps-to-stop-load-shedding-and-secure-electricity-security/>

<sup>42</sup> <https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>

<sup>43</sup> <https://www.pv-tech.org/private-pv-projects-eclipsing-reipppp-in-south-africa-amid-grid-access-issues/>

<sup>44</sup> <https://www.sciencedirect.com/science/article/pii/S0973082622000928>

<sup>45</sup> [https://insightplus.bakermckenzie.com/bm/attachment\\_dw.action?attkey=FRbANEucS95NMLRN47z%2BeeO-gEFcT8EGQjsWjiCH2WAUuQVQjpl3o%2BdEHTcBS4rtw&nav=FRbANEucS95NMLRN47z%2BeeOgEFcT8EGQbuwypnp-Zjc4%3D&attdocparam=pB7HEsg%2FZ312Bk8OIuOIH1c%2BY4beLEAeaKyCWa82unk%3D&fromContentView=1](https://insightplus.bakermckenzie.com/bm/attachment_dw.action?attkey=FRbANEucS95NMLRN47z%2BeeO-gEFcT8EGQjsWjiCH2WAUuQVQjpl3o%2BdEHTcBS4rtw&nav=FRbANEucS95NMLRN47z%2BeeOgEFcT8EGQbuwypnp-Zjc4%3D&attdocparam=pB7HEsg%2FZ312Bk8OIuOIH1c%2BY4beLEAeaKyCWa82unk%3D&fromContentView=1)

<sup>46</sup> <https://www.phenomenalworld.org/analysis/eskom-unbundling-and-decarbonization/>

<sup>47</sup> <https://www.pv-tech.org/private-pv-projects-eclipsing-reipppp-in-south-africa-amid-grid-access-issues/>

<sup>48</sup> <https://theconversation.com/south-africas-bailout-of-eskom-wont-end-power-cuts-splitting-up-the-utility-can-as-other-countries-have-shown-200490>

<sup>49</sup> <https://www.oua.co.za/projects/energy/unbundling-eskom>

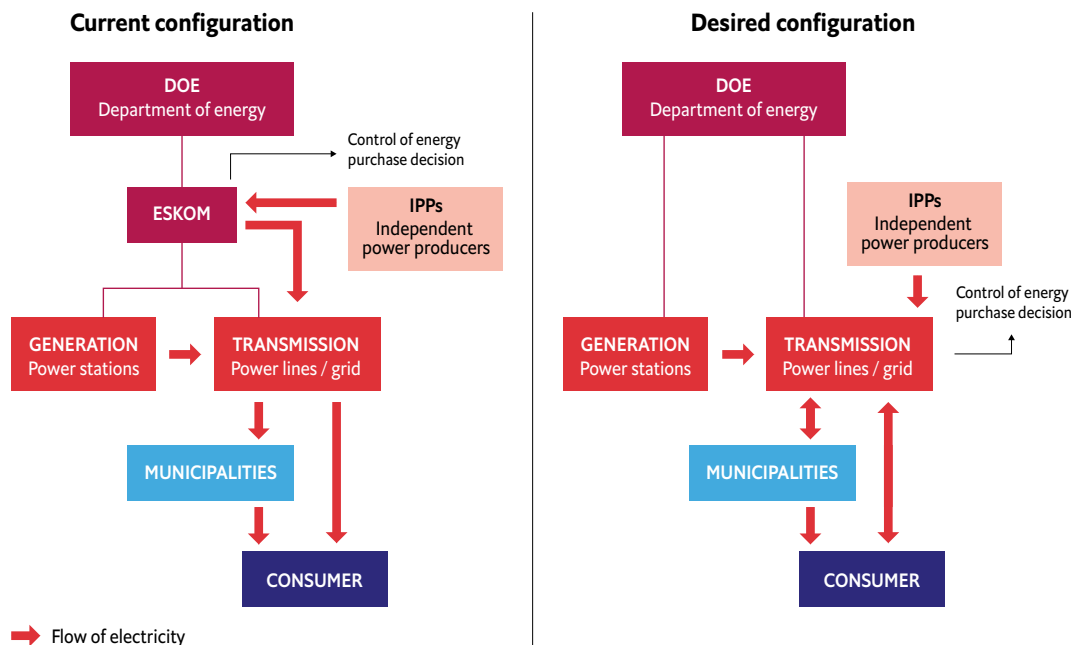
Separating Eskom into these units would enhance competition, transparency and accountability in the energy sector.<sup>50</sup> Direct privatisation is not the ultimate goal of unbundling, but rather the creation of an independent entity to democratise the energy sector.<sup>51</sup> “This will allow for producers, private, non-private or even community, to identify the lowest-cost generation capacity and feed that into the grid,” explains Mr Fakir. “That’s the system we need to evolve to.”

But political opposition has delayed the unbundling and partial privatisation of Eskom, the deadline for which passed in December 2022. Currently, the government has placed the segmentation of Eskom on hold as it focuses on fixing the nation’s generation capacity.<sup>52</sup> This has left a newly separated and registered transmission entity inoperative.<sup>53</sup>

**“We’re shifting from a very vertically integrated energy system to including more diversity in the system, not only from a technology point of view, but also in terms of ownership and market participation,”**

Jarredine Morris, senior manager at The Carbon Trust - Africa

**Figure 2: Current and planned reconfiguration of South Africa’s electricity sector**



Source: Organisation Undoing Tax Abuse (OUTA)

<sup>50</sup> <https://www.sciencedirect.com/science/article/pii/S0973082622000928>  
<sup>51</sup> <https://www.phenomenalworld.org/analysis/eskom-unbundling-and-decarbonization/>  
<sup>52</sup> <https://mg.co.za/politics/2023-03-14-zuko-godlimpi-anc-may-lose-2024-elections-over-energy-crisis/>  
<sup>53</sup> <https://www.afd.fr/en/ressources/unbundling-eskom-how-would-new-distribution-system-impact-energy-poverty>

### Box 2: The pricing problem

While the methodology used to set South Africa's electricity tariffs was chosen to offer price certainty, it led to tariff rates that do not reflect the cost of electricity. Over the past decade, this approach has caused tariff rates to increase by more than 500%.<sup>54</sup>

The current methodology is based on a Multi-Year Price Determination (MYPD), which specifies allowable revenues for Eskom and sets out a framework of principles to determine energy prices.<sup>55</sup> Nhlanhla Gumede, regulator member at National Energy Regulator of South Africa (NERSA) explains this process, saying, "Eskom will take that allowed revenue and on its own, within its own models, will then come up with tariffs and retail terms."

Currently, NERSA has begun reforming the determination methodology to align better with energy dynamics.<sup>56</sup> In addition, the Resource Mobilisation Fund (RMF), created to provide technical and financial support to end the energy crisis, is working to improve national capacity through tariff design and regulation.<sup>57</sup>

According to Mr Gumede, "it's almost impossible to unbundle the company without unbundling the tariff." The challenge, he says, is in determining reflective tariffs for the unbundled entities, as the location of power distributors and environmental costs of different power generators would have to be factored in.

By dismantling Eskom's vertical monopoly, specialist businesses can take charge of distinct portions of the energy sector, driving efficiencies and potentially bringing an end to severe power cuts.<sup>58</sup> According to researchers at the Stellenbosch University, electricity transmission should be managed by a single state-owned entity, as it is more efficient to have one large grid in an area than multiple, smaller grids for transmission. But liberalising both generation and distribution has major advantages. "The most effective way of getting power onto the grid is by opening up grid access and procuring that power through a flexible market," states Mr Olver. Smaller and privately-funded generation companies offer cheaper electricity, while distribution companies as close to the end user as possible enhance efficiency.<sup>59</sup>

In February 2022, an Amendment Bill to the Electricity Regulation Act (ERA) of 2019 was released. The Bill was designed to foster market reforms to increase industry competition, shift the energy sector towards a multi-market structure and revise the existing electricity pricing policy. In addition, it prescribed the development of a transmission systems operator (TSO) to manage a dynamic electricity trading platform.<sup>60</sup> Although the Bill is a positive step towards diversifying the electricity sector, there are elements that can be improved. The Bill provides far-reaching powers to ministerial entities, which could hold back liberalisation of the generation market. It gives NERSA the discretion not to share methodologies that inform tariffs and rates for licensees. This would reduce transparency in the market and, ultimately, competition, especially within

<sup>54</sup> <https://www.oua.co.za/projects/energy/unbundling-eskom>

<sup>55</sup> <https://www.nersa.org.za/wp-content/uploads/2022/07/CONSULTATION-PAPER-MYPD5.pdf>

<sup>56</sup> <https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>

<sup>57</sup> <https://www.news24.com/fin24/opinion/martin-kingston-new-business-fund-will-help-end-power-crisis-by-securing-expertise-20230314>

<sup>58</sup> <https://theconversation.com/south-africas-bailout-of-eskom-wont-end-power-cuts-splitting-up-the-utility-can-as-other-countries-have-shown-200490>

<sup>59</sup> <https://theconversation.com/south-africas-bailout-of-eskom-wont-end-power-cuts-splitting-up-the-utility-can-as-other-countries-have-shown-200490>

<sup>60</sup> <https://centurionlg.com/2022/04/13/the-electricity-market-in-south-africa-opportunities-for-german-smes-from-the-renewable-energy-sector/>

agreements where tariffs were bid for under procurement processes. As the amendment is yet to come into effect, removing protectionist guidelines could expedite the transition away from an inefficient single-buyer system.<sup>61</sup>

Eliminating the monopoly must be done carefully and in line with the just energy transition principles. Some critics of a multi-market system remain concerned that emphasising low-cost power could lead to greater adoption of fossil fuels in some cases, leaving consumers to take on the carbon tax burden.<sup>62</sup> However, according to Mr Olver, a liberalised market will respond to the current low costs of renewable energy. "You've already seen wind and solar prices drop so that

they are the cheapest power sources available to us, and they're also the power sources that can be put onto the grid fastest," he says.

The policy approach towards transition must evolve to recognise and reject a coal-dependent economy. The policy framework governing energy should consider strategic development and align vested interests in the just transition. Mr Olver emphasises, "different regulatory authorities are not of one mind. So there's some policy inconsistency." He goes on to explain that authorities must accept the speed of the transition, focusing on agile policies to support the transition rather than limiting regulations to control clean energies.



<sup>61</sup> <https://www.webberwentzel.com/News/Pages/electricity-market-progress-key-aspects-of-the-electricity-regulation-act-amendment-bill-2022.aspx>

<sup>62</sup> <https://www.foodformzansi.co.za/energy-woes-privatisation-is-a-failed-experiment/>



## Chapter 2: Fuelling finance

At the 27th UN Climate Change Conference of the Parties (COP 27), President Cyril Ramaphosa presented South Africa's just energy transition investment plan. The government estimates that the energy transition will cost about US\$97bn over the next five years.<sup>63</sup> The National Business Initiative approximates the cost of the transition to stand at no less than US\$320bn by 2050.<sup>64</sup> The investment is expected to cover new generation capacity, new infrastructure for transmission and distribution and funds to cope with socio-economic consequences of the transition.<sup>65</sup>

Although the targets seem ambitious, the opportunity cost of delays in addressing the energy crisis are far greater. The annual cost of load shedding alone is US\$25bn, according to Jacques Morisset, lead economist for South Africa at the World Bank, which will cripple South Africa's economy as well as their ability to fund a transition. Urgent action is required to structure valuable investment pathways and tap into financing opportunities.

South Africa must leverage international partnerships to access blended and concessional finance, while dismantling the fiscal support for fossil fuels and processes that disincentivise private-sector investment into the grid. On the policy approach to generate major investment opportunities, Mr Gumede of NERSA says, "intervention must be predicated on policies and must also be predicated on fundamental economic principles." Investment planning must therefore focus on delivering a fair distribution of benefits across South Africa.

**“Intervention must be predicated on policies and must also be predicated on fundamental economic principles.”**

Nhlanhla Gumede, regulator member at National Energy Regulator of South Africa (NERSA)

### International partnerships for catalysing investment

At COP 26 in 2021, France, Germany, the UK, US, EU and South Africa formed the Just Energy Transition Partnership (JETP). The JETP was designed to offer South Africa support in transitioning away from coal towards a low-carbon economy. This entailed a commitment of US\$8.5bn from the donor countries over the span of 3-5 years, which is meant to include grants, concessional loans, investments, risk-sharing instruments, private-sector funding, and more.<sup>66</sup> Although the initial sum covers only 9% of the total funds estimated to deliver a just energy transition, the amount can be leveraged to significantly narrow the financing gap.<sup>67</sup> Mr Fakir explains, "Given that the level of infrastructure spend in South Africa has been on decline, we could assume that [this] will lead to multiplier effects."

<sup>63</sup> <https://www.brookings.edu/blog/future-development/2022/11/17/two-reasons-why-climate-skeptics-should-support-south-africas-just-energy-transition/>

<sup>64</sup> <https://web-assets.bcg.com/79/c5/dc68d7e940d898730da40d74a511/south-africas-net-zero-transition.pdf>

<sup>65</sup> <https://www.brookings.edu/blog/future-development/2022/11/17/two-reasons-why-climate-skeptics-should-support-south-africas-just-energy-transition/>

<sup>66</sup> [https://ec.europa.eu/commission/presscorner/detail/it/ip\\_21\\_5768](https://ec.europa.eu/commission/presscorner/detail/it/ip_21_5768)

<sup>67</sup> <https://www.blendedfinance.earth/making-climate-capital-work>

Following the announcement of the JETP, Spain committed to providing US\$2.1bn in financial tools to support Spanish companies investing in renewables in South Africa. Reportedly, Norway and Denmark are also considering investments.<sup>68</sup> Mr Fakir confirms that international partnerships to support the JETP could maintain pressure on the government to make sustainable decisions. He adds, "There's already a process in place to raise another US\$5bn and we are working with other stakeholders, particularly in the private sector, to look at how we can use mobilised domestic resources to fund other aspects of the JETP."

But the benefits of the JETP remain theoretical. "I think the JETP is largely useless at the moment," says Ms Moola. "I think the South Africans have been slow to actually deliver their plan." The investment plan was announced only in November 2022 and the implementation plan, which was due by March 2023, has yet to be released at the time of writing. Beyond this, Ms Moola claims that the concessional financing offered within the JETP is less attractive than what can be raised locally in South Africa, given its deep capital markets. Accelerating plans and ironing out critical discrepancies will determine the success of such partnerships.

### The financing toolkit

The South African government can explore a range of financing options, from blended finance to public-private partnerships, to enable the energy transition. A tried and tested model for the expansion of power infrastructure is **public-private partnerships** (PPPs), which brings together government guarantees for power purchases with private-sector financing and technical expertise. In South Africa, experts we interviewed advocate for the use of PPPs, specifically for grid development. "In his budget speech, the finance minister opened the door for private-sector participation in the buildout of the grid," explains Ms Moola. "If [the government] wants to open access to the grid, they want to have some measure of equity in that." The blueprint for PPPs in South

Africa is already available, adds Ms Moola, from past road-toll infrastructure projects executed under a Build-Operate-Transfer model.

Bringing together governments, multinational development banks (MDB) or development finance institutions (DFI) and the private sector in **blended financing** arrangements is another viable option. Risk guarantees offered by MDBs or DFIs make the project more attractive for private investors, by bridging the risk-return expectations. Indonesia is an example of another emerging market looking to evolve to a low-carbon economy through a JETP. As a result, the nation recently launched an Energy Transition Mechanism (ETM) Country Platform, which will fund its transition away from fossil fuels. The platform brings together grant, investment, technical and financing partners to deliver blended finance solutions to sustainably retire over 15GW of coal-fired power facilities.<sup>69</sup>

Currently, the Development Bank of Southern Africa (DBSA), a bilateral development financing entity, readily invests in renewables projects. It established South Africa's largest blended finance instrument, the Investment Fund, which aims to bring together US\$7bn in public capital and US\$62bn in private-sector investment to fund transition efforts over the next decade. To date, its pipeline of projects is valued at around US\$6bn. Ms Moola highlights the value in enabling the country's existing institutions to manage new energy investments. She says, "South Africa has a developed capital market. It has a local savings pool... and it's cheaper for the government to raise money in rand."<sup>70</sup>

**“South Africa has a developed capital market. It has a local savings pool... and it's cheaper for the government to raise money in rand.”**

Nazmeera Moola, chief sustainability officer at Ninety One

<sup>68</sup> <https://www.ft.com/content/e6653b1d-2302-4e44-81bb-38dc608d303d>

<sup>69</sup> [https://media.kemenkeu.go.id/getmedia/08b6623b-3592-4a86-9ed2-69b12a4392cd/SP-172-Indonesia-Launch-es-ETM-Country-Platform-to-Accelerate-Just-and-Affordable-Energy-Transition\\_1?ext=.pdf](https://media.kemenkeu.go.id/getmedia/08b6623b-3592-4a86-9ed2-69b12a4392cd/SP-172-Indonesia-Launch-es-ETM-Country-Platform-to-Accelerate-Just-and-Affordable-Energy-Transition_1?ext=.pdf)

<sup>70</sup> <https://static1.squarespace.com/static/5acdc066c258b4bd2d15050b/t/628e373f-28d4fe216b114042/1653487452874/Making+Climate+Capital+Work+-+FINAL+REPORT.pdf>



Other forms of **concessional financing** can also be explored. Concessional finance provides below market rates of financing support for large development projects, through flexible loans, grants and equity investments.<sup>71</sup> Like other nations within the BRICS coalition, South Africa can access public finance institutions and state-owned enterprises to support energy diversification.<sup>72</sup> The New Development Bank (NDB) was formed by the BRICS committee to offer development finance. Since its inception in 2014, the bank has approved four projects in South Africa pertaining to clean energy and power efficiency.<sup>73</sup> But, William Van Wyk, country manager for FIMER South Africa, a supplier of

solar inverters, warns that loyalty to member states may harm the transition if partners continue to support fossil fuels. He says, “We need to look at where our global funding comes from and where our allegiances lie because that country is going to drive what type of fuel source and generation we are going to be sustaining.”

Some critics have found the NDB lacks transparency and accountability. On areas of improvement amongst South Africa's energy transition partnerships, Neoka Naidoo, independent climate change consultant, explains, “the fundamental lack of accountability stands because there's no clear cross-institution implementation pathway and political will. This leaves the opportunity for multiple ill-planned activities, by different uncoordinated actors, to take place and create more chaos.” To ensure that South Africa remains on track to meet transition targets, experts have called for a national liaison group to promote dialogue between the South African government and international financial institutions.<sup>74</sup>

### Adjusting fiscal interventions

There are a number of paradoxes in South Africa's fiscal framework that are impeding the energy transition. “[The government] must have their incentives aligned properly and make sure they're not working against each other,” says Mr Olver. Firstly, a number of fossil fuel subsidies remain in the system. Existing carbon offset credits justify companies' continued use of high-emitting power sources and the carbon tax is too low to drive a shift away from fossil fuels.<sup>75,76</sup> Bold steps to dismantle these are necessary to develop accurate market pricing signals for renewable power. Removing carbon tax exemptions and increasing the tax rate could provide the nation with an additional US\$8bn in revenue by 2030 that can be reinvested into the transition.<sup>77</sup>

<sup>71</sup> <https://www.worldbank.org/en/news/feature/2021/09/16/what-you-need-to-know-about-concessional-finance-for-climate-action#:~:text=What%20is%20concessional%20finance%3F,countries%20to%20accelerate%20development%20objectives.>

<sup>72</sup> <https://www.iisd.org/system/files/publications/beyond-fossil-fuels-brics.pdf>

<sup>73</sup> <https://www.ndb.int/>

<sup>74</sup> <https://theconversation.com/how-brics-new-development-bank-can-improve-transparency-and-accountability-186265>

<sup>75</sup> <https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>

<sup>76</sup> <https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>

<sup>77</sup> <https://www.brookings.edu/blog/future-development/2022/11/17/two-reasons-why-climate-skeptics-should-support-south-africas-just-energy-transition/>

While renewable energy subsidies exist, there is a lack of understanding on how they are deployed.<sup>78</sup> “Our local policies are vague on how to interpret carbon policies and buyback procedures,” explains Mr Van Wyk. To remedy these inconsistencies, South Africa must integrate fiscal tools such as a progressive carbon tax and green finance taxonomy into national strategies, to support the just energy transition. These efforts could have a multiplier effect on private and philanthropic financing towards the transition.<sup>79,80</sup> To further incentivise investment,

Mr Morisset says that providing tax breaks for private-sector investment into renewables will be a key driver for the transition. Beyond these initiatives, South Africa could save tens of billions of dollars by reducing Eskom's bailouts. But across the tools that the government uses to finance the energy transition, it is imperative that they are accompanied with social policies, such as local ownership and economic development, to equitably distribute its benefits.<sup>81,82</sup> We explore the social building blocks that will ensure a just transition in the next chapter.



<sup>78</sup> <https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>

<sup>79</sup> <https://www.sciencedirect.com/science/article/pii/S0973082622000928>

<sup>80</sup> <https://www.atlanticcouncil.org/blogs/energysource/the-just-energy-transition-partnership-with-south-africa-will-hinge-on-domestic-reform/>

<sup>81</sup> <https://www.reuters.com/business/sustainable-business/get-blend-right-we-can-unlock-trillions-finance-global-south-say-experts-2023-01-16/>

<sup>82</sup> [https://www.cif.org/sites/cif\\_enc/files/knowledge-documents/supporting\\_just\\_transitions\\_in\\_south\\_africa.pdf](https://www.cif.org/sites/cif_enc/files/knowledge-documents/supporting_just_transitions_in_south_africa.pdf)

## Chapter 3: Energising equity

According to the World Bank, South Africa is considered one of the most unequal countries in the world due to racial, spatial and wealth inequities.<sup>83</sup> Decades after its independence, South Africa's socio-economic progress is restricted by energy poverty and discrimination. While policies and programmes exist to offer universal energy access to all, nearly seven million households in the country have access to only unsafe and unreliable energy sources.<sup>84</sup>

A transition to clean energy will improve worker health, productivity and job opportunities.<sup>85</sup> However, according to Mr Olver, the human element of the transition is one of the most challenging aspects to navigate. He says,

"people haven't yet come to terms with the long-term prospects of renewable energy. We're asking people to leave something they know that works and put their future hopes into something they are unsure of."

Currently, unions are resisting the loss of 90,000 coal jobs as a result of the transition and are urging policymakers to implement schemes to offset these redundancies.<sup>86</sup> To ensure the energy transition leaves no one behind, the International Energy Agency (IEA) recommends implementing policies and programmes focusing on job opportunities, worker protection, socio-economic development, social justice and engaging the community as active participants.<sup>87</sup>

### Box 3: Green industrial policies to drive the transition

Poverty, inequity and youth unemployment are critical social barriers to the energy transition. As the South African government seeks to develop new avenues for economic growth to drive job creation, it is vital to ensure these are aligned with the transition in the energy sector. The sustainable expansion of the industrial sector should be a key area of focus.

Thus far, South Africa's industrial policy has been closely associated with national mining, power and financial sectors. In a post-apartheid era, cheap coal was a key instrument to attract capital and cultivate energy-intensive industries that relied on primary-resource inputs.<sup>88</sup> In light of the current energy crisis, there is a need to evolve industrial policy to better realise the benefits related to the just energy transition.

Operated by the Department of Trade, Industry and Competition, South Africa's Industrial Policy branch is guided by the Reimagined Industrial Strategy, which seeks to invest in national job creation and focuses on sector-oriented programmes, such as efforts to promote economic growth associated with the green economy.<sup>89</sup> Indeed, industrial policy is undergoing a 'green' renaissance that acknowledges the need for intervention to drive a sustainable structural transformation. Such a green industrial policy must include the following key elements<sup>90</sup>:

<sup>83</sup> <https://www.aljazeera.com/news/2022/3/10/south-africa-most-unequal-country-in-the-world-report>

<sup>84</sup> <https://www.sustainable.org.za/uploads/files/file72.pdf>

<sup>85</sup> <https://www.brookings.edu/blog/future-development/2022/11/17/two-reasons-why-climate-skeptics-should-support-south-africas-just-energy-transition/>

<sup>86</sup> <https://www.reuters.com/business/energy/exclusive-safricas-energy-transition-plan-needs-465-bln-five-times-pledges-2022-10-21/>

<sup>87</sup> <https://www.iea.org/reports/recommendations-of-the-global-commission-on-people-centred-clean-energy-transitions>

<sup>88</sup> [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms\\_315677.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_315677.pdf)

<sup>89</sup> <http://www.thedtic.gov.za/industrial-policy/>

<sup>90</sup> <https://afripoli.org/how-global-decarbonisation-can-turn-into-an-industrial-development-opportunity-in-africa>

- Adoption and deployment of renewable power
- Fiscal incentives for low-carbon industry clusters
- Development of green skills and retraining the existing workforce
- Incorporation of circular economy principles, promoting waste reduction and recycling
- Mechanisms to factor externalities into prices (e.g. carbon pricing).

Beyond policy development, implementation and institutional governance are persistent weaknesses in South Africa. Embedding greater transparency on criteria, performance requirements and long-term objectives will lead to a more comprehensive and complete industrial policy.<sup>91</sup>

### Programmes for an inclusive energy transition

Marginalised communities are often left on the fringe of mass energy movements. However, South Africa's renewable energy procurement processes are centred on rural societies and environments. These efforts are expected to create 10,000 local jobs, support 3,000 local businesses and educate 30,000 individuals by 2050.<sup>92</sup>

At the top of the list of interventions are those to protect groups at risk of losing their livelihoods amid the transition.<sup>93</sup> Associations such as the National Economic Development and Labour Council (NEDLAC) and National Energy Crisis Committee (NECOM) support these efforts by facilitating dialogue among key stakeholders, identifying labour and community concerns among those affected by the transition. According to Ms Morris of The Carbon Trust - Africa, both organisations have robust processes to foster greater cooperation and alignment towards the transition. To be impactful, however, stakeholder engagement must go beyond a 'tick-box' exercise. Ms Naidoo explains that entering into stakeholder engagement processes with predetermined

notions on outcomes fails to acknowledge and account for community differences in social strategies pertaining to the transition.

Beyond NEDLAC and NECOM, the REIPPPP is also employing active labour market policies to target job creation for disadvantaged communities and racial groups. Hydrogen South Africa (HySA) is another example of an innovative social intervention that is creating local wealth, expanding clean energy and creating new jobs.<sup>94</sup>

**South Africa's renewable energy procurement processes are centred on rural societies and environments. These efforts are expected to create 10,000 local jobs, support 3,000 local businesses and educate 30,000 individuals by 2050.**

<sup>91</sup> <https://afripoli.org/how-global-decarbonisation-can-turn-into-an-industrial-development-opportunity-in-africa>

<sup>92</sup> <https://www.cobenefits.info/country-studies-infographics/studies/south-africa/>

<sup>93</sup> [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA\\_Market\\_Africa\\_2022.pdf?rev=bb73e285a0974bc996a1f942635ca556](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf?rev=bb73e285a0974bc996a1f942635ca556)

<sup>94</sup> [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA\\_Market\\_Africa\\_2022.pdf?rev=bb73e285a0974bc996a1f942635ca556](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf?rev=bb73e285a0974bc996a1f942635ca556)

#### Box 4: The youth dividend

The International Labour Organisation expects the transition to a low-carbon economy will lead to significant job creation.<sup>95</sup> However, upskilling youth with the skills needed to participate in the energy transition must be a key policy consideration.<sup>96</sup> As approximately 250,000 young graduates enter the South African workforce each year, training and education policies will unlock opportunities to grow the industry and channel labour expertise into the renewable energy sector.<sup>97,98</sup> Policymakers can deploy funding to deliver training and create jobs for the youth to reduce disruptions.<sup>99</sup>

Educational programmes have been deployed by the government and private-sector entities to prepare young people for careers within South Africa's energy transition. Through the 'Drivers for Change' initiative, South Africa established a fund to support youth-led climate projects and offer technical guidance to scale these efforts. While the initiative has not been repeated since its launch in 2020, it can potentially address the impending youth unemployment crisis and nurture skill sets to support the transition.<sup>100</sup> In the private sector, Siemens Energy held the Just Energy Transition Hackathon for high schoolers in Gauteng to develop their problem-solving skills. Contestants found innovative and efficient ways to run virtual data centres while keeping costs and carbon emissions low.<sup>101</sup>

These examples highlight that collaborative efforts between the private and public sector can prepare the future labour force to participate in and lead the transition.

Experts advocate that some form of transition assistance must be offered. "We need some form of income support for workers that are transitioning," says Mr Olver. "We need to see that move forward into a more concrete set of measures." However, income support is highly debated among politicians due to a lack of funds to sustain a basic income grant. However, a combination of growth reforms and private-sector efforts to expand social security (i.e. employee safety nets) can help.<sup>102</sup>

Exploring schemes through which energy-sector employees and unions can take more ownership of the transition could also draw support for the transition. "We need to make sure that organised labour is invested in the future green economy," states Mr Olver. He suggests that this can be achieved by investing mine worker pension funds into renewable energies, thereby giving

coal employees ownership of the new sector and the benefits that arise. Additionally, involving trade unions that are dependent on coal revenues in decarbonisation planning can help them to better understand these new avenues for economic prosperity and employment.

More broadly, there are a host of benefits of the transition to renewable energy that must, at the outset, be communicated to South Africa's residents. If about 11GW of rooftop solar PV is installed within the residential sector by 2030, residential consumers will save around R12.8bn (US\$676m). Perhaps more importantly, shifting away from coal-fired power plants will alleviate air pollution, which currently affects up to 44 million residents and led to 13,000 premature deaths in 2018, generating health costs of R45bn (US\$2.4bn). As such, transitioning to renewable power can have a significant positive impact on health outcomes.<sup>103,104</sup>

<sup>95</sup> [https://www.ilo.org/global/topics/green-jobs/projects/africa/WCMS\\_360570/lang-en/index.htm](https://www.ilo.org/global/topics/green-jobs/projects/africa/WCMS_360570/lang-en/index.htm)

<sup>96</sup> [https://www.gfse.at/fileadmin/4\\_gfse/services\\_\\_\\_policy\\_briefs/youth\\_gfse\\_policy\\_brief\\_v2\\_01.pdf](https://www.gfse.at/fileadmin/4_gfse/services___policy_briefs/youth_gfse_policy_brief_v2_01.pdf)

<sup>97</sup> <https://www.irena.org/News/expertinsights/2022/Nov/Could-the-Energy-Transition-Benefit-Africas-Economies>

<sup>98</sup> <https://ddp.org.za/blog/2022/06/03/why-tackling-graduate-unemployment-in-sa-is-important-for-post-covid19-economic-recovery/#:~:text=Roughly%20250%2C000%20fresh%20graduates%20enter,of%20the%20graduates%20find%20employment.>

<sup>99</sup> [https://www.gfse.at/fileadmin/4\\_gfse/services\\_\\_\\_policy\\_briefs/youth\\_gfse\\_policy\\_brief\\_v2\\_01.pdf](https://www.gfse.at/fileadmin/4_gfse/services___policy_briefs/youth_gfse_policy_brief_v2_01.pdf)

<sup>100</sup> [https://www.dffe.gov.za/drivingforceforchange\\_winnerprofile](https://www.dffe.gov.za/drivingforceforchange_winnerprofile)

<sup>101</sup> <https://www.siemens-energy.com/MEA/en/news/magazine/jet-hackathon-gauteng-youth.html>

<sup>102</sup> <https://econrsa.org/publications/technical-background-paper-the-macroeconomics-of-establishing-a-basic-income-grant-in-south-africa/>

<sup>103</sup> <https://www.cobenefits.info/country-studies-infographics/studies/south-africa/>

<sup>104</sup> <https://www.greenpeace.org/africa/en/press/8939/air-pollution-from-fossil-fuels-costs-the-world-r120-billion-every-day-greenpeace/>

**Box 5: The Mpumalanga makeover**

Mpumalanga province is at the heart of South Africa's coal country. It produces 83% of the nation's coal and employs 85% of South Africa's coal-mining labour. With its abundance of coal resources and ageing power plants, the province requires targeted assistance to join the transition.<sup>105</sup>

To guide policymakers in transitioning the region's economy, the JETP lays out high-level policy areas of focus. These include the repurposing of coal facilities, supporting economic diversification, assisting labour to participate in the transition, and developing the necessary market conditions to enable a transition. The partnership recognises the negative impacts of the coal industry, along with the advantages of the sector's strong industrial base and workforce to offer solutions in the energy transition. As a result, planning around Mpumalanga's own transition includes the production of microgrids and mobile solar-power units. These efforts will capitalise on the region's transmission lines and incentivise renewable power operators to relocate to the area.<sup>106</sup> Mr Morisset of the World Bank, acknowledges that solar and wind potential is limited in the region, but adds, "in the short term it will certainly make some sense to develop some renewable projects because the cost of transmission will be zero and [it will] provide some jobs."

Along with building new capacity for renewables in Mpumalanga, efforts to rehabilitate abandoned mines are critical. Land pollution, acidic water bodies and even fatalities are some of the major risks of abandoned mines. Research by Human Rights Watch has shown that the government is yet to take suitable steps to ensure that coal mining companies restore mine sites. This responsibility should largely sit with the Department of Mineral Resources and Energy (DMRE). More broadly, educating the community on health risks and locations of abandoned mines is fundamental to attaining their buy-in for the transition.<sup>107</sup>

Mr Olver adds that this programme should incorporate a funding component. He says, "when mines reach the point of closure, what you want to be able to do is to immediately trigger mine rehabilitation funds. Then you can potentially absorb all the workers coming out of that mine for another five years while they do all the rehabilitation." In alignment, the DMRE can impose hefty fines on non-compliant behaviour and ensure that mining permits are authorised only in the case of adequate funds set aside for rehabilitation.<sup>108</sup>

By enforcing existing regulations to make coal companies pay for rehabilitation, the overall cost of coal will increase, making it a less favourable source of energy.

<sup>105</sup> <https://oxpeckers.org/2022/11/energy-transition-in-the-east/>

<sup>106</sup> <https://oxpeckers.org/2022/11/energy-transition-in-the-east/>

<sup>107</sup> <https://www.hrw.org/report/2022/07/05/forever-mines/perpetual-rights-risks-unrehabilitated-coal-mines-south-africa>

<sup>108</sup> <https://www.hrw.org/report/2022/07/05/forever-mines/perpetual-rights-risks-unrehabilitated-coal-mines-south-africa>



## Conclusion

This report demonstrates that unless the South African government prioritises moving away from a vertical energy model, the transition will continue to be held back. "The main thing we should focus on now", says Mr Fakir, "is really fully unbundling the system's operator, deregulating the electricity market and getting everybody to participate in it, because that's the only way out of this hole at the moment." The participation of renewable energy providers should be better incentivised. Fundamental policy shifts to drive the transition must be bold and seek to dismantle structures that uphold power inefficiencies. Mr Van Wyk asserts, "if we don't address the core issue of a rigid governmental model around mining infrastructure and the influence of trade unions in the political parties, the just energy transition will not move further than the proposal at parliament."

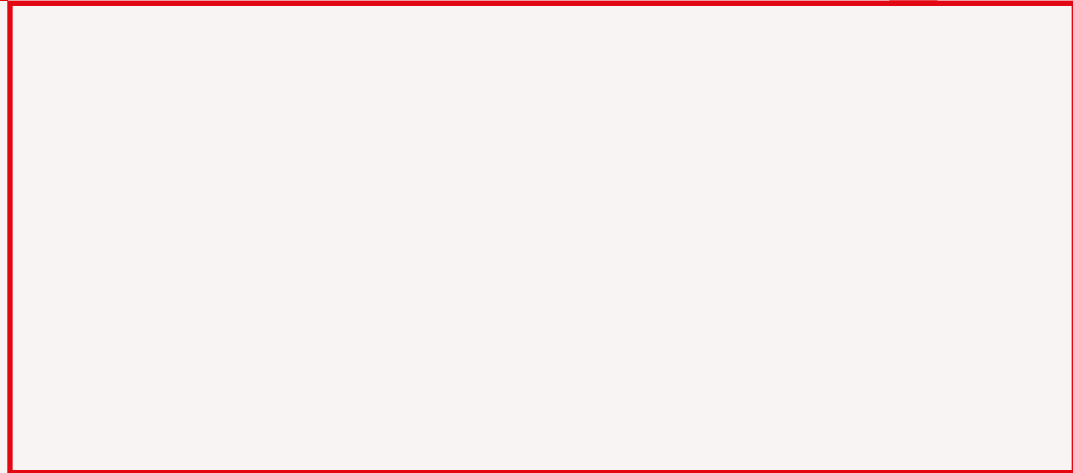
While a just energy transition offers a number of societal benefits, it is a challenge to bring diverse communities along the journey. By restructuring development models and building capacity for civil society organisations to engage with vulnerable communities, the government will be able to sustain open communication to better plan for the transition. Transition assistance, in the form of temporary income for those adversely affected by the shift to renewables, as well as upskilling programmes, need to be considered.

Prioritising youth participation will be critical to future-proofing the South African energy sector. Enhancing current projects to involve young people in climate change mitigation and adaptation in South Africa can be effective. As part of the government's social programming around the transition,



engagement with educators to transfer knowledge, foster guidance on career planning and empower young voices on the needs of the just energy transition is an imperative.<sup>109</sup> Accounting for the pivotal role that young people hold in a revolutionary transformation, like the just energy transition, will help unlock benefits for generations to come.

<sup>109</sup> <https://www.dailymaverick.co.za/article/2022-11-23-active-climate-change-citizenship-for-a-just-transition-in-south-africa/>



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