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Research Report
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JET Issues in Public Finance

A focus on mobilising funding for Mpumalanga

Commissioned by

THE AFRICAN CLIMATE FOUNDATION

krutham

About Krutham

Krutham, is a leading research and consulting firm that specialises in the financial sectors of emerging markets. Its analysis is used by companies, investors, stockbrokers, regulators, policy makers and companies in South Africa and around the world. It has offices in Johannesburg, London and Boston.

This report was commissioned by the African Climate Foundation (ACF). It was produced independently by Krutham and the contents represent the views of Krutham and its analysts.

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Abbreviations

UNFCCC	United Nations Framework Convention on Climate Change
ACF	African Climate Foundation
AIGCC	Asia Investor Group on Climate Change
ALM	Asset Liability Management
AG	Auditor General
AGSA	Auditor General South Africa
DEDaT	Department of Economic Development and Tourism
DFFE	Department of Forestry, Fisheries and the Environment
DHET	Department of Higher Education and Training
DIRCO	Department of International Relations and Corporation
DPSA	Department of Public Services and Administration
DSD	Department of Social Development
DTIC	Department of Trade, Industry and Competition
EV	Electric Vehicle
EPWP	Expanded Public Works Programme
GIC	Global Investor Coalition on Climate Change
ICMA	International Capital Market Association
IDC	Industrial Development Corporation
IIGCC	Institutional Investors Group on Climate Change
IDP	Integrated Development Plan
JET	Just Energy Transition
JET-IP	Just Energy Transition Investment Plan
JETP	Just Energy Transition Partnership
JTFM	Just Transition Financing Mechanism
LED	Local Economic Development
MTEF	Medium Term Expenditure Framework
MEGA	Mpumalanga Economic Growth Agency
MEGDP	Mpumalanga Growth and Development Path
MBD	Multilateral Development Banks
NDP	National Development Plan
NHI	National Health Insurance
NT	National Treasury
NDCs	Nationally Determined Contributions
OECD	Organisation for Economic Co-operation and Development
PCC	Presidential Climate Commission
RSC	Regional Services Council
SARS	South African Revenue Services
SEZ	Special Economic Zone
TVET	Technical, Vocational and Education Training
UN	United Nations

1. Executive summary

This is the third paper in our series looking at scaling financing to support the just energy transition in South Africa, in partnership with the African Climate Foundation. While the first two (on capital markets developments required to achieve scale – here – and the particular challenges of financing the social or "just" projects in the transition at scale – here) looked mainly at markets or private sector led funding solutions, they exposed particular issues about de-risking and blended finance, as well as the role of subnational government in the transition – for solving location-based problems, just and social project financing problems and generally in terms of delivery of complex programmes. Subnational government's role – by which we mean provinces and municipalities in an appropriate solution set within the transition from a financing angle – has in general been seldom recognised and poorly understood, in particular when it comes to achieving scale. Indeed, we think this paper is one of the first to look at it in much detail – taking forward the issues raised in our first two papers, as well as the broader context arising from our scene setting that we lay out at the start of this paper.

Overall, the aim is similar to the first two papers – how to mobilise funding at scale and over long periods in this transition, though the lens is lower down the "pyramid" of public finance below national level, where deep problems arise in terms of bankability, balance sheets and service delivery that must also be solved. Another key issue is information asymmetry, which becomes acute at the lower levels of municipal government. For example, provincial governments were for a long time completely unaware of what the government was up to on JETP, regardless of Mpumalange being a supposedly key "beneficiary" of the funding earmarked in the JETP.

The energy transition can, if done correctly, be positive for the economy – a stable, inexpensive supply of clean energy will support South Africa's long-term growth while new opportunities associated with a faster growing economy will open up over time, supported by well-targeted social or "just" projects and schemes to assist in the adjustments required.

But, in the short and medium term, there will be disruptive effects, particularly for the coal industry, that impact against strong vested interests. In some geographic areas, such as the coal-mining hubs of Mpumalanga and communities surrounding power stations, these impacts will be concentrated and severe, including both direct impacts on jobs and businesses and indirect effects on trade, investment and municipal finances. That said, there will also be positive impacts of the transition in Mpumalanga, including growth opportunities for ferrochrome and iron ore (see), agriculture and tourism.

The objective of the just transition imperative is to ensure that the disruptions that will materialise are managed such that it minimises (and if possible entirely eliminates) the negative ramifications for those affected by the transition, while simultaneously seeking to maximise the extent to which new industries are developed in an inclusive and equitable way.

The transition challenges will be most acute in two municipalities located in Mpumalanga – one of South Africa's nine provinces – that are home to both coal mines and coal power stations: Emalahleni and Steve Tshwete. Both short-term adjustments and longer-term development opportunities will need transitional funding from a variety of sources. There is currently little thinking at a national level about these issues when it comes to public finance.

One of the major challenges for policy is to allocate resources in a way that minimises disruptions for affected workers and communities. That said, there is no silver bullet to achieve this. and solutions must be developed in the context of what can be done within the fiscal framework, as well as what is affordable for the fiscus. Where the fiscus is unable to do so, philanthropic capital needs to step in to close the gaps.

In this paper, we focus on the policy instruments and funding mechanisms that might be available

to government to facilitate local, often smaller, projects. We highlight that the appropriate choice of policy instrument will depend on the specific opportunities or adjustments that are to be supported.

We note that a wide range of non-transition local and provincial funding instruments are already in place, some of which have potential to support specific transition projects. We draw attention to opportunities for earmarking allocations from the electricity levy and carbon tax, both of which are intended to compensate in part for social and environmental costs that are disproportionately borne by Mpumalanga. However, we caution that South Africa's fiscal resources are constrained, and the energy transition that lies ahead will require investment and adjustment programmes in all areas of the country.

A careful sequencing of programmes and initiatives and financing arrangements that extend over the long term, building on existing arrangements, are more likely to succeed than plans based on unrealistic short-term targets.

Our central recommendation, however, is that institution-strengthening in Mpumalanga's municipalities and in key provincial departments is the key to a resilient and sustainable just economic transition and to enabling financing at scale. There are severe dysfunctionalities in sub-national government at present which militate against the kinds of blended finance and co-operative partnerships that are needed to mobilise private investment and the support of DFIs and philanthropies alongside public sector resources, on sufficient scale.

This paper comes at a key time when National Treasury is thinking about reforms to conditional grants and where the political debate is focused more closely on local effects of the transition and stress testing plans to deal with this. This paper ultimately is only the start of thinking about these issues and there will be much more to write on in the future.

Figure 1 – Summary recommendations

Source: Krutham

Table 1 – Summary table of recommendations

Recommendation	Actions and stakeholders
1. Ringfence funds for the JET	The PCC should advocate for National Treasury to ringfence the revenue from environmental taxes, particularly the electricity levy, to support the just transition. To achieve an equitable distribution of this revenue, a formula-based approach is proposed that takes into account the differential impact of the energy transition on different parts of the country. This would be consistent with the constitutional imperative for equitable distribution of revenue.
2. Restore municipalities' creditworthiness	The PCC, with support from the NT and the AGSA, should undertake a detailed study on municipalities to establish what support is required to improve their financial position and incorporate JET in their long-term financial planning process.
3. Strategic leadership from affected provinces	The Mpumalanga government with support from the Mpumalanga Green Cluster Agency, should work with municipalities to develop coherent just transition strategies
4. Develop coherent decommissioning schedule	Eskom in conjunction with the PCC and the NT should develop a detailed schedule with a clear strategy outlining how the timelines will be adhered to.
5. Blended finance solutions	The PCC and JETP PMU can support this process through acting as facilitator between the government, philanthropies and banks.
6. Quantify the funding requirements and map available transition funding	The PCC and JETP PMU with support from philanthropies needs to do additional research on the funding demand and supply for the just transition.
7. Enhance accessibility of mechanisms used to channel JET funding	The PCC and JETP PMU with support from NT should ensure that any mechanisms developed to channel funding are fit for purpose.
8. Proactive engagement by labour	Labour with support from the PCC, philanthropies, to take more proactive role in crafting JET solutions.

Source: Krutham

Box 1 – How a stable supply of electricity will support other mining activity in Mpumalanga

Coal is not the only mining product of Mpumalanga. The province is also a significant producer of ferrochrome and iron ore. South Africa is home to over 70% of the world's viable chromite, with large deposits in Mpumalanga. Ferrochrome is manufactured by smelting chromite, which uses significant amounts of electricity. Similarly, the beneficiation of iron ore requires electricity. The country is also the leading producer of a large variety of other minerals including gold and platinum, and has about 78% of the world's identified manganese resources.

As a result, there are several large mining employers in the province and South Africa that are highly dependent on a stable and inexpensive source of electricity to both mine and beneficiate iron ore, ferrochrome and manganese into end products. In the province, these include Columbus Steel, the second biggest employer in Steve Tshwete municipality. Its plant in Middelburg is the only stainless-steel mill in Africa. Other large employers include Samancor's Middelburg Ferrochrome smelter, and there are several nearby chrome and iron ore mines and the manganese smelter in Mbombela.

Due to rapidly rising electricity prices and loadshedding, Mpumalanga has not been able to capitalise on its natural comparative advantage in ferrochrome, steel and stainless steel and has been losing market share to other global producers.

This highlights that a transition to a stable supply of relatively cheap energy will also support other mining jobs in the province. We explore below how this could be accelerated, for example through a special economic zone.

Dlamini, R. & von Blottnitz, H. (2022). Resource Intensity Trends in the South African Ferrochrome Industry from 2007 to 2020. Minerals, 13(1), 44.

2. Background

South Africa needs to mobilise funding at unprecedented scale to unlock both climate and transition funding to facilitate the transitioning out of and transitioning into facets of the just energy transition. This requires collaboration between the private sector (investors and development funders) as well as the public sector and needs to materialise in a spatially distributed and politically contested environment. This paper delves into the issues in public finance for South Africa's just energy transition.

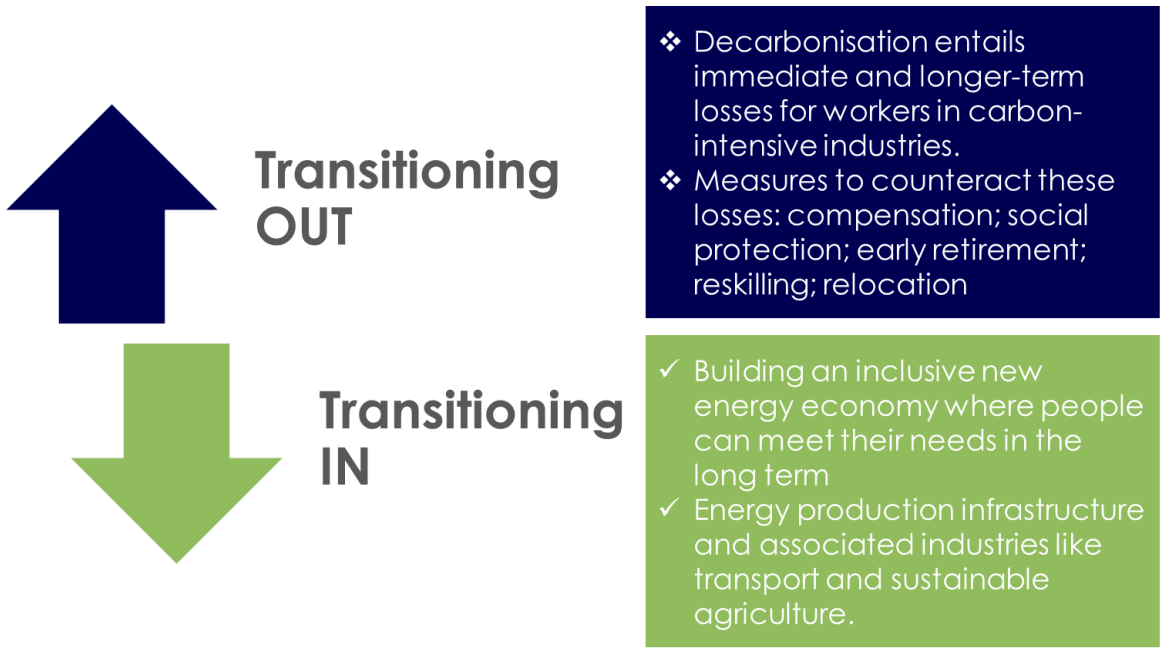
South Africa needs to mobilise financing at an unprecedented scale for the just energy transition, with funding estimates up to 2050 ranging between R4trn-R8.5trn. While the private sector will have to provide a significant majority of the total funding needed, the public sector has a critical role to play in ensuring that what public funding sources are available can be utilised such that it unlocks private financing at scale.

As discussed in the second report in this series of three reports, there are two components to the transition: "transitioning out" and "transitioning in" - referring, on the one hand, to provide support to reduce carbon emissions to meet international commitments and, on the other, to the need to scale up clean energy solutions.

Transitioning out refers to the activities needed to promote social justice in the *transition away from coal*. This is the component of the JET with the explicit objective of promoting social justice that is most widely recognised locally, for example in the JET-IP. It is the most salient feature of the JET debate given the vocal and politically powerful coal constituency.

Transitioning in activities, meanwhile, include (a) planning for and facilitating social justice in the new energy economy and (b) climate mitigation and adaptation measures. In (a), by energy economy we mean the production of energy, as well as the secondary industries that will rise from the new energy system such as transport and sustainable agriculture.

Figure 2 – Transitioning out vs transitioning in



Source: Krutham (formerly Intellidex)

With this framing in mind, most of the financing for the transitioning out of fossil fuels will be needed in Mpumalanga, while the funding of transitioning in is throughout the entire country. Various issues and challenges exist from a public sector funding perspective, including possible adjustments to specific provincial and municipal allocations, new or expanded revenue sources and the scope for raising long-term capital on cost-effective terms through well-targeted fiscal support.

This report investigates a broad range of issues related to the public finance aspects of the just energy transition. This includes the role of the National Treasury, and the provincial government – particularly the Treasury, but also the Department of Economic Development and Tourism (DEDaT) and the Department of Social Development (DSD).

Box 2 – Transition Finance vs Climate Finance

In context of the transitioning in and transitioning out framing discussed in the previous section, it is important to also differentiate between transition finance and climate finance as each has distinct characteristics.

Climate finance is defined by the United National Framework Convention on Climate Change (UNFCCC) Standing Committee on Finance as follows:

> *"Climate finance aims at reducing emissions and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts."*

Climate finance therefore envelops financing for all programmes or projects (including mitigation and adaption) intended to address climate change in all economic sectors across the globe.

Transition finance, meanwhile, is understood and defined by the OECD as finance intended for decarbonising entities or economic activities that:

i. are emissions-intensive,
ii. may not currently have a low- or zero-emission substitute that is economically available or credible in all relevant contexts, but
iii. are important for future socio-economic development (OECD, 2022).

While a clear definition of transition finance has not yet been widely adopted, conceptual thinking on transition finance is evolving. Based on a review of 12 transition taxonomies, guidance and principles from 11 public and private actors, and 39 transition relevant instruments, two preliminary views have emerged (Tandon, 2021):

1) The essence of transition finance is triggering entity-wide change to lower exposure to transition risks; and
2) Transition finance may be better understood as capital markets instruments with a set of core functions/attributes rather than a specific format or label.

Based on these definitions, climate finance typically includes funding for eligible green projects (as defined by the ICMA), including, for example, renewable energy, energy efficiency, pollution prevention and control, environmentally sustainable management of living natural resources and land use, green buildings, clean transportation etc. These are likely to be transition in projects. Transition finance, however, supports existing entities along their journeys to achieve net zero and will likely have a critical role to play in the transitioning out facet of the JET, for example funding the decommissioning of a coal fired power plant.

Furthermore, we consider the budget process and fiscal framework, and its relationship with other departments, provinces, local governments, and Eskom, including the five instruments that can be used to channel funding for the spatial aspects of the just transition, including:

1. The equitable share
2. Direct conditional grants
3. Indirect conditional grants
4. Spending by national departments
5. Tax instruments

Within this we will see that Treasury's fundraising capabilities need to be strengthened but also that wider actors need to pay more heed to the idea of (in the transitional sense) a public sector institution/function which matches capital and solves for capacity issues in some areas (but does not necessarily have a balance sheet). This is likely to be spearheaded by the Presidential Climate Commission, housed within an existing organisation, such as the Development Bank of Southern Africa, for example.

The report highlights that spending related to JET transitioning out will be largely spatial which cannot currently be catered for well in the current framework.

As such we recommend how existing funding instruments can be used and/or adapted from a budgeting, tagging, needs assessments etc point of view. Given the times to enact such changes however we also look at the interim stopgaps needed from philanthropies, the private sector, and actors across the spectrum of capital.

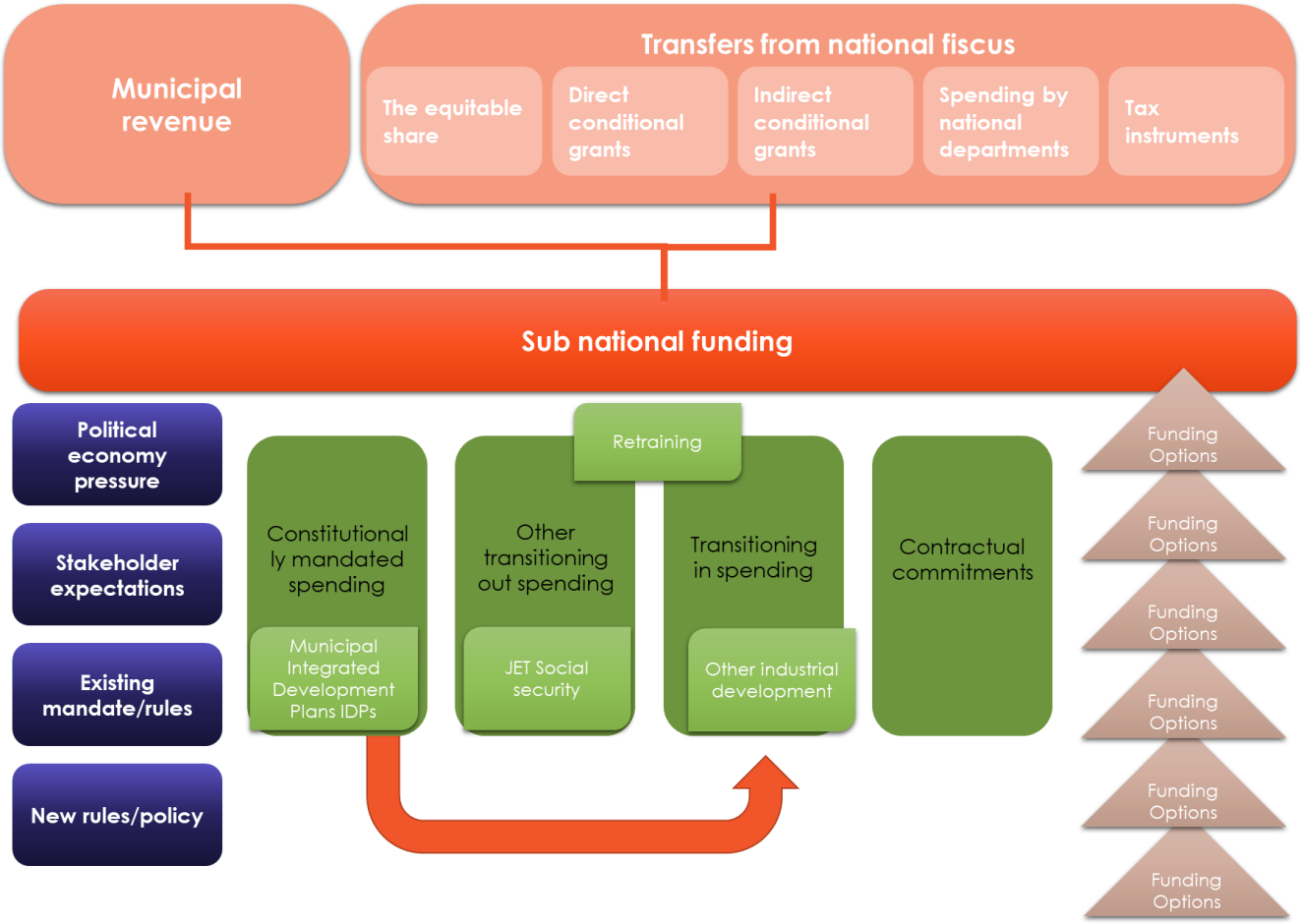
All of these issues however are equally applicable to resilience and adaptation funding which will not be spread evenly across our country and be geographic specific, as climate change impacts different regions of South Africa in different ways.

The issues raised here are further out the curve of public and policy maker understanding than our other two papers and as a result, this paper is somewhat more speculative in nature but nevertheless raises important issues that must be analysed and solved to enable the transition and in particular to ensure that Mpumalanga, its workers and communities are not left behind.

Overall, our key problem statement for this paper is outlined below, followed by a snapshot of the sub-national funding landscape.

What impact does the current sub-national public finance framework have on JET and its funding? What reforms are necessary to ensure the greatest mobilisation of funding for mitigation, adaptation and resilience during our transition from sub-national public sector actors?

Figure 3 – Sub-national funding landscape



Source: Krutham

The case for JET

The case for a just energy transition arises for two main reasons.

First, internationally, South Africa has, along with other countries, agreed to a nationally determined contribution (NDC) to the global emissions reduction framework. The country's NDC was updated in 2021 as a critical response to the climate change crisis and is at the heart of the Paris agreement. Article 4 of the Paris agreement requires South Africa to take a mitigation focus and reduce greenhouse emissions. In October 2015, South Africa submitted its first NDC to the United Nations Framework Convention on Climate Change (UNFCCC), pledging to limit its country's greenhouse gas emissions to a range between 389 Mt CO2-eq for 2025 and 2050. In the updated NDCs the country commits to a fixed target for greenhouse gas emissions levels of 398-510 MtCO2e by 2025 and 350-420 MtCO2e by 2030 (NDP,2021). Climate change is a global challenge and for South Africa, the coal transition is the key to honouring NDC commitments. The difficulty of overcoming this obstacle is compounded by the need to transition in a manner that considers South Africa's pervasive socio-economic challenges (Climate Transparency, 2020).

Second, South Africa's power supply situation has become critical. Ongoing problems with the existing fleet of aging power stations have been nearly impossible to solve, and it is clear that accelerated investment in renewable energy is a key component in restoring capacity in our electricity network.

In early 2007, South Africa experienced its very first bout of load shedding – scheduled power outages required to enable state-owned power utility Eskom to carry out maintenance and/or ease pressure on the system to prevent the grid from collapsing. Planned power outages became the norm in the years that followed and by autumn 2023, the country had reached its most intense levels of load shedding yet. At so-called Stage 6, some 6,000MW of power is shed to avoid grid collapse, leaving households and businesses across the country without power for up to four hours at a time, typically two to three times per day. The South African Reserve Bank (SARB) estimates that Stage 6 load shedding costs the country approximately R900mn a day, preventing the economy from growing and costing hundreds of thousands of missed job opportunities. The lack of energy security, which refers to the availability, accessibility, acceptability, and affordability of energy, is a major barrier to economic growth in South Africa.

Against this backdrop, South Africa has the opportunity to meet its NDC target and to solve its electricity crisis through a "least cost" transition to renewable energy. All South Africans will gain from a transition to a low-carbon economy as this has the potential to spur economic growth, generate jobs, and boost energy security while tackling the grave threat posed by climate change and health risks associated with coal-based power. Investing in this transition is an economic imperative, and also an international commitment.

However, the transition is far from straightforward. The investment requirement is very large, and the sequencing of exits from existing plants and construction of new alternatives is already badly misaligned. There are also local impacts to consider, winners and losers in the transition process, and the need to find appropriate compensatory mechanisms and support for adjustments. To this end, the transitioning out of the fossil fuel and coal economy and transitioning into renewable energy should be done in a fair and just manner.

The just energy transition is not only necessary from an environmental and social perspective, but is also economically beneficial. The shift towards renewable energy sources and the phasing out of coal power plants will lead to job creation in the renewable energy industry and reduce long-term healthcare costs associated with air pollution caused by coal-fired power plants. Emissions from coal fired power stations lead to several diseases and premature deaths (Langerman & Pauw, 2018) and this has been evident in Mpumalanga, with air quality in the province earning it the label of the region with the deadliest air pollution hotspot in the world (Chutel, 2018).

Moreover, investing in renewables can create a more stable energy supply, reducing the risk of blackouts and increasing energy security. Although renewable energy might not be the final solution to all the country's energy problems,

more rapid investment in renewables will reduce the impact of the current energy crisis. Furthermore, other parts of Mpumalanga would benefit greatly from a more stable and sustainable energy supply, which can attract investment and foster economic growth. It is important to acknowledge that the impacts of this transition will vary across different parts of the country. In Mpumalanga, for example, where coal mining has been a major source of employment and income for decades, there will be short-term economic disruptions as mines are shut down. However, there are mechanisms that can help mitigate these losses (see).

Box 3 – Mechanisms to mitigate transition losses

The only formal, statutory mitigation measure that currently exists for job losses (for example when a mine closes), is that workers who lose those jobs qualify for benefits from the Unemployment Insurance Fund (UIF) for 12 months. However, South African law requires that mines have "social and labour plans" that include community development, training and housing, for example, and that should include specific measures associated with retrenchment or downscaling of employment.

In principle, the closure of a mine should be accompanied by implementation of these measures out of funds set aside by the mining company during its productive years. There are also obligations on mines to implement land/environmental rehabilitation plans, which could include some temporary employment opportunities.

These measures are already built into the law and regulations, and the underlying presumption is that mine (owners) should provide for these costs.

Additional targeted interventions may include reskilling programmes for workers as well as support programmes for ancillary industries that have been built around mining communities, particularly in the informal sector. What these programmes might look like, however, is not entirely clear and further research is required to better understand the role of philanthropy in addressing some of these social justice issues related to the energy transition.

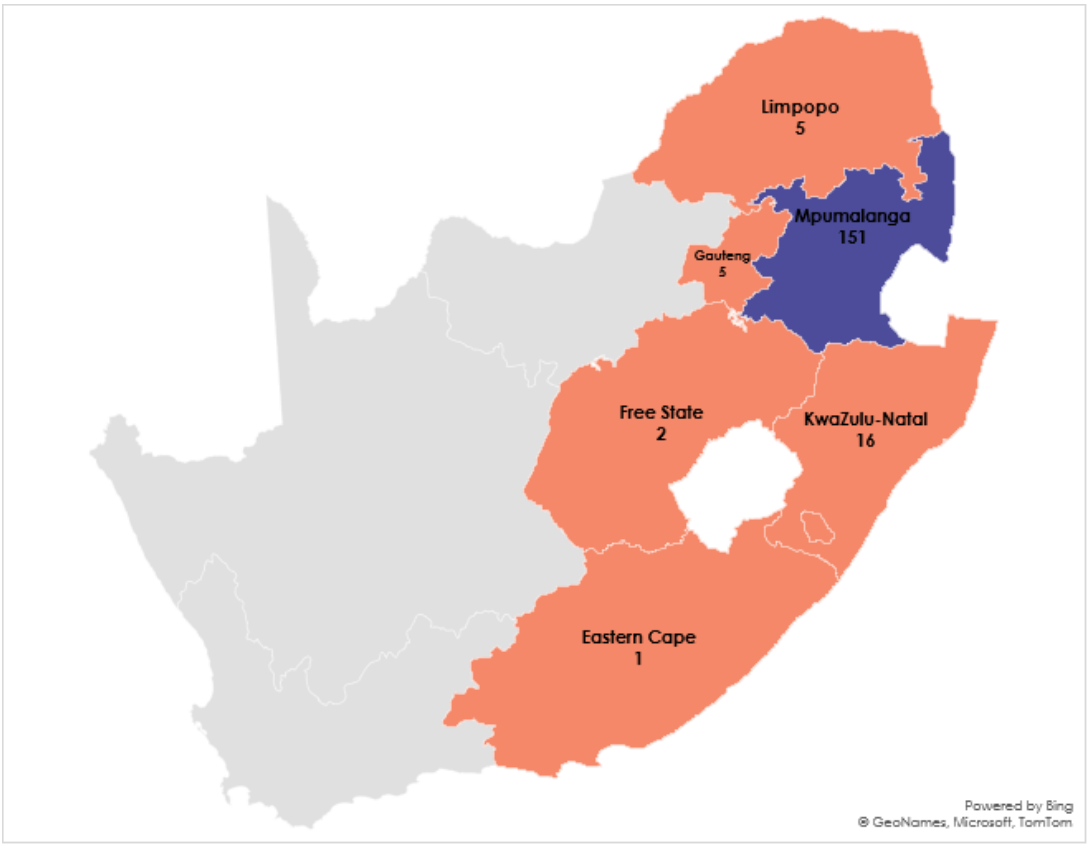
While there may be some localised negative economic impacts during the transition to a renewable energy system, overall, it represents a positive development for South Africa's economy. The benefits of reduced air pollution-related healthcare costs, not to mention the imminent rise in penalties against carbon-intensive economies through, for example, carbon border taxes, as well as increased energy security, all outweigh the short-term challenges posed by shutting down coal mines. As such, policymakers should work towards implementing a well-planned just transition that will allow for adjustments and shifts to take place without unanticipated disruptions. This should be done in a manner that considers the most socially vulnerable that will be affected by this changed.

Spatial aspects of the transition

While overall South Africa would gain from a transition to a clean and reliable source of energy, there will be spatial impacts of the transition. The just energy transition partnership (JETP) seeks to balance the economic benefits of transitioning into clean energy when transitioning out of the reliance on fossil fuels, while accounting for the socio-economic impacts that may affect communities. This balance is necessary to ensure that the transition is not only just but also seen to be sustainable, thus benefitting all stakeholders.

At a macro level, South Africa's transition to clean energy through the just energy transition investment plan (JET-IP) represents a significant shift in the country's economic structure. The implementation of this plan is likely to lead to the diversification of the economy, as it moves away from a predominantly coal-powered energy sector.

Figure 4 – Coal mines in South Africa, by province



Box 4 – How a stable supply of electricity will support other mining activity in Mpumalanga

Coal is not the only mining product of Mpumalanga. The province is also a significant producer of ferrochrome and iron ore. South Africa is home to over 70% of the world's viable chromite, with large deposits in Mpumalanga. Ferrochrome is manufactured by smelting chromite, which uses significant amounts of electricity. Similarly, the beneficiation of iron ore requires electricity. The country is also the leading producer of a large variety of other minerals including gold and platinum, and has about 78% of the world's identified manganese resources.

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The coal sector

The transition to clean energy will have a significant impact on the coal sector.

South Africa has 180 coal mines located in six out of the nine provinces (although many of these plants are quite small and some of them export coal, albeit a small minority). Coal powered electricity plants are in Mpumalanga, Limpopo, and the Free State. The largest concentration of both coal mines and coal-powered plants is in Mpumalanga, a province that is highly reliant on coal mining given the sector's notable impact on the province's overall employment opportunities and economic prosperity.

According to the recent Mpumalanga Business guide[1] the mining sector accounts for 20% of Mpumalanga's economic activity making it the single largest economic sector in the region. Moreso, with the region contributing 83% to all coal production in South Africa, Mpumalanga stands out as one of the largest coal exporting regions globally (MEGA, 2023).

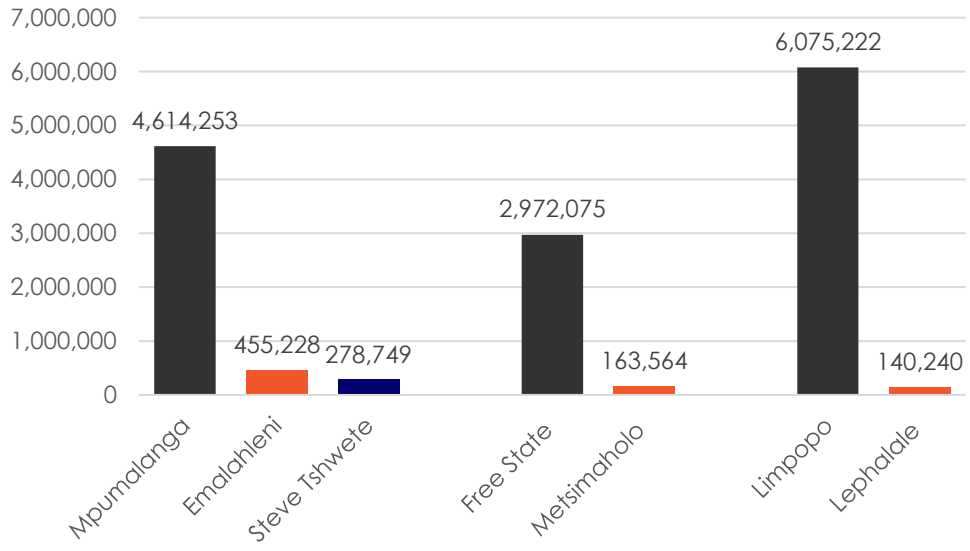
A portion of employment in these provinces is owed to the presence of Eskom coal-powered stations that are nearby surrounding mines. A study in 2021 focussed on coal sector jobs specifically related to power generation estimates that approximately 36,500 of the 80,000 workers in the coal sector can be linked directly to coal for domestic use in power generation (Tyler et al., 2021). Additionally, approximately 12,000 jobs are linked to Eskom power generation (Makgetla et al., 2019). These coal-powered power stations are due to be decommissioned as they reach the end of their useful lives, in keeping with South Africa's NDC commitments and therefore there is approximately 48,500 direct jobs at risk from the just energy transition (when considering only coal mining and Eskom power generation).

The reality is that both skilled and semi-skilled labour will need to transition to alternative income

[1] *Mpumlanga Business 2022-23 - globalafricanetwork.com*

generating activities and this eventuality must be examined and considered when developing transition strategies. The ultimate objective is to minimise (if not fully eliminate) the adverse disruptions that the transition will have for affected communities and develop new industries that will have a net positive impact on economic growth.

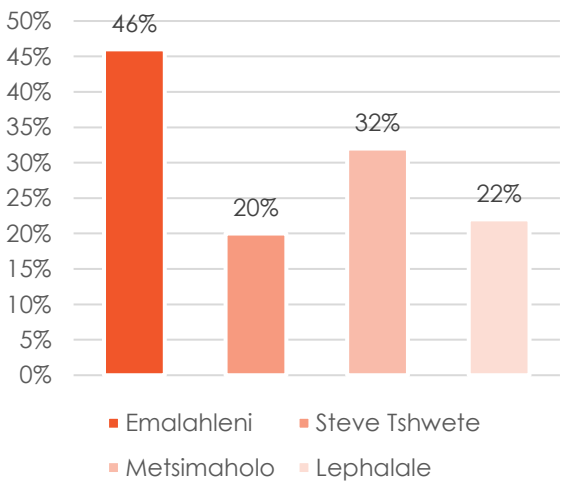
Figure 5 – Population statistics (2021)



Source: Statistics South Africa & MFMA AGSA Report 2020 - 21

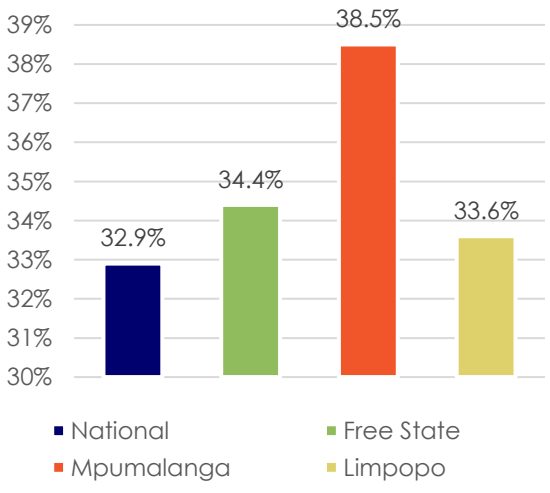
Figure 5 above gives a population break-down of the provinces that are most impacted by the transition. The provinces being Mpumalanga, Free State and Limpopo. The focus is condensed to look more specifically at the municipal level, where the impact is more concentrated. Local municipalities such as Emalahleni and Steve Tshwete (Mpumalanga), Metsimaholo (Free State) and Lephalale (Limpopo) are home to both coal mines and Eskom coal-powered stations. These municipalities will be hardest hit by the transition into clean energy and economic diversification to an inclusive green economy. This transition will affect livelihoods and economic participation as the decommissioning of coal-powered plants gets into full swing.

Figure 6 – Unemployment by municipality (2021)



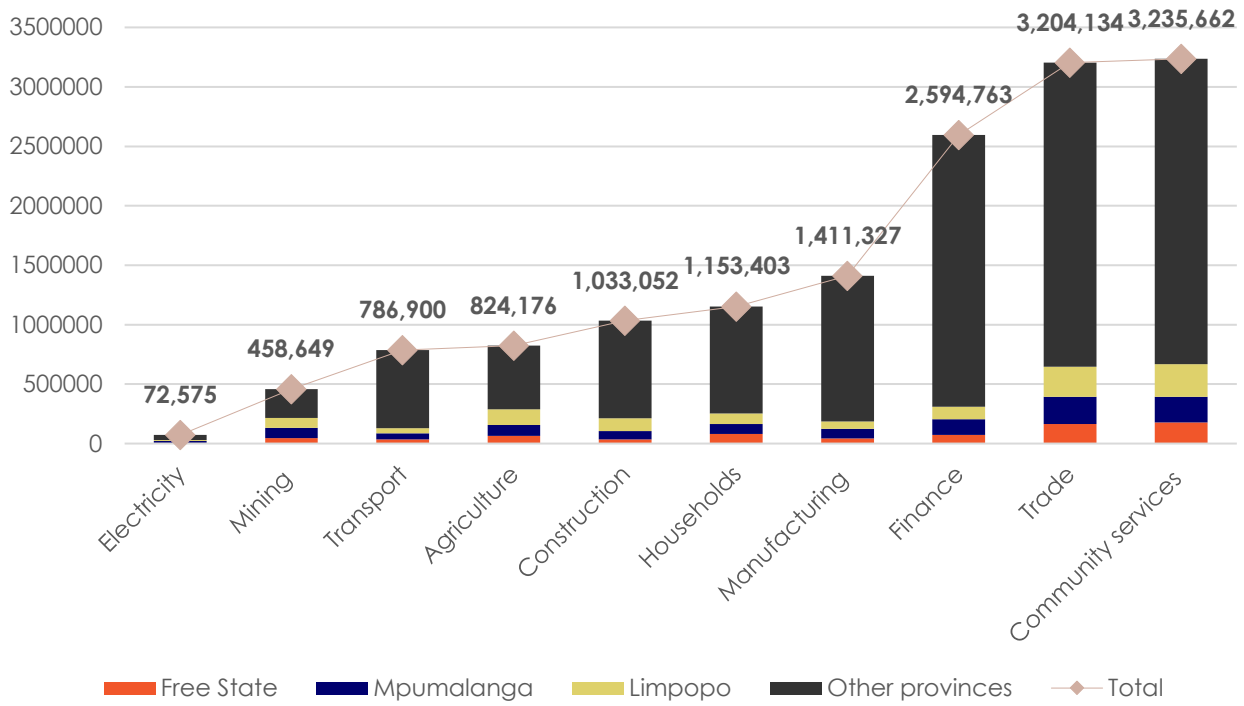
Source: MFMA AGSA Report 2020 – 21

Figure 7 – Unemployment by province



Source: StatsSA, Quarterly Labour Force Survey (Q1:2023)

Figure 8 – Employment by industry and province - 2021



Source: StatsSA, Quarterly Labour Force Survey (Q1:2023)

Figure 8 above highlights the employment trends for both the formal and informal sector contrasted with national industry employment. The industries that stand out are community services, trade, finance, agriculture, mining, and manufacturing.

The development of new industries is required as it creates the opportunity for more diversification in terms of skills level and technological advances. If the development of new industries is accompanied by targeted interventions that support the development of the skills required, it can help absorb a growing labour supply. Such measures will at least partially help offset the negative disruptions from the transition.

The Mpumalanga provincial government has established the Mpumalanga Growth and Development Path (MEGDP) in efforts to expand its industrial base to support the provincial economy through the beneficiation of its agricultural produce, agri-processing, and value chain expansion (Global Africa Network, 2017). Expanding the development of a Special Economic Zone (SEZ) in the Nkomazi region will feed into the primary and secondary industries as it is targeted at providing support infrastructure for logistics, agriculture, automotive, mining, and mineral industries.

The provincial government has a very specific role to fulfil as any fiscal funding for the just transition will be channelled through it. One of the main obstacles at present is that the municipal government is not even getting the basics right - access to electricity, maintenance of road infrastructure, implementing the rule of law, providing good quality education etc. If done correctly, these basic public services have the potential to be significant catalysts of improved economic activity.

Nevertheless, as municipalities – and indeed provincial government – are intended to serve their communities, there may be opportunities for targeted interventions to be facilitated by them.

In order to attract the investments that will support and incentivise job creation and economic growth in the region, municipalities will have to improve their financial and operational management processes.

It is also essential that the PCC continually engages with both the municipalities and the communities they are supposed to serve when

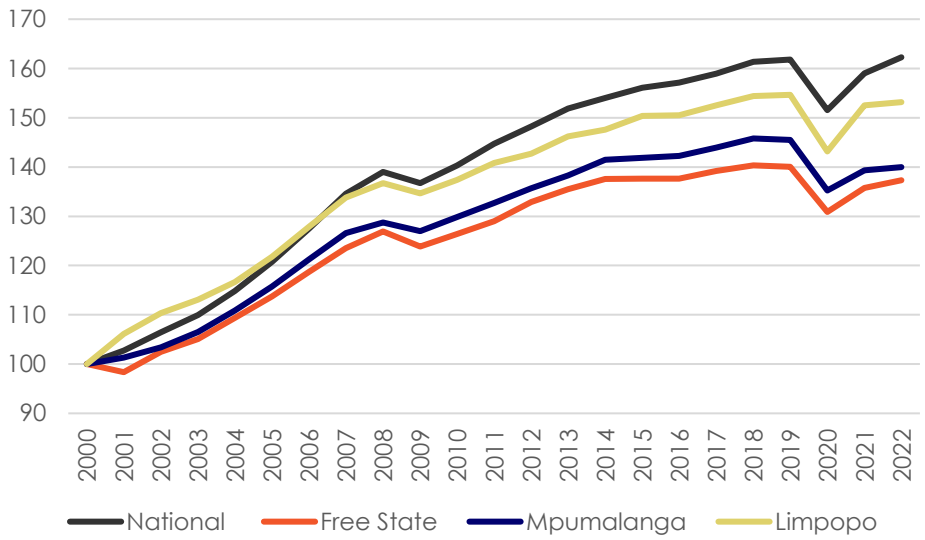
designing solutions that will help implement the JET-IP to avoid deepening existing information asymmetries. Community voice should help guide the PCC on designing fit for purpose interventions and the financing vehicles needed to deliver these.

Consultation with these parties and the community at large, if facilitated appropriately, has the potential to yield targeted opportunities for diversification into a long-term green economy that builds on established sectors such as agriculture, mining, manufacturing, and the electricity industries, as well as identifying opportunities to create new industries.

The primary focus should not simply be on the feasibility of the JET-IP and its contribution to meeting NDCs; there needs to be further consideration of the tangibility of negating job losses and displacement in the affected local municipalities. The decisions and the intended strategic outputs of the JET need to be more inclusive with regard to the communities of Emalahleni, Steve Tshwete, Metsimaholo, and Lephalale local municipalities. Such consultation can also uncover what the community really wants – whether that is to establish cohesive transformation towards renewables, reskilling, and the economic development of the province, or opportunities to relocate to other provinces with more economic opportunities (for example). shows GDP growth rebased to 2020 to illustrate the relative GDP growth of the main provinces compared to national level between 2000 – 2022, using constant 2015 prices. Limpopo initially outperformed Mpumalanga and the Free State, keeping pace with national growth until 2008. However, over the entire period, all three provinces have lagged behind national GDP growth, with Mpumalanga and the Free State significant laggards.

The transition will in time spread to Limpopo and the Free State as these provinces not only have coal mines but also are home to Eskom coal-powered stations. As such they too need to plan around the change towards renewable energy utilisation and the inclusion of a green economy in their industry construct and identify areas of development and diversification that will aid economic growth to be relatively aligned with national growth prospects.

Figure 9 – GDP, provincial vs national (constant 2015 prices, rebased 2000 = 100)



Source: Statistics South Africa

Conclusion

The just transition should be considered from both a transitioning in and transitioning out perspective, not that actions that address these two areas are necessarily mutually exclusive. Decommissioning of South Africa's coal-fired power plants is the only way that the country will be able to honour its commitment to the NDC targets agreed with the UNFCCC. While this will be a complex process, it is necessary and will ultimately be economically beneficial for the country in the medium to long term. The transition needs to be done in a socially just way as far as possible. Statutory mechanisms to mitigate transition losses are limited and therefore there is an opportunity for the National Treasury to work with provincial and municipal governments to explore channels through which a just transition can be pursued.

The spatial aspects of the transition require a targeted approach to the geographical areas most severely affected by the transitioning out actions, while at the same time remaining cognisant that the most vulnerable stakeholders across the entire country should be considered from a transitioning in perspective.

The coal sector has played a critical part in contributing to economic growth as well as employment and these stakeholders should be taken into account as we transition. In the pages that follow, we consider the economic dynamics of Mpumalanga, with a particular focus on municipalities in the province.

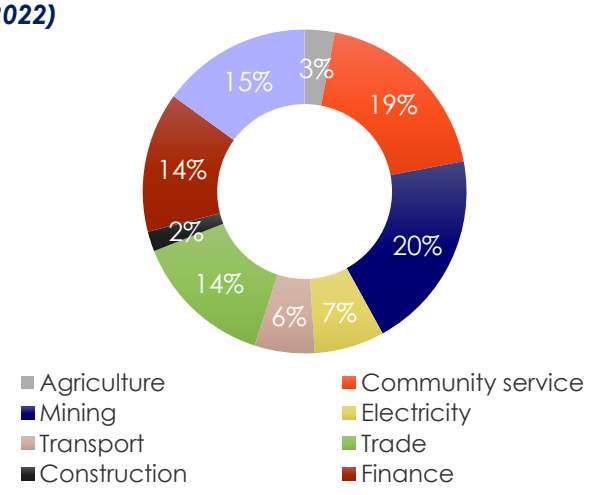
3. Deep dive into Mpumalanga

Mpumalanga is the second smallest of nine provinces across South Africa. It is highly reliant on the coal sector and the energy transition will therefore have a disproportionate impact on both the province as a whole and municipalities individually. Furthermore, the transition will have to materialise against a deeply complex political backdrop. This section provides an overview of Mpumalanga, including JET funding requirements for the province, the financial position of municipalities, and an in-depth analysis of the political economy of the province.

Overview

Mpumalanga, South Africa's second-smallest province after Gauteng, is located in the northeast of the country, bordering eSwatini , and Mozambique to the east, with a population of 4,335,964 and a land area of 76,495km^2. Mpumalanga produces around 83% of the country's total coal but has quite a diverse economy, with relatively robust trade, finance and manufacturing sectors (*Mpumalanga Business 2022-23 by Global Africa Network Media - Issuu*, 2022). According to the Mpumalanga provincial government, the mining and energy sector generates more than 20% of the province's GDP and accounts for more than 7% of the active labour market in the province.

Figure 10 – Mpumalanga's overall economy (2022)

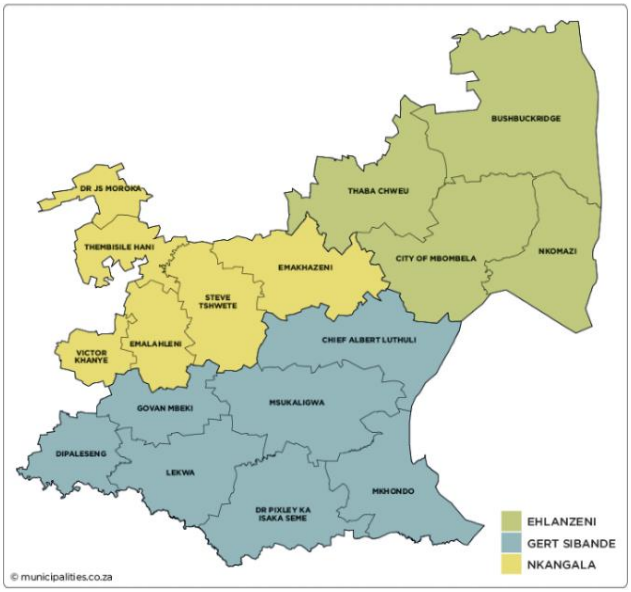


Source: Krutham, (Mpumalanga Business 2022-23 by Global Africa Network Media – Issuu, 2022)

Additionally, following the decommissioning of Komati power station, ten of Eskom's 12 coal-fired power plants are in Mpumalanga. The province is home to 70% of Eskom's generation capacity. This indicates that the transition to a cleaner and environmentally friendly economy will impact most of the province's economy. It's also important to note that the transmission capacity is already in place, which has implications for future use in Mpumalanga.

To this end, a just energy transition for Mpumalanga is a transition that will be able to cushion the economy and the jobs that will be lost. This can only be achieved if there are clear long-term schedules for plant and mine closures, as well as social and labour plans for affected communities and targeted support for sectoral development strategies and economic/industrial zones.

Figure 11 – Mpumalanga province



Source: municipalities.co.za

The energy shift will impact around 120,000 jobs (when considering direct and indirect jobs), which is a total number of people in the coal industry and the coal value chain (Hanto et al., 2022). While this impact is likely to be gradual and therefore easier to absorb into other industries,

there are likely to be linkages with other sectors which will compound the negative impact from the job losses culminating from the coal value chain. This will aggravate South Africa's already high official unemployment rate of 32.9% (we believe genuine unemployment is closer to 42.5%).

Mpumalanga's unemployment rate increased by 2.4% with job losses amounting to 45,000 in the first quarter of 2023 (StatsSA, 2023). These official job losses can at least partially be attributed to the decommissioning of Komati, although this was likely compounded by generally poor economic growth and crippling loadshedding. Note that this data does not include the informal economy, which probably also suffered.

With more coal plant decommissioning in the pipeline and the transition plans in motion, additional job losses are imminent in an economy that can ill afford it.

Of course, these job losses need to be set off against the gains in jobs that will come from a stable clean supply of electricity which the energy transition promises to provide. Since loadshedding first started back in 2008, it has cost the SA economy trillions of rands – either directly through fiscal bailouts for Eskom or indirectly through power outages and unrealised investments in industrial sectors. While it is hard to quantify the real economic cost of loadshedding over this period, it has no doubt resulted in job losses, jobs not being created, and a negative impact on the fiscus. Having a stable electricity supply is therefore absolutely necessary to avoid the further haemorrhaging of jobs.

The transition for Mpumalanga will be unjust if it is not accompanied by a deliberate infrastructure investment drive in the province, including tourism related infrastructure, industrial and logistics capacity, housing, building on the province's economic plans and the IDP. In the absence of these interventions, there will be no other industries able to absorb that labour force. Therefore, economic diversification is key, and this should happen even before the transition is implemented.

The renewable energy industry promises that the transition will result in the creation of new green jobs, although approximately 80% of those jobs will come from the early stages of renewable energy projects (ie temporary jobs), including casual employment such as grass cutting, solar panel cleaning, maintenance, and servicing. Furthermore, however, there will be additional opportunities from distributed and embedded generation through installation and maintenance jobs.

Mpumalanga's funding gap

Overall, there is no public sector funding for JET initiatives besides a proportion of the $8.5bn in funding from international actors that was pledged at COP 26 in 2021. It is instructive to note that these funds are likely to be deployed over a protracted period (10–15-year timelines) and should therefore be considered in this context. The just energy transition investment plan (JET-IP) will target capital allocations to the value of ~R711.4bn in the electrical sector. Most of these funds, ~R647.7bn, are earmarked for network infrastructure, power, and storage.

New energy vehicle development in South Africa will cost R128.1bn, or 8.5% of the budget, while green hydrogen development will cost R319bn, or 21.2% of the budget, or roughly the same as the R319.1bn allocated to assist municipalities with the transition. The JET-IP has earmarked only R2.65bn for skills development, a mere 0.18% of the total funding, which includes a skills hub/platform for JET and the Future of Work, Pilot Skills Development Zones in Mpumalanga, the Eastern Cape and Northern Cape, and mobilising allocations to HET from existing public and private post-school education and training (PSET) funding. Grants would only make up roughly 2.7% of the budget which is quite concerning considering the major need of re-skilling of workers that stand to lose their jobs and those that will be needed for the diversified economy.

According to the JET-IP, Mpumalanga alone requires an investment of a total of R60.4bn to finance the transition investment needs. These initiatives include repurposing coal plants, restoring coal mining land, infrastructure development and diversifying local economy and capacity building.

This figure has been highly challenged by different individuals and organisations as not being a true

reflection of Mpumalanga's just transition needs. From the interviews we have conducted when collecting data for this report, we learned that there is an overarching opinion that the JET-IP is only focusing on the decommissioning of stations and the workers that stand to lose their jobs but does not consider those workers that are currently unemployed, the whole coal value chain and the informal economy in and around coal mining communities.

Table 2 – Mpumalanga just transition investment needs as outlined in the JET-IP

Investment needs	Description	2023–2027 ZAR bn
Repurposing coal plants	Social investment to support local communities and supply chain developments for new energy technologies	3.40
Repurposing coal mining land	Remediating and repurposing coal mining land for new public and private use	13.00
Improving infrastructure for development	Infrastructure upgrades in roads, water, digital, energy access, education, and training facilities, to attract investors and improve lives	12.30
Diversifying local economies	Creating and supporting small-scale livelihood opportunities in surrounding communities and nurturing new economic pathways for coal mining regions through new investments and support for incubators, accelerators, and early-stage ventures	24.00
Caring for the coal workforce	Managing workforce transitions through reskilling, support for mobility, retraining, redeployment, placement, and temporary income support	5.60
Investing in youth and preparing future generations for the transition	Tackling youth unemployment through education, soft skills training, work experience opportunities, and placements	0.75
Planning for success	Conducting a comprehensive assessment of coal asset closures to support provincial and municipal preparedness	0.30
Instituting policies for post-mining redevelopment	Promoting policy alignment and ensuring financing for responsible mine closures and pathways for post-mining rehabilitation and repurposing	0.05
Building capacity for success	Providing budget support to relevant government agencies; budget support for establishing a local secretariat; along with technical assistance and project funding linked to demonstrations, pilots, incubators, and accelerators.	1.00
TOTAL		60.40

Source: PCC, JET-IP

Currently, there is no public sector model, nor any funds declared by the National Treasury to fund the JET in Mpumalanga. So far, the energy transition activities that have occurred in the province such as the Komati decommissioning have been funded by donor funding and concessional loans. Similarly, provincial, and local governments do not have a specific budget line that is dedicated to the JET initiatives. The one other initiative that can be seen as a supporting mechanism to the uptake of renewable energy is that of the tax incentives that were announced by the minister of finance in the 2023 budget speech. While tax incentives should support faster adoption of renewable technologies, thereby accelerating progress on the climate action front, they are not nearly sufficient from a budget planning perspective to support the pursual of a broader just energy transition.

Local governments

Local governments are key in achieving a just transition on the ground. Firstly, because they are close to the communities the local municipalities need to be equipped with finance and technical assistance to be able to better deal with the energy transition especially the "just" element.

From the municipalities we interacted with, there is a clear indication that municipalities do not have a clear understanding of addressing the energy transition. While the transition is happening, the municipalities do not have the tools nor the policies to integrate JET into their everyday activities. There is also an issue of not being able to differentiate between JET projects and basic delivery projects.

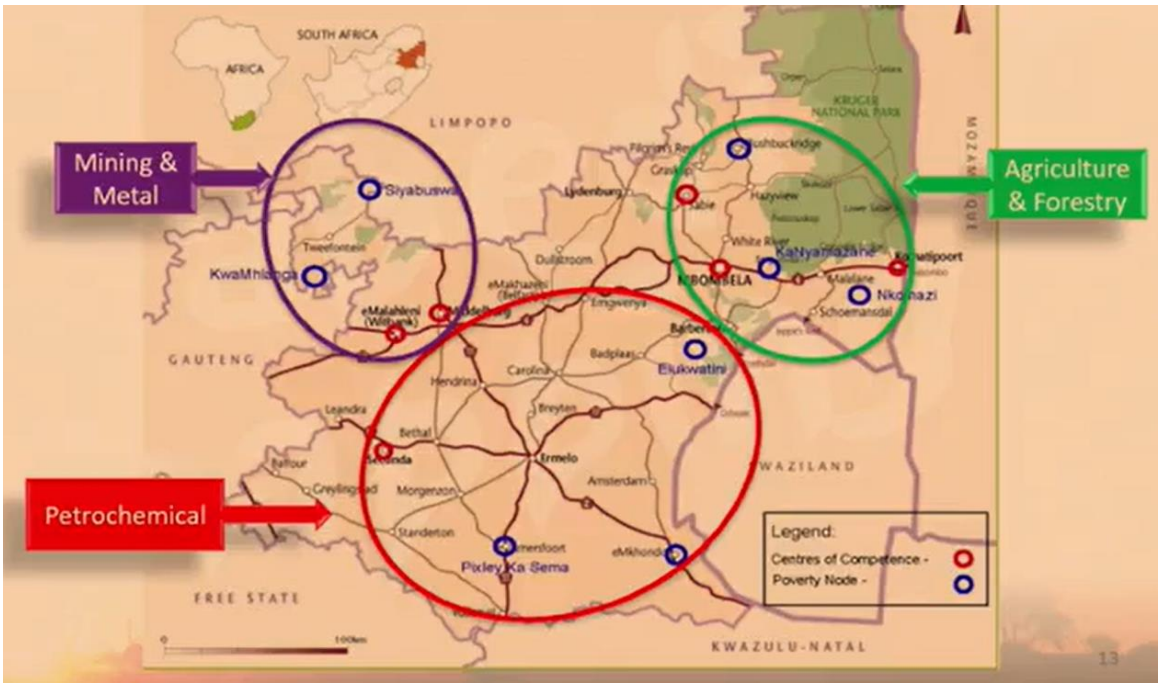
Projects that need funding

Mpumalanga has developed the Mpumalanga Infrastructure Master Plan (MIMP 2060) and the Mpumalanga Green Economy Development Plan (MGEDP) – the latter of which details ambitions to transition to renewable energy sustainable agriculture, tourism and eco-conscious towns by 2030. The MIMP, meanwhile, covers sectors such as transport, economic and social infrastructure, along with social services, amenities, climate change, and immovable asset management. The projects that form part of these plans will need to consider both the transitioning in and transitioning out activities that need financing.

The province has done significant work in planning its transition and it has come up with an inclusive economic diversification strategy that aims to focus on growing three sectors, namely, the chemical, agriculture and the mining and metals sectors. These sectors will be regionally based on the region's current value proposition and competence. The petro-chemical sector will be based in Secunda to take advantage of Sasol, the mining sector will be based in Emalahleni and Steve Tshwete municipality and agriculture will be based in the lowveld region of Mpumalanga.

Additionally, the province intends to integrate climate smart agriculture and climate resilient infrastructure plans in its economic diversification strategy. These economic diversification strategies will be essential for the overall economic growth of affected municipalities and indeed provinces and should be used as tools that will support the pursual of the just transition imperatives.

Figure 12 – Areas of competence for inclusive growth



Source: Economic development and tourism, Mpumalanga province

In addition to the identified areas of competence that will advance economic diversification in the province, Mpumalanga needs funding for JET projects. Considering socio-economic issues that already exist in the country and particularly in the province with the high rate of inequality and unemployment, the JET projects need to address both the socioeconomic and the climate elements (environmentally friendly). The projects need to focus on both the transitioning out of the coal dominated economy and into the cleaner greener economy.

These projects will include different sectors and will encompass all or some of the JET elements or preparation towards a just energy transition such as reskilling centres,

Below are some of the key JET projects that require additional funding in Mpumalanga. Some of these projects are already being implemented and have received some seed capital but require additional capital to grow and have a significant impact.

Table 3 – List of projects in Mpumalanga that needs financing

Project	Project owner	Project description
1. Standerton reskilling centre	Energy and Water Sector Education and Training Authority (EWSETA), and Power Africa	Training and reskilling women around Mpumalanga.
2. Renewable energy technology centre	Cape Peninsula University of Technology & Eskom	Reskilling centre for Eskom employees and surrounding communities.
3. UK-SA Job Skilling in electric vehicle (EV) sector	British High Commission and the Department of Science and Innovation	Job skilling in EV sector.
4. Solar device installations	Enerlogy	Enerlogy installs small solar devices in townships.
5. Mpumalanga Agroforestry project	TERRAGRN	The project is on track to turn up to 200,000 hectares (ha) of unused land in coal mining-centred Mpumalanga, South Africa, into a sustainable land management agroforestry project, over the next 10 years. With reversing the devasting impact of climate change the ultimate goal, around 11 million tonnes of sustainably harvested biomass will be turned into energy and materials solutions through the SA project, greatly assisting SA to meet its climate change commitments and accelerate moves to a just energy transition.
6. Atec Pure Waters, Klarinet Mpumalanga	Atec	ATEC is a supplier of water sourced from a borehole, quality assured for safe consumption and supplied to individuals, schools, burial societies, offices, mines and mine supporting businesses. The enterprise will bring a new innovative business idea in investing in renewable energy to harvest groundwater in the mining community of Emalahleni.
7. Mpumalanga ke Lesedi	Mpumalanga ke Lesedi	MP Kelesedi applies a social enterprise model to grow and supply vegetables to poor families affected by coal mine closures due to loss of employment. The enterprise uses the new innovative business idea of clean wind energy to access water for agricultural purposes
8. Ekasi energy	Ekasi Energy	Offering clean energy solutions for cooking and heating that focus on local fuel production and consumption will help build energy capacity in urban informal areas and create a circular economy energy solution.

Box 5 – What is Mpumalanga's comparative advantage?

Comparative advantage is the idea that some countries, individuals, or regions can produce a particular good or service relatively better than others - a place has some comparative advantage even if it does everything worse than its neighbours. It should specialise in activities where the gap between its efficiencies and its neighbours' is smallest, and the neighbour should specialise in activities where the gap is biggest. If they both specialise and if they trade, they are both better off. As part of the just transition, it would be sensible to support industries where the province already has a comparative advantage, rather than industries where the province naturally struggles to succeed. In the table below, we identify some of Mpumalanga's areas of comparative advantage from the literature. Two measures are used - "revealed comparative advantage" and "locational quotient". The former uses trade flows to identify comparative advantage, while the latter uses relative shares of industry. From this, we note that Mpumalanga has a pathway to diversify its economy out of coal into other mining (eg manganese products, ferrochrome, iron ore), agriculture and / or tourism. Moreover, the data show that Mpumalanga has a reasonable undiversified economy. Active measures to diversify the economy (eg into tourism) will make the province more resilient to external shocks particularly commodity price movements.

Indicators of comparative advantage

Indicator	Description	Results
Revealed comparative advantage	Uses trade flows to identify where comparative advantage lies	Manganese products, beef products (Visser et al., 2019)
Locational quotient	Uses relative shares of industry / employment to show where comparative advantage lies	Mining (coal, manganese, ferrochrome, iron ore, coal), agriculture, trade (tourism)

The impact on municipalities

The Emalahleni and Steve Tshwete local municipalities are home to seven coal-fired power stations (Emalahleni is also home to the Komati power plant, which was decommissioned when it reached its end-of-life cycle in October 2022). These two municipalities are most affected by the transition.

The number of expected job losses in the coal sector are all based on the number of coal-powered plants that are decommissioned (Jacobs, et al., 2022), meaning to mitigate extensive job losses there needs to be an acceleration in the implementation of renewables and clean technologies. The decommissioning of coal-power plants will lead to an estimated loss of 48,500 jobs from 2019 to 2030, highlighting that not all jobs lost in Mpumalanga due to the transition can be compensated through clean energy jobs (Jacobs, et al., 2022). At provincial and municipal level, other strategies need to be implemented to identify industries that can create labour demand for those jobs that are not accommodated in the clean energy structure.

Municipalities don't have a statutory mandate or programmes that create jobs at scale and, therefore, bestowing the responsibility on local municipalities will be difficult. These challenges are compounded by audit findings by the Auditor General of South Africa (AGSA) in the consolidated general report on local government audit outcomes MFMA 2020-21[2]. The AGSA raises issues of lacking preventative controls where municipal managers and senior management fail to enforce basic controls that will support a functional control environment.

The auditor general emphasises the need for an effective control environment, sustainable financial health, effective infrastructure project planning and management and compliance with legislators, as focal areas that the municipalities in Mpumalanga need to improve on in terms of their management as this will foster accountability and lead to improved service delivery.

With regards to the MFMA AGSA Report 2020 - 21 for the Emalahleni and Steve Tshwete local municipalities, audit findings were "qualified" and "unqualified with no findings" respectively which allows us to evaluate to some extent the financial position of the two municipalities. Given that both municipalities' budgets for the 2022-23 financial period would need to be used to pay for the previous years' expenditure, this is a cause for concern as it affects the feasibility of new projects being established and the degree to which service delivery will meet the needs of the communities adequately. A municipal mandate that is directed at efficient and effective service delivery that creates an enabling environment for a growing local economy is local economic development (LED). LED is targeted at job creation and both the development and implementation of new economic opportunities which aim to increase income levels of communities, which in turn will allow municipalities to pay for pertinent services through increased revenue turnover (Koma, 2014)With this in mind, the reskilling of those who have lost jobs and diversifying the skills set of local communities requires extended support and implementation measures from these municipalities to ensure a holistic balance amongst all stakeholders. This then advocates for better management of public funds by municipalities to support the just transition as well as improved service delivery. The instruments that are available to channel financing towards this include provincial and local government grants for transitional development funding, which is discussed in much more detail in the following section titled "Fiscal measures".

It is rather concerning that the municipal budget does not at present have a budget allocated to skills development and preparing the community of Emalahleni and Steve Tshwete for the inevitable transition. This can be included in ther local development mandates. The current budget seems relatively stretched with high unrecoverable debtor payments and to a degree a mismanagement of funds in terms of how much is seen to be used for unauthorised, fruitless, and wasteful and irregular expenditure. Municipalities should be in discussion with mines and power

[2] *Consolidated general report on local government audit outcome MFMA 2020 – 21 - MFMA Report 2022 - Draft 12 02.indd (agsa.co.za)*

stations/Eskom about social and labour plans, as these plans are supposed to include community development commitments.

This evidently supports the AG's findings that suggest that leadership within local municipalities needs to find sustainable measures that will assist in improving the control environment and that highlight that there are underlying consequences when these control measures are not adhered to.

Inadequate cash flows and reserves will lead to difficulties for both the Emalahleni and Steve Tshwete local municipalities when they need to fund future service delivery projects, considering they need to utilise the current budget for unbudgeted expenses stemming from the previous year. It is imperative that municipalities improve their budget processes not only to ensure that they are financially sound that will result in a clean audit, but to also be able to fund projects that need municipal alignment such as the just transition to boost local economic growth and development and attract domestic and international investments. Table 4, and Table 5 depict the unauthorised, fruitless, and wasteful and irregular expenditure for both the Emalahleni and Steve Tshwete municipalities.

Table 4 – Unauthorised, fruitless, and wasteful and irregular expenditure: Emalahleni

Emalahleni local municipality (R million)					
	2020-21	**2019-20**	**2018-19**	**2017-18**	**2016-17**
Unauthorised	R444,7	R187,2	R518,8	R860,4	R834,5
Fruitless & wasteful	0	R332,5	R400,4	R406,7	R296,6
Irregular	R618,4	R419,5	R412,5	R323,6	R188,3

Source: MFMA AGSA report 2020 - 21

Table 5 – Unauthorised, fruitless, wasteful and irregular expenditure: Tshwete

Steve Tshwete local municipality (R million)					
	2020-21	**2019-20**	**2018-19**	**2017-18**	**2016-17**
Unauthorised	R107,0	R56,2	R31,4	R26,0	R1,4
Fruitless & wasteful	<R1,0	<R1,0	<R1,0	<R1,0	<R1,0
Irregular	R0,5	R0,5	R4,0	R5,9	R51,1

Source: MFMA AGSA report 2020 - 21

These audit findings highlight that the municipalities that will be most severely affected by the transition are simply not in a position to attract any investments that will support them on their just transition journey. The challenge for the municipalities is not to try to replace coal plant jobs with renewable energy jobs, but to attract investment in the land released and to take advantage of skilled/semi-skilled labour.

Municipalities' plans for industrial zones and attracting investment is critical, as are the challenges related to resource availability.

The table below provides a list of Eskom coal-powered stations, indicating both the local and district municipality; the expected year of decommissioning can be found here.

Table 6 – Eskom Coal fired power stations

Name of Power station	Province	Local Municipality	District Muncipality	Capcity (MW)
Duvha	Mpumalanga	Emalahleni	Nkangala	3600MW
Kendal	Mpumalanga	Emalahleni	Nkangala	4 116MW
Kriel	Mpumalanga	Emalahleni	Nkangala	2850MW
Kusile	Mpumalanga	Emalahleni	Nkangala	4800MW
Matla	Mpumalanga	Emalahleni	Nkangala	3 600MW
Arnot	Mpumalanga	Steve Tshwete	Nkangala	2 100MW
Hendrina	Mpumalanga	Steve Tshwete	Nkangala	2 000MW
Komati	Mpumalanga	Steve Tshwete **(Decommissioned)**	Nkangala	-
Camden	Mpumalanga	Muskaligwa	Gert Sibande	1600MW
Grootvlei	Mpumalanga	Dipaleseng	Gert Sibande	1 200MW
Majuba	Mpumalanga	Dr Pixley ka Isaka Seme	Gert Sibande	4 110MW
Tutuka	Mpumalanga	Lekwa	Gert Sibande	3 654MW
Lethabo	Free State	Metsimaholo	Fezile Dabi	3708MW
Matimba	Limpopo	Lephalale	Waterberg	3 990MW
Medupi	Limpopo	Lephalale	Waterberg	4800MW

Table 7 – Eskom decommissioning schedule

Key

- Shutdown, optimised based on unit conditions beyond 50 year life
- Not yet in commercial operation
- Units already in reserve storage and not planned to be retumed to service
- Tut & Kom Shutdown before 50 year life optimised based on unit conditions

Station	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
Arnot	31-Mar-27	31-Aug-26	31-Jul-26	31-Mar-27	24-Nov-29	31-Mar-29	N/A	N/A	N/A	N/A
Camden	30-Au -24	30-	30-Nov-24	31-Jan-23	30-Nov-25	3101-23	31-Jan-24	31-Jul-25	N/A	N/A
Duvha	17-Au -31	30-Se -31		3D-Jun-33	30-Mar-33	21-Feb-34	N/A	N/A	N/A	N/A
Grootvlei	16-Au -26	21-Mar-26	04-Se -27				N/A	N/A	N/A	N/A
Hendrina		10-Feb-25		31-Mar-25	31-Dec-25	13-Sep-25	19-Mar-24			21-Mar-23
Kendal	30-Sep-39	19-Jun-41	15-Dec-42	30-Nov-42	23-Dec-43	09-Dec-44	N/A	N/A	N/A	N/A
Komati										N/A
Kriel	05-Jan-01	13-May-27	27-Jan-28	21-Aug-29	12-Mar-29	16-Nov-30	N/A	N/A	N/A	N/A
Kusile	29-Au	30-0ct-70	30-Au 71	30-Jun-72	31-Dec-73	30-Jun-73	N/A	N/A	N/A	N/A
Lethabo	21-Dec-36	10-Jul-37	26-Mar-37	02-Dec-38	30-Jun-40	27-Dec-41	N/A	N/A	N/A	N/A
Majuba	31-Mar-46	31-Mar-47	31-Mar-48	31-Mar-49	31-Mar-50	31-Mar-51	N/A	N/A	N/A	N/A
Matimba	03-Dec-38	03-Dec-38	28-Se 39	29	30-Se	30-Se	N/A	N/A	N/A	N/A
Matla	22-Au	29-Jun-31	Il-Dec-31	15-0ct-32	23-Au 33	2001-34	N/A	N/A	N/A	N/A
Medu	31-Jul-71	30-Ma -69	30-0ct-68	3D-Nov-67	30-A r-67	31-Au 65	N/A	N/A	N/A	N/A
Tutuka	15-Mar-30	10-Jan-30	28-Jul-30	22-Apr-30	25-Sep-30	05-Jun-30	N/A	N/A	N/A	N/A
Koebe	20-Jul-44	17-Nov-45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Generation 2035 shutdown plan (Camden dates revised on plant condition – date of last unit not changed), Eskom

Though a decommission timetable has been included to track the proposed dates, there are several conversations around the extension of the lifespan of coal-powered power stations. Given

the energy insecurity currently faced by the country, it has been highlighted that decommissioning of coal-powered stations will be tracked back to accommodate the rate at which added capacity from renewables can be plugged into the grid to reduce any further constraints that the grid may potentially face.

Local municipality bankability and the feasibility of funding

It is not financially feasible for municipalities to fund shortfalls that stem from the JET-IP especially in the instance of funding environmental social community group led initiatives, reskilling of those who have re-entered the unemployment pool and diversifying towards a green economy, promoting alignment.

Purely based on their financial positions, they would need to look at ways to attract domestic funding from either commercial banks, the National Treasury or private sector entities and international funding from the likes of philanthropies, donor organisations and multilateral development banks.

For this to be possible, both the Emalahleni and Steve Tshwete municipalities need to take into consideration their bankability.

The issue of bankability is a common bottleneck when it comes to attracting private capital for development purposes, as the issue of bankability looks into the risk profile and the riskiness of the project that is under examination at project development phase (Rana, 2017).

Both municipalities would need to design an optimal risk-sharing portfolio while improving their financial position which will assist in boosting their credibility as the funding requests are directed to both lenders and investors.

The box below looks into the criteria local municipalities would have to meet for their development projects to be seen as bankable.

Box 6 – Bankability and credibility in terms of financial institutions

1. **Commercial banks** – traditional commercial banks as well as commercial infrastructure debt providers do not usually take up the task of making a project bankable, rather they are interested in the risk profile of the project and the riskiness of the investment decision to determine if they will provide the risk capital.

2. **Investment banks –** financial intermediaries that act as agent between corporations and financial markets. These organisations differ from commercial banks in that they have advisory teams that can help a client get a project to bankability (whereas traditional commercial banks are unable to provide this support). Note that the banks, or divisions within a bank, that oversee these functionalities are not part of a bank managing balance sheet into lending. This is an essential component for the broader just transition as most coal value chain projects are largely not bankable at this point.

3. **Development banks** – multilateral development banks (MDBs) and development finance institutions (DFIs) consider the political cooperation and enabling environment especially when it comes to cross-border development funding. This is to ensure clarity with regards to the legal and regulatory framework. These projects require scale and return certainty as they tend to tap into large markets yielding large externalities especially when considering the economic, social, and environmental impact. Clear indications of how responsibilities and benefits of the underlying success of projects are determined need to be defined accordingly before investment.

4. **National Treasury** – NT focuses on ensuring that the public-private partnership (PPP) framework is comparable to international standards thus it provides its views and recommendations for municipal

PPP projects and does not approve them. The processes it undertakes to conclude on bankability are as follows:

- check and approve feasibility study;
- check and approve procurement documentation before it is issued;
- check and approve bids before appointing a preferred bidder; and
- check documentation before approving contract signature.

5. **Philanthropies** – philanthropies are interested in appropriate risk allocation, viable social and economic impact, adequate financial structuring as the public sector has a critical risk associated with it in terms of reliability, and creditworthiness. A stable legal and regulatory environment to ensure accessibility and enforceability of legal pathways is essential.

All this considered we need to remember that risks to transitioning are relatively high not forgetting that this is unchartered territory in the African context. Local municipalities such as Emalahleni and Steve Tshwete will need an immense amount of support from national government, philanthropies, development banks and the likes to position themselves accordingly to get investor buy in for their development projects where a shortfall is identified within the JET-IP.

Table 8 – Funding likelihood using bankability criteria below provides robot-themed likelihood of funding scale:

- **green** = highly likely
- **amber** = moderately likely
- **red** = unlikely

Each of the above financial institutions or persons has a different criterion that they utilise to determine the bankability of a project as well as risk-appetite, thus using this scale we determine the likelihood of receiving funding in line with the provided criteria.

Table 8 – Funding likelihood using bankability criteria

	Private financiers	MDBs and DFIs	National Treasury	Philanthropies
Mpumalanga				
Emalahleni				
Steve Tshwete				
Msukaligwa				
Dipaleseng				
Dr Pixley ka Isaka Seme				

As previously mentioned, the just transition is unchartered territory in terms of commercial banks and commercial infrastructure debt lenders; it is highly unlikely for them to invest in such a project due to the high level of risk it comes with. Projects need clear line of sight to revenues that would be used to pay off loans, so, projects' fundability must be premised on clarity about who will service the debt and where those revenues will come from. For many projects, that probably means contractually committed long-term funding from government and/or revenue guarantees. There are no best practices to consider, learned experience and feasibility studies that can steer the decision aside from hypotheticals.

Developmental banks and philanthropies are moderately likely to fund just energy transition initiatives in the Mpumalanga province as well as the Emalahleni, Msukaligwa and Dr Pixley ka Isaka Seme local municipalities and highly likely to fund the Steve Tshwete local municipality.

Steve Tshwete has a more favourable financial standing than the other municipalities and looks to have accounted for criticism and directions of the AG to an extent. As much as development banks and philanthropies look at the extent of social, economic, and environmental impact a project brings which works to both the province and municipalities' favour, the return on investment is equally of high interest. Furthermore, these financial institutions or people draw attention to risk sharing and invested success into projects; given management's inability to enforce accountability and develop efficient financial management criteria this would work against the province and its local municipalities. In general, the NT is more interested in revenue generating activities rather than those that require expenditure spending. If there are other means of revenue generation that could be targeted towards the just transition to aid Mpumalanga and its local municipalities the NT may be willing to lend a helping hand.

Table 9 – Financial health of selected local municipalities

	Emalahleni	Steve Tshwete	Msukaligwa	Dipaleseng	Dr Pixley ka Isaka Seme
Going concern uncertainty (doubt about ability to continue operating)	Yes	No	Yes		No
Municipal debtors that are not recoverable	25%	47,7%	79,3%		87,5%
Total liability position (total liabilities exceeded total assets)	No	No	No		No
Total Eskom arrears	R5bn	-	R180,9mn		-
Year-end bank balance was in overdraft	No	No	No		No
Deficit for the year (total expenditure exceeded total revenue)	Yes	No	Yes		Yes
Next year's budget will pay for expenditure of the previous year(s)	Yes	No	Yes		Yes
Average creditors payment period (days)	1128	3	1227		221
Average debtors' collection period (days)	290	36	160		210
Next year's budget will pay for expenditure of the previous year(s) that is more than half of the budget	Yes	Yes	Yes		Yes
Annual Financial Statements submitted by legislated date	No	Yes	No	Yes	Yes
Good quality financial statements submitted for audit	No	Yes		No	No
Audit outcome	Qualified[3]	Unqualified with no findings[4]	Qualified	Disclaimer[5]	Qualified

Source: MFMA AGSA report 2020 – 21

[3] *Qualified audit opinion – is an audit report that is indicative of a qualified opinion on the true and fair view of the financial statements provided.*

[4] *Unqualified audit opinion – is an audit report that gives a clean report of the financial statements provided which represents a true and fair view of the financial position of an entity.*

[5] *Disclaimer audit opinion – is provided in the case that an auditor is unable to obtain sufficient and acceptable audit evidence for he/she to arrive to an audit opinion.*

The political economy of Mpumalanga

Mpumalanga is one province in which the African National Congress (ANC) is almost certainly going to retain its majority in the 2024 elections. The party won 71% of the vote in the province in the 2019 national elections and 59% across the province in the 2021 municipal elections. The Economic Freedom Fighters (EFF) came second in the 2019 national elections with 13% of the vote, while the Democratic Alliance (DA) came third with 10%. Given these figures, it is unforeseeable that the party would decline to under 50% of the vote in 2024. With the ANC expected to decline nationally, the party will be inclined to ensure that it does not jeopardise its standing in Mpumalanga in 2024 and beyond. That includes ensuring that the transition happens in a manner that minimises losses for the coal mining communities and importantly, ANC-aligned individuals and businesses with vested interests in coal mining. Prevailing political dynamics have augmented Mpumalanga's political importance for the governing party.

Table 10 – Aggregate results

	2019 National Elections (%)	2021 Municipal Elections (%)
ANC	71	59
EFF	13	15
DA	10	12
Other	6	14

Source: IEC

Political leadership

The ANC's 71% victory in 2019 translated into 22 seats in the provincial legislature, the EFF's 13% vote share resulted in four seats for the party, the DA's 10% assured the party of three seats, while the Freedom Front Plus's 2% gave the party one seat.

The ANC thus governs Mpumalanga comfortably. This is reflected in that the premier of the province and the speaker of the legislature both come from the ANC. That said, in line with national trends, the ANC has been witnessing a decline in electoral support in Mpumalanga. The party went from 86% in 2009 to 78% in 2014, and 71% in 2019, as already stated.

Notably, the EFF has been on an upward trajectory, having displaced the DA as the official opposition in the legislature in 2019 after more than doubling its 2014 support which saw the party winning 6% of the vote.

In 2024, the ANC is thus expected to retain Mpumalanga, albeit with a reduced majority. In line to profit from this expected decline is the EFF, which has been performing relatively well in some post-2021 by-elections in the province. The expected decline of the ANC at national level means that the party is likely to lose outright control of some provinces. Chief among these would be Gauteng and possibly KwaZulu-Natal (KZN). The loss of a majority in some provinces would lead the party to employ all possible tactics in order to prevent the loss of more provinces in subsequent elections. It would therefore not be surprising to see the party resorting to anti-transition and anti-renewables rhetoric after the 2024 elections in Mpumalanga. In fact, as we edge closer to the 2024 elections, we should not be shocked should there be a rise in anti-renewables rhetoric from the ANC and other parties in Mpumalanga.

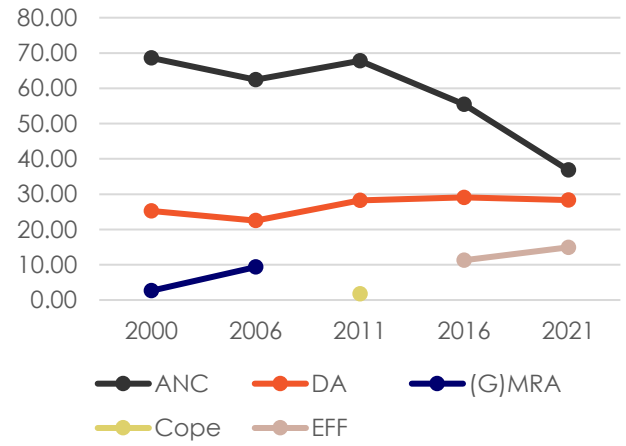
As we edge closer to the 2024 elections, we should not be shocked should there be a rise in anti-renewables rhetoric from the ANC and other parties in Mpumalanga.

Recently, we witnessed the ANC proficiently pushing back against calls for full scale expropriation of land without compensation (EWC) through a bill that satisfies neither those who support nor those who oppose EWC. If the ANC, up to so far, has been able to quell demands for EWC which arguably had substantial support on the ground then the transition, which is highly contested, faces an even bigger challenge. Election season provides an opportune moment for the ANC in Mpumalanga to "reassure" its voters that their interests in the coal value chain will be protected. There will be no mitigation against this anti-renewables rhetoric as the parties that will eat into the ANC's voter base will be singing the same tune.

Political parties can be important agents of change as they are likely to have the ear of all stakeholders in the transition. However, their dependence on popular support tempers with their objectivity. This is especially true during election season and when their electoral support is declining.

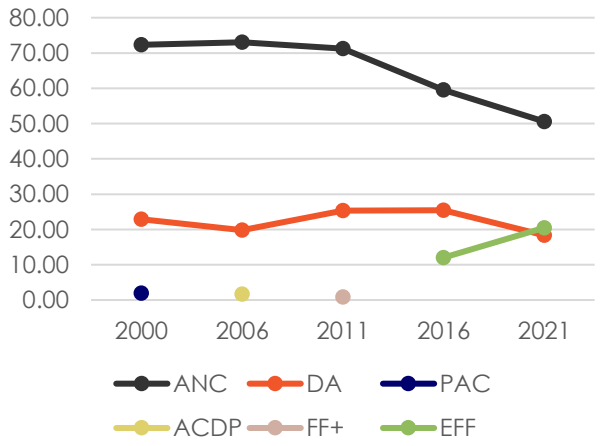
The more interesting dynamics are in local government. While the ANC won 59% of the vote in the province in 2021 – a decline from 71% – it failed to win an outright majority in three municipalities: Steve Tshwete Local Municipality; Lekwa Local Municipality; and Govan Mbeki Local Municipality. In the Steve Tshwete Local Municipality, the ANC declined from 55% in 2016 to 37% in 2021. The DA also declined from 29% to 28%, while the EFF improved from 11% to 14%. In the Emalahleni Local Municipality, the party declined from 60% of support in 2016 to 51% in 2021. In this municipality, the EFF displaced the DA to take second place. The party improved from 12% to 20%, while the DA declined from 25% to 18%. The EFF's rise in the province and in the Steve Tshwete and Emalahleni municipalities in particular, signals an emergence of a stakeholder that may be an important player in transition in the foreseeable future. The EFF is known for its stern approach towards much that has to do with the private sector and would therefore not be an easy partner to work with. That said, the party is not opposed to the transition. The EFF has a labour desk that would keenly be waiting to challenge job losses resulting from the transition. Should the party join forces with unions, most likely those not affiliated to the Congress of South African Trade Unions (Cosatu), there could be significant resistance to a transition that jeopardises workers' interests.

Figure 10 – Top three parties in Steve Tshwete



Source: IEC

Figure 11 – Top three parties in Emalahleni



Source: IEC

The role of unions in the energy transition

The dominant union in the mining sector, the National Union of Mineworkers (NUM), has a long relationship with the governing ANC. President Cyril Ramaphosa served as the union's founding general secretary between 1982 and 1991. Ramaphosa was succeeded by former president Kgalema Motlanthe who served as NUM's general secretary on an acting and permanent basis between 1991 and 1998. The incumbent minister of mineral resources and energy and national chairperson of the ANC, Gwede Mantashe, succeeded Motlanthe and occupied the position from 1998 to 2006. These are but some of the high-profile ANC leaders that have a history with NUM. NUM is affiliated to the ANC-aligned Cosatu. It is therefore consistent with Tripartite Alliance [ANC, Cosatu, and South African Communist Party (SACP)] tradition that union leaders ultimately climb up the ladder to serve in ANC structures or government departments, as the case of former NUM president Senzeni Zokwana illustrates. Zokwana served as the minister of agriculture, forestry and fisheries from 2014 to 2019. At present, Cosatu's second deputy president, Duncan Luvuno, serves as NUM's health and safety national chairperson.

With such links to the governing party and its partners, NUM undoubtedly has the ear of sections of government. In fact, both Ramaphosa and Mantashe addressed the union's national congress in 2022. Mantashe, in particular, has been criticised widely for his perceived insistence on the continued usage of coal and reluctance to commit to a fast-tracked transition to renewable energy sources. Apart from his ministerial position, Mantashe's position in the ANC has made him an even more powerful figure in government and thus the transition. He played a central role in effectively shielding Ramaphosa from accountability and attacks from ANC national executive committee (NEC) members following the findings of the Section 89 panel regarding his role in the events that took place following the theft of money from his Phala Phala farm. Mantashe and other Ramaphosa allies persuaded him not to resign following the findings. They further went on to help him get re-elected as ANC president in December 2022. All this augmented Mantashe's influence both in the ANC and government and positioned him as the president's protector. As such, it is has become increasingly difficult for the president to act in a manner that displeases Mantashe, including on energy-related issues.

NUM's primary interest in the transition is job security for its members. Following the conclusion of its 2022 national congress, the union indicated its appreciation of the opportunity to take part in discussions relating to the transition. NUM recently spoke in support of Mantashe's call for Africa to resist global "coercion" to jettison the usage of fossil fuels. Instead, the union called for coal mines to be "left alone" and reiterated Mantashe's view that investments in technology aimed at making coal cleaner should be the immediate focus rather than the rushing of the closure of Mpumalanga coal mines (NUM, 2023). The union also indicated that it is not opposed to renewable energy, but that South Africa must adhere to the Integrated Resource Plan to utilise a mixture of energy sources. NUM's Highveld region, based in Mpumalanga pays special attention to coal and energy affairs. Another important union in the mining sector is the Association of Mineworkers and Construction Union (AMCU), (in)famous for its role in the Marikana massacre. Like NUM, AMCU is not outrightly opposed to the transition, but the union holds that the transition should be cognisant of South Africa's inequality, high levels of unemployment and underdevelopment (Bulbulia, 2022). The union thus favours a phased transition, with particular attention being paid to the reskilling of workers, as well as places – such as Mpumalanga - that are likely to be the most affected by the transition. Other unions with a voice in the coal value chain are the National Union of Metalworkers of South Africa (Numsa), Solidarity, and the South African Transport and Allied Workers Union (Satawu).

With Mpumalanga being a predominantly rural province and thus being characterised by limited economic opportunities coal mining is an important economic activity in the province. Cosatu (2022) noted that the coal value chain employs more than 120,000 people, most of whom are based in Mpumalanga. It therefore makes sense why the unions are primarily concerned about job losses. Conversations around the transition therefore need to include labour representatives to ease the anxiousness among workers, who have raised concerns about the impact that it would have on their livelihoods.

Moreover, unions should be viewed more as stakeholders with a mandate to represent their members rather than unreasonable opponents of the transition. We need to highlight that the formal sector jobs in this value chain, while very important, are less than 1% of all employment in the country. It is therefore possible to imagine a failure of the country to make the transition resulting in greater job losses due to the wide implications that such a failure would have.

Vested interests

In a fitting summation of the scale of vested interests in coal mining, Sguazzin & Burkhardt (2021) state that "coal … has underwritten the system of political patronage and Black Economic Empowerment (BEE) that has kept the ANC in power since the end of apartheid." A rapid shift from renewables also faces opposition from mineworkers (albeit with minimal voice), truckers, coal companies and the mafia-like syndicates that have penetrated parts of the coal industry (Pilling, 2022).

Trucking mafia

Among other factors, the deterioration of the rail network has increased levels of coal transportation by road. This has increased the stake of transport companies in the coal-based energy production sector. Companies in the business of transporting coal by road have also benefited from the global rise in coal demand due to the Russia-Ukraine conflict. An example of how the centrality of trucking companies in the coal sector has been augmented is that to replace one average Transnet train, Canyon Coal's Khanye Colliery uses 80 trucks, each carrying 34 tonnes (Banya & Reid, 2022). Traditionally, trucks - in addition to conveyor belts - have been used to transport coal over short distances, while rail transport has been used to transport coal, typically destined for export, over long distances (Department of Energy, n.d). The precarious state of Transnet has induced a rise in the transportation of coal by road over long distances.

With companies opting to outsource the transportation function, logistics companies involved in coal transportation by road have become important players in the coal mining value chain. Writing in 2017, Anton Eberhard and Catrina Godinho note the role played by Eskom in augmenting the role of logistics companies in the coal mining value chain. The pair detail how in 2011 then minister of public enterprises, Malusi Gigaba's imposition of a 50+1% black ownership requirement on Anglo American's New Largo coal mine led to the mine remaining undeveloped (Eberhard & Godinho, 2017). The consequence was that coal had to be trucked into Kusile at high cost. They further detail how the utility's failure to make further investments to an Exxaro mine, as per agreement, resulted in the utility trucking coal in at a substantially higher cost (Eberhard & Godinho, 2017).

As Eskom stated in 2021, the usage of expensive power stations (with no tied colliery) and gradual decline of production in cost plus mines due to lack of investment has led to an increase in the procurement of coal through medium term contracts with additional transport costs. On average 30% of coal costs emanate from its transportation (Eskom, 2021). Importantly, medium term volume (~50Mt) accounts for 51% of the coal costs hence medium-term contracts remain the most expensive coal contracts (Eskom, 2021). Perhaps more important are the allegations that former Eskom acting chief executive officer (CEO) Matshela Koko conspired with the Coal Transporters Forum (CTF) and unions to organise protests against the potential closure of coal mines in light of progress made in the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) (Eberhard & Godinho, 2017). One protest saw coal transporting trucks block roads in Pretoria as the protesters handed over a memorandum to the presidency at the Union Buildings. The coal transporters were reacting to then President Jacob Zuma's 2017 announcement that government would procure more energy from independent power producers (IPPs). Following the failure of this protest to alter government's stance, the CTF approached the high court in Pretoria in March 2017 to interdict Eskom from concluding power purchase agreements (PPAs) with IPPs. The case was dismissed with costs. Central to the CTF's opposition to IPPs was that they were going to put coal transporters out of business and their employees out of work. This case highlights a stakeholder with a vested interest in the maintenance of the status quo. The transition poses a threat to those in the business of transporting coal. This threat would naturally ignite

opposition to the transition altogether. The CTF represents approximately 50 companies transporting coal for Eskom (*Coal Transporters Forum v Eskom Holdings Limited and Others (42887/2017) [2019] ZAGPPHC 76 (26 March 2019)*, 2019).

According to Chireshe & Bole, there are approximately 4,000 people employed as drivers of coal-transporting trucks. Coal-transporting companies, many of which are black-owned, employ about 5,000 people according to Bloomberg (Sguazzin & Burkhardt, 2021). Furthermore, black shareholders own a third of the companies that supply coal to Eskom (Sguazzin & Burkhardt, 2021). Coal trucking companies and their employees are therefore important stakeholders in the coal value chain and therefore the energy transition. Couple this high number of employees with the race factor in ownership patterns, which positions the coal mining industry and coal trucking specially as significant players in the transformation of the country's economy. The result is a heavily vested interest in coal mining both for economic and political reasons. However, it is useful to note the finding that about 7,500 truck driving jobs could be created through the implementation of pathways of sustainable aviation fuel production from biomass resources such as Solaris seeds, invasive alien plants and sugarcane molasses as well as industrial off-gasses (Chireshe, 2022). More than 3,800 of these jobs would be in regions that are currently associated with coal trucking (Chireshe, 2022).

Coal mafia

The existence of a "coal mafia" with the interest of extracting as much profit as possible from its coal operations has been identified in recent years as loadshedding has worsened. In November 2022, it was reported that two truckloads of a mixture of coal and rocks were delivered to the Majuba Power Station (Cowan, 2022). Indications are that this was not an isolated incident. In the same month last year, a coal truck driver and his supervisor were arrested at the Matla Power Station after it was discovered that the truck was delivering sub-grade coal to the power station, following the offloading of high-grade coal at a Rondebult coal yard in Mpumalanga (Illidge, 2022). The practice of coal switching has been widely reported upon. It apparently entails truck drivers acting alone or on the instruction of their superiors, offloading coal destined for Eskom power stations at private coal yards. The trucks are then loaded with low grade coal, which is transported to Eskom power stations. The drivers and/or superiors are compensated by the owners of the coal yards or their representatives. The low-grade coal inflicts substantial damage to components used in the generation of power, which at times results in breakdowns at power stations which further exacerbates loadshedding. Meanwhile, the high-grade coal is sold on typically to the export market at market value which is significantly higher than that of the low-grade coal. The result is extended hours of loadshedding and massive profits for those involved in the syndicate.

What is important to note in the operations of these syndicates is the cooperation of Eskom and mine employees who facilitate the bypassing of control processes (Illidge, 2022). The operations of these syndicates engaged in coal theft and the arrests of some of those involved corroborate claims of sabotage that have been made by many individuals close to Eskom, notably the minister of public enterprises, Pravin Gordhan. We must also highlight that coal swapping can take place without the knowledge of the truck owners or the transport companies contracted to transport coal to Eskom. This is because, the parties involved in these operations go to lengths to ensure that trucks cannot be tracked during the short period for which they are diverted from their route to Eskom power stations. However, Eskom is putting measures in place to curb coal switching/swapping, including the utilisation of private security services, hence the increase in arrests especially last year. The increase in the practice of coal swapping coincides with the increased usage of trucks to transport coal. This suggests a relationship between these two stakeholders in the coal mining value chain. As such, it would not be surprising if they were to pull resources together to resist the transition, through lobbying or legal challenges.

Conclusion

History has shown us the importance of the "social licence" for projects and programmes such as the various aspects of the transition. Without the buy-in from communities that will be affected the most, it will be very difficult to transition. The biggest risk here is that groupings with vested interests may utilise the uncertainty about the transition to plant opposition to it at community level. Like the rest of the country, Mpumalanga is battling with increasing extortionist business practices especially in construction, and coal mining and transportation. The transition would therefore not only be challenged by people with vested interests but communities. Active law enforcement will of course be needed to deal with blatant criminal activity. However, convincing communities and labour that the transition is in their best interest may offset many challenges that a transition with no social licence may face. Lastly, political parties are an important stakeholder in the transition. However, we must be cautious of their inclination to doublespeak and even inconsistent messaging depending on the audience, especially during election season. While this may be convenient for them in the short-term, it can sow profound anti-transition sentiments in society in the long-term.

4. Fiscal measures

South Africa has a sophisticated yet highly complex budget process and the potential options for channelling fiscal funds for the just energy transition are considered within the existing fiscal framework. Key features of the framework include the equitable share approach, the allocation of conditional grants, and spending allocations by national departments. Finally, we consider the tax instruments that are available, followed by a summary table highlighting the pros and cons of the various fiscal instruments that might be utilised for the just energy transition.

Outline of fiscal measures

Many countries have introduced fiscal measures to support the transition from a carbon-intensive economy to a less-carbon intensive one.

Fiscal measures include both direct spending programmes and taxes or subsidies designed to influence household or business decisions. The objective is to incentivise behaviour that supports climate change mitigation, adaptation and readaptation. Typical measures are outlined in Figure 13[6]:

As highlighted in Table 11, South Africa's approach has been largely to focus on tax measures.[7] With the exception of limited financial incentives (eg in 2011 Eskom provided on subsidies on LED light bulbs) there has been limited direct expenditure on the transition.

There have been numerous targeted interventions to encourage the adoption of more energy efficient practices; these include, for example:

- solar geyser programmes;
- national and provincial departments and municipalities have undertaken retrofitting of lights and other "green building" initiatives; and
- a conditional grant for municipalities for energy efficiency initiatives.

These are very specific targeted interventions and a framework for dedicated spending on transitioning the economy has yet to be launched. That said, NT is in the process of developing a budget tagging framework for climate change which, when complete, is expected to provide a clearer picture of relevant spending programmes and initiatives.

At the same time, various environmental levies, particularly the electricity levy and carbon tax, have proven to be a reliable source of reasonably significant revenue since they were introduced. The estimate for 2023/24 is that the electricity levy will raise approximately R8bn, and the carbon tax (together with other environmental taxes) a further R6 bn. Over time, as the carbon tax is increased, the revenue will rise. However, by design, the intention is that a *higher rate* for the carbon tax would also lead to a *lower tax base* as emissions are reduced, meaning that the total tax revenue may actually stabilise or decline over time.

6 https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op315~c279c7c290.en.pdf

7 *For a detailed discussion on the different energy taxes in South Africa, see* https://www.oecd.org/tax/tax-policy/taxing-energy-use-south-africa.pdf.

Figure 13 – Market-based fiscal measures

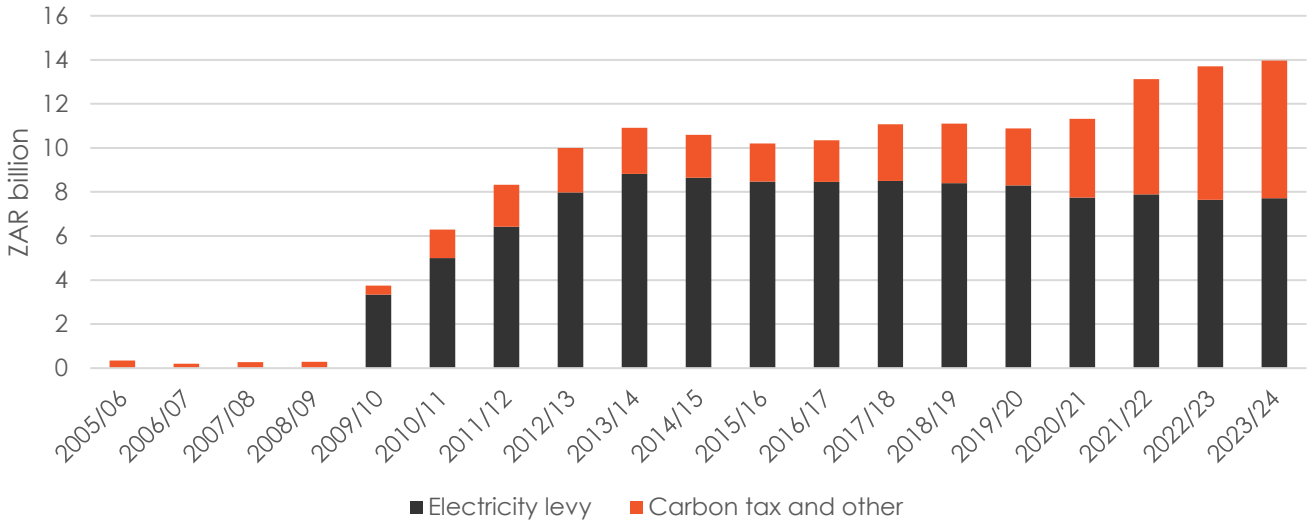
Tax instruments	Public expenditure measures	Financial incentives for specific activities
•These are designed to change behaviour by changing the relative prices of activities with high levels of emissions. South Africa is a frontrunner in this area, with a well-established set of environmental taxes, including a levy on "dirty" electricity generation and a carbon tax	•These include subsidies and transfers to regions, firms and households to support climate reduction, adaptation and mitigation	•This includes, for example, subsidies for low emission technologies such as electric cars, lightbulbs, etc.

Source: European Central Bank

Table 11 – Fiscal instruments

Fiscal instrument		Details
Electricity levy on non-renewable and environmentally hazardous electricity	✓	The electricity levy is raised on electricity generated in South Africa using non-renewable (fossil) fuels and environmentally hazardous (nuclear) sources.
Carbon tax	✓	A tax is levied on entities that produce or emit carbon dioxide equivalent above a certain threshold. The tax aims to incentivise businesses to adopt cleaner technologies.
Emissions trading scheme	?	National Treasury is considering an emissions trading scheme to complement the carbon tax.
Public expenditure, including subsidies and transfers	X	Limited. South Africa provides guarantees that supports the Renewable Energy IPP Procurement Programme (REIPPPP).
Tax incentives	✓	The 2023 Budget provided for an expanded tax incentive for businesses of 125% of the cost of renewable energy assets used for electricity generation.
Financial incentives, eg to transition	?	In 2011, Eskom offered subsidies on low use LED light bulbs, as part of a comprehensive demand management strategy.
Non-market-based measures	✓	Quantitative emissions targets (DFFE).

Figure 14 – Revenues from electricity levy, carbon tax and other



Source: National Treasury

Could environmental taxes be used to fund the just transition?

South Africa's tax system has a limited number of "ringfenced taxes', ie taxes that are earmarked for particular purposes. This reflects the approach of the Katz and Davis Commissions, which have consistently recommended that the tax system remains administratively straight forward. This reduces compliance costs, for both taxpayers and the tax authority, and supports the principle of a broad based, relatively low tax environment.

The arguments against ringfencing flow from this principle. One problem with ring fencing is that it creates resource allocations that bypass the budget process. The general rule is to ring fence only when the tax is a quasi-user charge, as in social security or insurance contributions or arguably fuel levies for roads. Ringfencing also poses risks to a simple, effective tax system. On the revenue side, each ringfenced tax requires its own tax base, calculation method, monitoring and audit process. That said, the calculation is not necessarily a significant concern, although the carbon tax is somewhat more complex than others Ringfencing can limit the flexibility of governments to respond to changing needs and priorities. It may hinder the ability to allocate resources efficiently across different sectors based on evolving circumstances.

On the expenditure side, ringfenced taxes imply ringfenced spending. This, in turn, imposes complex budgeting and financial planning requirements. Spending requires careful tracking and management of earmarked funds, which can be administratively burdensome and may lead to inefficiencies. Allocating specific tax revenue to one area may result in underfunding or neglect of other important sectors. It can lead to a fragmented budgeting process where competing interests vie for ringfenced funds, potentially creating imbalances.

In this way, ring fencing of revenue reduces allocative efficiency. Extreme examples are the Unemployment Insurance Fund which has large surpluses even as government continues to borrow; or the Sector Education and Training Authorities which divert 1% of payroll for skills training with what appears to be little putative benefit.

That said, ringfenced taxes can raise transparency and accountability. Taxpayers can follow exactly where their money is going and hold governments accountable for the use of funds.

By dedicating tax revenue to specific sectors or programmes, ringfencing may be able to ensure consistent funding for essential services such as healthcare, education, or infrastructure.

In some jurisdictions, it can help protect these priority areas from budget cuts or shifting priorities.

Arguably, ringfencing can prevent the diversion of tax revenue to other purposes or projects. This could arise potentially through legally mandating that funds are used for a specific purpose, so possibly reducing the risk of mismanagement or corruption.

Table 12 – Advantages and disadvantages of ringfencing

Advantages	Disadvantages
Transparency and accountability	Flexibility and efficiency
Protecting priority areas	Complex budgeting
Avoiding misuse of funds	Trade-offs and fragmentation

Box 7 – Long-term planning in affected municipalities

Municipalities are constitutionally mandated to promote the economic development of the communities they serve. They do this through preparing local economic development strategies within the context of integrated development plans (IDPs).

At local governmental level, developmental objectives are underpinned in Section 152 & 153 of the 1996 Constitution. In brief these sections highlight that municipalities are mandated to promote social and economic development of the communities they serve and are encouraged to participate in national and provincial development programmes when deployed; furthermore, municipal budgeting and administration processes should focus on prioritising the basic needs of the community.
Municipalities are provided with frameworks that underpin LED, public funds, research, and support from national government; this allows them to develop strategies that are aligned with their individual community needs – these strategies need to be within the Integrated Development Planning (IDP) processes. The LED strategies identified need to be supported by the vision outlined in the IDP to prioritise development projects that focus on addressing gaps in the local economy.

Spending instruments for JET funding for sub-national units

Across the world, spending measures to combat climate change are diverse. They include transfers to households and subsidies to firms to incentivise emission reductions and lower energy intensity, public expenditure to protect the environment, and public R&D spending to promote cleaner technologies and climate change mitigation.

In principle, there are a number of instruments that can be (and are) used to effect spatial redistribution in South Africa. Indeed, one of the most significant features of the fiscal system is that nationally raised revenues (which are, in practice, raised disproportionately on economic activity in the major cities) are used to fund public services and household transfers across the whole country. Thus, funding flows that are allocated on the basis of population numbers and, in particular, poverty rates, would tend to result in net positive fiscal flows to poor rural areas since the distribution of the population (and, especially, of poor households) is markedly different from the distribution of economic activity.

Before interrogating these provisions, we need to consider the legal framework within which any allocations may or may not be possible.

The Constitutional framework

South Africa's nine provinces and 257 municipalities account for well over half of public expenditure However, revenue collection is largely the preserve of national government. Inter-governmental transfers, mainly from the national fiscus to sub-national authorities, are therefore important elements in South Africa's fiscal system.

The Constitution establishes the statutory framework within which these transfers are managed.

Local government and each province –

> *"is entitled to 'an equitable share of revenue raised nationally to enable it to provide basic services and perform the functions allocated to it", and*
>
> *"may receive other allocations from national government revenue, either conditionally or unconditionally."*[8]

The equitable shares and other allocations to provinces and municipalities must be provided for in legislation, following consultation with provincial governments, organised local government and the Financial and Fiscal Commission.

Account must be taken of the following:

- *the national interest,*
- *any provision that must be made in respect of the national debt and other national obligations;*
- *the needs and interests of the national government, determined by objective criteria;*
- *the need to ensure that the provinces and municipalities are able to provide basic services and functions allocated to them;*
- *the fiscal capacity and efficiency of the provinces and municipalities;*
- *developmental and other needs of provinces, local government, and municipalities;*
- *economic disparities within and among the provinces;*
- *obligations of the provinces and municipalities in terms of national legislation;*
- *the desirability of stable and predictable allocations of revenue shares; and*
- *the need for flexibility in responding to emergencies and other temporary needs, and other factors based on similar objective criteria.*[9]

The Constitution establishes that the appropriation of funds by the state is governed by law. Section 214 is formulated in broad terms and allows for a wide range of purposes and activities of the state. It recognises that expenditure may be required to meet "obligations" or "needs," distinct from services or functions assigned or specified in legislation.

Consistent with the Constitution's broader endorsement of the rule of law, the language of section 214 creates a clear presumption against arbitrary or unfair use of public funds. Where discretion or judgements about relative needs come into play in the allocation of funds, the Constitution signals that "objective criteria" are expected to be applied.

Chapter 13 of the Constitution – read together with the requirements of Chapter 2 that the state should, within its available resources, and through reasonable measures, make available or contribute to the provision of housing, health care, social security and education, amongst other rights – obliges the state to exercise responsibilities of stewardship over revenue raised. The state exercises its fiscal and financial responsibilities to give effect to these rights and to promote the wellbeing of its people through the appropriation of monies for specified purposes.

An appropriation of monies is achieved through an appropriation act, which is subject to special legislative procedures that reflect the accountability of the executive to Parliament or provincial legislatures for the utilisation of public funds. These procedures include review and recommendations by committees of the legislature who therefore exercise oversight both of the appropriation of funds for the purposes of the state and of the subsequent application and reporting on the use of these resources.

Underlying these constitutional principles is a recognition of the fundamental challenge of scarcity in the public finances. The resources available to the state are unavoidably constrained, relative to the range and diversity of possible purposes or uses to which such resources might be put. If a society is to meet its needs, and to advance the social and economic wellbeing of its people, it must use the resources at its disposal efficiently and effectively. South Africa's Constitution adds further requirements – fairness, objectivity, and a presumption that public

[8] *Section 227(1) of the Constitution.*

[9] *Section 214 of the Constitution.*

purposes should be pursued through laws of general application, rather than arbitrary or capricious procedures.

In considering the special needs of a region or community or of businesses affected by technological change and economic transition, compensatory or other measures will need to be balanced against other state responsibilities and obligations.

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A constraining consideration is that while the resources of the state are substantial, they are held in stewardship on behalf of the wider community. It is not the state, ultimately, that suffers loss if unreasonable, excessive, or unnecessary payments are made for particular purposes; it is the state's capacity to meet its obligations that is diminished, including the constitutional obligations correlative to the rights referred to above. Compensation paid in any particular instance is a charge of equivalent value against the state's capacity to meet other social, economic or developmental obligations – as is implicit in the economic concept of "opportunity cost".

The Division of Revenue Act

The Constitution's requirement for an equitable division of revenue between national, provincial, and local government is given effect through the Division of Revenue Act, tabled as part of the annual Budget in February each year. The preparation of the Division of Revenue Act follows a consultative process prescribed in the 1997 Intergovernmental Fiscal Relation Act, which includes consideration of the advice of the Financial and Fiscal Commission and consultation with provincial governments and organised local government.

An Explanatory Memorandum accompanies the Division of Revenue Act every year, setting out the factors that inform the division of resources between the spheres of government and explaining the formulae and criteria behind the allocation of provincial equitable shares and conditional grants and of municipal equitable shares and conditional grants.

Underlying these considerations is the assignment of various powers and functions to each sphere of government. The Constitution assigns exclusive responsibility for national defence, the criminal justice system, higher education, foreign affairs, and various administrative functions to national government. Some functions are assigned concurrently to national and provincial government, including basic education, health services, social welfare services, housing, and agriculture. Municipalities have responsibility for electricity and water distribution, sanitation and waste management, local planning, and municipal infrastructure.

The division of nationally collected revenue takes into account the "fiscal capacity" of each sphere of government. Provinces have limited taxing power and raise a small proportion of their revenue needs from health service charges and gambling taxes, for example. Municipalities are expected to recover the costs of basic services such as electricity and water from households and businesses through property rates, user charges and fees, but it is recognised that the revenue-raising power of municipalities varies greatly. Local equitable shares and grants account for a larger share of the revenue of rural municipalities than of cities or metropolitan authorities. Conditional grant allocations to provinces and municipalities also take into account efficiency considerations, such as the efficacy of the recipients' past use of these allocations.

The equitable share and grant allocations are broadly redistributive – they allocate more funds on a per capita basis to provinces and municipalities with lower average income levels. This includes various allocations for infrastructure investment, designed to support economic development, stimulate employment and address social and economic disparities.

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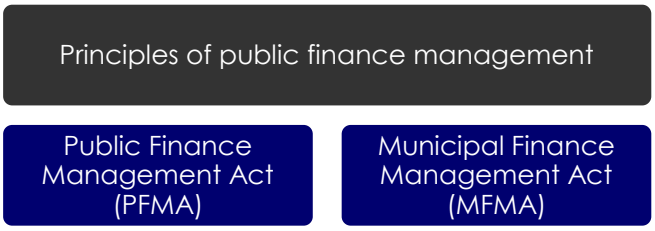
In keeping with South Africa's three-year medium term expenditure framework, the Division of Revenue Act and its accompanying Explanatory Memorandum set out firm allocations for the year ahead and indicative allocations for a further two years. In-year adjustments can be made through a Division of Revenue Amendment Bill and Adjustments Appropriation Bills, usually tabled alongside the Medium-Term Budget Policy Statement in October each year.

Further details of the current intergovernmental fiscal transfers, set out in the 2023 Division of Revenue Act, are provided below.

Principles of public finance management

The Constitution's requirement for fairness, objectivity and reasonableness in the use of the resources available to the state is given procedural and substantive content in the Public Finance Management Act (PFMA) and the accompanying Treasury Regulations. In respect of local government finances, the Municipal Finance Management Act (MFMA) sets out corresponding principles, procedures and statutory constraints intended to ensure fiscal probity and sustainability.



Section 38 of the PFMA obliges accounting officers of departments, trading entities or constitutional institutions to ensure the effective, efficient, economical and transparent use of its resources. Section 38(2) expressly prohibits the commitment of funds "to any liability for which money has not been appropriated." This gives effect to the rule of law in the use of public monies and reinforces the requirement of section 21 (relating to provinces) in its restriction of the withdrawal of funds from a Provincial Revenue Fund to either appropriations in law or direct charges provided for in law.

With regard to the capacity of the state to incur expenditure in excess of available revenue, or to borrow or incur future financial liabilities, the PFMA and the MFMA are structured to ensure that the Minister of Finance has overall control of public debt and associated obligations.

Section 66 of the PFMA and associated regulations restrict the powers of accounting officers or accounting authorities in committing the state to future financial obligations.

Section 66 reads as follows:

> *Restrictions on borrowing, guarantees and other commitments*
>
> *(1) An institution to which this Act applies may not borrow money or issue a guarantee, indemnity or security, or enter into any other transaction that binds or may bind that institution or the Revenue Fund to any future financial commitment, unless such borrowing, guarantee, indemnity, security or other transaction-*
>
> *(a) is authorised by this Act;*
>
> *(b) in the case of public entities, is also authorised by other legislation not in conflict with this Act; and*
>
> *(c) in the case of loans by a province or a provincial government business enterprise under the ownership control of a provincial executive, is within the limits as set in terms of the Borrowing Powers of Provincial Governments Act, 1996 (Act 48 of 1996).*

The purpose of these provisions is to provide the Minister of Finance with the necessary authority to manage the public debt by exercising control over transactions or undertakings which raise debt or debt-like obligations of the state.

In practice, provinces are generally expected to meet their expenditures from current revenue, and do not borrow. Larger city or metropolitan municipalities have greater scope to borrow for investment in infrastructure, where such investments are required to expand service delivery capacity and contribute to future revenue streams.

However, the MFMA and associated regulations impose stringent procedural and accounting standards on municipalities. Unlike national and provincial departments, their accounts are recorded on a double-entry accrual basis, which for many municipalities diverge considerably from the cash-based inflows and outflows through which financial discipline is, in practice, effected.

Capital market securities, bank loans or project finance facilities are effectively available only to metropolitan municipalities; the liabilities of most district and local authorities reflect trade debts and outstanding Eskom or water board bills, rather than formal borrowing instruments.

Both provinces and municipalities are therefore highly constrained in their access to deficit finance or earmarked debt facilities. Not only new

projects or initiatives, but also personnel and non-personnel commitments associated with ordinary operating activities of departments or local government have to be kept well within prudent limits.

Both provinces and municipalities are therefore highly constrained in their access to deficit finance or earmarked debt facilities. Not only new projects or initiatives, but also personnel and non-personnel commitments associated with ordinary operating activities of departments or local government have to be kept well within prudent limits.

Where substantial future outlays relative to a department's baseline allocation or a municipalities recurrent revenue are under consideration – major capital projects or multi-year procurements, for example – then these are the subject of explicit engagement and agreement between departments and the relevant treasury ahead of entering into commitments. For accounting purposes, departments and municipalities are obliged to disclose substantial future contractual commitments in their financial statements.

Complementing these requirements that limit expenditure to the amounts and purposes prescribed in the division of revenue and annual appropriation acts and ensure oversight of government borrowing by the minister of finance, South Africa's public finance management approach gives comprehensive effect to the principles of transparency and accountability.

Transparency begins with the publication of a Medium-Term Budget Policy Statement several months ahead of the annual budget, outlining the economic outlook and fiscal policy considerations for the period ahead and setting out an indicative medium-term expenditure framework, including provisional allocations to provinces and municipalities. The Budget itself comprises the tabling of both revenue and spending plans for the period ahead, together with proposals for financing a budget deficit, explained in some detail in the Budget Review with its statistical and other annexures. The Budget Review is accompanied by the Estimates of National Expenditure detailing expenditure plans for three years ahead for all national departments and entities. Similar details of provincial revenue and spending plans are published by provincial treasuries when their budgets are tabled.

Accountability is built into the public finance management system in several ways.

- Fiduciary and financial responsibilities of the heads of government departments or other organs of state – identified in the Public Finance Management Act as "accounting officers" – are set out in law in considerable detail;
- Departments and public entities are obliged to table annual reports in Parliament, accompanied by audited financial statements, subject to prescribed formats and accounting standards;
- Performance against plans and programme targets must be reported, also subject to prescribed guidelines and audit procedures;
- Departments and public entities are obliged to report to both portfolio committees of the national or provincial legislatures and to public accounts committees, with specific responsibility for review of audit findings and examination of irregular or unauthorised expenditure; and
- South Africa's financial management and audit standards are comprehensive and intrusive and extend beyond the financial accounts to include compliance with procurement and other regulations and adherence to performance management prescripts.

It is pertinent to note that the National Treasury is currently piloting a "budget tagging" procedure aimed at identifying and monitoring climate change relevant expenditure, with support from the World Bank and specialist advisors.

The planning and budgeting system of the state

In giving effect to the requirements of the Constitution and the PFMA for an equitable division of revenue and a fair and efficient allocation of resources, the National Treasury and provincial treasuries undertake and oversee an annual planning and budgeting cycle, culminating in the presentation of expenditure proposals and appropriation bills to their respective legislatures.

In brief, the pertinent features of the planning and budget system of the state are the following:

- Determination of an overall expenditure level for the year ahead, and forward estimates for the subsequent two years, taking into account macroeconomic, fiscal policy, revenue and debt management considerations;
- Provision, within the overall expenditure level, for the state's debt service obligations, resulting in a projected level of non-interest expenditure for the year ahead and subsequent two years;
- Provision, within the projected non-interest expenditure level, for a contingency reserve to be set aside for unforeseeable and unavoidable expenditure, and to allow for macroeconomic and other uncertainties, resulting in a projected level of non-interest expenditure to be allocated for the year ahead and subsequent two years;
- Determination of an equitable division between national, provincial and local government of the available envelope of non-interest expenditure to be allocated, taking into account considerations prescribed in section 214 of the Constitution;
- Determination of each province's share of the provincial equitable share, on the basis of an objective formula that takes into account population numbers and education and health care needs, amongst other factors, and of each province's share of conditional grants for specific purposes allocated to provinces from the national equitable share on the basis of relevant objective criteria; and
- Preparation of medium term expenditure proposals by departments and other organs of state, and review and consideration of these proposals in order to determine an allocation within the expenditure level available to national government and each province for the year ahead and forward estimates for the subsequent two years, to be tabled in the relevant legislature as an appropriation bill and an accompanying set of medium term expenditure estimates.

While these planning and budgeting processes are the responsibility of officials of the National Treasury and provincial treasuries, they involve extensive consultation between treasuries and other departments during the course of the planning cycle.

The planning and budget processes are overseen by Cabinet and a Ministers' Committee on the Budget at national level, and by Provincial Executive Councils and their committees at provincial level. Consultation takes place with organised local government on the envisaged allocations to the municipal equitable share and conditional grants. Prior to the tabling of the draft fiscal framework and division of revenue in Parliament through the October Medium-Term Budget Policy Statement each year, these proposals are considered by an extended Cabinet meeting that includes provincial premiers and finance MECs.

With the adoption, beginning in 1998, of a medium-term expenditure planning system, South Africa's expenditure proposals each year are set out as "changes to baseline" allocations, where the baseline for any particular department, function or programme is its forward estimate of expenditure included in the previous year's medium-term estimates. Changes to baseline could arise as a result of many possible considerations – revised costs, increased or decreased levels of activity, shifts in government priorities, delays in programme implementation, unanticipated events or spending requirements, amongst other factors or relevant circumstances.

A provincial department or any other organ of state, in preparing its expenditure proposals for the period ahead, is obliged to take full account of all its service delivery obligations, including reasonable provision for claims and obligations that might not yet be finalised or determined. However, there is no presumption that a

department or any other organ of state will be allocated the resource envelope that would accommodate all of its service delivery plans or intentions in full.

There is always a substantial excess of budget proposals over the available resource envelope. In finalising its expenditure proposals for the period ahead, a department or organ of state is obliged to limit its expenditure plans to the resource envelope made available to it through the medium-term expenditure planning process. Expenditure in excess of the amounts appropriated by the legislature is regarded as unauthorised and will be reported as such in the financial statements for the year in question.

In its consideration of the expenditure proposals of its departments, a provincial treasury or its expenditure planning committee will take note of obligations that might arise from social or economic transition plans or development projects. These might include initiatives of local municipalities or joint projects or programmes of provincial departments and municipalities.

In view of the responsibilities of accounting officers to ensure efficient use of resources, management of risks and control of expenditure and service provision, the cost of such initiatives would generally be expected to be met from within the available baseline of expenditure allocations to that department or organ of state.

In exceptional circumstances, however, taking into account the impact of such claims on service delivery, a provincial treasury or expenditure planning committee might recommend an addition to baseline or supplementary allocations to municipalities for the purposes of meeting or partially meeting the costs of transition plans or projects.

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Instruments for spatially targeted fiscal redistribution

In this section, we explore the numerous instruments available in South Africa for transferring funds from the national fiscus to provinces and to local government. These instruments can and do play diverse roles, and this section seeks both to describe the instruments and to assess their utility in directing funding to Mpumalanga and/or to specific municipalities. The five main instruments that we will discuss each have different utility and are considered in more detail in the pages that follow.

Figure 15 – Instruments for spatially targeted fiscal redistribution

The optimal choice of instrument for achieving fiscal redistribution depends on the policy goals that are being pursued, with different tools being more suited to achieving some goals than others.

Before looking at this, however, it is worth identifying the nature of the possible instruments themselves. Two points should be made at the outset, however:

1. The choice of instrument should be rationally connected to the nature of the spending mandate, so that it matches both the nature and quantum of the services being provided, as well as the relevant time horizon.
2. Importantly, consideration must be also given not just to the recipient of the flow of funds via any given instrument, but also to how that is paid for. This is particularly the case if JET-related funding is to be financed through the existing tax base. In particular, the impact of JET-related funding on the resources available for allocation through other instruments needs to be borne in mind. If, for example, JET-related funding in the form of a conditional grant is to be made to municipalities negatively affected by the energy transition, consideration must be given as to whether this is at the expense of other conditional grants or if the funding envelope for the equitable share for national, provincial or local spheres of government is to be reduced. Different answers to these questions have different implications for how the impact of JET funding flows is to be understood, and whether the chosen instrument is optimal.

Before considering these issues in more detail, we explore the five different instruments that are available.

The equitable share

Apart from property taxes levied by local government, almost all tax revenues raised in South Africa are paid into the National Revenue Fund after collection by the South African Revenue Services (SARS).

Given the manner in which the powers and functions of government are allocated between the three spheres of government, the fact that almost all taxes accrue to the national sphere creates an enormous asymmetry between the service delivery functions of provincial and local government, on the one hand, and, on the other, their revenue-raising powers.

The Constitution mandates, therefore, that provincial and local government receive an equitable share of nationally raised revenue. There are two stages to this process:

1. Determining the "vertical" division between national, provincial and local spheres based on their respective obligations (inclusive of the obligation on national government to finance debt service costs).
2. Determining the "horizontal" division of revenue between provinces and local governments.

While the horizonal division of revenue between provinces/local governments is driven by more-or-less objective criteria, with relevant variables plugged into a formula, the vertical division is characterised by greater policy discretion, albeit that some spending items – notably debt service costs and judges' salaries – must be funded before further division of revenues. The application of policymakers' discretion in the vertical division is moderated by the fact that policymakers are constitutionally obligated also to ensure that resources available to all spheres of government are adequate to fund their functions, and that allocations/budgets are reasonably stable and predictable.

The result of these processes is summarised each year in Schedules 1 and 2 of the Division of Revenue Bill, which show that national government is allocated 68% of spending, while provinces and local governments are allocated about 27% and 5% respectively.

Note should be taken, however, of the fact that the allocation to the national sphere includes allocations for debt service costs, which accounts for an average of about R370bn a year over the medium term. The allocation to the national sphere also includes funding for conditional grants to provinces and municipalities, which will ultimately be spent by (or in support of) provincial or local governments (see below).

Table 13 – Equitable division of revenue among three spheres

Equitabe division of revenue raissed nationally among the three spheres of government				
Spheres of Government	Column A	Column B		Average of total
		Forward Estimates		
	2023/24	2024/25	2025/26	
	R bn	**R bn**	**R bn**	
National	1,370.5	1,446.7	1,542.7	68%
Provincial	567.5	587.5	614.3	27%
Local	96.5	103.8	109.4	5%
Total	**2,034.6**	**2,137.9**	**2,266.5**	**100%**

Source: Schedules to the Division of Revenue Bills

Table 14 – Determination of each province's equitable share

Schedule 2				
Determination of each province's equitable share of the provincial sphere's share of revenue raised nationally				
Province				
		Forward Estimates		Average of total
	2023/24	2024/25	2025/26	
	R bn	**R bn**	**R bn**	
Eastern Cape	73.3	76.0	79.6	13%
Free State	31.4	32.4	33.7	6%
Gauteng	120.8	125.4	131.1	21%
KwaZulu – Natal	115.9	118.9	123.8	20%
Limpopo	65.3	68.0	71.5	12%
Mpumalanga	46.7	48.4	50.8	8%
Northern Cape	15.2	15.7	16.5	3%
North West	40.1	41.8	43.8	7%
Western Cape	58.9	60.9	63.4	10%
Total	**567.5**	**587.5**	**614.3**	**100%**

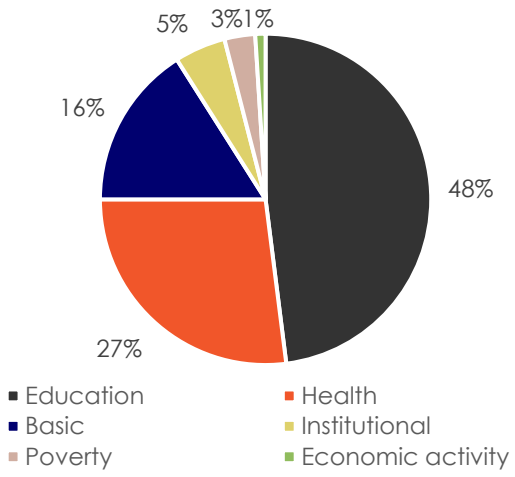
Source: Schedules to the Division of Revenue Bills

The formulae used to apportion the provincial and local government equitable share between the provinces and local authorities use a variety of objective variables. These include:

- An education component (48%), based on the size of the school-age population and the number of learners (Grades R to 12) enrolled in public ordinary schools;
- A health component (27%), based on each province's risk profile and health system caseload;
- A basic component (16%), derived from each province's share of the national population;
- An institutional component (5%), divided equally between the provinces;
- A poverty component (3%), based on income data; and
- An economic activity component (1%), based on regional gross domestic product.

Because of differences between these variables and the distribution of population, per capita allocations to the provinces vary quite significantly: in 2023/24, the Northern Cape will receive an average of R11,600 per resident from the equitable share, while Gauteng will receive R7,500. (Mpumalanga's allocation is about R9,900 per person.)

Figure 16 – Equitable share objective variables



Source: National Treasury

An important nuance to note is that a small fraction of the funding provided to provinces through the provincial equitable share is not allocated in terms of this formula, and usually reflects the transfer of budgets from national departments to provinces following a transfer of function.

The budget previously allocated to the DTIC (Department of Trade, Industry and Competition) for Coega SEZ, for example, was transferred to the Eastern Cape government, and the amount is included in the equitable share component.

Typically, these amounts are quite small – under R2bn a year. in recent years, however, they have been inflated by the allocations made through the Presidential Youth Employment Initiative, particularly the schools project, with allocations amounting to R15.5bn across 2022/23 and 2023/24. This is important for the issues raised in this report, because it reflects the fact that there is somewhat more flexibility in the horizontal division of revenue than would be the case if it were driven solely by the weighted average of a number of objective variables. We will return to this below.

Local government equitable share

The calculation of the size and distribution of the local government equitable share works somewhat differently than the provincial equitable share in that a large component of its value is driven by an estimate of the costs to local government of providing free basic services to households they serve. In 2023/24, the local government equitable share provides for all 11.2 million households that are below the poverty line receiving six kilolitres of water, 50kWh of electricity, sanitation and refuse removal. It is estimated that these services cost just under R530 per household per month, and allocations to local governments are made on the basis of the distribution of poor households between municipalities. The total of nearly R71bn accounts for nearly three-quarters of the total value of the local government equitable share of about R96.5bn.

General fuel levy

Metropolitan governments receive a share of the fuel levy as part of the equitable share. This is intended to provide them with the resources to maintain roads and was introduced in 2009 as the regional services council (RSC) levies replacement revenues were being eliminated. It is a direct charge on the national revenue fund and is updated annually through the amendments of tax legislation.

Utilisation of the equitable share component

The utilisation of the equitable share component of provincial and local government revenues is largely at the discretion of the receiving authority, which has the constitutional authority to apportion these funds to its respective functions in accordance with its own understanding of its spending priorities. There are, however, some constraints on this discretion. One of these is that spending in local and, especially, provincial government is dominated by compensation, and this tends to mean that a large proportion of revenues flow to functions on the basis of departments' obligations as employers to their employees. The composition and distribution of employment can change over time, but tends to be relatively sticky, setting an important constraint on local and provincial governments' capacity to change the composition of spending rapidly.

A second important constraint on local and provincial governments' discretion in the use of the equitable share component of their revenues is that national legislation and/or policy may set norms and standards for the provision of specific services. Funding those norms and standards will also limit provincial/local governments' discretion in the use of the equitable share. Thus, norms and standards relating to learner:teacher ratios or schooling infrastructure account for a large proportion of available funding which has to be allocated to the department of education to ensure compliance with those norms. Similarly, in relation to local governments' equitable share, a strong constitutional presumption exists that these funds will be used to support the provision of basic services to poor households.

Conditional grants

If spending on the equitable share component of provincial and local government revenues is, in principle at least, at the discretion of the relevant sphere of government, conditional grants are allocated to fund specific activities. These funds are voted to national departments and are included in the national component of the equitable share. The allocation is made, however, with the explicit intention that they be transferred to provincial or local governments on condition that they are used in particular ways.

As suggested by their name, conditional grants are allocated to achieve particular goals. Some are allocated on the basis of a formula composed of objective variables (eg housing grants tend to be weighted on the basis of existing housing need), while others are allocated on the basis of applications submitted by a provincial/local government (eg school

infrastructure grants) or on the basis of historical need for the grant (eg the national tertiary grant in the health system that supports provinces on the basis of the number/size of tertiary care facilities). A minority of grants are performance based, in that allocations in one year are linked to performance in the prior year (eg EPWP grants). In all cases, funds are transferred to spending agencies periodically on the basis of the provision of evidence confirming that previous allocations have been spent and that they have been used in line with the intended purpose. That purpose is specified in annexures to the Division of Revenue Act. This process is managed by the relevant national department, which has dedicated personnel tasked with administering conditional grants, and ensuring that spending agencies comply with conditions.

Provincial conditional grants

Provincial conditional grants will average over R130bn a year over the medium-term expenditure framework (MTEF). The biggest provincial conditional grants are outlined in Figure 17.

Collectively, these six grants account for nearly two-thirds of all provincial conditional grants.

Within the existing provincial conditional grants framework there are several options for transition-related special allocations:

- The comprehensive agriculture support programme could be targeted at affected communities;
- Human settlements development and settlement upgrading allocations could be earmarked for affected communities; and
- EPWP supplementary allocations could be targeted at specific employment projects.

It is worth noting that Mpumalanga has received special allocations to compensate for roads damage associated with coal trucking over the past years. It would also be possible to introduce new conditional grants to provinces to meet identified transition-related costs or compensatory programmes, subject to Division of Revenue Act procedures and requirements.

Figure 17 – Provincial conditional grants

1. District health programme

- Intended to enable the health sector to develop and implement an effective response to HIV/AIDS, TB, and to support primary healthcare (including the provision of inoculations).

2. National tertiary services grant

- Provides funds to provinces in which large tertiary hospitals are located since these provide services to patients in all provinces and to for the whole public health sector.

3. Human settlements development grant

- Funds RDP housing programmes.

4. Provincial roads maintenance grant

- Supplements provincial allocations to raids maintenance activities.

5. Education infrastructure grant

- Provides resources for school-building and upgrading.

6. National school nutrition programme grant

- Provides one nutritious meal to all learners in poorer primary and secondary schools to help improve learners' ability to learn.

Table 15 – Conditional grants to provinces

R million	2022/23 Revised estimate	2023/24	2024/25	2025/26	% of total over MTEF
Agriculture, land Reform and Rural Development	**2234**	**2333**	**2516**	**2596**	**2%**
Comprehensive agricultural support programme	1599	1626	1777	1825	1%
Ilima/Letsema projects	610	620	648	677	0%
Land care programme: poverty relief	85	86	90	94	0%
Basic education	**23124**	**25329**	**26485**	**28093**	**20%**
Early childhood development	1193	1242	1885	2341	1%
Education infrastructure	12501	13872	13845	14438	11%
HIV and AIDS (life skills education)	242	242	253	264	0%
Learners with profound intellectual disabilities	256	260	272	284	0%
Maths, science and technology	425	433	453	473	0%
National school nutrition programme	8508	9279	9788	10293	7%
Health	**56252**	**54183**	**56171**	**58687**	**42%**
District health programme grant	29023	26866	28072	29330	21%
Health facility revitalisation	6780	7120	7361	7691	6%
Human resources and training grant	5449	5479	5367	5607	4%
National health insurance grant	694	695	717	749	1%
National tertiary services	14306	14024	14654	15310	11%
Human Settlements	**19172**	**19246**	**19614**	**20493**	**15%**
Human settlements development	14256	14944	15118	15796	11%
Informal settlements upgrading partnership	4121	4303	4496	4697	3%
Provincial emergency housing grant	796	-	-	-	
Public Works and Infrastructure	**858**	**861**	**900**	**940**	**1%**
Expanded public works programme integrated grant	433	435	454	475	0%
Social sector expanded public works	425	426	446	466	0%
Sports, Arts and Culture	**2176**	**2175**	**2272**	**2374**	**2%**
Community library services	1573	1571	1641	1715	1%
Mass participation and sport development	604	604	631	659	0%
Transport	**19756**	**23270**	**24853**	**27058**	**19%**
Provincial roads maintenance	12665	15867	17117	18976	13%
Public transport operations	7090	7403	7735	8082	6%
Total direct conditional allocations	**12370**	**127544**	**132963**	**140402**	**100%**

Source: Annexure W1: Explanatory Memorandum to the Division of Revenue, 2023 Budget review p25

Local government conditional grants

Local government conditional grants fall into two main categories: infrastructure grants and capacity-building grants. Together they will average nearly R55bn a year over the MTEF, with the largest being the municipal infrastructure grant (which provides municipalities with funding for infrastructure development), the urban settlements development grant (which supports public infrastructure grants specifically in the metros), and the public transport networks grant (which supports infrastructure spending on public transport, particularly bus rapid transport services in the metros).Together, these three grants account for nearly two-thirds of conditional grants to local government.

Like provincial conditional grants, local government conditional grants are administered by national departments, whose function is to ensure that the grants are utilised for the purposes laid out in the Division of Revenue Act. Like provincial conditional grants, some local government grants are allocated on the basis of formulae, the variables of which are objective data from the relevant municipal areas, while

other grants are allocated on the basis of applications made to the relevant administering department.

Several municipal conditional grants could include allocations targeted at transition-affected municipalities. Consideration could be given, for example, to special allocations for industrial or enterprise zones within the neighbourhood development programme grant, or special allocations for municipal EPWP and Community Work Programme (CWP) activities.

Table 16 – Conditional grants to local government

R million	2022/23 Revised budget	2023/24	2024/25	2025/26	% over the MTEF
		Meduim-term estimates			
Infrastructure grants	**48857**	**49733**	**52123**	**54646**	**96%**
Integrated urban development	1085	1172	1227	1284	2%
Municipal disaster recovery	3319	321	-	-	0%
Municipal infrastructure	16842	17545	18331	19150	34%
Informal settlements upgrading partnership	4273	4365	4531	4765	8%
Urban settlements development	7352	8149	8793	9343	16%
Energy efficiency and demand side management	223	224	243	253	0%
Integrated national electrification programme	2120	2212	2311	2415	4%
Neighbourhood development partnership	1293	1475	647	676	2%
Public transport network	6013	6794	7752	8369	14%
Rural roads asset management systems	115	115	121	126	0%
Regional bulk infrastructure	2521	3496	4099	4045	7%
Water services infrastructure	3701	3864	4038	4219	7%
Capacity – building grants	**2685**	**2259**	**2361**	**2467**	**4%**
Municipal disaster response	764	373	389	407	1%
Municipal energy housing	55	-	-	-	0%
Infrastructure skills development	159	160	167	175	0%
Local government financial management	566	569	594	621	1%
Programme and project preparation support	361	3777	394	411	1%
EPWP integrated grant for municipalities	778	781	816	853	1%
Total	**51542**	**51992**	**54484**	**57113**	**100%**

Source: Annexure W1: Explanatory Memorandum to the Division of Revenue, 2023 Budget review p45

Spending allocations by national departments

Spending by national departments is, of course, governed by the distribution of functions between the three spheres of government and is dominated by spending on the criminal justice system (police, justice, and corrections), defence, home affairs, department of international relations and cooperation (DIRCO) and the intelligence services. Significant spending is also incurred on policy development and "centre of government" functions such as the Presidency, the National Treasury, department of public service and administration (DPSA) etc, as well as by the national departments of health and education.

While there is little data available about the spatial distribution of the activities and spending of these departments, all such spending must take place somewhere and it is possible, in principle at least, that more of this spending could happen in areas that are negatively affected by the energy transition. That said, most of national spending is governed by considerations that could not really

be reprioritised spatially towards the relevant areas. It would be difficult to make a case for allocating a disproportionately large share of spending on criminal justice, or home affairs (for example) in Mpumalanga on the basis of a desire to ameliorate the effects of the energy transition. Moreover, the policy-making departments have neither the appropriate mandates nor the requisite budgets (or skills) to deliver activities of any meaningful size in affected areas. There are, however, a few exceptions to this rule: spending programmes in the DTIC and DHET, as well as indirect grants to provinces and local governments that are managed by national departments.

Indirect grants to provincial and local governments

Indirect grants are allocations made to national departments for activities that, while paid for by the national department concerned, are intended to support activities for which particular provincial or local governments are responsible. They are, in effect, in-kind contributions by national departments to the programmes of the relevant provincial or local government. For the most part, these programmes deliver infrastructure, with most indirect grant spending accounted for by allocations for regional bulk infrastructure to the department of water and sanitation, funding for Eskom (via the department of mineral resources and energy) for supporting the provision of access to the grid, and allocations to the national departments of health (for national health insurance (NHI)) and education (in support of addressing particular school infrastructure challenges, such as continued reliance on pit latrines).

In principle, national departments' programmes could be expended to accommodate increase spending directed to areas affected by the energy transition through indirect grants such as those described above.

Table 17 – Indirect conditional grants to provinces and local government

	2022/23 Revised budget	2023/24	2024/25	2025/26
		Meduim-term estimates		
Indirect grants to provinces	**4612**	**4178**	**4447**	**4763**
School infrastructure backlog	2403	2079	2172	2269
NHI (National Health Insurance)	2209	2099	2275	2494
Indirect grants to local government	**8170**	**8481**	**8861**	**9259**
Infrastructure				
Integrated national electrification	3588	3821	3993	4172
Neighbourhood development partnership	201	101	105	110
Regional bulk infrastructure	3470	3607	3769	3938
Water services infrastructure	771	805	841	879
Capacity building				
Municipal systems improvement	140	147	153	160
Total	**12782**	**12659**	**13308**	**14022**

Source: Annexure W1: Explanatory Memorandum to the Division of Revenue, 2023 Budget Review

Direct spending by DTIC and DHET

Although most national departments have functions whose spatial distribution is not readily amenable to changes that might be effected in order to redistribute resources to areas negatively affected by the energy transition, or which would not be all that effective in addressing challenges caused by the loss of mining/generation activities, there are three possible exceptions to this rule: the DHET, the DTIC and the department of social development (DSD). It would be possible to direct funding at projects/households in areas affected by the energy transition through new or existing programmes in these departments.

Department of higher education and training

The DHET is responsible for higher education policy and planning in SA, but it also runs a number of TVET colleges (transferred to it from the provinces in 2016). These functions have obvious potential in relation to the needs of areas affected by the energy transition, and allocations could be made to provide for expanding educational options (including access to TVET education for those who have not completed their matric) in Mpumalanga.

Department of trade, industry and competition

The DTIC provides funding – sometimes intermediated through the IDC – to businesses on the basis of a range of industrial policy instruments. Some of these are sector-focused, while others (particularly support for SEZs) are spatially defined. New JET-related programmes might be added, or existing programmes might be expanded to provide for funding for industrial activities to affected areas.

Department of social development

South Africa's individual and household grants system provides for a variety of grants based on a different eligibility criterion, including means tests. Most spending on these grants is accounted for by the old age grant and the child support grant. There are, however, grants aimed at more narrowly defined groups, including the war veterans grant, the grant-in-aid and the care dependency grant. It is, in principle, possible to consider grants targeted at communities that are adversely affected by the energy transition.

Tax instruments

Thus far, we have only considered instruments for directing public spending to areas negatively affected by the energy transition. It is also possible, however, to use tax incentives (more formally, "tax expenditures") to incentivise increased business activity in these areas. This would not amount to increased public spending, but, if it were successful, might stimulate additional economic activity in these areas.

Currently, tax expenditures amount to over R250bn a year in foregone revenues, with between 80% and 90% of this figure accounted for by:

- Personal income tax reductions attendant on retirement fund contributions
- Zero-rating of VAT on select items
- PIT reductions for spending on medical aid
- Customs exemptions in support of the domestic vehicle industry

Table 18 – Tax expenditures

R million	2017/18	2018/19	2019/20	2020/21
Research and development	**270**	**257**	**213**	**165**
Participation exemption	**8423**	**16311**	**12569**	**4930**
Personal income tax	**124441**	**135942**	**141267**	**142299**
Retirement fund contributions	82546	88799	96407	97734
Medical	33213	37818	35052	35371
Interest exemptions	3523	3657	3814	3201
Secondary rebate (65 years and older)	3273	3535	3784	3857
Tertiary rebate (75 years and older)	261	284	306	307
Donations	377	418	477	467
Capital gains tax (annual exclusion)	697	561	601	428
Venture capital companies	551	870	827	932
Corporate income tax	**18402**	**27455**	**21675**	**15382**
Small business corporation tax savings	3290	3305	3187	2663
Reduced headline rate	3215	3239	3115	2611
Section 12E depreciation allowance	74	67	72	52
Research and development	270	257	213	165
Learnership allowances	719	587	502	273
Strategic industrial projects (12I)	563	361	16	2
Film incentive	6	0	19	1
Urban development zones	203	208	253	114
Employment tax incentive	4317	4512	4754	7165
Energy-efficiency savings	611	1913	161	68
Participation exemption	8423	16311	12569	4930
Value-added tax	**58446**	**68857**	**73439**	**58760**
Zero-rated supplies	56926	65255	71752	57236
Exempt supplies (public transport and education)	1520	1603	1687	1525
Customs duties and excise	**33564**	**38608**	**44393**	**35534**
Motor vehicles (MIDP/APDP, including IRCCs)	28754	31250	34107	26189
Textile and clothing (duty credits – DCCs)	712	734	725	709
Furniture and fixtures	198	178	168	138
Other customs	875	600	625	1409
Diesel refund	3025	5846	8767	7090
Total tax expenditure	**234854**	**268862**	**280774**	**251975**

Source: Annexure B, 2023 Budget Review

In relation to energy-transition affected areas, possible options for tax expenditures to support business activity might include lower corporate income taxes for activities in these areas (as was originally proposed for SEZs and which is currently applicable for small businesses); investment incentives in the form or larger write-offs or more generous depreciation schedules for fixed investment (as is the case in SEZs and in urban development zones); and more generous access to the employment tax incentives (as is the case in SEZs).

Pros and cons of various fiscal instruments with respect to the JET

As is evident from the above, there are a great many possible instruments for providing directing public funding to areas that are adversely affected by the energy transition. This creates a great deal of flexibility in the intergovernmental fiscal regime, and it is not, therefore, difficult to find mechanisms that could be used to compensate adversely affected areas. A range of issues arise, however, in thinking about which instruments to use since each has strengths and weaknesses relative to the others.

In determining which instrument is optimal, a number of issues need to be clarified, the most important of which is that the choice of instrument depends fundamentally on the nature of the spending that is to be funded.

This is obviously and trivially true: one would not expect that the direct transfers to affected households would be optimally delivered by the same funding instrument as provision of greater access to technical and vocational training to workers who lost their jobs as a result of the closure of a mine or power station.

Apart from the nature of the activities to be funded, the choice of instrument will also be affected by other issues, including:

- Whether it is expected that the activities to be funded will be of a permanent or temporary nature;
- Whether any public body should have discretion in the nature or composition of activities to be funded, and, if so, where decision-making authority will vest;
- How to ensure a high degree of accountability for the use of funds;
- The source of funding, in particular the extent to which such funding is at the expense of other funding flows; and
- How to minimise the administrative burden of disbursing and managing the funds

No final answer can be provided to the question of which instrument is best suited to the goals of the JET unless and until the nature of the activities to be funded is determined.

Table 19 – Summary of fiscal options

Nature of the transfer	Description of allocation process	Pros	Cons
Equitable share to PG and LG	Allocation to PGs and LGs based on a pre-defined formula and used for general funding, with allocations made by recipient guided by norms and standards	• Transparent allocation criteria • Recipient has discretion as to use of funds to local priorities (though this is moderated by national norms and standards and historical spending/commitments such as payroll costs)	• Formulae are complex, not always optimal, and sometimes contested • Quality of available data questionable • Unfunded commitments when equitable share is not adequate, with numerous challenges resulting from gaps between trends in equitable share and payroll costs Accountability for quality of spend is weak

Nature of the transfer	Description of allocation process	Pros	Cons
Conditional grants: Formula-based allocation rules or allocations made according to historical spending levels	As with the equitable share, allocation to PGs and LGs based on a pre-defined formula. Unlike the equitable share, funding is earmarked for specific functions, and conditions for reporting are legislated	• Transparent allocation criteria • Funding is provided explicitly for implementing national priorities • Performance is monitored through conditional grant administrative processes	• Formulae are complex, not always optimal, and sometimes contested • Loss of discretion • Can be administratively cumbersome and expensive • Significant corruption associated with some of the grants, suggesting limited accountability
Conditional grants: Allocation made on the basis of applications or business plans	Allocations made on the basis of submissions from eligible entities responding to the criteria established in the conditional grant	• Ensures that resources are spent in line with national policy intentions • Predetermined reporting requirements can enhance monitoring and accountability for delivery • Discretion in allocations can result in greater effectiveness	• Can be administratively complex/expensive, and quality of oversight can degrade • Discretion in allocations can result in inequalities, particularly if better-resources entities produce better submissions • Perceived inequalities can result in pressure to equalise allocations
Conditional grants: Allocations based on past performance or historical spending	Some grants allocations are based either on historical spending levels (since they support specific activities) or are based on previous performance (eg the EPWP grants are allocated to municipalities on the basis of previous use so that higher-performing municipalities get a larger share)	• Provides for specific activities, including those with carry-through costs • Ensures continuity, predictability and stability in finances • In principle, incentives can ensure more optimal spending allocations, and spending aligned with national priorities	• Limited ability to adjust spending plans as priorities change • Incentive-based allocations can be administratively onerous • Difficult to design incentives without creating perverse incentives or that cannot be "gamed"
Spending by national departments	National departments allocate resources to activities in specific geographical places	• Allocations supplement spending by other spheres of government • Allocations reflect national priorities • To the extent that national departments have greater capacity, quality of spend might	• Allocations can only be made in terms of the mandates of national departments. In practice, the key departments relevant to the JET are DTIC and DHET • Limited local accountability for quality of spend

Nature of the transfer	Description of allocation process	Pros	Cons
		be higher, though this is not always the case	• Risk that national projects can generate unfunded local costs
Tax instruments	Tax rebates provided to incentivise specific kinds of activity by taxpayers (especially firms) in designated areas	• Can provide a stimulus to private sector-led development in designated areas by reducing costs or increasing returns • Minimal administrative costs for government	• May create market distortions or shrink the tax base • Risks of gaming/fraud exist

Box 8 – Social security issues

The problem of stranded labour in the transition – those that risk being left behind by not only unemployment from carbon intensive industries, but also those who might not be well served by the system in terms of training, reskilling and jobs transfer – has led to a conversation globally but also in South Africa about the role of state backstops. This means social security and the broader social wage. The broader social wage of course includes healthcare, free education and housing in addition to grants that are social security. The debate is knotty, complex and ideological, in particular as it plays into many existing debates that are deeply fraught – such as that of the Basic Income Grant in South Africa.

The case for social security in JET however is stronger given displacement of activity though equally it is normally the responsibility of the industry doing the displacing to fund transitions through liability funds or similar and to provide adequate wider support including retraining etc. State backstops then in most countries while not as generous as the average wage would be the ultimate fallback.

The problem of course in South Africa is that there is no unemployment insurance system and there are minimal working age grants available. The UIF is available for a short period after someone is unemployed to ensure they have money to bridge to new employment and (theoretically) cover the cost of a job search, while the SRD grant is a minimal poverty alleviation grant that is not tied to any poverty level and has been eroded by inflation and has little relevance for someone in the transition.

The debate globally and from some quarters in South Africa has alighted on the idea of income guarantees – that someone who is made unemployed by the transition should, if other schemes are unsuccessful in finding them work, get an income that is a (high) percentage of their old salary. This idea however is rejected for funding by Eskom, mines, government more broadly and JETP funders as unaffordable and open to abuse. It is also not applicable to any other industry in transition or where people are made unemployed (say through bankruptcy etc).

Elsewhere in this paper we look at what options there are for social protection through the UIF scheme which worked effectively during Covid when deployed as the TERS (Temporary Employment Relief Scheme). There is flexibility in this scheme, but it would have to be tied to broader liabilities of transitioning companies to support.

The broader problem then is the lack of reform of the underlying system and the narrow tax base, something that JET itself cannot solve and as we have expressed elsewhere – JET cannot solve all South Africa's ills.

That said, the issue of social security at a sub-national level is slightly different – and where the idea of a social wage is more important especially at municipal level. As communities transition and there is a risk that communities become non-viable as employment moves elsewhere, there are existing housing and municipal labour schemes that can be deployed to support remaining communities or workers moving into new communities for training and job opportunities. Increasingly the provision of such broader aspects of the social wage like housing, may need a JET lens on them to track need and target provisioning to ensure efficacy of the social wage.

5. Alternatives to fiscal funding

The research undertaken in all three reports of this series suggest that there is no single silver bullet for financing the just energy transition. Instead, the solution is using a combination of financing channels, instruments and structures to unlock capital at scale. While alternatives to fiscal funding were discussed extensively in the first paper of the three-part series, this section provides an overview of alternatives that are available.

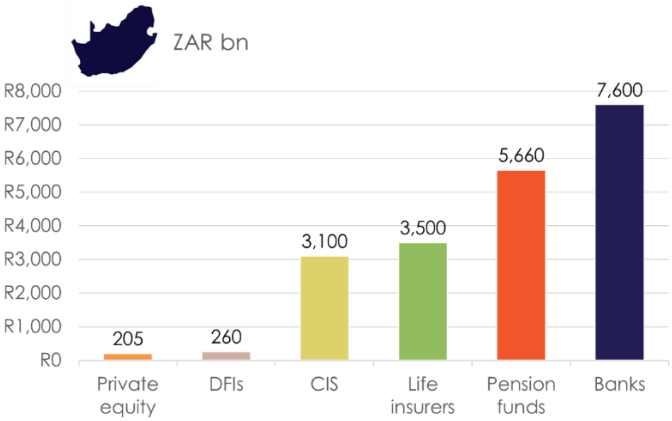
The private sector funding landscape

The focus of this paper is primarily on public sector financing since the mobilisation of private finance at scale was discussed extensively in the first report of this series. It is nevertheless worth recapping what the various pools of private sector capital are that can be used for the just transition. Given the nature of just transition projects, there are many instances in which development funding (including grants and concessional financing) and private capital must be blended to ensure that private investors meet their returns mandate while development funders deliver on their social and/or environmental objectives.

The main objective for public finance for the just transition should be to a) fund projects that cannot be commercialised (see for more details on this) and b) to provide funding for projects that are not bankable to get them to a point of bankability. The latter should help address issues related to a lack of investable pipeline, which is discussed in more detail in the following section titled "Alignment between demand and supply".

In Figure 18, we provide an overview of the size of the various funding pools in the South African market that can be leveraged for the just transition Table 20, we provide a brief overview of each of these funding pools. Note that the funding pools detailed below do not intend to provide estimates of the amount of funding that is available for the just transition, they simply outline the various types of private sector capital that might be crowded in for just transition projects through blended finance and other financing vehicles.

Figure 18 – South Africa funding pools



Source: SAVCA, National Treasury, ASISA
Note: Cannot be summed because of significant duplication, eg pension funds holding insurance policies and CIS.

Table 20 – South African funding pools

Funder	**Brief overview**
Banks	South Africa's banking sector has total assets of R7.6bn, and R548bn of tier 1 capital. Banks are well capitalised and as of August 2022, the aggregate bank capital adequacy ratio was 17.55% while the tier 1 capital adequacy ratio was 14.85% (SARB, 2022b). Banks' investment horizon is typically short term with low-risk appetite, and the investment objective is to generate net interest margin and arranging fees. Banks have a key role to play in intermediation with the broader market yet underwriting (holding some on their balance sheet) either for some time, or temporarily to create markets and liquidity, would all be served still with lower capital requirements. Central banks may well prefer some kind of first loss of similar from others (say MDBs etc) to reduce risk, and this is why structuring deals and the role of multiple players becomes important. To reach the scale required, banks will need to move assets off balance sheet to the institutional market.
Life insurers	The insurance sector is large and competitive, with high penetration rates. The industry is the second largest in the financial sector with life insurers managing R3.5tn in assets. Life insurers have a long-term investment horizon and medium risk appetite in respect of their unlinked investment funds, including their own capital. Investment objectives vary according to the nature of the investments – for on balance sheet investing, insurers target returns within regulated risk parameters, while for client funds, the investment mandates are generally long term and target risk-adjusted market returns. The main risk for insurers is asset-liability management (ALM) mismatch risks while the key investment constraint is the regulatory environment.
Collective investment schemes	This segment of the market has R3.1tn in assets under management (AUM) with funds classified into several categories based on asset class and geographic exposures. Fund strategies vary widely from different industry exposures, asset class exposures and risk appetites. South African regulation requires funds to provide daily dealing which imposes a high liquidity requirement on the assets held by CISs. Therefore, these schemes will invest primarily in listed debt and equity and their participation in financing the JET will be subject to the availability of highly liquid listed instruments that offer competitive risk-adjusted returns.
Pension funds	With a combined R5.66tn (SARB, 2022a) in AUM as of May 2022, South Africa's pension fund industry remains one of the largest 15 in the world when measuring assets as a % of GDP (OECD, 2020). Assets can be broken down into a pool of private pension funds (R3.34tn) and public pension and provident funds (R2.32tn). Regulatory limits on asset class exposure are not a constraint for pension fund investors. Instead, the absence of an investable pipeline of projects is the main issue that emerged from our research. To mobilise large-scale financing from the pension fund industry, South Africa needs listed investment products that deliver appropriate risk-adjusted returns over a long-term investment horizon.
Private equity	South Africa's private equity industry remains relatively small with R206bn in funds under management as of 2021. Investors have medium- to high-risk appetite and an investment horizon of five to seven years. While most funds' primary investment objective is to maximise investor returns, some funds have specific mandates on ESG or impact themes. While private equity can lock up capital for longer periods than banks and collective investment schemes, these investments require an exit mechanism in the medium term. The nature of this capital is ideal for greenfield investing in JET projects or portfolio companies, and this is done mostly through the provision of equity and occasionally mezzanine capital (subordinated debt or preferred equity). Despite its scale, private equity has an important role to play in the just energy transition. PE firms tend to provide risk capital in the form of equity, whereas banks and other institutional investment is focused on debt. Typically, South African projects are leveraged four to five times, so equity can play an important catalytic role.

Funder	Brief overview
DFIs	As of the 2020/21 fiscal year, DFIs in South Africa, including the Development Bank of Southern Africa (DBSA) and the Industrial Development Corporation (IDC), had total assets of R243.8bn. The Land Bank, which provides loans to the agricultural sector, remains in financial distress after defaulting on its debt in 2020/21. DFIs have long-term investment horizons and mandates to address market failures for infrastructure funding. The objective of South Africa's DFIs is to promote the development of infrastructure and apart from the need for prudent management of finances, DFIs have few constraints regarding their ability to invest in JET instruments and projects. DFIs can invest throughout the entire lifespan of an infrastructure project and have various tools through which this can be done (as listed above). Investment mandates are determined by shareholder agreements.

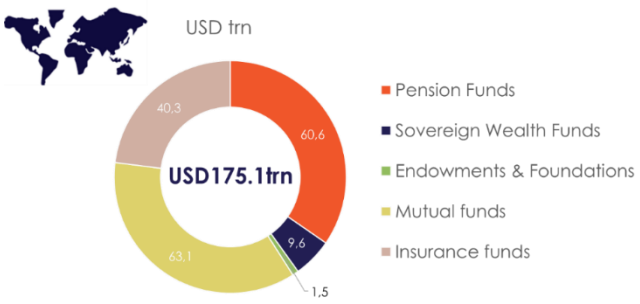
Source: Intellidex, 2022

In addition to the domestic capital that must be mobilised for the just transition, there are various sources of capital in international markets that can be leveraged if South Africa manages to develop a pipeline of bankable projects, products and instruments (see discussion in the following section).

A high-level snapshot of the international financing sources can be found in

Figure 19 and a brief overview of the various international funding pools is discussed in Table 21.

Figure 19 – International funding pools



Source: Thinking Ahead Institute (2022). Global Pension Assets Study | 2021

Table 21 – International funding pools

Funder	Brief overview
Institutional investors	The bulk of the offshore funding for the just transition will flow from institutional investors, including pension funds, mutual funds, insurance funds and sovereign wealth funds. The Global Investor Coalition on Climate Change (GIC) is the coordinating body for institutional investors that are investing for a net zero future. They have four partner investor networks globally, including the European-based Institutional Investors Group on Climate Change (IIGCC), the Asia Investor Group on Climate Change (AIGCC), Ceres Investor Network on Climate Risk and Sustainability (North America) and the Investor Group on Climate Change (Australia and New Zealand). The table below details the membership and total AUM for each of the partner organisations. In addition, the UK's Impact Investing Institute earlier this year launched the Just Transition Finance Challenger, a project that aims to support investors in adopting appropriate responses to the growing demand for sustainable finance products. The project has 19 public and private asset owners and managers and is in the process of developing criteria to underpin a just transition label for investment products. These products would need to comply with all three Just Transition Elements: 1. Advancing climate and environmental action; 2. Improving socioeconomic distribution and equity; and 3. Increasing community voice.

Funder	Brief overview
Endowments and foundations	International endowments and foundations have a critical role to play from a market preparedness perspective, particularly research and technical assistance to ensure that South Africa lays a solid foundation that will set the country up for success in achieving a just energy transition. In addition to the traditional function of philanthropic capital, these financiers should also think outside the box to find innovative ways in which their funding can be deployed. There is a growing global movement among distinguished philanthropies to encourage the application of grant funding as catalytic capital to crowd in commercial investors for impact investing (see Box 11). Although philanthropic funders have historically allocated a very small portion of total funding to climate change – only $320m of the $64bn in US-based grants disbursed in 2020 was allocated directly towards climate change interventions (McKinsey & Company, 2021) – the climate agenda has taken centre stage and the funding available for climate interventions is bound to increase in years to come.
PDBs and MDBs	As of 2020, there were 522 PDBs globally across 154 countries with $23tn in AUM, representing 10% of the total value of investments made annually (Peking University Institute of New Structural Economics, 2022). As a collective, these institutions have signalled their commitment to a just transition. Initially, a core group of MDBs (detailed below) solidified their support for a just transition via setting out five MDB Just Transition High-Level Principles at the UN Secretary General's Climate Action Summit in September 2019, and more recently, at the 2022 Finance in Common Summit.

Source: Intellidex, 2022

Alignment between demand and supply

In the first report of this series,[10] we highlighted the lack of an investable pipeline of projects as a key barrier to attracting finance, a finding supported by other research (eg Lowitt (2021). The result is a mismatch between the demand for and supply of finance – there is a misalignment between the just energy transition financial needs and the financial ecosystem that exists. This gap can, in part, be met by a mechanism that matches demand and supply needs based on a specified standard criterion. Although a silver bullet that can match all the just transition funding supply to project demand does not exist, and is unlikely to be developed, a platform that helps facilitate such matchmaking would be useful. Similar examples of such platforms already exist in other regions, including, for example, the European Union matchmaking platform, EUInvest Portal (see). The Presidential Climate Commission (PCC) is in the process of designing a mechanism of this nature which intends to help direct the flow of public and private funds to support just transition initiatives' needs. More details on this mechanism can be found in Box 10.

Box 9 – EUInvest Portal

The InvestEU portal is an online platform that connects project promoters with potential investors. It serves as a project database showcasing a wide range of investment opportunities across the European Union. The portal aims to increase the visibility of projects seeking financing and help investors find suitable investment opportunities that align with their interests and objectives.

The portal functions through a series of steps, beginning with project submission by promoters like companies, public entities or NGOs. Projects must meet specific criteria, be based in the EU and fall under one or more of the four InvestEU policy windows. The European Investment Bank then reviews and validates the submitted projects to ensure compliance with EU policies and regulations. Once approved, projects are published on the InvestEU Portal, where they can be accessed by potential investors, including banks, venture capital funds, private equity firms or institutional investors. They can directly contact project promoters to discuss potential collaboration and financing arrangements.

[10] *Financing South Africa's Just Energy Transition: Capital market developments to scale private sector mobilisation*

Box 10 – PCC Just Transition Finance Mechanism and the role of spatial funding

The PCC is in the process of designing a just transition financing mechanism (JTFM) to address the scale and urgency of the just transition imperative. Neither the private nor the public sector can sufficiently mobilise the scale of funding required for the just transition and the JTFM intends to act as a policy-aligned national platform that will support the mobilisation of both private and public funding for the just transition. The mechanism is likely to have multiple funding windows which, at a minimum, will channel funding for both critical and designated projects. The PCC's JTFM conceptual note (PCC, 2022) defines these two project categories as follows:

1) Critical projects: Projects and other investments central to developing economic and climate resilience but typically lacking a business case due to market failures.
2) Designated projects: High priority market needs aligned to economic transition policies and strategies. Once adequately de-risked or enhanced, they may become bankable. Because the business case is marginal at inception, these projects or enterprises would otherwise fail to attract funding.

This mechanism will support the mobilisation of funding for both transition in and transition out projects through matching concessional finance with projects that need funding. Given Mpumalanga's heavy reliance on coal, as already discussed extensively in this report, the province has significant financing needs from a transition out perspective. The JTFM is therefore one mechanism that can (in time) be leveraged to mobilise funding for Mpumalanga's transition needs.

It would, however, be important to distinguish between funding for permanent, transitional and once-off impacts. ***Permanent impacts*** are those arising from permanent changes to the finances of an affected municipality. The closure of a coal power station may, for example, permanently remove a source of revenue for a municipality. This gap would require nearly perpetual fiscal support, which would be much less possible given South Africa's fiscal constraints. ***Transitional funding*** would be aimed at ensuring that a municipality could use the funds to fund new areas of economic activity. Possible items to fund would be new bulk infrastructure for new industry.

Mainstreaming JET activities

The lack of JET mainstreaming in public finances is one of the key barriers to unlocking financing at scale for JET initiatives. In our view, money or the availability of funds is not the only problem but the public sector financing that is available is not necessarily allocated for JET initiatives.

For instance, the parliamentary monitoring group stated that the National Treasury has reported that 12 departments have underspent on their 2021/2022 budget, which is alarming as it undermines service delivery and perpetuates challenging socio-economic conditions for communities.

There is a need to rethink how JET activities can be included in public sector budgets, especially local municipalities because they are close to the communities. Additionally, there is a need to mainstream JET activities across all departments to take full advantage of the public sector funds.

An additional and potentially complimentary tool that can support bridging the gap is mobilising private sector finance for JET. Evidence of the private sector increasing participation in the just energy transition is gradually starting to build.

However, this is not being done at scale and activities that are being financed are often concentrated on transitioning in.

While the private sector's involvement in financing just transition activities is still in the nascent stage, there are various efforts underway to support private sector financiers to ensure that their investments meet certain standards to qualify as transition finance. One such example is the Impact Investing Institute-led just transition finance challenge, which has developed elements (climate and/or environmental action, socio-economic distribution and equity, and community voice) and detailed criteria for investors interested in financing just transition activities.

That said, many challenges persist and there is a significant need for public and development funders to act as catalytic capital providers to help mobilise financing for the just transition at a much greater scale. The reality is that the just energy transition will be a journey and all stakeholders that will be affected must be taken along this journey to maximise the likelihood of achieving this successfully.

Box 11 – Catalytic capital for the just transition

Catalytic capital refers to financing that is concessionary, patient, risk-tolerant and flexible to support the seeding, scaling, and sustaining (Leijonhufvud & Locascio, 2019) of interventions that help achieve the sustainable development goals (SDGs). This type of capital has a critical role to play in the just transition (and indeed broader development) agenda is it helps bridge the gap between projects that are not bankable and commercial finance.

Catalytic capital for ***seeding*** is deployed to new or innovative funds or investment vehicles or funds that are managed by new investment managers. novel funds or investment vehicles (Courageous Capital Advisors, 2022b). In the ***scaling*** role, catalytic capital supports taking effective, proven solutions from niche to mainstream (Courageous Capital Advisors, 2022a). Both these types of capital seek to solve issues related to a gap in capital and the investment thesis posits that the need for catalytical capital is ***transient*** – success is therefore achieved once the market gap is closed, and commercial investors can deploy capital without the need for additional catalytic funding (Courageous Capital Advisors, 2022b).

The third type of capital fulfils a ***sustaining*** role and responds to areas in the market where there is an ongoing need for catalytic capital as either concessional returns must be accepted, or disproportionate risks shouldered. Whereas the seeding and scaling capital gaps are considered transient, the sustaining capital gap is considered ***structural*** and therefore unlikely to change in the long term. This type of capital is typically deployed to serve hard-to-reach beneficiaries or geographies and to fund strategies that are not fully commercially viable (Courageous Capital Advisors, 2022c).

In the context of JET, transition in opportunities will often require capital that supports either (or both) seeding or scaling, while many of the transition out projects are likely to require catalytic capital that addresses the sustaining capital gap.

Figure 20 – Catalytic capital

Source: Tideline, Catalytic Capital Consortium, Courageous Capital Partners, Krutham

6. Recommendations

As is the case with the capital market infrastructure as well as investigating how the social justice elements of the just transition can be funded, there are various challenges and intricate complexities to channel public finance for the just transition. There are some initial interventions that can be explored to help overcome and resolve some of the key issues. These are discussed in the table of recommendations below. At the same time, some issues can't be addressed directly through recommendations and are particularly hard to deal with, especially in context of the complex political dynamics that are at play. Furthermore, the recommendations outlined below are not considered a silver bullet but rather a starting point that can help establish some of the fundamental building blocks that can help create momentum for the just energy transition. As South Africa progresses on this journey, more issues are expected to emerge and solutions to overcome challenges will have to be found along the way.

Recommendation	Actions and responsible parties
1. Ringfence funds for the JET As it stands, despite there being various channels that exist through which funding for the JET can be disbursed to municipalities, there is currently no funding specifically being allocated in the budget process for JET activities and therefore no funds are being disbursed to municipalities. National Treasury can consider ringfencing the revenue from environmental taxes, particularly the electricity levy, to support the just transition. To achieve an equitable distribution of this revenue, a formula-based approach is proposed that takes into account the differential impact of the energy transition on different parts of the country. This would be consistent with the constitutional imperative for equitable distribution of revenue.	The PCC should advocate for these changes at National Treasury. NT should complete tagging framework etc.
2. Restore municipalities' creditworthiness Municipalities have a critical role to play in ensuring that financing is channelled to the right places for a just transition, ie to support the communities most exposed to economic shifts that will result from the transition. As such, municipalities in affected provinces (Mpumalanga in particular) need to ramp up efforts to improve their financial position and obtain clean audits to restore their creditworthiness and open up channels for raising and disbursing funds. Furthermore, they must improve their long-term financial planning processes to enhance prospects of securing capital for just transition interventions, both from the fiscus and from philanthropic funders. In order to achieve this, municipalities require support from a broad ecosystem of stakeholders, including National Treasury, the Auditor General of South Africa (AGSA), the provincial budget office and the PCC to ascertain where the main gaps are in much more detail.	PCC, with support from NT and AGSA, should undertake a detailed study on municipalities to establish what support is required to improve their financial position and incorporate JET in their long-term financial planning process.

Recommendation	Actions and responsible parties
3. Strategic leadership from affected provinces Considering the outsized effect that that transition will have on provinces like Mpumalanga, the provincial government should take a leadership role in providing strategic guidance on the just energy transition to ensure that municipalities get the support they need. This includes plans to crowd in private financing for the just energy transition. This should build on the work already done by the province on transitioning from being a coal-dependent economy to a well-diversified province. Any constraints to achieving this (such as resourcing and capacity constraints) should be communicated to the PCC to ensure that the appropriate technical assistance can be unlocked from philanthropic funders.	Mpumalanga treasury with support from the Mpumalanga Green Cluster Agency, should work with municipalities to develop coherent just transition strategies.
4. Develop coherent decommissioning schedule Eskom (under guidance from the DMRE and in partnership with the PCC and NT) must spearhead the development of a decommissioning schedule to ensure proper planning around financing is done in alignment with these timelines. This will create transparency and provide a mechanism for accountability to ensure South Africa remains on track to meet its NDCs, while simultaneously giving financiers comfort that the road to net zero is properly planned for.	Eskom in conjunction with the PCC and NT should develop a detailed schedule with a clear strategy outlining how the timelines will be adhered to.
5. Create a funding window at National Treasury for JET projects It is proposed that a structure is created similar to the Jobs Fund (or as part of the Jobs Fund) where projects within Mpumalanga and the affected municipalities can apply for transition financing.	PCC and JETP PMU should engage with GTAC.
6. Blended finance solutions Neither public, development or private capital can solve for the just transition financing requirements on their own. Funders across the entire spectrum of capital – including the government – need to collaborate and utilise blended finance models to de-risk investment opportunities and help unlock financing at scale for hard-to-fund solutions. Grant funding can (and should) be deployed as catalytic capital to de-risk projects and support the seeding and scaling of just transition projects. By acting as catalytic capital providers, the funding has the potential to mobilise funding from numerous sources at a much larger scale. Additionally, grant and concessional financiers should focus on providing sustaining capital for the structural just transition issues.	PCC and JETP PMU can support this process through acting as facilitator between the government, philanthropies and banks.

Recommendation	Actions and responsible parties
7. Quantify the funding requirements and map available transition funding While an enormous amount of work has been done on mapping the supply of climate finance and sustainable infrastructure finance, there is no clarity on either the funding that is available for the just transition (including the usability and probability of access) or an assessment of the quantity of financing needed for this. Note that this refers specifically to the cost of financing the social justice aspects rather than the total funding estimate of ~R8.5tn for the overall economic transition. A good starting point for this would be to quantify what the specific just transition funding needs are for each of the affected municipalities. This will help with long term financial planning, support fundraising and ultimately enable municipalities to achieve the just transition objectives articulated in the PCC's just transition framework. More research on this issue is needed.	The PCC and JETP PMU with support from philanthropies needs to do additional research on the funding demand and supply for the just transition.
8. Enhance accessibility of mechanisms used to channel JET funding Mechanisms intended to mobilise finance for the just transition should be designed such that provincial government and municipalities are able to access funding. These platforms have the potential to give municipalities and provincial government direct access to capital from both local and international funders and investors specifically earmarked for the just transition, thereby eliminating or at least reducing the cost of matching financing and projects.	PCC and JETP PMU with support from NT should ensure that any mechanisms developed to channel funding are fit for purpose.
9. Proactive engagement by labour A large number of workers will be adversely affected by the economy's transition to low carbon solutions, and in the South African context, this is especially true for workers in the energy sector. For this reason, labour has a critical role to play in communities as well as working with municipalities to ensure that the interventions intended to ensure that the transition is done in a just way are fit for purpose.	Labour with support from the PCC, philanthropies, to take more proactive role in crafting JET solutions.

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