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Making sense of jobs in South Africa's just energy transition: Managing the impact of a coal transition on employment

OVERVIEW

As the reality of a coal transition and coal power decommissioning draw nearer, South Africa's just transition plan is both urgent and glaringly absent. There is a pressing need to manage the impacts of the transition on workers and local economic development, particularly in coal-dependent regions and affected communities. A credible fact base is required, from which to make appropriate and broadly supported decisions. In this conceptual clearing, several specific political consensuses must be brokered to enable policy design and implementation as well as investment for a green and just transition. This policy brief speaks to the current policy vacuum, proposing steps to address it. First, it considers the implications of the coal transition for employment in South Africa, with reference to national policy and available research. It then seeks to characterise the key issues, points of contestation, and the current just transition/employment policy vacuum. Finally, recommendations for the facilitation of shared understanding and consensus-building are outlined.

INTRODUCTION: A CHANGING ENERGY-SOCIETY-ECONOMY NEXUS

While energy systems are still highly dependent on fossil fuels, the coal transition is undoubtedly underway. The transition is driven by climate, policy and financing commitments, as well as the changing operating and market conditions for coal. As an energy carrier, coal is increasingly uncompetitive compared with alternatives, particularly when socio-environmental externalities are costed and included in its pricing. A total of 195 countries have signed up to the Paris Agreement, and 193 countries have subscribed to the Sustainable Development Goals (SDGs), both of which demand climate change mitigation and an ambitious shift away from fossil fuels.¹

As a signatory to both frameworks, the South African government has committed to decarbonising its economy and its power sector, with the latter responsible

 ¹SDG 7 is focussed on affordable clean energy. Limiting global warming to 1.5 degrees Celsius above temperatures of pre-industrial levels implies a concomitant commitment to global net-zero greenhouse gas emissions by 2050.
 ² The National Planning Commission (NPC) also carried out an extensive multi-stakeholder engagement process that generated recommendations for moving towards detailed just transition planning, including proposals to move forward with jobs planning (NPC, 2019). for about 41% of the country's gross annual greenhouse gas (GHG) emissions (2015 data, based on DEA, 2018). Coal is at the heart of South Africa's story of industrialisation and its economic structure.

It has led to specific socio-economic configurations, particularly in the development of an extensive, centralised coal-dependent power sector, led by a vertically-integrated utility, Eskom.

The power sector co-evolved with patterns of energy and carbon-intensive industrial development (from liquid fuels and chemicals to steelmaking and aluminium smelting). The country's infrastructure, from roads, to rail, to water, has also been heavily shaped by these developments. Slow and inconsistent low-carbon policy implementation has resulted in coal-fired power plants still accounting for 73% of nominal capacity (37.9 GW) in 2020 (Calitz and Wright, 2021).

South Africa is forging ahead with policy development to plan its coal transition in the context of an already struggling coal value chain and underperforming power sector. Multiple policy documents, such as the National Development Plan² and the country's Low Emissions Development Strategy, chart a clear course. The 2019 Integrated Resource Plan (IRP) for Electricity scheduled the decommissioning of Eskom's fleet of coal-fired power stations, stipulating that 5 200 MW of coal-based generation capacity will be



Source: Authors based on based on DoE, 2019 and Eskom, 2018

decommissioned by 2022, 11 000 MW by 2030, and 35 000 MW by 2050. This trajectory will fundamentally alter the energy mix in South Africa with broad socio-economic implications.

As this value chain is disrupted, there will be significant consequences for investment and employment associated with upstream and downstream activities, as well as the towns and local economies that depend on these activities. Internationally, the labour movement has been instrumental in foregrounding the need to protect workers' interests in this complex process of shifting energy systems away from fossil fuels and brokering coal transition agreements to manage coal workers' vulnerability (ILO, 2018). South African unions have advanced the local "just transition" discourse, proposing various mechanisms to support those workers who would lose their jobs (e.g. COSATU, 2012; 2020).

The just transition imperative has already found its way into policy, in the latest IRP and the 2019 Roadmap for Eskom in a Reformed Electricity Supply Industry. It is also at the core of the 2020 multi-stakeholder Framework Agreement for a Social Compact on Supporting Eskom for Inclusive Economic Growth and South Africa's revised Nationally-Determined Contribution to the United Nations Framework Convention on Climate Change. Despite progressive policy commitments, the employment impacts of the coal transition in South Africa have been the subject of political contestation, fragmentation and inertia.

There is another dimension to the question of jobs and the coal transition. South Africa's coal-dominated power sector is a serious constraint on economic development and employment in the broader economy (World Bank, 2018). First, South Africa's coal -dependent electricity sector has been riddled with political, economic and technical issues that have left Eskom technically bankrupt and a perpetual strain on the national fiscus. Second, Eskom's internal failings, together with underinvestment in electricity infrastructure, has frustrated the government's post-democracy growth and development ambitions

Rolling national power cuts (load shedding) and fast-rising electricity prices from 2007 onwards have undermined both business development and electricity access programmes. In 2019 alone, load shedding cost the economy between R59 billion and R118 billion (Wright and Calitz, 2020). Third, the extremely high carbon intensity of the economy is a material vulnerability factor for South Africa's exports, as trading partners turn away from carbon-intensive products and jurisdictions. The impact of rising border carbon taxes, as envisioned by the European Union from 2023, should not be underestimated (Montmasson-Clair, 2020a).

DELINEATING THE COAL TRANSITION'S IMPACT ON EMPLOYMENT

Employment in the coal value chain is vulnerable to changes in both international and local markets. Domestic consumption, based on Department of Mineral Resources and Energy (DMRE) data, is spilt between Eskom (62%), Sasol (23%), general industry (8%), the steel industry (4%) and other marginal uses (4%). Research suggests that local coal demand is likely to be driven down by the planned decommissioning schedule of coal-fired power plants, reduced electricity demand (due to increasing electricity prices, improved energy efficiency, the prospect of a high carbon tax, the rise of self-generation) ands reduced demand from industrial players (Sasol has for instance announced plans to reduce its reliance on coal). Even without a proactive decommissioning schedule (see Figure 1), as coal-fired power stations reach the end of their lifespan, extending their lives is prohibitively expensive.

Decreasing coal output will, over time, necessarily reconfigure and reduce the coal sector's direct and indirect value creation and contribution to employment.

About 39% in value and 26% in volume of South Africa's coal was exported in 2019, showing the importance of exports to the sector's value creation. Despite a spike late in 2020, overall recent historical export volumes have been lower than previously projected; and studies suggest that future demand will be lower than current industry expectations (Burton, Marquard and McCall, 2019).^{3,4} International demand is vulnerable to the increasing competitiveness of alternative energy sources in key export markets, like India and China, together with the pricing of social-environmental externalities through, for example, carbon pricing (Burton, et al, 2019). The Minerals Council has projected potential additional employment linked to increased export potential. However, this is uncertain at best, and extremely unlikely, at worst. The large "coal majors"

³ The Minerals Council foresees an additional 11 600 people assuming an increase in coal exports from 75 Mt to 110 Mt (2019).

⁴ The value of South African coal exports to China spiked at the end of 2020 in response to deteriorating trade relations and decreasing exports from Australia to China. There is significant uncertainty, however, about how China will meet its demand over the longer term, and how South African coal will feature in this strategy.

⁵ Much smaller companies comprise the remaining 20%.
⁶ The IRP 2019 plans to add renewable energy (mostly at utility-scale) through Eskom and Independent Power Producers (IPPs) (DoE, 2019). There are also plans to extend the life of the 1800 MW Koeberg nuclear power station until 2044 and to consider additional nuclear capacity, which is being opposed by several civil society organisations.

⁷ The following four municipalities are almost entirely reliant on coal-related economic activity: eMalahleni (Witbank), Steve Tshwete (Middelburg), Msukaligwa (Ermelo), and Govan Mbeki. extremely unlikely, at worst. The large "coal majors" (Anglo Coal, South32, Sasol, Exxaro and Xstrata) that control 80%⁵ of local coal mining are limiting their investments. Both Exxaro and Glencore have put caps on their coal investment, and Anglo American and South32 are selling coal assets to Seriti, a South African resources group.

Decreasing coal output will, over time, necessarily reconfigure and reduce the coal sector's direct and indirect value creation and contribution to employment. This stark reality is independent of the choice of which alternative energy sources will be used to fill the deficit left by decreasing coal-based production.⁶

Geographically, 80% of coal mining activities are concentrated in two districts in the Mpumalanga Province, Nkangala and Gert Sibande. In terms of downstream activities, electricity generation and petrochemical production (in Secunda) are also concentrated in Mpumalanga. Medupi, Eskom's coal mega-plant, is in the Limpopo province, with newly opened coal mining located there. As such, the majority of job losses will be concentrated in the Nkangala and Gert Sibande districts.⁷ In Emalahleni, for instance, about two-third of the local gross value added (GVA) directly comes from coal mining and power generation, with the remaining activities being predominantly linked to the value chain. The same is true for employment, with about a third of it being directly linked to coal mining and power plants and the remainder servicing such industries and the people employed in them. In total, about 2.7 million people live in the Nkangala and Gert Sibande districts, including 1.2 million people in the four hotspots of Emalahleni, Steve Tshwete, Govan Mbeki and Msukaligwa.



Figure 2: GVA segmentation for coal-dependent regents compared to South Africa overall for 2018

Direct employment across the coal value chain stands around 150 000 workers. About 72% of such jobs are inherently linked to the production and transport of coal. These jobs are fundamentally at risk with the demise of coal-based activities. Mining accounts for the lion's share – about two-third of total direct jobs.

An increasingly detailed picture of the employment challenge is emerging from a growing body of work (Burton et al., 2018; Burton, et al., 2019; Strambo, et al., 2019; Makgetla, et al., 2019; Patel, et al., 2020). There is still material employment in the coal sector.

Direct employment across the coal value chain stands around 150 000 workers. About 72% of such jobs are inherently linked to the production and transport of coal. These jobs are fundamentally at risk with the demise of coal-based activities. Mining accounts for the lion's share - about two-third of total direct jobs (91 459 workers in 2020, including 7 433 people at Sasol). Transport-related jobs are around 15 000, spilt between Transnet Freight Rail (an estimated 12 000 people directly depending on the domestic and export coal lines), the Richards Bay Coal Terminal (532 people in 2014) and coal trucking (about 200 trucking small businesses employing 2 000 to 4 000 people in 2018). The rest of the direct jobs in the value chain are at the consumption level, essentially in power generation (an estimated 10 000 people employed by Eskom Generation's coal-fired power plants⁸), petrochemical production (17 814 people working Sasol's South African at

⁸ Eskom has come under repeated scrutiny because the entity is significantly overstaffed, according to international power utility benchmarks. ⁹ Eskom has repeated

⁹ Eskom has recently commissioned detailed socio-economic impact studies for plants in Hendrina, Grootvlei and Komati. Such studies had, however, not been released publicly at the time of writing. petrochemical operations), steelmaking (6 622 employed ArcelorMittal South Africa in 2020) and cement production (about 7 000 employees in 2016). While in jeopardy, such jobs can be preserved by introducing alternative feedstocks or technologies. More broadly, numerous industrial activities, such as aluminium smelting, have historically relied on abundant and affordable electricity supply, based on a coal beneficiation strategy that is no longer valid. The decarbonisation of the grid would, however, address most of the concerns.

Workers in the coal value chain (where less than 15% are women) typically compare well with other formal workers in terms of their socio-economic situation, especially given relatively low formal qualifications. However, a granular understanding (at site level) of the profile of these workers is not currently available, which is a challenge in the planning of support.⁹ Despite this, a good high-level characterisation has been established through the National Employment Vulnerability Assessment (NEVA):

- Workers in coal mining are relatively young, with a median age of 38 years (similar to other mining but older than others outside public service and domestic work) and, according to the Mpumalanga Provincial Treasury (2015), each typically supports around three dependents.
- The median pay in coal mining and heavy chemicals was over R10 000 a month in 2017, and close to R15 000 for electricity, compared to just over R5 000 for other formal workers.



Figure 3: Direct employment in coal mining in South Africa

Source: Authors, based on data downloaded from Quantec in April 2021, Series on Mineral Statistics - National Annual Employment & Earnings and National Monthly Employment & Earnings.

It is necessary to urgently characterise the reduction of employment in the coal value chain in as much detail as possible, outlining the extent and pace of retirement and early attrition, matched to appropriate support, welfare, reskilling and re-employment.

- Eighty percent of workers in the coal value chain had retirement funds in 2017, compared to less than 60% of other formal workers. Similarly, the coal value chain has a greater level of participation in the Unemployment Insurance Fund (UIF) than the rest of the economy, ranging from over 90% in coal to around 75% in basic chemicals.
- Workers in the coal value chain have high union membership and access to labour rights. Over 70% of miners are union members as compared with 67% of workers in electricity generation and 45% in basic chemicals. In the formal economy as a whole, union membership stands at just 35%. Most coal workers report that they get leave and have written contracts in line with labour law requirements.
- While coal sector workers are also more likely than most to view their positions as permanent, mining companies report a high level of contract labour. While total employment in coal mining increased between 2005 and 2020, additional labour has been through contract and not permanent employment (see Figure 3).
- Education levels in coal mining were slightly lower than the norm for other formal workers; 80% of coal workers had a grade 12 or lower in 2017, compared to 74% for formal workers in other sectors (73% for heavy chemicals and plastics workers, and just 53% in electricity).
- The skills mix in the coal value chain differs from the rest of the economy. It is characterised by a relatively high reliance on semi-skilled (no advanced training or skills required) workers, with fewer unskilled and skilled workers. About 90% of those workers employed in the coal industry in Mpumalanga are semi-skilled (74%) or low-skilled (17%) workers.

Given these dynamics, the question for South Africa is not whether coal is in decline, but how soon and how successfully a coal phase-out can be implemented (Burton et al., 2018; Burton, et al., 2019; Strambo et al., 2019). It is necessary to urgently characterise the reduction of employment in the coal value chain in as much detail as possible, outlining the extent and pace of retirement and early attrition, matched to appropriate support, welfare, reskilling and re-employment. The choice is now between the active management of this process, and allowing it to happen with no active facilitation and influence. The cost of doing nothing has not been scoped. However, it will undoubtedly be tremendous and lead to enduring individual, district-level and country-wide impacts that will shape the economy and society over the long term.

NAVIGATING CONTESTED MEANINGS IN JOB DEBATES

The national debate between key stakeholders in the coal transition, and the energy sector more broadly, has been fragmented and shaped by a combination of information asymmetry, vested interests, and legitimately differing values and ideas about the kind of transition that is required and appropriate. Despite the widely acknowledged need to plan for a just transition, antagonism within the national discourse has led to several successive political impasses, with stakeholders across the public and private sectors, the labour movement and civil society, being critically divided on important issues.

Key debates concern the real and perceived role of the private sector in the energy sector, energy infrastructure ownership and the requirement for decent jobs. There is a disjointed framing of critical issues across stakeholder groups, uneven access to available information, and a sense of mistrust of information generated between stakeholder networks advocating for different technologies and transitions. In addition, the coal value chain continues to be positioned by some stakeholders as an engine of economic growth and direct employment through strong advocacy surrounding technologies such as "clean coal", for example.

Inconsistencies in methodologies used to account for, and forecast, job creation in the energy sector (and other sectors) do not help this situation. However, there are more fundamental issues that must be addressed. This has to do with the very idea of a job and what kind of security employment should offer in a profoundly unequal economy. The fundamental and legitimate question is whether alternative employment will meet the International Labour Organization's (ILO) definition of a decent job. According to the ILO's just transition framework, a low-carbon economic transition should deliver jobs with reasonable social protections, that allow for workers' growth and advancement, and allow for labour to organise to advance collective interests (ILO, 2018). This is not a simple matter, because, as the IRP also acknowledges, the coal transition is contemporaneous with other socio-technical transitions characterised together as the Fourth Industrial Revolution (4IR).

While the Integrated Resource Plan's envisioned large-scale renewable energy build-out will create significant employment, it need not be the only or the primary locus of re-employment for coal workers.

The IRP expressly acknowledges the unknown (positive and negative) impact that 4IR will have on the energy sector, making some jobs redundant and shaping which skills might be demanded in the local and global economy. Importantly, these dynamics (of automation and redundancy) apply across all technologies, including the coal sector, and could accelerate job shedding in the latter. It must also be noted that, despite the relatively high remuneration and social protection in the sector already noted, coal jobs have often fallen short of a "decent job" standard with dire human and social costs. As the energy sector evolves, these serious issues should be contextualised in the historical performance of the sector as well as the emergent risks and opportunities associated with various value chains.

Another vital issue is the false trade-off between coal and renewable energy jobs. While the IRP's envisioned large-scale renewable energy build-out will create significant employment,¹⁰ it need not be the only or the primary locus of re-employment for coal workers. Indeed, the IRP acknowledges that lost coal jobs will not be replaced, like for like, with other energy sector jobs. Instead, while energy-related jobs can be planned and optimised, job creation should be facilitated across a multitude of economic activities, of which renewable energy is only one.¹¹ There are a number of reasons that coal jobs should not necessarily be replaced with other energy jobs:

 There is no evidence-based rationale for comparing employment in coal mining with jobs in renewable energy. Currently, there are widespread spurious comparisons between two value chains at completely different stages of development, often making false comparisons between renewable energy power plant employment to the entire coal value chain. A genuine comparison between

¹² As of December 2019, the REIPPPP had, for instance, generated R53.7 billion local content expenditure, achieving 50% local content (IPP Office, DBSA and NT, 2020). technologies would need to adop a value chain approach, from mining, to capital equipment, to manufacturing, to plant construction, operation and maintenance, to decommissioning, taking the maturity and potential of respective alternatives into account.

- There is no theoretical or empirical reason to *a priori* favour employment in the renewable energy value chain to replace employment in the coal value chain. All employment creation opportunities should be assessed on their own merit.
- New renewable energy jobs may or may not be available in the same location as existing coal jobs. This is a policy choice involving trade-offs between energy generation costs and localising economic development, requiring engagement with affected workers and communities, and provincial and municipal governments.
- Job creation in other non-energy prioritised economic sectors (such as manufacturing, waste management, tourism or agriculture) might well be more advantageous in coal-dependent regions than renewable energy employment.
- Even if jobs are created in affected locations, they will not necessarily benefit affected workers and communities. The discussion must therefore be broadened to include local economic development, local livelihoods and resilience.
- Like most other jobs, available energy sector jobs may require reskilling that could involve lead times that make planning more complex.

Overall though, renewable energy technologies have a positive impact on job preservation as well as job creation. As of September 2020, a total of 55 217 job-years have been created for South African citizens, of which 44 290 were in construction and 10 927 in operations (IPP Office, DBSA and NT, 2020). A recent study by the Institute for Advanced Sustainability Studies and the Council for Scientific and Industrial Research (CSIR) shows that electricity pathways with higher shares of renewable energy lead to higher net employment in the power sector (Hartley et al 2019). Furthermore, strong manufacturing activity in the renewable energy value chain would generate additional employment opportunities in the country.¹² Similarly, the operation and maintenance of small-scale embedded generation (and associated services) could be an important area of employment creation. In addition, increased deployment of renewable energy in South Africa and the associated changes it creates in the economy (most notably lower electricity prices, either directly through distributed generation, or over time through the grid) would lead to net increases in

¹⁰ Different organisations, including the CSIR, the University of Cape Town's Energy Systems Modelling Group, and the International Renewable Energy Employment Agency estimate a net increase in employment in the energy sector if the IRP is implemented (Wright et al., 2018; Hartley, et al., 2019; Oyewo et al., 2019). The projected numbers for employment are, however, not consistent across studies. ¹¹ For instance, the NPC's social dialogue process, various modelling exercises, and national and subnational policy have all identified the agriculture sector as a major potential employer for the region (NPC, 2019). Nevertheless, it should be stressed that matching levels of remuneration and social protection in the mining sector poses challenges in offering alternative employment opportunities, particularly in agriculture.

WHAT EMPLOYMENT METRICS DO AND DO NOT MEASURE

The difference in estimates of job numbers across different technology value chains is due, in part, to a lack of agreement on appropriate jobs metrics and methodological differences (Tyler, 2018). Both need to be resolved if comparisons are to be made and allow for complex trade-offs to be understood and managed for issues such as technology choice and geographical location. While methodological issues can be resolved, and increasing collaboration between researchers can reinforce this, the primary disagreement is not job measures, but job meanings.

The Independent Power Producer (IPP) Office reports on job creation in the REIPPPP using "job-years". A job-year can indicate several short-term jobs by several people whose labour hours add up to a single job -year. As of September 2020, the IPP Office reported that the REIPPPP had created 55 217 direct "job-years" for South African citizens (IPP Office, DBSA and NT, 2020). That does not mean 55 217 people were employed for a year. The other standard job measure, "full-time equivalents" (FTEs), runs into similar problems: 55 217 job years converts to 62 659 FTEs, which inflates the level of employment compared to the job-year metric. Both are cumulative measures of a quantum of time over which employment was generated and are vastly different from considering employment numbers or headcounts.

Definitional issues become evident when methodologies are considered. According to the IPP Office, a job-year corresponds to one person employed full time for 12 months. However, the definition used has changed over time. Full-time employment corresponded to 174 hours a month for the first two procurement rounds (bid windows 1 and 2) of the REIPPPP but only 160 hours for following rounds (bid windows 3, 3.5, 4, 1S2 and 2S2), which mechanically increases the number of job-years.

FTEs follows the definition used by the Expanded Public Works Programme. It corresponds to one person employed full-time for a year, based on 230 days of work a year.* The methodology itself does not specify the number of hours a day, simply recommending a maximum of 40 hours a week or a proxy of eight hours per day for tasks. Effectively, this translates to about 153 hours a month, which further increases the number of employment opportunities.

Furthermore, a job-year or FTE cannot measure the security and consistency of employment, or whether and how many "decent jobs" are created, an enduring concern for the labour movement. The DMRE does require IPPs to report only on "meaningful" work, but this is not tightly defined or rigorously applied.

* The 230 days are effective days of work after subtracting provision for non-productive days in a year (such as leave and holidays).

overall employment. Overall, employment gains are mostly anticipated in the service sector, with manufacturing employment gains expected to be mostly indirect, through lower electricity prices (Montmasson-Clair, 2020b).

This said, as with every other industry, new economic activities must be rigorously governed to ensure worker and community protection. Notably, with employment in the construction sector characterised by known issues of precarity, careful policy planning is needed to protect employee rights and ensure consistent employment and appropriate social protections for workers. Furthermore, as noted, job creation cannot be seen as separate from questions of local economic development and sustainable livelihoods, including non-employment related wealth creation, such as social ownership of renewable energy.¹³ This requires optimising the overall investment impact,

¹³ In 2020, COSATU published a social compact, which builds on its just transition work, but focusses on addressing Eskom's immediate financial crises. There are conditional interventions to drive investment in renewable energy in a way that maximises job creation and diversifies ownership to include communities and cooperatives (COSATU, 2020). The National Union of Metalworkers of South Africa (NUMSA) has historically supported a "socially owned" renewables sector (NUMSA, 2013). rather than narrowly focussing on the socio-economic development (SED) and enterprise development (ED) spending associated with the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP). SED and ED are marginal compared to the primary infrastructure investment and both programmes have faced significant challenges and are criticised by many stakeholders (Hartley et al., 2019).

More than a decade of inconsistent policy implementation, along with state capture and corruption have left the energy sector with an accountability and legitimacy crisis. Without adequate consistency and comparability across studies and trust from diverse stakeholders, it has proven impossible to broker a consensus on costs and trade-offs that need to be made to forge ahead. For example, the argument for a more rapid decarbonisation of the energy sector than the one envisaged in the IRP (motivated by the opportunity to access climate funding for critical aspects of transition management and secure competitive advantage in new "green" opportunities) (Burton et al., 2018; Roff et al., 2020), has been strongly criticised by the labour movement, on the basis of just transition concerns.

Several projects have explored the viability of new value chains, such as green hydrogen, the use of coal ash, agriculture and tourism to diversify the Mpumalanga economy. However, it is not clear when and how a just transition plan will be put in place, and how the necessary consensus for implementation will be facilitated. South Africa cannot afford the current inertia.

While the lack of consensus and just transition policy vacuum persist, opportunity windows for economic wins may be closing. Several projects have explored the viability of new value chains, such as green hydrogen, the use of coal ash, agriculture and tourism to diversify the Mpumalanga economy. However, it is not clear when and how a just transition plan will be put in place, and how the necessary consensus for implementation will be facilitated. South Africa cannot afford the current inertia.

PROPOSING A FRAMEWORK FOR A COHERENT PLAN

South Africa is in critical need of, a just transition plan to manage the influence, the direction and the process of the coal transition. The lack of a plan leaves government (particularly local spheres) and social partners at a loss in terms of facilitating local economic development and other support for coal workers and affected communities. Not only is a plan lacking plan, but also an absence of clarity as to which actors will be convening and leading different processes to develop and implement various components of the plan.

The Presidential Climate Change Coordinating Commission was appointed in December 2020 to drive this agenda at the political level but it has neither the mandate nor the resources to implement a just transition at the local level. All stakeholders have a role to play in designing and implementing such a just transition in the country. National government ought to drive the definition of an overarching vision and framework, while local government has a crucial facilitation role to play that is worryingly absent from the just transition discourse. This is instrumental to bring all stakeholders together, most importantly affected communities and workers as well as local public and private businesses, both in the coal value chain and outside of it where new economic activities may be created.

An appropriate approach is not about prescribing the political positions and actions of different stakeholders. Instead, what is required is a credible knowledge base and minimum consensus to orient stakeholders to organise themselves. This would allow an ambitious government vision and cascading implementation plans to be supported, given clear guiding principles and parameters (not limited to funding and finance). Three propositions are made about how to move forward:

- 1. A credible fact base must be established by facilitating collaboration between researchers from different stakeholder groups. This must include mapping and unpacking the technical and methodological differences between various studies to allow for the transparent application of relevant insights. A significant amount of work has been done on just transition jobs by the government (Department of Forestry, Fisheries and the Environment, the dtic, DMRE, research organisations (CSIR, and others), universities, think tanks and other organisations), labour unions (National Labour and Economic Development Institute-NALEDI, Sam Tambani societv Research Institute-SATRI), civil organisations (Project90by 2030, WWF-SA) and organisations (National **Business** business Initiative). From this knowledge base, all the known and unknown facts about the coal transition should be mapped and made widely accessible.
- 2. The political trade-offs must be clearly defined and separated from evidence (including agreed, consistently applied job definitions and metrics). A carefully scoped, legitimate and robust process of engagement that reaches across levels of government and across stakeholders should be used to identify these trade-offs and unpack all the socio-economic costs and benefits, with affected parties drawn into decision-making processes through meaningful, empowering participation.
- 3. The hard decisions must be followed up with swift and decisive action. A transparent and accountable governance and implementation structure must be specified and embedded within existing institutional arrangements and performance parameters, with regular public reporting and ongoing stakeholder consultation.

While the coal transition is inevitable, adequate support for vulnerable workers and communities is not. It requires coherent movement between diverse stakeholders with different priorities and rationales for acting. The above measures are necessary and should be implemented before significant windows of opportunity to facilitate alternative employment and livelihood for affected workers and communities close.

REFERENCES

Burton, J., Caetano, T. and McCall, B. 2018. Coal transition in South Africa – Understanding the implications of a 2°C-compatible coal phase-out for South Africa. IDDRI and Climate Strategies.

Burton, J., Marquard, A. and McCall, B. 2019 Socio-economic considerations for a Paris Agreement-compatible coal transition in South Africa. Policy paper for Climate Transparency. Available at: https://www.climate-transparency.org/wp-content/ uploads/2019/07/CT-Just-Transition-in-South-Africa.pdf.

Calitz, J. and Wright, J. 2021. Statistics of utility scale power generation in South Africa in 2020. Pretoria: Council for Scientific and Industrial Research.

COSATU. 2012. A just transition to a low-carbon and climate resilient economy. pp.1-68. Johannesburg: Congress of South African Trade Unions. Available at: https://www.sagreenfund.org.za/wordpress/wpcontent/uploads/2017/05/Naledi_A-just-transition-to -a-climate-resilient-economy.pdf.

COSATU. 2020. COSATU Submission: Eskom Social Compact Proposal. Johannesburg. Congess of South African Trade Unions.

DEA. 2018. GHG National Inventory Report South Africa 2000-2015, Pretoria: Department of Environmental Affairs.

DoE. 2019. Integrated Resouce Plan (IRP) 2019. Pretoria: Department of Energy.

Eskom. 2018. Comments on Draft 2018 IRP.

Hartley, F., Burton, J., Cunliffe, G., McCall, B., Caetano, T., Ntuli, N., Fourie, R. and Chiloane, L. 2019. Future skills and job creation through renewable energy in South Africa: Assessing the co-benefits of decarbonising the power sector.

ILO. 2018. Just Transition Towards Environmentally Sustainable Economies and Societies for all. Geneva: International Labour Organization.

IPP Office, DBSA and NT. 2020. Independent Power Producers Procurement Programme (REIPPP): An Overview. March 2015. IPP Office, Development Bank of Southern Africa and National Treasury.

Makgetla, N, Montmasson-Clair, G., Maseko, N. and Patel, M. 2019. National Employment Vulnerability Assessment : Analysis of potential climate-change related impacts and vulnerable groups. Available at: www.tips.org.za.

Montmasson-Clair, G. (2020a) The global climate change regime and its impacts on South Africa's trade and competitiveness: A data note on South Africa's exports. Available at: www.tips.org.za. Montmasson-Clair, G. (2020b) A case for renewable energy in South Africa's post-lockdown economic recovery stimulus package. TIPS Policy Brief 13/2020. Pretoria: Trade & Industrial Policy Strategies. Available at: www.tips.org.za.

Mpumalanga Provincial Treasury. 2015. Socio-economic review and outlook for Mpumalanga. Mpumalanga Provincial Treasury. Nelspruit. Available at: http://treasury.mpg.gov.za/documents/ SERO_report_of_Provincial_Treasury.pdf

NPC. 2019. Social Partner Dialogue for a Just Transition: 2050 Vision and Pathways for a Just Transition to a low carbon, climate resilient economy and society. Pretoria: National Planning Commission.

NUMSA. 2013. Building a Socially-Owned Renewable Energy Sector in SA. Johannesburg: National Union of Metalworkers of South Africa.

Oyewo, A., Aghahosseini, A., Ram, M. and Lohrmann, A. 2019. Pathway towards achieving 100% renewable electricity by 2050 for South Africa. In *Solar Energy*. Elsevier, 191(October 2018), pp.549-565.

Roff, A. A., Steyn,G., Tyler, E., Renaud, C., Brand R. and Burton,J. 2020. A Vital Ambition – Determining the cost of additional CO2 emmission mitigation in the South African Electricity System. July 2020. Meridian Economics in collaboration with the CSIR Energy Centre.

Strambo, C., Burton, J. and Atteridge, A. 2019. The end of coal? Planning a "just transition" in South Africa. Available at: https://www.sei.org/wp-content/ uploads/2019/02/planning-a-just-transition-in-southafrica.pdf.

Patel, M., Makgetla, N, Montmasson-Clair, G. and Maseko, N. 2020. Sector Jobs Resilience Plan: Coal Value Chains. Pretoria: Trade & Industrial Policy Strategies. Available at: www.tips.org.za.

Tyler, E. 2018. Briefing paper: An overview of the employment implications of the South African power sector transition. For the South African Wind Energy Association.. Available at: https://sawea.org.za/wpcontent/uploads/2018/07/Employment-implications-SA-power-sector-transition_final.pdf.

World Bank. 2018. An incomplete transition – overcoming the legacy of exclusion in South Africa. 125838-ZA. Washington DC.

Wright, J.G., Calitz, J.R., Ntuli, N., Fourie, R., Rampokanyo, M. J. and Kamera, P. 2018. Formal comments on Integrated Resource Plan (IRP) 2018. Pretoria: Council for Scientific and Industrial Research.

Wright, J. G. and Calitz, J. 2020. Setting up for the 2020s: Addressing South Africa's electricity crisis and getting ready for the next decade. Pretoria: Council for Scientific and Industrial Research.

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