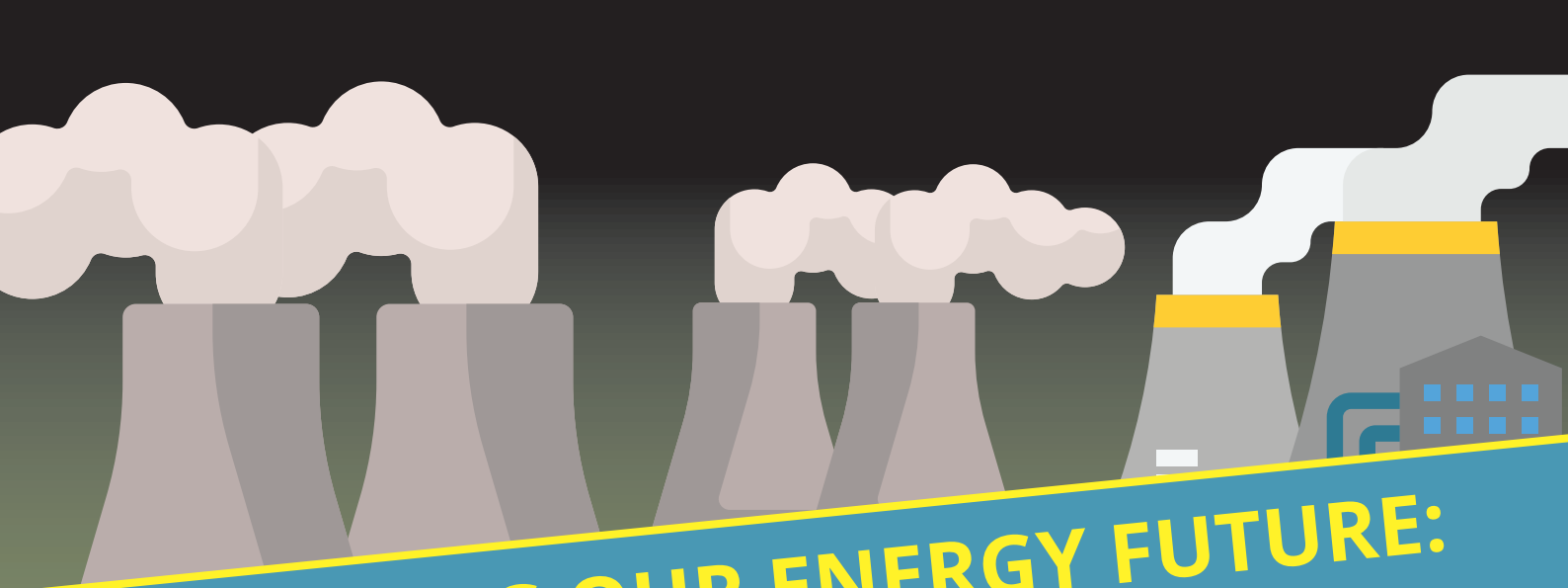




REMAKING OUR ENERGY FUTURE:

Towards a Just Energy Transition (JET)
in South Africa



PROJECT 90
BY 2030

Inspire.
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A low-carbon generation.

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The Friedrich-Ebert-Stiftung (FES) has been promoting the values of the Social Democracy in Africa for over 40 years. FES work for social justice, democracy, peace and international solidarity on the continent. FES, as an independent and non-profit organization, is rooted in a rich tradition of social democracy dating back to its foundation in 1925 and the political legacy of its namesake Friedrich Ebert, the first democratically elected German President. FES has encouraged and nurtured political exchange between Africa, Germany and Europe for many years, acting as partner to political parties, parliaments, trade unions, media, civil society groups and the interested public.

FES South Africa is working with a broad range of likeminded partners, developing strategies and programs designed to overcome political, social and economic challenges in South Africa. Their common goals are a sustainable and inclusive socio-economic transformation, broad-based civic political participation and a democratic South Africa fulfilling its role as a soft power regionally and internationally. Their instruments for achieving these goals comprise targeted political education, information and training programs, public dialogues, action-oriented research as well as publications and political consultation.

Project 90 by 2030 (Project 90) is a Non-Profit Organisation established in Cape Town in 2007 with the vision of inspiring and mobilising society towards a sustainably developed and equitable low-carbon future. Project 90 strives to spark significant, positive and lasting changes in responding to climate change and dealing with energy issues. Our unique three-pronged approach sees us engaging with the following actors

- Aspiring young South Africans: to nurture them in becoming tomorrow's climate and energy informed leaders
- Strengthened communities: by enhancing their energy access and capacity to engage with local government on energy service delivery
- Network of civil society organisations: to amplify collaborative efforts in the call for good governance and national climate change and energy policies that lead South Africa to a just and low carbon energy system.

Acronyms

AG	Auditor-General
AIDC	Alternative Information and Development Centre
AQA	National Environmental Management: Air Quality Act
COSATU	Congress of South African Trade Unions
CSIR	Council for Scientific and Industrial Research
CSO	Civil society organisation
DBSA	Development Bank of Southern Africa
EGSA	Energy Governance South Africa
ERC	Energy Research Centre
ESCOM	Electricity Supply Commission (now Eskom)
ETUC	European Trade Union Confederation
EU	European Union
GHG	Greenhouse gas
GW	Gigawatt
IDP	Integrated development plan
IEP	Integrated Energy Plan
IFI	International financial institutions
IISD	International Institute for Sustainable Development
ILO	International Labour Organization
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent power producer
IPPPP	Independent Power Producer Procurement Programme
IRP	Integrated Resource Plan
ITUC	International Trade Union Confederation
JET	Just energy transition
JT	Just transition
LEDs	Low Emissions Development Strategy
LVA	Latrobe Valley Authority
MPRDA	Mineral and Petroleum Resources Development Act
MW	Megawatt
NALEDI	National Labour and Economic Development Institute
NDC	Nationally Determined Contribution
NDP	National Development Plan
NEDLAC	National Economic Development and Labour Council
NEVA	National Employment Vulnerability Assessment
NGO	Non-governmental organisation
NPC	National Planning Commission
NUM	National Union of Metalworkers
NUMSA	National Union of Metalworkers of South Africa
PCCCC	Presidential Climate Change Coordinating Commission
PIC	Public Investment Corporation
PPCA	Powering Past Coal Alliance
RE	Renewable energy
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
SAFTU	South African Federation of Trade Unions
SAREC	South African Renewable Energy Council
SJRP	Sector job resilience plan
SLP	Social and labour plan
TIPS	Trade & Industrial Policy Strategies
UK	United Kingdom
UNFCCC	United Nations Framework Convention on Climate Change
WEF	World Economic Forum

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1

Introduction

1.1 Scope, points of departure and aims of report

A just transition (JT) is a highly complex topic, where the overall goal is to shift to systems that are better for people and the planet, and to do so in a fair and managed way that “leaves no one behind”. A JT is about justice in the context of fundamental changes within the economy and the society. Both of these areas are extremely contested, consensus is hard to achieve, and people are generally resistant to change. A JT confronts “business as usual” and threatens powerful vested interests in certain economic sectors. In recent years, a vast amount of literature on the subject has been published, and in South Africa the conversation has picked up pace. The urgency of acting now is indisputable.

While a JT can apply to many sectors and industries, this publication focuses on *energy*. In addition to being a major contributor to climate change, environmental damage and impacts on human health, the energy sector (particularly Eskom), is facing significant challenges in South Africa. We fully acknowledge that energy is linked to other sectors such as transport, agriculture, water and land use, and that a just

energy transition (JET) is a part of a wider JT. While the focus of this report is on one sector, we do so recognising that it is linked to other parts of a larger system in many ways.

Our approach was to look at what we can learn from international experience, to combine that with what has already been done in South Africa, and to make recommendations about how to move forward. This publication focuses on the shift from coal to renewable energy (RE), mainly for electricity generation. We are well aware that a movement away from fossil fuels (coal, oil and gas) is far more than just moving from coal to RE, but as discussed in Chapter 3, this particular transition is the obvious starting point in South Africa. The lessons and recommendations presented here can also be adapted to other fossil fuel sectors. While the focus of this study is on coal, a big picture perspective of the energy system is crucial. South Africa must adopt an integrated planning approach, for energy and other sectors.

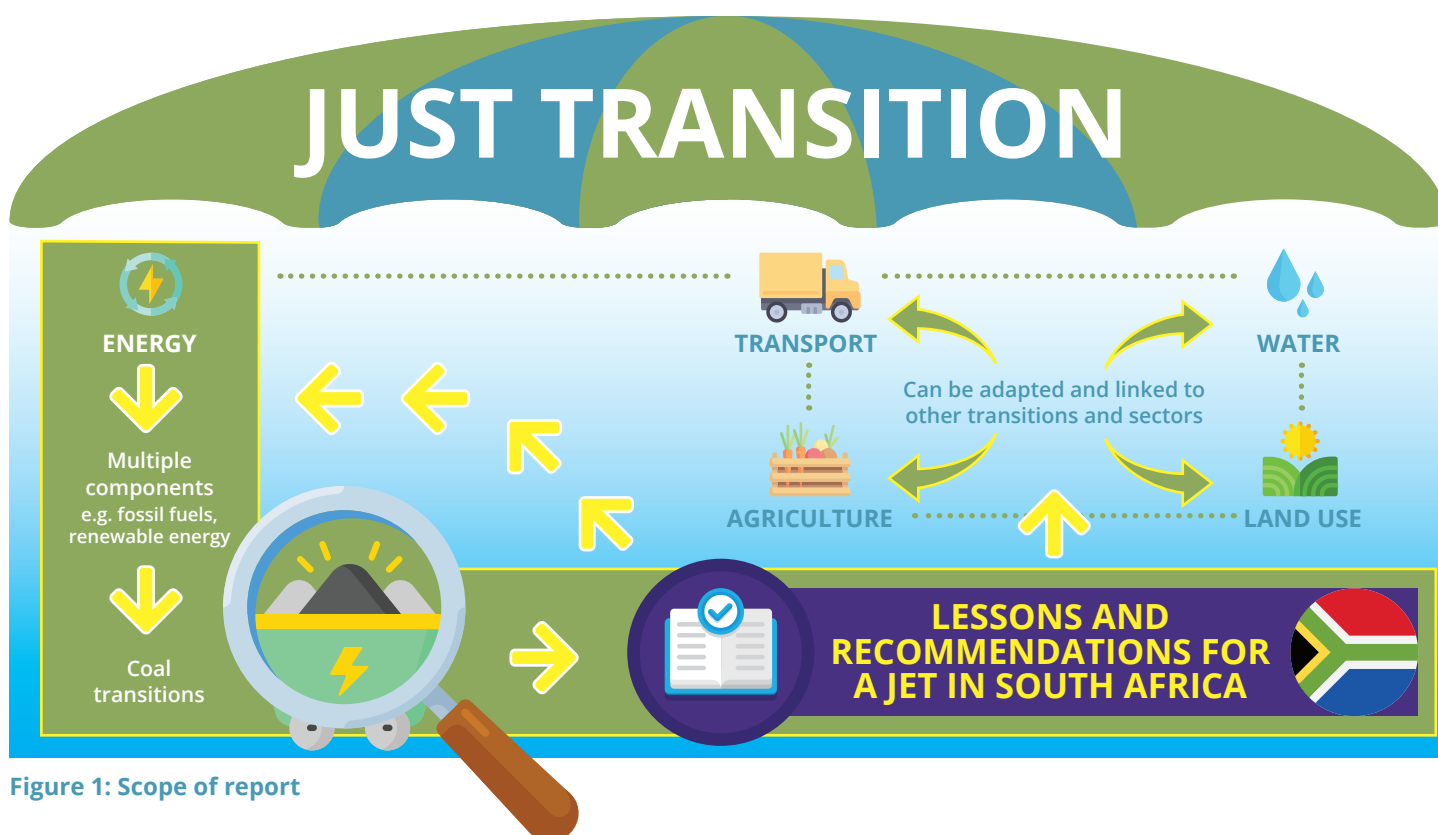


Figure 1: Scope of report

Points of departure

1. Mitigating climate change risks requires urgent action to reduce greenhouse emissions.
2. A transition to a low-carbon society, powered by RE, is both necessary and technically possible.
3. The injustice of the current energy system (Section 1.2) strengthens the case for a JET.
4. Stakeholders in the debate have different views, and will continue to do so, but there is enough common ground for collaboration.

Eskom is in crisis, and the reform of Eskom will be a huge part of a JET in South Africa. Since there is plenty of other work being done in this sphere, this report does *not* go into detail regarding Eskom. Furthermore, this report does *not* get into the technical details of energy system planning and emission

Aims of this report

1. To condense and collate key points from the large body of literature on this topic, and present it in language suitable for a wide audience.
2. To make priority recommendations that are practical, implementable, and sufficiently ambitious to make an impact.
3. To serve as a resource for further discussion.

reduction pathways. It does *not* present any modelling or analysis on the energy side of the transition. The focus is on justice – what do we need to make the transition just and fair, and what can we do to start moving in the right direction.

1.2 South Africa's minerals-energy complex – an unjust system

Mining and energy have been virtually inseparable in South Africa's history. Coal has played a central role, from the first industrial-era smelting of iron and copper ore (up to the 1860s) using heat from coal, through the 19th and 20th century where coal-fired energy powered diamond and gold mines [1]. Before and throughout apartheid, government's priorities were to generate cheap energy for mining and industry. The Electricity Supply Commission (ESCOM, now known as Eskom) was established in 1923 as a state-owned monopoly, using coal-fired electricity [2]. Historically, the exploitation of cheap black labour provided the engine for the mineral-energy complex's growth and prosperity, while Eskom offered industry some of the cheapest electricity in the world. In addition, mining and industry had an outsize influence on energy planning, and the country's energy plan was repeatedly adjusted to include more coal power stations, which made space for even more energy-intensive industries.

Most black working class families did not get the benefit of this electricity. When South Africa became a democracy in 1994, only half of the country's households were electrified [3]. The new government started a massive electrification programme that managed to connect 84.7% of households to the electricity grid by 2018 [4]. However, access to the grid does not mean that households can afford electricity. In recent years Eskom has requested regular tariff increases, leaving many people struggling to keep their lights on. A further injustice is that

the negative health impacts of air and water pollution in the electricity-producing coal regions of South Africa are felt most severely by low-income households.

The decline of coal has begun

In the Global North¹, coal drove the industrial revolution and supported colonial empires. However, the world has changed, and continues to change. The United Kingdom (UK) was once a global leader in coal, but production levels have plummeted to as low as they were 300 years ago [5]. In 2018, only 5% of electricity generation in the UK came from coal [6]. By contrast, South Africa is still dependent on coal for 85% of its electricity generation [7], but this is set to drop.

In last 50 years over four million coal workers have lost their jobs, first in Europe and then in other parts of the world [8]. This is mainly due to mechanisation, declining profitability, the availability of cheaper alternative fuels and technologies, and anti-pollution government measures that made coal an expensive material to use. At its peak in 1980, there were approximately 135 000 coal mineworkers in South Africa, but by 2015 this number had dropped by over 40% to around 77 000². In context, coal mining now forms ~16% of total mining employment in South Africa, and accounts for ~0.5% of the national workforce [9].

1. Global North refers broadly to the economically developed countries in North America, Europe and Australia.

2. StatsSA provide a figure of ~98 000 for 2015, but that is out of line with the figures from the Chamber of Mines and Quantec provided here.

1.3 Drivers of energy system change in South Africa

There are five main (ongoing and emerging) drivers of change in the energy system: a) the fact that RE generation has become cheaper than other ways of generating electricity; b) the critical importance of reducing carbon emissions to mitigate the impacts of climate change, including the impacts on food security; c) the seriously negative effects of burning coal on the environment and human health; d) the currently dysfunctional state of Eskom, both financially and operationally; and e) the significant potential that RE has to address socio-economic challenges if it is implemented in the context of a JET.

a) The falling cost of renewable energy

The cost of RE technologies has fallen dramatically in recent years and is continuing to fall. At the same time, the cost of extracting fossil fuels has gone up. This is true in South Africa too, with the full life-cycle costs of wind- and solar-generated electricity being significantly less than coal and nuclear [10].

b) Climate change

Since the 1970s, scientific research has highlighted how burning fossil fuels drives climate change by releasing large amounts of carbon dioxide into the atmosphere. Carbon dioxide is a greenhouse gas (GHG) that serves to trap heat in the atmosphere, making a significant contribution to the steady rise in average global temperatures. The impacts of climate change are being felt all over the world. In southern Africa, people are particularly vulnerable. Crop yields and food security are negatively affected by poor and unreliable seasonal rainfall, increasing temperatures and higher incidence and severity of extreme weather events. As a party to international climate change treaties, including the Paris Agreement of 2015, South Africa has committed itself to reducing its carbon emissions. The National Development Plan (NDP) includes a chapter which addresses the need to restructure the energy sector, and to make sure energy supports the social and economic aims of the Plan. There are also a number of laws and policies that seek to address climate change, including the Climate Change Bill.

c) Coal pollution

Other negative environmental impacts are associated with coal mining and coal-fired energy generation. The impacts of this are felt most in Mpumalanga, the province where most of the country's coal mining and coal power plants are located. Coal extraction and use has caused serious air and water pollution along with land degradation. Many people living there suffer from respiratory illnesses and other diseases linked to coal pollution, which also has a host of negative impacts on livelihoods and food security.

d) Reforming Eskom

Eskom is a monopoly, a state-owned enterprise that distributes about 90% of the country's electricity. It is also vertically integrated, which means a company controls more than one stage of the supply chain. In this case Eskom generates, transmits and distributes electricity. In July 2019, the Minister of Finance told Parliament that a vertically integrated electricity utility is outdated, that Eskom is no longer financially viable, and that it would be restructured [11]. The financial and operational crisis at Eskom has resulted in ballooning debt that could cripple the national economy and periods of extended power cuts and load shedding since 2008.

e) Helping to address socio-economic challenges

The official unemployment figures are now close to 29% but that doesn't tell the whole story. Of the 6.7 million people who are unemployed, 71% of them have been without work for longer than a year and cannot find a job [12]. Reforming the energy system through a carefully planned JET has the potential to not only create jobs and stimulate livelihoods, but also to increase energy security and to make the ownership structure of electricity less centralised and less concentrated.

1.4 What is a just energy transition, and why do we need one?

The energy transition is already happening across the globe. While the appetite for fossil fuels remains, RE now accounts for two-thirds of all new power generation capacity [13]. It is very important for South Africa to keep pace with this global energy shift, and proactive planning should be done to ensure that the new system better meets the needs of the poor and vulnerable sectors of society. Having an expensive, inefficient

and polluting coal-fired electricity generation system is already hampering South Africa's development, and its ability to meet its international climate change obligations. As the world takes climate change more and more seriously, those countries with less carbon-intensive economies will be at an economic advantage. By contrast, those countries which have not yet made the transition will be left further and further behind.

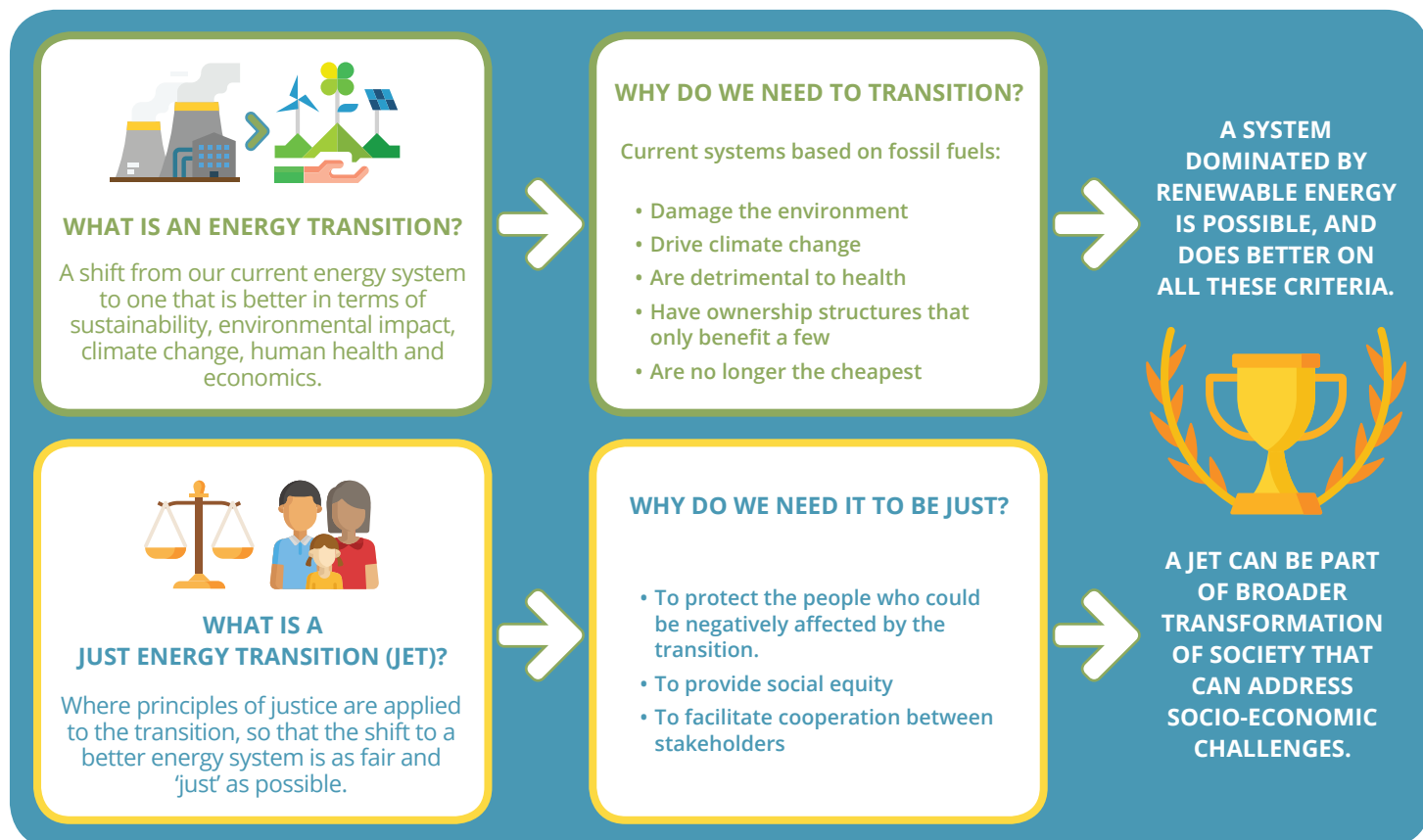


Figure 2: The need for both an energy transition and justice

1.5 Steps toward a JET

The process of moving society to a sustainable renewable energy path must be fair, transparent, and people-centred. A JET must be managed in a way that helps people, especially vulnerable people, to be better off.

The energy transition will involve technology: moving from a centralised, unsustainable and dirty energy supply to a locally distributed, more sustainable and cleaner one. In addition, action is required to remedy the environmental harm to the water and air that has been caused by the use of fossil fuels to date, particularly the mining and burning coal. In terms of justice, South Africa can learn lessons from coal transitions that have happened in developed countries (see Appendix 2). Furthermore, regions of Canada and Australia, for example, have elements within their current coal phase-out that are in line with a JET, while Mexico [14], Brazil [15] and Argentina [16]

have identified the importance of increasing the participation of rural and urban communities, and small businesses, in their RE transitions. By combining international lessons with what South Africa currently has related to a JET, steps can be made in the right direction

Climate change requires a rapid response, but this should be based on a clearly articulated set of values and principles, and a participatory and transparent process that helps South Africa to address its triple challenge of poverty, inequality and unemployment. While it is possible that new technologies will bring new opportunities that cannot yet be imagined, the time for action is now. Enough common ground has been established for the process to begin; indeed, it has already started. This publication aims to support the development and implementation of a JET in South Africa. Join us in this journey.

2

Making the energy transition just and transformative

There have been two great energy transitions in the modern era. In the 19th Century, there was a transition from the age of water power to the age of steam. The steam age was fuelled by massive expansion in the mining and burning of coal, firstly in northern Europe and then throughout the world. Coal became “king”, providing seemingly endless amounts of energy for factories, transportation, domestic heating and the gradual electrification of the Global North [17]. Coal provided the impetus for industrialisation and the creation of colonial empires – both legacies which continue to haunt us today. The second great energy transition took place largely in the 20th Century as coal was replaced by oil, a process that massively accelerated after the Second World War [18]. The supremacy of oil as the world’s primary source of energy continues to this day [19].

Despite the emergence of oil, coal continued to be used in the 20th Century as the primary means for

generating electricity for factories and homes in most industrialised countries. In more recent years, the burning of coal has dramatically declined in the face of competition from natural gas and RE, and the need to curb carbon emissions to mitigate climate change. For example, in the United Kingdom, the home of the coal-based Industrial Revolution, inland coal consumption fell from 157 million tonnes in 1970 to just 15 million tonnes in 2017 [20]. In May 2019, Britain went for two weeks without generating any electricity from coal [6].

The third energy transition that is already underway, and gaining momentum, is the one away from fossil fuels, particularly coal, toward renewable energy. South Africa has started to include RE in the national energy mix, and the number of small-scale RE generators is increasing. In order to ensure that the current energy transition is a just one in South Africa, it is important to learn what we can from elsewhere in the world, and also look closely at national circumstances.

2.1 Principles of just transition

The concept of a JT originated in the United States. During the 1990s, trade unions articulated JT as programme or process to support workers whose jobs were lost due to environmental policies [21]. The term is still used by some labour unions in this sense of providing protection to a specific category of workers. Over time, a JT has become more linked to climate change, and has been acknowledged, albeit in a small way, in the Paris Agreement. The term JT is now being used by progressive organisations, including those in South Africa, to describe a deeper and broader socio-economic transformation based on “justice” [22].

What is justice? Who are the claimants of justice and who must respond to claims for justice? Who judges where justice begins and ends? Justice is understood differently by different people, in different places, in different political and cultural contexts. This report does not aim to settle the deeply contested question of how far the understanding of justice should extend in the South African context, or to provide a rigid boundaries for a JT. Rather, it acknowledges principles that have been recognised

as being necessary for a JT, understanding that these minimum requirements can be expanded on to provide greater degrees of justice.

In 2015, the International Labour Organization (ILO) produced the “Guidelines for a just transition towards environmentally sustainable economies and societies for all” [23]. Developed from tripartite multilateral negotiations between unions, employers’ organisations and governments, these guidelines have become recognised worldwide as a good benchmark for JT work. A number of other groups have put forward their suggestions, and some of these are presented in Appendix 1. By analysing these, and other literature on a JT, along with the discussions around a JT in South Africa, the themes highlighted below emerge as key principles that have a wide support.

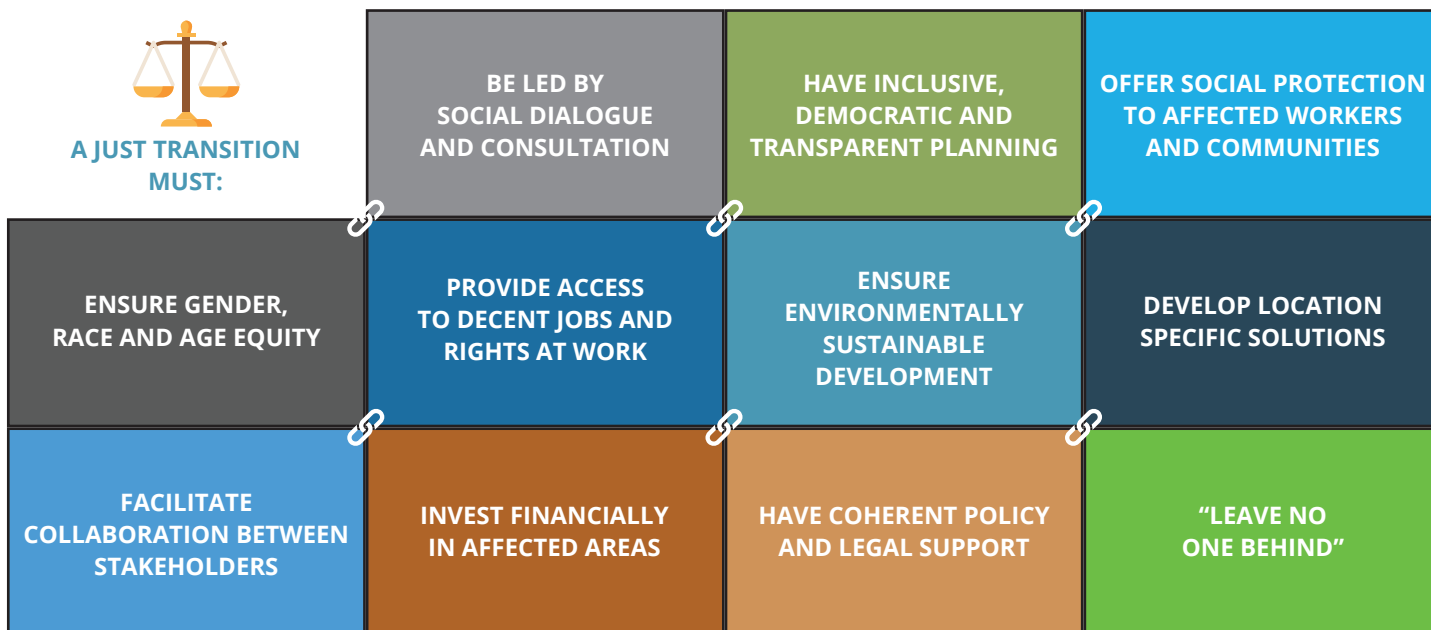


Figure 3: Fundamental principles for just transition

2.2 Approaches to an energy transition

What are the approaches to an energy transition in South Africa? There are three broad types of answer to this question.

1. The very narrow **'technical'** approach says that, for the sake of mitigating climate change and damage to the environment, South Africa must transition as quickly as possible from fossil fuels to renewable energy. This is a pragmatic, technocratic and managerial transition from one source of energy to another.
2. The **JET** approach builds on the technical approach's argument that there is the need for change to address climate change and environmental damage, but has an important addition. It says that workers and communities who could be negatively affected by such a transition need to be protected from job losses and a decline in economic activity. The implication is that both procedural and distributive justice must be part of the energy transition. This is largely a technocratic and managerial transition with incremental and reformist approaches to deal with the negative consequences [24].

3. The **transformative JET** approach builds further on a JET with a much wider scope for energy democracy and social justice. It aims to ensure absolute equality of energy access and complete sustainability through deep and systemic changes to holistically reimagine the fundamental organisation of society. It positions an energy transition as a core part of the wider transformation of society premised on the reimagining and remodelling of food production, housing, and transportation, among many other things, in environmentally and socially sustainable ways. This transition is about rebuilding the economy from the ground up, and completely reimagining the type of society we want to live in [24]. As Naomi Klein recently remarked, "the task is to articulate not just an alternative set of policy proposals, but an alternative world view to rival the one at the heart of the ecological crisis" [25]. Tasneem Essop, the member of the National Planning Commission (NPC) who is facilitating South Africa's current JT dialogue, has stated that a "paradigm shift" is needed to "ensure that a transition does indeed address many of the socio-economic challenges in the country" [26].

If a JET goes beyond those immediately affected, involves more players, and contributes to tackling fundamental socio-economic issues, then it is becoming more transformative. A transformative JET does not have a strict definition or an end point.

Rather than trying to gain consensus among all the stakeholders as to what exactly constitutes a transformative JET, a JET can be

thought of as points on a continuum. To start, provision should be made for the people most directly affected, but this can be done in a way that also provides positive effects in the wider society and the environment. People are already being affected by mine and power station closures, so that is the place for a JET to begin, but the process should be designed with the view of becoming transformative.

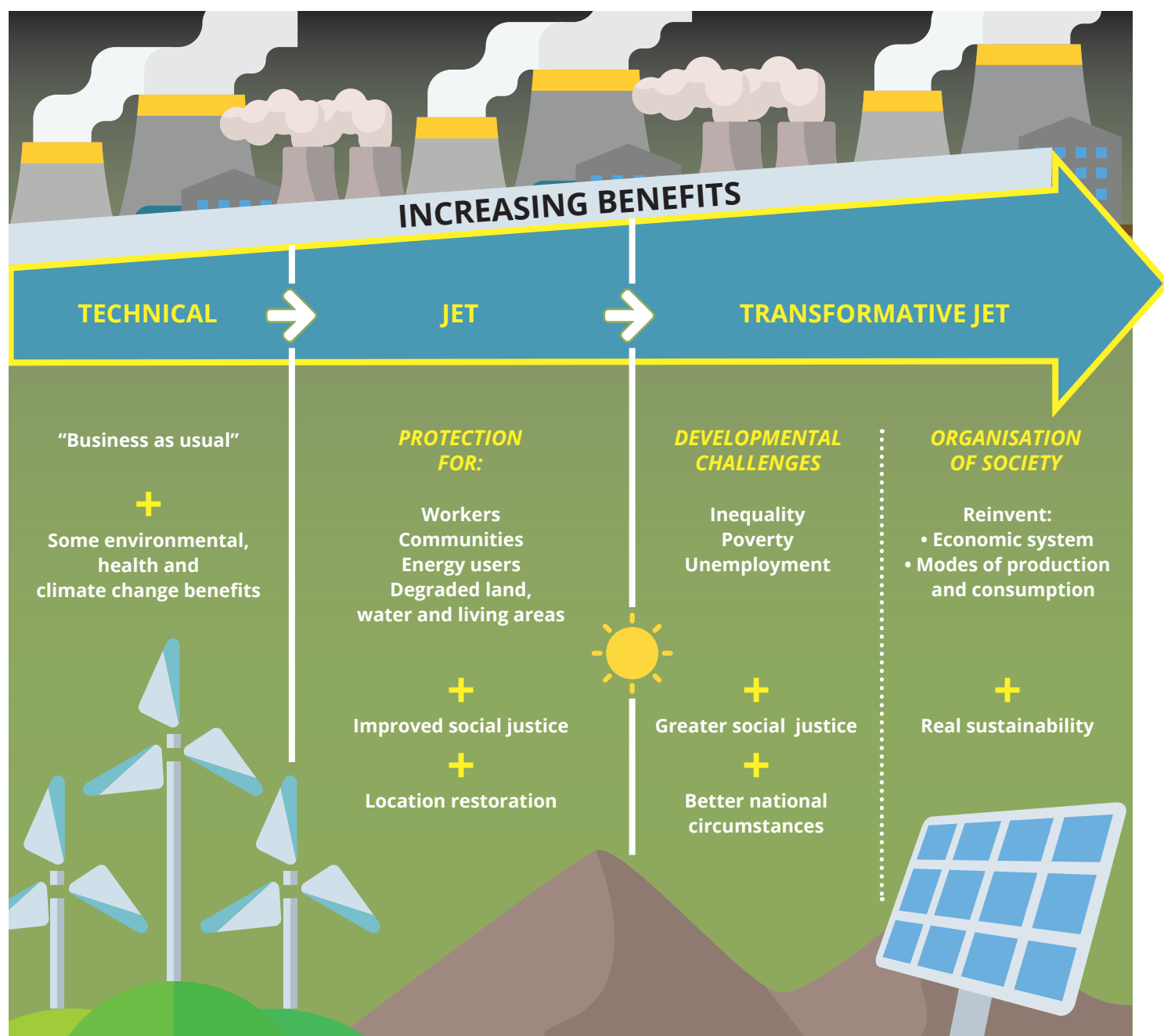


Figure 4: Energy transitions seen as points on a continuum

South Africa's triple challenges of entrenched poverty, very high structural unemployment and growing inequality show that something is deeply wrong with the way that society is organised. The need to transition from fossil fuels to RE could provide South Africa with an ideal opportunity to think creatively and compassionately about new ways of ordering society.

The debates on a vision or end state for the energy system in South Africa, and discussion around a common understanding of a JET, are important and should continue. However, the lack of consensus to date in these areas should not prevent initial steps

being taken. There is no time to waste. While it sounds appealing to have a very clear picture of the destination that all parties agree on, that does not seem possible right now. Nor is actually practical. The future is unknown and it is not possible to predict what new technologies will emerge and what circumstances will arise. So, even if there were current consensus on the ideal pathway and destination, there would always be the need to be flexible and to reassess the current situation over time. Therefore, it makes sense to work together from the common ground that has emerged from the JET conversations, adapting and responding as the process unfolds.

2.3 Planning for our energy future

The economics of the energy landscape are now in favour of renewables, and a transition to renewables is becoming inevitable. It is our task to make sure it is fair and just. We believe that South Africa should aim for a JET that is as transformative as possible. However, given the enormous challenges in South Africa at present, and the urgent need to transition from fossil fuels as fast as possible due to climate change, a JET may only be able to focus on protecting workers and communities in the short term. Evidence from other countries shows that market forces alone will not result in a JET, let alone a transformative JET. Therefore planning is necessary to make sure that the energy transition addresses, at a minimum, those people that are most affected, in a way that can also contribute

to addressing South Africa's long term triple socio-economic challenges. Planning for a JET must be done taking into account linkages with other sectors such as agriculture, land use, and water. As discussed above, a JET must be viewed in the wider JT context, but this report will focus on JET.

The coal sector is where immediate attention is required for reasons explained in Chapter 3 along with lessons from international experience. Chapter 4 covers views, processes and policies related to JET in South Africa. Chapter 5 brings the local components and international experience together to provide proposed building blocks for a JET in South Africa, and recommendations for how to advance them.



Image: George Philipas Photography

3

Transitions from coal – learning from international experience

In debates and workshops over the last few years about a JET in South Africa, stakeholders have called for real-world demonstrations of how to handle the difficult process of moving away from a core industry like coal. The unions, in particular, have indicated that their members want more than just “theories” around a JET. Tangible

demonstrations of successful strategies are required. Labour representatives have indicated the importance of historical and contemporary examples of best practice to get buy-in from workers and communities who will be affected, and those who are already suffering.

3.1 Why focus on coal?

As of July 2019, there are 30 national governments that are committed to phasing out coal from the power sector by 2030 [27]. The debate is now mounting about when coal use in countries with very large populations, India and China in particular, will peak or start to decline, and how this will affect global trade. The Coal Transitions project indicates that the most likely scenario is for thermal coal demand to

decline globally in the 2020s [28]. While there are many vested interests pushing for the continued use of coal, particularly in South Africa, there is also increasing recognition of the risks in further investment in this sector. The total costs of coal – financial, social and environmental – are becoming harder for governments to ignore, especially as RE can provide an alternative that scores better on all these metrics.

There are several reasons why coal is a necessary starting point for planning a JET in South Africa.

- Mining for coal causes enormous environmental damage, particularly in Mpumalanga [29].
- Burning coal, mainly to produce electricity:
 - Creates air pollution that is damaging to human health. Air quality surrounding the coal power stations in Mpumalanga is some of the worst in the world and is estimated to cause over 2 200 deaths annually [30].
 - Contributes the majority of South Africa's greenhouse gas emissions.³
- Currently, ~85% of electricity in SA is generated from coal [7]. Therefore emissions from sectors such as transportation (which rely on liquid fuels such as petrol and diesel) cannot be reduced by shifting the energy source to electricity until South Africa has shifted away from coal power stations to low carbon electricity generation.
- Eskom has an ageing fleet of coal fired power stations that need to be decommissioned soon as they near the end of their design lives, and some may need to close earlier to meet Paris Agreement targets.
 - Some coal power stations are already in the process of closing down, but there are no indications yet of anything resembling a JT for the people affected.
- Substantial opposition to the introduction of RE has come from the coal sector.

3. Coal dominates the energy sector which has contributed 79% of gross national emissions from 2000 to 2015 [180].

3.2 Key insights from coal transitions in other countries

Historically, the countries and regions that have made a significant shift away from coal have developed economies. For example, the United Kingdom and Spain both made a shift away from coal at a national level, but they differ in their reasons for transitioning and the way in which they managed the process. Limburg (in Netherlands) and Ruhr (in Germany) provide case studies of regional conversions from coal. Similarly, contemporary programmes that appear to be making the transition just and fair are also in the Global North. For example, Canada has progressive programmes for workers and a body to oversee its JT, while the Latrobe Valley in Australia provides a model for transition that is locally run with government support. The work that went into this publication examined the evolution of coal sectors in nine countries⁴, mainly in the Global North (see Appendix 2). In the Global South, there has not been any real transition from coal yet, but a number of relevant observations are taken from seven nations⁵. Some countries provide good examples to follow, others reveal pitfalls that should be avoided. This work

is not exhaustive, and it does not get into technical details. The aim of this chapter is to provide high-level summaries of selected coal transitions and highlight examples of progressive approaches. The lessons should provide a solid foundation for planning a JET in South Africa.

Section 3.2 and 3.3 draw on the Coal Transitions Project, the work by the International Institute for Sustainable Development (IISD), and a number of other synthesis reports looking at lessons from coal transitions. **Where information comes from the country summaries, the references are given in Appendix 2.** The intention here is to present the key lessons in a condensed format rather than in-depth analysis.

An important starting point is the simple fact that coal transitions have already happened, and are currently underway, in various parts of the world. So, while the prospect in South Africa may seem daunting, it is not uncharted territory.

Transition from coal can take a long time

The decline of coal in the UK started in the 1920s and the Spanish plans to close non-competitive mines started in 1998. In Limburg the conversion took 25 years and the one in Ruhr is still in progress. A positive aspect of these long timeframes is that they can allow proper stakeholder engagement and provide for a managed decline⁶ of the workforce which mitigates the risk of redundancies. The negative side of long transitions is that mitigating the impact of climate change requires an urgent and rapid reduction in emissions.

The Intergovernmental Panel on Climate Change (IPCC) report entitled “Global Warming of 1.5°C” shows that this type of major shift needs to happen within the next 12 years [31]. Therefore a significant challenge in JET planning is how to do it quickly enough to reduce emissions at the rate required to stay within a 1.5°C degree warming scenario, but also slowly enough to manage the social factors, including mitigating negative impacts on affected workers and communities.

An increasing number of drivers for coal transitions

The case studies highlight that the main drivers of coal transitions have been economic and environmental. Since about 2010, climate change policy considerations have played an increasingly important role.

- **Economic** drivers are cheaper alternative fuels, decreased coal profitability, the energy efficiency imperative, and decreased export/ local demand for coal. More recently, financial instruments such as carbon taxes have played a role. The trend of increasing costs for coal and decreasing costs for RE is likely to continue.

- **Environmental** drivers are air pollution and, to a lesser extent, water and land degradation.
- **Political** pressure for emissions reduction in line with the Paris Agreement and local climate change policies are now additional drivers.
- Other emerging drivers include: structural shifts towards more service-led economies, overcapacity of power production in China,⁷ water stress (less water for coal power plant cooling), increasing power plant efficiency, mechanisation, and a trend toward decentralised, small-scale energy generation.

4. United Kingdom, Spain, Netherlands (Limburg region), Germany (Ruhr region), Canada (Alberta and Ontario), the United States, China and Poland.

5. India, China, Indonesia, Vietnam, the Philippines, Kenya and Chile

6. “Managed decline” refers to managing the decline of a sunset industry such as coal.

7. A reduction in power use in China due to overcapacity could lead to drop in demand for coal in China, and even a 5 – 10% drop would wipe out about 30% of the world coal export market.

A just transition from coal is possible

Three key points support the prospect of JT from coal that meets climate change objectives.

1

Analysis by the Coal Transitions project has shown that, in six major coal economies,⁸ **a transition away from coal in a “below 2°C global warming” scenario is technically feasible and affordable.**

2

Real world examples from the UK, Spain, the Netherlands (Limburg) and Germany (Ruhr) shows that **countries and regions have already been able to make the shift from coal.**

3

While most countries have made mistakes within the “justice elements” of their transitions, **by combining best practice across various justice metrics, a JET plan can be developed.**

A move toward a transformative JET, as discussed in Chapter 2, will require improvements over what any country has achieved to date. There will be obstacles, but provided there is sufficient political will, it could be done.

Renewable energy and energy efficiency are important

A transition from coal implies a transition to something else, and some options are better than others.

In many coal transitions, the availability of a cheaper fuel source such as gas or oil has been a driver for change. Gas provided a market shift in the energy sector in both the Netherlands and the UK. In Alberta, Canada, a large part of the coal-phase-out strategy relies on the conversion of existing coal power stations to gas [32]. While electricity from gas does produce lower emissions in comparison to coal (during the combustion phase), it does still contribute significantly to climate change, and indications are that methane leakage⁹ in the gas value chain may have been significantly underestimated, and is therefore not necessarily much better than coal [33]. International experience has shown that fracking for gas can contribute to water and air pollution, as well as seismic instability.

Renewable energy is the long-term solution to decarbonising the energy sectors, and transitions strategies should only use gas where absolutely necessary. A shift to RE contributes to justice by:

- Lowering electricity prices, if managed correctly.
- Increasing access to electricity in remote communities through off-grid RE.
- Creating more jobs per unit of energy than fossil fuels, including gas [34].
- Reduced health and environmental costs when compared to fossil fuels.

Energy efficiency is an important part of low-carbon energy transition strategies. Furthermore, as shown in Poland, improved efficiency within the coal sector can be a useful way to reduce emissions in the short term, where economic constraints may delay the shift to alternate energy sources [35].

8. China, India, South Africa, Poland, Germany and Australia- accounting for 68.6% of global coal consumption.

9. Over a 20 year period, methane is ~84 times stronger as a heat trapping gas than carbon dioxide [179].

3.3 Lessons for JET from coal transitions in the Global North

There has been a lot of research in recent years into lessons from coal transitions, but many of the reports are quite technical and academically focused. This section aims to summarise the main points under 5 overall lessons.

I. Acceptance and stakeholder engagement are critical

As the Dutch example shows (Appendix 2), when players accepted the transition was inevitable and unions were involved in overseeing the transition, then there was less resistance from industry and workers did not strike or protest. Acceptance of the need to transition allows for participatory planning and proactive management to take place. Strategies to promote the acceptance of a just coal phase-out based on its overall benefits will be essential in future engagements. Workers unions are central to the social dialogue with government and business, and the buy-in and support of community leaders is essential.

In some cases, coal sector workers and communities have a strong cultural identity and sense of pride in being associated with coal industries. This needs to be compassionately

handled, and there should be a clear acknowledgement that such communities are not responsible for the decline of the coal sector. Workers want honest answers to their questions and concerns. When government and business prepare properly, this can help earn workers' trust. Historically, certain companies have reneged on agreements bartered with labour unions, so there may be suspicion that this will happen again.

The drivers of coal transitions have often been economic, such as a cheaper alternative fuel, and players could see the financial need to transition [36]. To reduce lobbying by the coal industry against the climate change and pollution rationale for energy transition, it may be useful to emphasise economic arguments.

II. Planning must be done early and proactively

In many countries, there has not been a forward-looking, coherent strategy for coal phase-out, particularly for the justice elements of such an energy transition. Changes in the coal sector have often been led by market-related considerations. As a result, policies and measures related to workers have often been ad hoc and reactive, such as in the UK. This is a mistake. Sustainable solutions require a long-

term plan, and the earlier planning starts, the better.

Climate change presents the ultimate urgency to reduce emissions, so JET planning must start immediately, if it has not done so already. Once a transition starts, some aspects such as job losses, can happen quickly, which reinforces the need for proactive planning to manage the transition.

III. Local circumstances should dictate the transition pathway

Global examples show that the local situation is enormously important in defining what can and needs to be done in terms of JET planning. Factors include:

- The size of the local coal sector, and what proportion it makes up of the local economy¹⁰.
- Geographical proximity to other economic activities.
- Local employment, education and skill levels.
- Existing infrastructure and condition of land and water resources.
- Financial links (such as cross-subsidies) between coal and other services.
- Level of psychological attachment and pride in the coal sector.

In the Ruhr region of Germany, coal mining was done underground, there was high population density and, although the coal sector was a key employer in the region, the local geography and circumstances allowed for economic diversification. In contrast, Lusatia is a rural area in the former East Germany with open cast mining and limited opportunities outside the coal sector. This is a more challenging situation for the ongoing transition in this area. If coal really is the only viable economic activity in an area, and other regional centres are too far away, then *managed retreat* might be the best option. This is a difficult decision, and must have agreement from all parties after careful analysis of available options.

10. If coal is the only or predominant industry, the terms "mono-industry" or "narrow economic base" are appropriate.

IV. Action plans should be well coordinated and supported by clear policy and legal frameworks

In terms of co-ordination, governance should be done at all relevant levels – local, provincial and national. The roles and responsibilities of each role-player must be clear to avoid gaps, duplication, and overlaps. There should be systems to link and align governance at the different levels, otherwise progress will be inefficient and there may be conflicting actions. For example, while the UK at national level has committed itself to a coal phase-out, local politicians in Cumbria voted in 2019 to develop a new coal mine [37].

New institutional arrangements will be required – some to support dialogue, others to provide oversight, others to coordinate implementation – and they need to work together.

Policies should be clear, aligned with each other, and linked to timelines. **There should also be legal tools to make such policies enforceable.** Linked to low-carbon energy scenarios, countries should have clear schedules for coal mine closures and power station decommissioning. This can be a starting point for a managed decline of the coal workforce and other JET activities.

V. Implementation of a JET requires worker empowerment, alternative industries, economic resilience and environmental restoration

This is the crux of a JET. The best ideas and policies do not lead to progress without effective implementation. A thorough review of international experience shows that the interplay between the four areas described below is what can lead to

success. Workers need to be able to take on new employment opportunities, but this requires that alternative opportunities are available, and this will only happen if both the local economy and environment is improved.

1. Workers should be empowered, not only compensated financially

A trend in coal transitions is that justice elements relating to workers have relied heavily on financial compensation. The Polish and Spanish cases show that unconditional pay-outs or “golden handshakes” do not have good long-term outcomes. Redundancy packages do not provide a sustainable solution for younger workers, although “bridging to pension” is a useful strategy for employees nearing retirement age.

Programmes must be tailored to the needs of specific beneficiaries, which extends beyond workers to their families, dependants and people indirectly dependent on coal. While decommissioning and restoration projects can provide on-site jobs for some employees, many will need to move to another sector.

A weakness in many transitions has been ineffective retraining programmes [28]. A number of lessons have emerged regarding retraining:

- While it may be the best option in some specific circumstances, on-the-job training and worker transfer should be considered first.

- It needs to be appropriate for available/planned employment opportunities in locations suitable for affected workers.
- It should be done in conjunction with a holistic approach designed to combat the barriers to finding new employment.
- It should be done in a targeted way, offered to most suitable candidates, and coupled with job placement.
- There should be a sufficiently funded implementation agent for retraining programmes. From 1998 – 2005, Spain established the Foundation for the Development of Training in Coal Mining Areas, but it lacked the finances to be fully effective [38].

In the UK and Poland, coal miners had higher wages than other manual labourers or manufacturing employees, and often had better benefits. Alternative employment, if available, was often seen to be step down. JET plans should try to ensure that alternative employment is at least as attractive as employment in the coal sector dispensation. Managed decline as a strategy to deal with the coal workforce is discussed in Chapter 5. This should also consider other threats to labour in the coal sector like mechanisation.

2. There is a need for alternative employment opportunities

A shortcoming of the coal transition process in Spain was its failure to create adequate alternative industries. As coal leaves, something must take its place to avoid a situation where more workers compete for fewer jobs. If transition programmes for coal workers equip them to gain new employment, but overall employment opportunities have

decreased after coal, ex-coal workers may outcompete other job-seekers.

In the case of managed retreat, there should be regional coordination regarding where new employment opportunities will be located.

3. Building economic resilience in communities

These lessons relate to maintaining and building local economies post-coal, and can be put in four main groups [39].

Increase economic diversification to provide jobs

Where possible, industries that are related to existing local non-coal activities should be developed. New activities should build on regional strengths and comparative advantages, and re-purpose existing coal sector infrastructure where appropriate. Networks should be established for entrepreneurs and new business developers.

Improve infrastructure to encourage development

To encourage investment, new business opportunities should be created and steps taken to enhance an area's attractiveness for investment. Coal-mining areas often require upgrades to infrastructure including transport, education, health, services, housing and communication (including quality internet connection).

Initiate public sector activities or energy transition projects

To increase economic opportunities in coal-affected areas, these regions should be deliberately chosen for developing public sector activities (such as education, health, and administration) or initiatives that link with former energy activities (such as retrofitting, pilot projects or RE infrastructure).

Improve 'soft factors' – to make the area more appealing.

These relate to the aesthetics of an area, its culture, leisure activities and the state of the environment. These contribute to better working conditions, employee retention in the area, community cohesion, tourism potential and civic pride.

4. Remediating environmental damage

Environmental remediation provides on-site employment opportunities and can be a precursor for future economic activities such as agriculture. Mining companies have legislative obligations regarding ring-fenced funds for remediating environmental damage, but there may be a need for government support where there have been

bankruptcies, provision for remediation is inadequate or where corruption has diminished available finances. In terms of justice to nature, remediating environmental damage should be done regardless of whether or not the area will continue to be inhabited post-coal.

Interaction of local and national actors during implementation

To achieve the interplay between the four factors described above, it is important to combine bottom-up knowledge with top-down support. Local actors are best placed to develop and implement coal phase-out policies, but will likely need government support, particularly for funding. The Latrobe Valley Authority provides a good example of this (see Appendix 2 for details).

Dutch and Spanish examples indicate that state control of coal assets can ease the transition as government JET interventions could be easier to implement at their own public entities than those in the private sector. The role of public energy utilities should be carefully considered in JET planning.

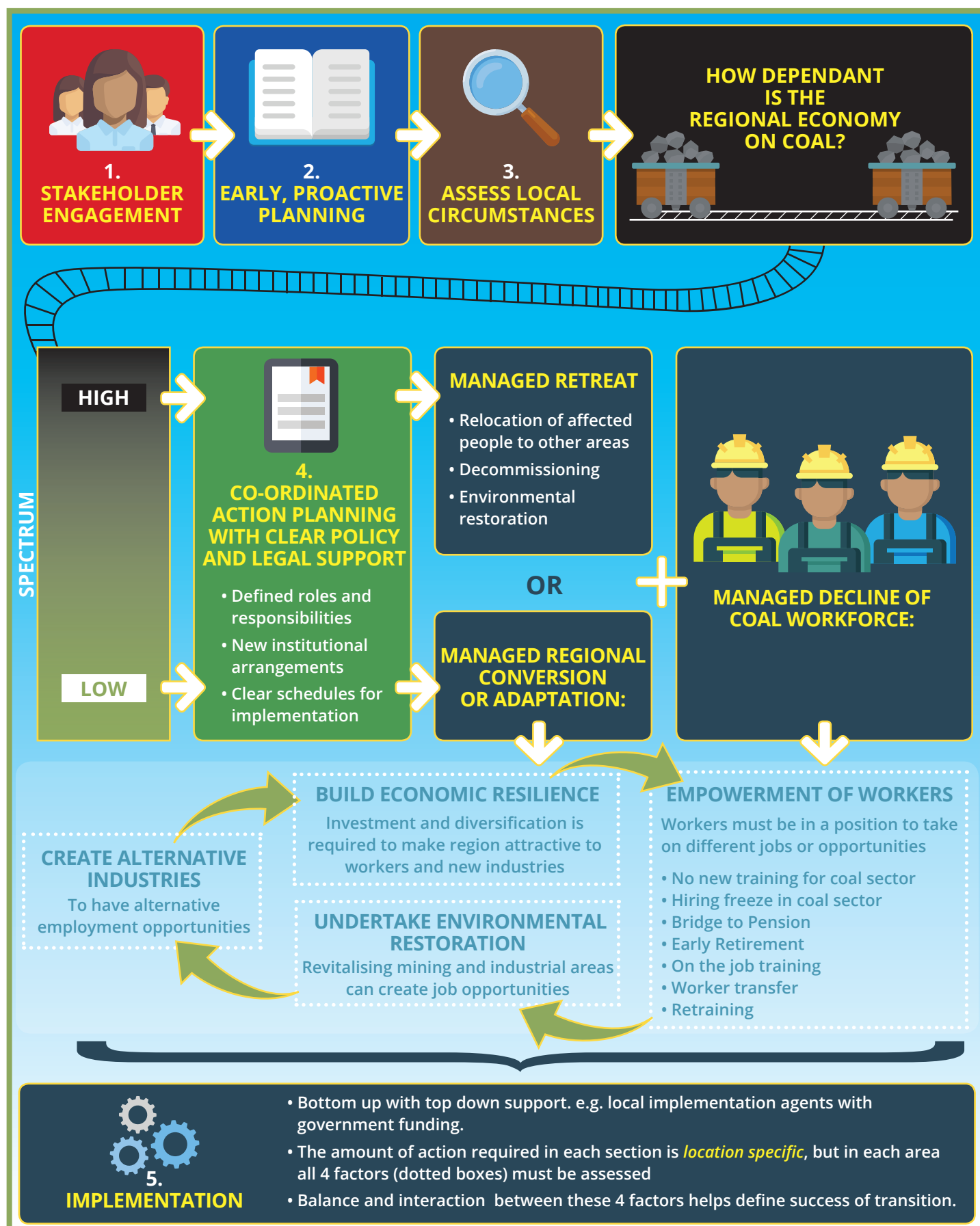


Figure 5: How coal transition lessons can provide a sequential framework for a JET

Financial considerations

Inaction is unjust and costly, and prevention is better than cure

While a JET will cost money, not implementing a JET could cost more [36]. For example, in Spain, an estimated €22 billion was spent between 1992 and 2014 on government subsidies to financially prop up struggling coal mines. By comparison, other countries with larger former coal mining employment levels invested between €1 billion and €5 billion in regional economic transitions [41].

The costs associated with not having a JET plan include: ongoing subsidies for uncompetitive industries, higher medical costs for workers whose health continues to be affected by coal mining hazards, and higher social security costs for those who do not find alternative work. In addition to financial costs, there are also social and environmental costs, also called externalities, which will continue to be borne by workers and communities if a proper JET is not implemented.

Possible sources of funding for a JET

An overview of international examples reveals that funding for transition activities have come from, or could come from:

- National and state budgets.
- The European Union,¹¹ and the World Bank.¹²
- Earmarked taxes and other revenues, e.g. carbon taxes, coal export taxes, pollution fines, and business site-use levies.
- Repurposing fossil fuel subsidies and budgets for future coal projects.
- Corporate social responsibility contributions from, e.g. mining companies and power plants.
- Green Climate Fund, or other climate finance mechanisms.

Other financial considerations for a JET

Possible financial incentives to promote a JET

Related to the need for alternative employment opportunities in specific areas, it may be prudent to offer tax incentives for businesses to relocate or open branches in affect areas. Similarly, corporations could be incentivised to have an internal transition plan (if such a plan is not already a legal requirement).

Considerations for new financial models

- Estimating the nett costs of transition.
- Reform of municipal revenue strategies.
- Alternative ownership models for RE infrastructure.
- Ring-fencing state or company transition funds.

Energy prices

There may be a need to shield low-income households from electricity or energy prices via a social policy that includes differential pricing or subsidies. It is beyond the scope of this report to deal with this in depth, but the point is that to provide justice, the costs of transition must not be borne by vulnerable groups.

Stranded assets¹³

Plenty of research has been published or is underway on stranded assets and associated risks in the coal sector. This is another complex topic that is beyond the scope of this study, but it is important to note that any investment in coal which becomes stranded could have been better used to finance aspects of a JET.

Political considerations

Political circumstances have a huge effect on if, and how, a transition plays out. In fact, the greatest barrier to a JET can be political inertia regarding vested interests in current systems. “Lock-ins” can result where incumbent players block change. In Alberta, a change in the ruling party led to the adoption of coal phase-out plans that had been resisted by the previous ruling party. By contrast, in the USA, President Donald Trump

has been trying to undo coal transition measures put in place by his predecessor. Alberta also provides an example of “future-proofing” progressive policies, as commercial contracts were signed directly with the power companies to mitigate the risk of back-sliding. Because companies will benefit from these contracts, they are unlikely to reverse course even if a future government wanted to [32].

11. The EU Coal and Fossil Fuel Regions in Transition Initiative was recently developed by the European Commission to support highly affected areas.

12. For coal sector adjustments in Russia, Ukraine, Poland and Romania [8].

13. A stranded asset is essentially an investment that has devalued significantly, become worthless or has been converted to a liability. Coal infrastructure now has the potential to become a stranded asset if it is outcompeted by RE or needs to be shut down early due to pollution or climate change policy.

The power of alliances

Transitions are complex and involve countering vested interests in legacy sectors, and consequently there is great benefit in working together for a common goal. The Powering Past Coal Alliance (PPCA) was initiated by the UK and Canada in 2017, and member countries have pledged to phase out thermal coal use by 2030 [27]. While a criticism of the PPCA is

that participating countries only account for 3-4% of global coal demand [28], the policy frameworks it is developing can inform best practice elsewhere. Another example is the Coal Regions in Transition Platform launched by European Commission so that 41 countries can exchange best practices on post-coal transformation [42].

3.4 Observations from the Global South

Some countries in the Global South¹⁴ are increasingly adopting RE, in some cases they are fast-tracking RE, and based on current and planned capacity additions, can even be viewed as driving low-carbon development [43]. However, it is important

to realise that this is not necessarily the same as a transition from coal, let alone a just transition. Nonetheless, a few observations from the Global South are worth noting regarding changes in the energy sector.

Still expanding the coal sector despite also ramping up renewables

Countries following this trend include those with large coal resources such as India [44], China [45] and Indonesia [46]. Although significant investment in RE in these countries has contributed to lowering the rate at which coal is growing, there is no agreement on stopping new coal projects or phasing out existing ones.

While these countries may acknowledge the inevitability of a transition away from coal, they are still politically and logistically locked into coal. Their economies have industrialised rapidly in the past two decades, and coal has met much of the demand for energy.

In Indonesia, effective planning for a transition appears to be stalled by policy makers and power generation companies who still see coal as a cheap form of generation. This is reflected in a close relationship between the coal industry and politics, as can be seen in government financial and regulatory support for the coal industry.

Pending a significant breakthrough in affordable storage for RE, decision-makers in India believe they must still use their cheap and abundant coal to meet industry and urban needs.

Coal use remains important and renewables are slow to take off

In the Philippines, high electricity prices have kept out any options that would be even more expensive. Coal prices have been kept low by not factoring in externalities (e.g. air and water pollution), which has in turn hampered the introduction of RE. There has been further resistance to RE, as in the absence of a local skills base, projects would initially require foreign contractors and this would result in costs that are higher than those in the USA and Europe [47].

Vietnam now has to import coal to meet demand, yet there is a lack of commitment to, and policy support for, local RE. Vested interests appear to be blocking solar and wind energy programmes in that country [48].



14. Global South refers broadly to the less economically developed countries in South America, Africa and Asia.

Targeted for coal expansion projects by foreign investors, particularly China

Kenya currently gets two-thirds of its electricity from renewables, and has no coal power at all. China is planning to build a power plant at the coastal village of Lamu. The project would use Chinese contractors, would increase Kenya's GHG emissions sevenfold, and the country would rely on imported coal [49]. This illustrates how China is exporting its coal industry while pushing clean energy policies at home. China has invested in over 200 coal projects in 34 countries, including in six countries in Africa that had no prior coal-related infrastructure [50].

In South Africa, coal is the dominant source of primary energy and new independent coal power plants still feature in draft

national energy plans. Renewables have been introduced through a national programme, but it has encountered political obstacles and resistance from Eskom. China is also planning to build a large coal power station as part of special economic zone in Limpopo, which seems to have evaded national policy as it will not connect to the grid but only provide electricity to the metallurgical operations on site. Further concerns, in addition to pollution and GHG emissions are that, as per their website, "It enjoys the tax incentive provided to South Africa special economic zones, also enjoys all the preferential treatments in policies that the South African government provided to encourage foreign direct investment." [51]



An artist's impression of the South African Energy Metallurgical Special Economic Zone (EMSEZ) project including proposed coal power station [51]

Small scale renewables

Many of the RE examples from the Global South relate to improved energy access via small-scale embedded generation (e.g. individual houses with their own solar panels) and rural RE initiatives (e.g. where a village is powered off a shared solar plant and grid). This is an important step towards a low-carbon future, addressing development goals and improving living standards. Yet, as shown in India, which has an extensive rural solar projects [52], this does not at all preclude the ongoing use of coal for utility-scale electricity generation in main towns and cities [53].

Chile may be an exception

While the majority of the Global South has not yet initiated a proper shift from coal, Chile is a possible exception. After an intensive uptake of coal in the past 15 years, Chile is now committed to fast tracking RE [54] and is also planning the closure of eight coal power stations by 2024 in its efforts to switch entirely to RE by 2040 [55]. Furthermore, there are indications that Chile has started multi-stakeholder processes to shape the transformation process in line with best practice, such as the ILO guidelines [56].

Water scarcity hampers coal-based electricity

Water is used for cooling coal power stations. Between 2013 and 2017, India temporarily shut down 61 units at 26 coal power stations due to water shortages [53]. Climate change is likely to increase water scarcity in many parts of the world.

4

The “JET landscape” in South Africa

Implementing a JET process for sustainable development requires top-down political guidance and bottom-up input that harnesses the expertise of local stakeholders [57]. The right tools and processes are needed in three possible dimensions: the climate dimension, the socio-economic dimension, and the political dimension [58]. While there are alternate ways to unpack the JET landscape, these three provide a simple structure where environmental factors can slot into the climate dimension and finance is cross cutting.

Regarding the climate dimension, carbon emission mitigation targets have to be formulated and followed.

South Africa should commit itself to an ambitious level of GHG emission reduction that is in line with its fair share of action to meet the global trajectory of limiting global warming to 1.5 °C. From a socio-economic point of view, climate action must be combined with development action that leads to the empowerment of the workforce, decent jobs, access to affordable energy, and positive impacts on equality and poverty. Finally, in the political dimension, a JET requires an enabling political framework and a plan in place to manage the transition process in a transparent, participatory and effective way [58].

4.1 Different views on what a JT/JET should entail

As has been stated above, the term “just transition” was coined by the trade union movement to raise awareness of the need to secure workers’ jobs and livelihoods when economies shift to more environmentally sustainable practices. The National Planning Commission has broadened the term beyond protecting workers to include the wider society, especially the most vulnerable, and working class communities. A JT should place eradicating poverty and inequality at its centre. It should be urgent in nature and scale, transparent and inclusive. Trade-offs in key sectors should be identified and dealt with in a JT plan. Overall, the transition should be just, ethical and sustainable [59].

Stakeholders such as labour, business and civil society organisations (CSOs) have their own ideas about what a JT or JET should entail. Some organisations take an economy-wide approach and see the energy transition as part of an overall JT in South Africa’s economy and society. Some focus specifically on the energy aspect of the transition and speak about a JET.

Labour puts affected workers and communities at the centre of a JET. The South African Federation of Trade Unions (SAFTU) sees the need for a deep economic transformation in a country whose economy is characterised by stagnation, increasing levels of deindustrialisation, unemployment, poverty and inequalities. SAFTU also prioritises the environmental and climate change imperatives of the energy transition [60]. Zwelinzima Vavi, the general-secretary of SAFTU, says while the transition is inevitable it should be inclusive and focus on the education system which left mineworkers badly prepared for other job opportunities. He also said that a social dialogue between all stakeholders is important and should happen

at the National Economic Development and Labour Council (NEDLAC) [61], which is a statutory body to bring together government, labour, business and community organisations to cooperate and discuss challenges South Africa is facing [62].

The Congress of South African Trade Unions (COSATU) and their research arm, the National Labour and Economic Development Institute (NALEDI), appear to support the notion of a transformative JET as they say that “we need to ensure that the concept of a just transition is developed further to fully incorporate our commitment to a fundamentally transformed society.” They both also prioritise the interests of energy-poor households and recognise that a JT provides an opportunity for the “redistribution of power and resources towards a more just and equitable social order”. The National Union of Metalworkers of South Africa (NUMSA) rejects the privatisation of electricity and says that only publicly-owned and democratically controlled renewable energy projects can ensure that renewables will be affordable for all. [63].

A research consortium of the Alternative Information and Development Centre (AIDC), Trade Unions for Energy Democracy and the Transnational Institute, as well as the National Union of Mineworkers (NUM) and NUMSA is investigating how to transform the current electricity sector, marked by electricity cuts and rising electricity prices, into a more sustainable and just setup. The consortium proposes a “new socialised Eskom” that is fully public and can include RE in a utility-owned generation model. It says a JET should be democratically controlled with electricity staying in the public domain, and the RE system should be socially owned [64].

Remaking Our Energy Future: Towards a Just Energy Transition (JET) in South Africa

The South African Renewable Energy Council (SAREC) puts the expansion of RE driven by private companies at the centre of future electricity provision and facilitation of a JET. SAREC sees very little direction in South Africa regarding what a transition entails, and proposes the formulation of a vision and transition path for the electricity supply industry, a common platform amongst all energy players, and the restructuring of Eskom [65].

A variety of CSOs have been advocating for a JET. Project 90 by 2030 describes a JET as “An opportunity of bringing justice, fairness and equity to the process of moving to energy

systems that are better for people and the planet. While the environmental and climate change imperative is to transition to energy systems that are low carbon, less polluting and more sustainable, the socio-economic components of a JET revolve around using this transition in a way that supports human wellbeing by helping to address poverty and inequality” [66].

Although the views on a JT/JET are diverse, there is enough overlap for collaboration. The building blocks presented here in Chapter 5 were chosen to cover the shared aspects that have emerged during the JET conversations in South Africa in recent years.

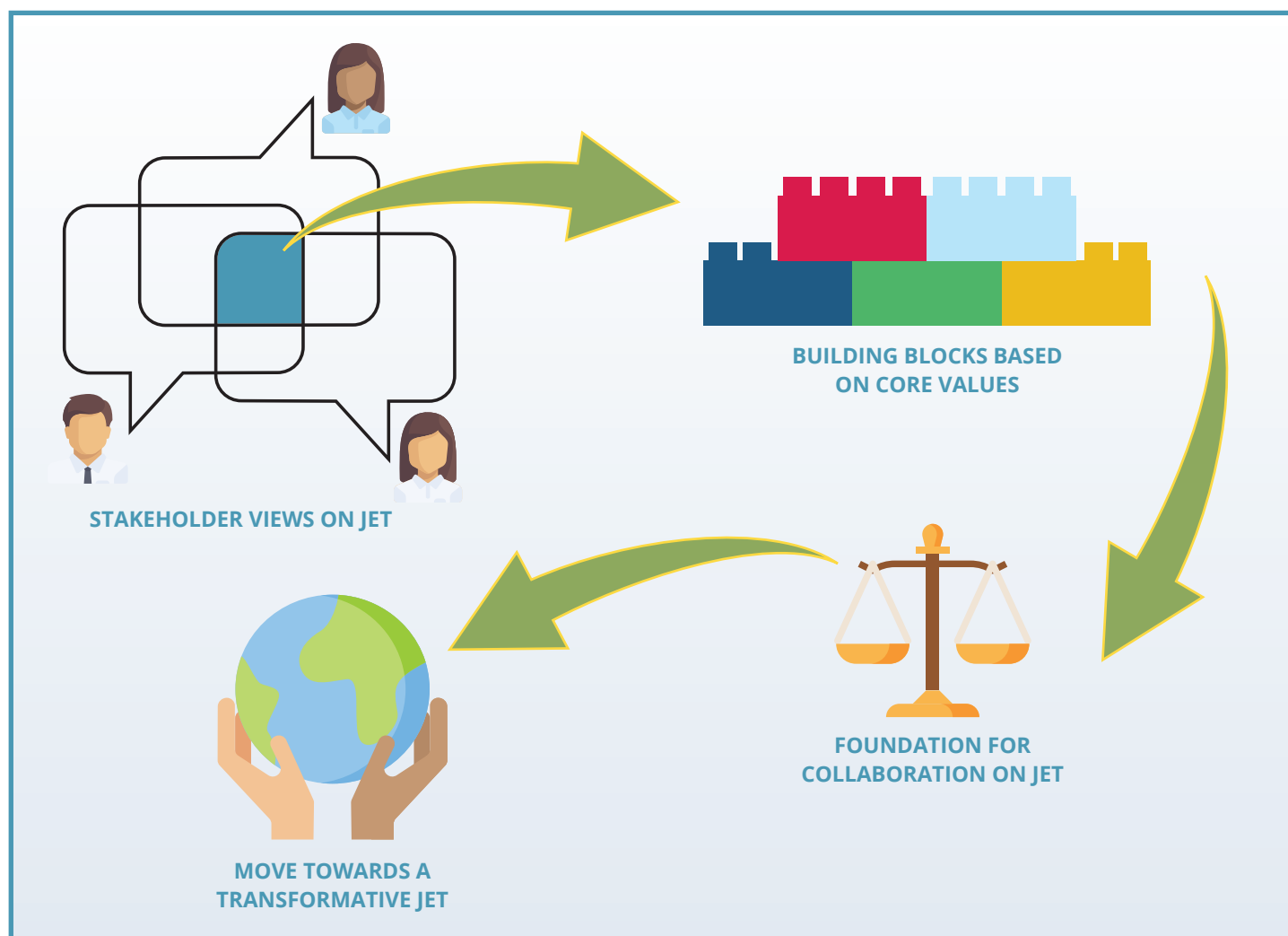


Figure 6: Common ground within JET viewpoints as a foundation for collaboration

A truly transformative JET requires changing both our primary energy sources and ownership of energy value chains and infrastructure, which in turn requires democratic governance of our energy systems, particularly electricity. If the way energy

is owned in South Africa doesn't change, the country will miss out on an important opportunity to reduce poverty and inequality [66].

4.2 Existing components relating to JET in SA

A JET in South Africa comes with many challenges and risks. Early planning, stakeholder involvement and political and financial commitment could help tackle these challenges and risks and, at the same time, open up new opportunities for action [57].

A proper JET plan should be holistic. It should: 1) build on what is currently known about the state of energy and development; 2) plan action in the climate, political, and socio-economic dimension; and 3) build on existing policies, participate in relevant processes, and engage all South Africans.

CURRENT STATE OF DEVELOPMENT AND ENERGY	RELEVANT POLICIES, LAWS AND PLANS	RELEVANT PROCESSES AND PROGRAMMES	CIVIL SOCIETY CAMPAIGNS AND NETWORKS
• Coal dominance • High carbon emissions • Air and water pollution in mining areas • High unemployment and poverty • High inequality • Rising electricity prices • Ineffective or non-existent policy and plans for some aspects of energy system • Implementation issues for some aspects of energy system	• National Determined Contribution under the Paris Agreement • National Climate Change Response White Paper • Climate Change Bill • Low Emissions Development Strategy to 2050 • National Development Plan • Integrated Resource Plan • National Environmental Management: Air Quality Act and Standards • New Growth Path • Carbon Tax Act • Integrated Energy Plan • Mineral and Petroleum Resources Development Act and associated social and labour plans • Provincial Green Economy Plans	• National Planning Commission: Pathways to a Just Transition • National Employment Vulnerability Assessment (NEVA) • Sector Jobs Resilience Plans • Presidential Climate Change Coordinating Commission • Eskom reform • Renewable Energy Independent Power Producer Procurement Programme	• Life After Coal/ Impilo Ngaphandle Kwamalahle • Million Climate Jobs Campaign • Energy Governance South Africa network • Campaign for a Just Energy Future

Table 1: A selection of components linked to a JET for South Africa

The climate dimension

By ratifying the Paris Agreement in 2016, South Africa committed itself to “strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius” [67]. Like all countries that ratified the Paris Agreement, South Africa drafted its own **Nationally Determined Contribution (NDC)** to the United Nations Framework Convention on Climate Change (UNFCCC) to demonstrate what it would do to contribute to achieving the global temperature goal. South Africa’s mitigation ambitions are based on the Long Term Mitigation Scenarios study undertaken in 2005. These scenarios were the basis for South Africa’s pledge to the Copenhagen Accord in 2009 and for the **National Climate Change Response White Paper** that was approved in 2011. While the Department of Environmental Affairs promised to further refine these mitigation targets, this has not yet happened.

The most promising mitigation strategies the South African government lists in its White Paper are energy efficiency and

demand side management, as well as increasing investment in the RE programme for the electricity sector. Furthermore, the emergence of bio-fuels and a suite of non-energy mitigation options, such as afforestation, were also considered to be important. Regarding economic instruments, South Africa introduced a carbon tax in 2019 [68].

South Africa is one of the only countries that uses the term “just transition” in its NDC. While this could be seen as a positive signal, the term and need for such a transition is being used as a justification for South Africa’s low emission reduction targets [58]. According to analysis by Climate Action Tracker, this NDC falls far short of what would be considered as South Africa’s fair share of action to meet the temperature goals of the Paris Agreement [69]. Climate ambition and a JET are not an either/or [57]. The government has the responsibility for ensuring a JET for all citizens while at the same time protecting them from the worst impacts of climate change through setting ambitious targets.

The political dimension

A number of policies and strategies in place or under discussion could create an enabling framework for a JET. The policies and laws mentioned here are either supportive of a JT or could potentially play a role in its implementation.

The term “just transition” is used in the National Climate Change Response White Paper which represents government’s vision for an effective climate change response. It is also used in the **Climate Change Bill** which provides necessary legislation to enforce the vision in the White Paper. It is also in the draft **Low Emissions Development Strategy to 2050 (LEDS)** that aims to provide a high-level plan on how South Africa will transition to a lower-carbon development economy. However, none of these documents clearly outlines what a JET for South Africa would entail.

Chapter 5 of the **National Development Plan (NDP)** of 2011 considers environmental sustainability and sees a JT as a key element for moving towards a low-carbon economy by 2030. The NDP says that managing a JT requires treating it as a cross-cutting issue and ensuring policy alignment at all levels of government [70]. This means a JT would have to be aligned with the **Integrated Resource Plan (IRP)** - the country’s long-term electricity infrastructure plan, the national mitigation trajectory, and other integrated development plans [70].

Other documents that are relevant for shaping a JET include the **National Environmental Management: Air Quality Act (AQA)** of 2004 and its associated framework, the **New Growth Path**, the recently approved **Carbon Tax Act**, the **Integrated Energy Plan (IEP)** and the **Mineral and Petroleum Resources Development Act (MPRDA)**.

The AQA provides a legal framework for reducing air pollution [71], while the National Framework on Air Quality Management in South Africa approved in 2018 helps to give effect to the Act by providing “norms and standards for all technical aspects that are needed for air quality management” [72].

In November 2011, the government and its social partners signed the **Green Economy Accord** as an outcome of social dialogue on the New Growth Path. The parties to the Accord realised that South Africa has a unique opportunity to create jobs and address the concerns about climate change at the same time. At that time of the event, the goal was set to create five million new jobs by 2020. With the right policies and cooperation, the government and partners hoped to create large numbers of green jobs [73]. Most provinces have developed a Green Economy Plan. Being especially affected by the coal industry, Mpumalanga’s Plan considers the low-carbon economy, natural resource management, and greener towns and cities [74]. Implementation has been limited to date [75].

The Carbon Tax Act came into effect in June 2019. It gives effect to the “Polluter Pays” principle for large carbon emitters. By putting a price on carbon emissions, government is shifting the costs from society to companies that are creating these emissions. The more an entity emits, the more tax it must pay. The more action a company takes to reduce its emissions, the lower its tax [76]. The carbon tax is intended to help ensure that more and more high carbon emitters adopt clean technologies in their production and shift South Africa to a low-carbon economy.

As set out in the White Paper on Energy (1998) and the Energy Act (2008), regular long-term energy and electricity planning is required to ensure, amongst other things, security of supply, affordability, universal accessibility, social equity, and employment. While the IEP, the plan that looks at all energy sources, has not been updated in a long time, the new version of the IRP (that only looks at electricity) was drafted in 2018 and is currently awaiting approval at NEDLAC. According to Minister of Mineral Resources and Energy, Gwede Mantashe, the new IRP is only likely to serve before Cabinet in September 2019 [77]. The new plan apparently aims to: align with the NDP, ensure security of supply, minimise the cost of electricity, make electricity supply socially equitable, minimise negative environmental impact, minimise negative emissions, and minimise water use [78]. It also recommends analysis of the impacts of coal plant decommissioning to ensure that communities that rely on the “coal-to-power sector are not left behind in the transition” [78].

The MPRDA was passed in 2002 to transform the mining and related production industries. One of the requirements introduced by the Act is that mining companies applying for mining and mineral production rights must also submit a social and labour plan (SLP) that will apply should the application be granted. SLPs are supposed to ensure that mining companies develop and implement “comprehensive Human Resources Development Programmes, a Mine Community Development

Plan and Housing and Living Conditions Plan, Employment Equity Plan, and Processes to save jobs and manage downscaling or closure” [79].

The **Renewable Energy Independent Power Producer Procurement Programme** (REIPPPP) was established in 2010 to procure RE from independent power producers (IPPs). The Independent Power Producer Procurement Programme (IPPPP) office was established by the Department of Energy, National Treasury, and the Development Bank of Southern Africa (DBSA) to procure RE projects for South Africa. According to its latest quarterly report, 6 422 MW of electricity has been procured from 112 RE IPPs in seven bid rounds. A total of 3 976 MW of electricity generation capacity from 64 IPP projects has been connected to the national grid. With regards to jobs, the IPPPP has secured 40 134 job years for South African citizens to date [80].

Looking to the near future, it is essential to look at the role of the state-owned electricity company Eskom and find a solution for its rising debt and financial challenges. There is need for a political framework to guide the process. Pravin Gordhan, Minister of Public Enterprises, recently announced that a draft White Paper outlining government’s approach to the unbundling of Eskom and how its debt burden will be managed is in preparation and should be finalised soon [81].

The socio-economic dimension

A number of processes currently underway involving a variety of stakeholders suggest that many organisations and institutions in South Africa consider an energy transition to be inevitable, and that planning should begin as soon as possible around a JET.

Current research and consultation processes towards a JET

The **National Planning Commission** (NPC) is working towards a social compact involving government, labour, civil society, and business for a just transition. The process helps to give effect to Chapter 5 of the NDP, which centres on the transition to an environmentally sustainable, low-carbon, socially-inclusive and climate-resilient society by 2030. The aim of the current process is to draft a joint vision of a long-term end state and clear pathways on how to facilitate a long-term planned and managed just transition. The buy-in of all stakeholders is key to the process [82].

For this discussion, the NPC adopted an economy-wide scope for planning a JT, and chose three key sectors that play an important role regarding the mitigation of climate change, as well as South Africa’s triple challenge of unemployment, poverty and inequality. The key sector areas are water, land use, and energy. The Commission acknowledges that the transition is already underway, especially in the energy sector. The main goal of this process is to ensure that the transition is just [82].

Since 2018, the NPC has conducted consultations at provincial and national level and has held open-invitation workshops in all nine provinces, with participants from civil society, communities, government, business and labour, as well as two special constituency roundtables for youth and labour. At a conference in Johannesburg on 29 May 2019, an agreement was concluded on two immediate areas for action: 1) the immediate negotiation of SLPs for the decommissioning of coal power plants; and 2) the piloting of regional JT planning in two hotspot areas: the Highveld (coal) and Free State (agriculture and impacts of drought). The process will finish off with a high-level summit before the end of 2019 [82].

At the same time, the Department of Environmental Affairs and the Economic Development Department commissioned work to undertake a review of the **National Employment Vulnerability Assessment** (NEVA) and the **Sector Jobs Resilience Plans** (SJRPCs) to strengthen the content, identify gaps, and get the SJRPCs ready for implementation [83]. The NEVA will assess the impact climate change will have

on jobs. On the basis of the NEVA, the SJRPs will explore sectors identified as vulnerable to job losses due to climate change as well as sectoral job creation opportunities. Once these have been adopted, the NEVA and SJRPs could be key policy instruments to manage the transition to a low-carbon economy [83].

The latest Quarterly Labour Force Survey released by Statistics South Africa in July 2019 indicates that the official unemployment rate increased by 1.4% to 29% compared to the first quarter of 2019 [12]. The creation of jobs is and has been a priority for the government. In light of the dire unemployment situation, President Cyril Ramaphosa invited representatives from government, business, labour and community organisations to the Jobs Summit in October 2018 to speak about job creation. One of the topics under discussion was a JT affecting the coal mining sector. Participants agreed that a JT is urgently needed in South Africa [84].

One of the suggestions from the Jobs Summit was to establish a statutory body in the Presidency in the form of a **Presidential Climate Change Coordinating Commission** (PCCCC). This body could take over from the NPC and coordinate and oversee the JT and ensure that job opportunities are created. It should be adequately resourced and include representation from relevant departments across the State, the social partners, as well as experts from CSOs and relevant research institutions. It could be incorporated into the recent Climate Change Bill. One of the first tasks of the PCCCC could be to look at the

outcomes of the NEVA and SJRPs to understand the impact of climate change on jobs, both positive and negative [84].

As part of an international research project, the Energy Research Centre (ERC), Trade & Industrial Policy Strategies (TIPS), and the Stockholm Environment Institute hosted a workshop in September 2018 entitled “The end of coal? The risks and opportunities facing South Africa’s energy economy”, and conducted a number of interviews with public officials, business associations, CSOs and researchers in Gauteng and Mpumalanga. Workshop participants included public officials from national government — such as the departments of Energy, Trade and Industry, Economic Development, and Environmental Affairs — as well as state-owned enterprises Eskom and Transnet, trade union representatives, researchers, business representatives and CSOs. The interviews and the workshop showed that, if the economic and environmental consequences of moving away from coal are not addressed, they could potentially trigger social instability, so concrete plans on how to manage a JT are more urgent than ever [85].

There were many important lessons from the research project. One of them was the need for an analysis of the risks and vulnerabilities of coal workers and local communities that depend on the coal industry in Mpumalanga to understand and mitigate local impacts of a decline in coal. This information can inform a plan that is context-specific and realistic about the economic conditions that characterise South Africa [85].

Holding government accountable

A number of community activists and CSOs have made it part of their mission to hold government accountable for reducing carbon emissions and enabling a JET.

Life After Coal/ Impilo Ngaphandle Kwamalahle was founded in 2016 as a joint campaign of Centre for Environmental Rights, groundWork and Earthlife Africa. The campaign aims to discourage the development of new coal power stations and mines, reduce emissions from existing coal infrastructure, encourage coal phase-out, and enable a JT to sustainable energy systems for the people [86].

The **One Million Climate Jobs Campaign** implemented by AIDC is an alliance of labour, social movements and CSOs focused on climate change and unemployment. The campaign suggests that well-researched solutions could help begin a JT to a low-carbon economy and create jobs at the same time [87].

Energy Governance South Africa (EGSA) is a network of justice-oriented CSOs dedicated to promoting transparent, inclusive and accountable decision-making in the energy sector. It focuses on energy policy, planning and governance. EGSA members have been working on publications and campaigns to move towards a JET and have done work around a transformative JET [88].

In 2016 the **Campaign for a Just Energy Future** was formed from civil society representatives to promote access to clean, affordable, reliable, safe energy in South Africa. The campaign helped to stop the nuclear deal in 2017 and organised two community Indabas in 2018 and 2019 to discuss ways of shaping and challenging energy policy and decisions, as well as ways of contributing to the JET debate in South Africa [89].

5

Moving towards a JET in South Africa

This chapter is split into two parts. The first provides “building blocks”, which are proposed as key principles for a JET, and *all* of them should be covered in relevant planning documents. They are a minimum set of areas that require attention, but more can be added in the progression to a transformative JET.

The second part is recommendations around how to advance a JET in South Africa. How do we get the ball rolling? These can be thought of as an outline of a management strategy and immediate steps. Thus,

the building blocks summarize the full story, while the recommendations section proposes who should be responsible, how to finance it and some entry points for implementation.

Both pieces are important: the second part recommendations are practical steps that can be taken immediately to start moving in the right direction, while the building blocks sketch the bigger picture of action that is required in total.

5.1 Building blocks for JET

What would make a solid foundation for a JET in South Africa? While the debates on all aspects of a JET continue, we sought to zoom in and articulate a set of principles that provide a sound basis. In Chapter 2 we provided some themes that proponents of a JET view as important. The building blocks presented here incorporate many of these themes into five key areas. They were derived from looking at international lessons (Chapter 3) and the South African context (Chapter 4), speaking with South African experts, holding two workshops (one with CSOs and one with community representatives) and working with other partners in this field. We see energy democracy as a cross-cutting issue that can be applied to each of the building blocks: “accessible and affordable electricity”, “corporate and business reform”, “shift in ownership of energy”, “empowerment of workers and communities” and “environmental restoration and protection”.

Energy democracy is another term that various stakeholders might define slightly differently, but the core value is collective control and working in the public interest. The term was shaped by organisations in Europe and the US but is finding its

way to the Global South. They understand energy democracy as a concept that looks into shifting from fossil fuel-generated energy to RE as well as giving more power over all aspects of the energy sector – from production over distribution to supply – to energy users and workers. At the same time, the energy system should provide universal access to energy, fair prices, secure and well-paid jobs and work in the public interest [90]. This understanding is very much in line with our understanding of a JET in South Africa. In addition to the factors mentioned above, we view energy democracy as a way people should participate in the energy sector. It should allow for regular public participation and stakeholder consultations, transparent planning processes and a joint vision, measurable goals and clear accountability, gender equality, awareness-raising and include related issues such as land-use and water.

The building blocks are described briefly in the following image, with initial ideas as to what can contribute to achieving them. Section 5.2, which suggests the institutional arrangements required to initiate a JET in SA, then elaborates on some of these building blocks.

Figure 7: Building blocks for a JET in South Africa

ESSENTIAL BUILDING BLOCKS



ACCESSIBLE AND AFFORDABLE ELECTRICITY

Millions of South Africans lack access to electricity. All South Africans need access to affordable, low carbon electricity to provide for basic needs.

WHAT SHOULD BE DONE?

- ~ Draft and implement a National Low-Income Household Energy Strategy.
- ~ Prioritise energy access for those without reliable access to electricity, using renewable energy solutions which are both more affordable and accessible.
- ~ Increase electricity subsidies for low-income households.



CORPORATE AND BUSINESS REFORM

We need to move away from business as usual. Corporations need to prioritise social and environmental issues and must implement tools to reduce emissions, pollution and waste but also secure decent jobs.

WHAT SHOULD BE DONE?

- ~ There must be strict legal compliance with all environmental regulations such as air and water pollution, carbon emissions and site rehabilitation along with workplace and employment standards.
- ~ Government should monitor and enforce these obligations while the private sector must have their own transition plans, which protect workers.

THE PRINCIPLES OF A JUST ENERGY

A shift from dirty and harmful fossil fuels to cleaner, affordable and sustainable renewable energies along with energy efficiency is needed. For this shift to be JUST and fair these building blocks are recommended as a minimum.





SHIFT IN OWNERSHIP OF ENERGY

Using renewable energy opens up opportunities for more socially or community-owned and less corporate or privately-owned energy generation.

WHAT SHOULD BE DONE?

- ~ Support communities in setting up their own energy projects.
- ~ Include more women and youth in the energy sector.
- ~ Revise South Africa's renewable energy programme.
- ~ Support the shift from a centralised system to a decentralised energy system.



EMPOWERMENT OF WORKERS AND COMMUNITIES

Workers and communities should not shoulder the burden of shifting to a low carbon economy. We need decent jobs and economic opportunities for all to 'leave no one behind'.

WHAT SHOULD BE DONE?

- ~ Set up programmes for worker placement and re-train workers in coal and other impacted sectors.
- ~ Provide training and education for other workers in need of jobs.
- ~ Invest in infrastructure in areas in need.
- ~ Promote economic diversification and the creation of alternative industries.



ENVIRONMENTAL RESTORATION AND PROTECTION

Modern agriculture, mining and industrial development have degraded the quality of our soil, air and water resources. We have to restore these areas and prevent further damage.

WHAT SHOULD BE DONE?

- ~ Apply the Polluter Pays principle, ensuring polluters pay for restoration of degraded ecosystems.
- ~ South Africans need to hold government and companies accountable.
- ~ Create space for small scale agriculture which can restore and protect the environment whilst feeding people.

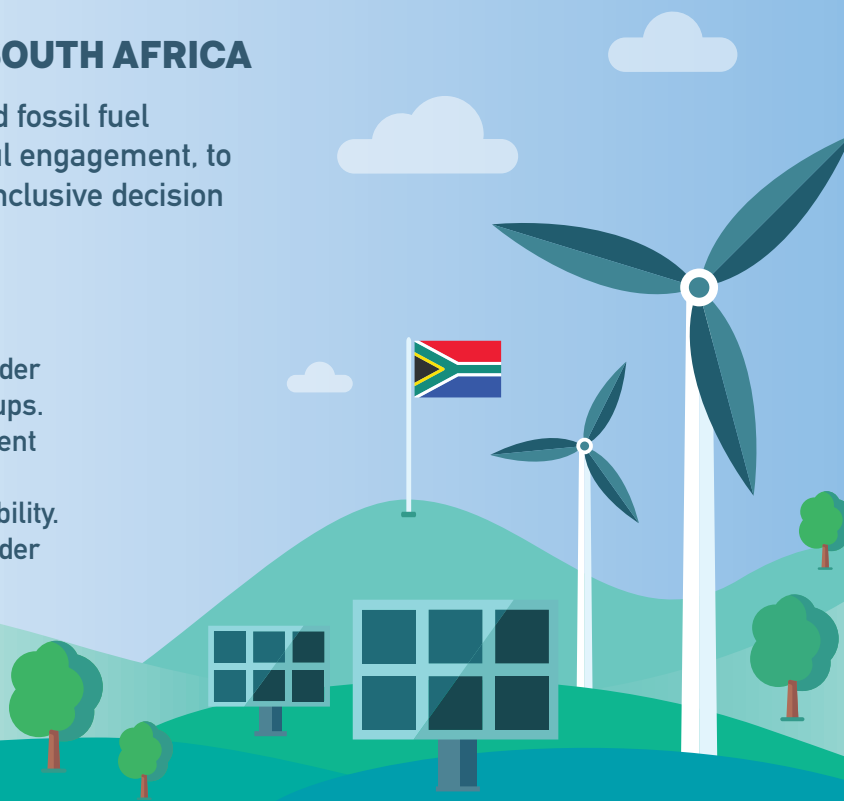
TRANSITION (JET) IN SOUTH AFRICA

WE NEED ENERGY DEMOCRACY IN SOUTH AFRICA

South Africa needs to move from a monopolised fossil fuel dominated system, without room for meaningful engagement, to a participatory renewable energy system with inclusive decision making processes.

WHAT SHOULD BE DONE?

- ~ Conduct regular public participation and stakeholder consultations that include youth and vulnerable groups.
- ~ Draft a joint vision of JET and undertake transparent planning processes.
- ~ Set measurable goals and ensure clear accountability.
- ~ Implement measures to improve and ensure gender equality.
- ~ Educate and raise awareness on energy issues.
- ~ Look at related issues such as land and water.



5.2 Recommendations to advance a JET in South Africa

The situation in South Africa of heavy dependence on fossil fuels is untenable, and due to the economic and environmental pressures outlined earlier, the country is already entering a period of energy transition. This is a period characterised by the slow growth of RE sources and gradual winding-down of coal mining and the decommissioning of coal power stations by Eskom. It is a period fraught with multiple challenges for workers and communities who live and work around coal mines and coal power stations in South Africa.

How might these challenges be met? What can be learned from countries that have already experienced this energy transition? Are there solutions that can be applied in South Africa to remediate these challenges? What institutions, tools and processes does the country already have in place to address these challenges, and what new components may need to be created to ensure that the energy transition in South Africa is, indeed, a just one?

In attempting to answer these questions, it is important to note that most energy transitions have taken place in the Global North. Similarly, contemporary programmes that appear to be making the transitions in line with the ILO guidelines are also in developed nations with very different socio-economic profiles to that of South Africa. Of particular importance is that these countries, to differing degrees, already have significant social protection schemes in place. In addition, their economies are generally more resilient to shocks as they tend to be more diversified than South Africa's economy, which remains largely reliant on the export of primary products. Planning a JET must take into account

the unique characteristics of the South African context, particularly as they relate to the triple challenges of poverty, unemployment and inequality.

Since every location has its own unique factors to consider, lessons will always need to be adapted from one situation to another. However, the more different the locations are to each other in terms of socio-economic factors, the more the lessons will need to be adapted. This is a limitation that must be borne in mind when planning for a JET in South Africa. Despite this, the underlying logic of most lessons should hold true for all transitions, independent on the state of development. What varies, depending on the strength of the economy and the country circumstances, is *how to implement* these principles.

This chapter synthesises the information from the preceding chapters and provides a guide to how we may be able to navigate this energy transition to the benefit of all people in South Africa. The chapter sets out a number of topics, and then: a) extracts lessons from experience on that topic (Chapter 3); b) considers what those lessons mean in the South African context (Chapter 4); and c) makes relevant recommendations. It does not pretend to be an exhaustive analysis or to know all the answers for this complex phase in our nation's history. **Rather, the emphasis is on priority areas. Practically, this involves setting up a management framework that should initially benefit the most directly affected people, but the process must be designed from the outset to address all the building blocks in parallel.**

Building from Chapter 3, the focus here is still on coal and electricity, but the essence of the recommendations can follow through to broader transitions. The recommendations fall into 4 categories:

CONSULTATION, OVERSIGHT AND PLANNING
IMPLEMENTATION
OWNERSHIP OF RENEWABLE ENERGY
FINANCING POSSIBILITIES

Relationship between the building blocks and recommendations in Section 5.2.

All of the building blocks are significant, and the national and local JET plans should cover each building block. However, as a realistic and practical starting point, this report focuses on energy democracy (as a basis for planning) along with "Empowerment of workers and communities" and "Shift in ownership of energy".

Section 5.2A proposes an outline for how planning should be done and who should drive the process, rather than getting

into the specifics of the plans themselves. Section 5.2B makes suggestions relating to those most immediately affected by the transition. Ownership has emerged as way for RE to benefit more people, and is highlighted in Section 5.2C. This chapter ends with the all-important question of "Where could the money come from?" Links between some of the sections are shown below.

BUILDING BLOCK	EXTENT TO WHICH IT IS EXPANDED ON SECTION 5.2
Energy democracy	Underpins Section 5.2A, which deals with how to manage a JT in South Africa. Also a cross cutting principle that can be applied to work on each building block.
Accessible and affordable electricity	1. Access is partly related to the ongoing grid and off-grid electrification programme by Eskom, which is beyond the focus of this report. However, Eskom programmes and reform should be done in line with the building blocks. 2. Affordability is largely determined by Eskom prices as controlled by the National Energy Regulator of South Africa (NERSA). However, the financing options suggested in Section 5.2D could be put towards subsidies to make electricity more affordable, particularly for low-income households. 3. Both access and affordability can be improved by ownership energy (Section 5.2C)
Corporate and business reform	JET planning (Section 5.2A) should examine the contribution of companies and how this is can be enforced. All actors in transition sectors should be included. This building block is touched on in Section 5.2B under “Adherence to current mining legislation” and “Private sector support”.
Shift in ownership of energy	An alternative model is presented in Section 5.2C, along with analysis of the REIPPPP.
Empowerment of workers and communities	Highlighted in Section 5.2B as workers and communities are often placed “front and centre” in the JT debate in South Africa.
Environmental restoration and protection	A few points are raised in Section 5.2B, such as “Rehabilitation of mines”, but this topic is not unpacked further in this report.

(A)

CONSULTATION, OVERSIGHT AND PLANNING

This section covers aspects of planning, stakeholder engagement, policy alignment and legislative support. As these overlap, the recommendations are combined after examining the lessons and South African context of each individually.

THE IMPORTANCE OF EARLY PLANNING



LESSONS FROM EXPERIENCE

Evidence indicates that informed **planning at the earliest possible stage results in energy transitions that have more equitable outcomes**. Planning for a JET is a highly complex task, involving multiple stakeholders all of whom have their own complex institutional priorities. Overwhelming evidence

shows that a failure to plan timeously is the “key factor in the unravelling of labour support for energy transitions” [75]. Proactive steps are necessary for a JET to succeed. As one research report notes, “when policies have worked to reduce the impact of coal closures they have often been longstanding commitments made over decades” [36].



SOUTH AFRICAN CONTEXT

In 2015, South Africa was the first country in the world to commit itself to a JT in its Nationally Determined Contribution (NDC) to the UNFCCC. Just four years later, the World Economic Forum (WEF) ranked South Africa 114th out of 115 countries in terms of its readiness for what the WEF describes as “an effective energy transition” [91]. This finding corroborated an assessment undertaken in 2017 which found South Africa at bottom of a list of 12 countries from the Global South in terms of their readiness for a JET [58].

This perilous position is largely the result of the government’s failure, through its ownership and management of Eskom, to prepare for the transition away from coal. Despite the 2015 inclusion in the NDC, the inclusion of JT in the President’s 2019 State of the Nation address [92] and the “the government’s commitments to a just transition” according to the Minister for Mineral

Resources and Energy [93], no functional JT roadmap or plan has been drawn up.

The government has known for at least ten years that the decommissioning of coal power stations was to begin from 2019. Power units at Hendrina have already been shut down, and 2 300 jobs are under severe threat – mainly contract workers through labour brokers that will not receive Eskom benefits. Further closures of aging stations such as Grootvlei and Komati are scheduled to close in 2020 and 2021 respectively [94].

It should be noted that most labour unions in South Africa have been consistently calling for, and actively supporting, a JT to low-carbon energy since at least 2012 [95]. This support has seriously wavered in the last two years as it has become increasingly clear that **government and Eskom have failed to properly plan for the transition** [75] [96].

STAKEHOLDER ENGAGEMENT AND SOCIAL DIALOGUE



LESSONS FROM EXPERIENCE

Experience from ongoing energy transitions elsewhere demonstrates that their **success hinges on the quality of social dialogue and negotiations** that take place between all role-players – government, organised labour, industry, communities, relevant CSOs and academics.

Research demonstrates that those transitions that “show greater political resilience and a more coherent and comprehensive approach were those where a relative consensus was reached” [97]. A strong social consensus on the need for a JET is essential to move the process of transition forward, and this can only come from well-intentioned, inclusive and committed dialogue by and between interested parties. Procedural justice is critical for a JET. All parties must participate fully in decision-making processes to ensure that outcomes gain and maintain the support of all interested and affected parties.

Evidence also points to the importance of maintaining open and meaningful dialogue throughout the transition process. This enables unexpected problems to be overcome through negotiation and avoids conflict. A core component of this ongoing dialogue should be a **robust communications campaign** that provides up-to-date, transparent and accurate information to all interested and affected parties.

Best practice indicates that setting up a **dedicated JT task force** or similar forum can result in better outcomes. In

Canada, the Task Force on Just Transition for Canadian Coal Workers and Communities includes members from organised labour, industry, civil society, academia, and local and national government. It is mandated to produce recommendations on which the government of Canada must act. The strength of this Task Force comes from its inclusive composition, clear terms of reference, and strong support from the Canadian government [98].

In Scotland, the Just Transition Commission has been established to “plan, invest and implement a transition to environmentally and socially sustainable jobs, sectors and economies, building on Scotland’s economic and workforce strengths and potential”. It is made up of national and local government officials, organised labour, industry partners, academics, non-governmental organisations (NGOs), and youth members [99].

Multi-stakeholder transitions over extended time periods are complex processes, meaning that institutions such as JT task forces need to be properly funded and constituted with the necessary institutional capacity to function effectively [100].

Previous experience has also shown that having champions in national government from the lead ministry responsible for the transition can facilitate more inclusive energy transitions [101].



THE SOUTH AFRICAN CONTEXT

Despite the failure to plan timeously for a JET in South Africa, **there have been processes to consult and communicate around a JT** in South Africa. As described in Chapter 4, the NPC has been working on “a Just transition to a low carbon, climate resilient economy & society” since 2018. According to the NPC, their workshops and subsequent stakeholder summits have been designed to form the basis for a “social compact” in South Africa to enable a JT [102].

This NPC process provided good initial engagement and was a commendable effort under the circumstances. However, there have also been some issues. While these meetings were generally well attended by members of the public and CSO representatives, they were largely shunned by organised labour and failed to meaningfully engage with community members living around coal mines [103]. In addition, the whole NPC just transition process appears to be underfunded with few staff and limited resources, which seems to suggest a lack of serious commitment from the government. Questions also remain as to what now happens to the process given that the social dialogue component is complete. It is not clear which government department or entity will be taking the initiative

forward. The NPC has subsequently recommended that the PCCCC (see Chapter 4) should “[now take] responsibility for the planning and implementation of the Just Transition in South Africa” [82].

In theory, NEDLAC should be the body to take forward a process that requires meaningful dialogue about a JET involving government, organised labour, industry and community members. **While NEDLAC is the only statutory body currently mandated to host this kind of negotiation, it has some serious limitations.** Chief amongst these is that neither government nor industry has tended to take its findings and recommendations seriously, and both have preferred to bypass NEDLAC when deciding on significant policy undertakings. It has also been critiqued for largely ignoring the plight of the unemployed, marginalising women and more vulnerable workers, and for not taking community concerns seriously [104]. One major organised labour federation, SAFTU, which is not a member, claims that it is being blocked from joining by the ruling party-aligned COSATU [105]. Given these serious concerns, questions remain as to whether NEDLAC is a suitable vehicle to manage the negotiation and policy formulation processes for a JET.

PLANNING SHOULD HAVE A LOCAL FOCUS



LESSONS FROM EXPERIENCE

Coal mining, coal power stations and associated supporting businesses (e.g. coal transportation) are located close to coal seams. These geographically bound regions are disproportionately affected by a transition away from coal.

This situation is exacerbated by the fact that, in general, regions which are most suitable for the establishment of utility-scale RE plants are not the same regions that have hosted coal-based economies [97].



THE SOUTH AFRICAN CONTEXT

Specific, directed support will need to be provided to workers and communities affected by the transition away from coal. However, South Africa has great wind resources and higher solar irradiation¹⁵ levels than the whole of Europe, which is ramping up RE [10] [106]. This means that consideration can be given to locating utility-scale RE plants in areas that are currently associated with coal. The majority of coal-producing areas are located in Mpumalanga (home to 80% of coal mining by volume [9]), with smaller concentrations in KwaZulu-Natal and a growing concentration in Limpopo. In the Emalahleni Municipality in Mpumalanga, at least 38% of

economic activity comes from mining [85]. While it is true that the Mpumalanga is not the best place in South Africa to locate utility-scale RE plants, such plants can still function effectively in Mpumalanga. In addition, the province is close to the major load centre of Gauteng [85]. For a JET, **the social justice motivations for RE expansion in coal regions should surpass the pure profit motive of positioning these facilities in the optimal renewable resource location.** For this to succeed, government support and alternative ownership models will play a role.

COORDINATED PLANNING WITH CLEAR POLICY ALIGNMENT AND LEGAL SUPPORT



LESSONS FROM EXPERIENCE

It is essential that the various programmes which will accompany a JET (decommissioning, skills training, economic diversification, etc.) are coordinated to maximise the synergies between them [97].

Planning should include three distinct, but highly interrelated, phases:

- Short-term planning consists of intensive preparatory action before any transition takes place.
- Medium-term planning deals with the actual transition itself as mines and power stations are gradually closed down along with development of RE. Employer and community support processes begin.
- Long-term planning involves the continual support of affected parties to ensure that workers and communities are not abandoned after the transition takes place [36]. This phase should also work toward the benefit of all citizens as part of a transformative JET.

Experience shows that the establishment of inclusive working groups for each stage of the transition can assist the process [97].

To successfully implement the plans and objectives produced from inclusive negotiations, it is critical that clear policy goals

are formulated with achievable, realistic timelines that can be regularly monitored for compliance. Evidence indicates that those countries which develop clear and unambiguous energy-transition strategies aligned with climate commitments and social equity are likely to experience more successful energy transitions [75].

In terms of legislative support, international experience indicates that the passing of a **“Just Transition Act”** which binds national government can create the high-level political commitment that is necessary for a JT to succeed. It can also have the advantage of making transition commitments legally enforceable. For example, in France in 2015, the Energy Transition for Green Growth (Energy Transition Law) sets out how France intends to decarbonise its energy generation while simultaneously creating jobs in the “green economy” [107]. Similar legislation is being proposed in the United Kingdom in the form of the Decarbonisation and Economic Strategy Bill [108]. The United States Senate is currently debating the Clean Energy Worker Just Transition Act [109]. The content and purpose of such an Act cannot simply be imposed by the executive arm of government if it is to enjoy broad support and be effective. It is, therefore, essential that the draft content of such an Act is agreed upon by all stakeholders during JT dialogues before it can be passed into law by Parliament.

15. Solar irradiance is measured by the amount of energy received from the sun at a given surface area in a given time period.



THE SOUTH AFRICAN CONTEXT

As there are no publicly available transition plans for South Africa, it is impossible to evaluate the current South African context. Given the current experience of the closure at Hendrina, it is **highly unlikely that transition plans have yet been drawn up for any part of the country.**

Despite the phrase “just transition” becoming a popular refrain among government ministers, there is no clearly defined energy transition policy framework in South Africa. In fact, there is no clear energy policy at all. The current draft IRP acknowledges the coming “transition to a low-carbon future”, but also acknowledges that “[T]he full impact of decommissioning the existing Eskom fleet was not studied fully as part of the IRP ... The socio-economic impact of the decommissioning of these plants on the communities who depend on them for economic activity was also not quantified” [78].

In the absence of any clearly articulated policy, the government’s attitude to a JET is incoherent and contradictory. The most

recent budget speeches by Minister of Minerals and Energy Gwede Mantashe and Minister of Environment, Forestry and Fisheries Barbara Creecy clearly illustrate this point. During his budget speech on the energy part of his portfolio, Mantashe acknowledged the necessity and inevitability of the phase-out of coal in South Africa, while the Creecy called for a “just transition to a climate-resilient and lower-carbon economy and society” [110] [111]. Despite this, during his budget speech on the mineral resources part of his portfolio, Mantashe argued that mining is a “sunrise industry”, announced that a new major coal field (Molteno) is being considered, and said “early indications are that the coal fields could be utilised as thermal coal for electricity generation” [112].

This kind of muddled thinking is what happens in a policy vacuum and is an indictment on the government’s failure to manage South Africa’s energy future.

RECOMMENDATIONS FOR CONSULTATION, OVERSIGHT AND PLANNING

Given that the transition is already underway in South Africa, it is clear that government needs, as a matter of the utmost urgency, to **draw up a comprehensive national plan** for managing a JET (that aims to also address broader socio-economic issues) which is complemented by locally specific plans (with a focus on immediate priorities faced by coal communities and other transition sectors). It can only hope to achieve this objective through inclusive and meaningful dialogue with all concerned parties via a purpose-built institution.

To this end, a **national Just Transition Task Team** should be established as a progression from the work already done by the NPC. Such a Task Team should be housed in a relevant lead ministry such as the Department of Planning, Monitoring and Evaluation in the Presidency and its key functions should be **to provide oversight and a consultation platform** for JT in South Africa. Work on a JET is covered within this mandate, but importantly, the planning role of the Task Team must **acknowledge the links of energy to other sectors during the transition.**

From the outset, government should accept responsibility for acting on recommendations, indicating that the necessary political will is in place.

SUGGESTED FEATURES AND RESPONSIBILITIES OF THE PROPOSED NATIONAL JT TASK TEAM:

- The consultation platform function should comprise **managing stakeholder engagement and social dialogue.**
- The oversight function should include **developing and**

monitoring time-specific national JT plans and ensuring alignment with relevant plans such as the IRP, IEP and NDP.

- All interested and affected parties should be represented and have a voice, including representatives of government, organised labour, communities, Eskom, industry, civil society, and academia. All relevant national government departments, provincial departments and municipalities should also be represented.
- All members should be of a seniority that is commensurate with the seriousness of the duty at hand, and have clear and unambiguous mandates to act to achieve a JT in practice. These representatives should regularly report on their mandates and be held accountable for delivering on these mandates.
- Sessions should be properly facilitated and democratic to ensure that collective decision-making takes place.
- Regular meetings should be held (at least quarterly) and publicly available reports on progress towards a JT in South Africa should be produced. These reports should honestly reflect on problems encountered and proposed solutions. These reports should be scrutinised and debated in Parliament and in other relevant arenas.
- Funding should come from government and industry, both of which have a vested interest in ensuring that a JT takes place in South Africa. There should be a specific line items in the national budget to ensure continuity of financial support.
- Adequately resourced and staffed to properly carry out its mandate.

Local JT task teams should also be established, with at least one local branch in Mpumalanga to work at the grassroots level in affected communities.

THE PROPOSED LOCAL JT TASK TEAMS SHOULD:

- Cover consultation and oversight functions at the local level, including developing local JT plans in partnership with local stakeholders.
- Identify and manage specific local parties responsible for implementation of JT activities.
- Receive support and cooperation of the proposed national JT Task Team

The announcement of the PCCCC is a positive step, but it is not known at this stage how this body will be constituted, who will be represented on it, what powers it will have, or if it is intended to carry out a similar role to the proposed national JT Task Team described above. It is concerning that the Commission will only be established if and when the Climate Change Bill passes into law.

While having champions in national government to drive a JET process is important, champions are not enough on their own. It remains important to formally entrench government commitments and undertakings in institutions like the proposed national JT Task Team than to rely on the goodwill of sympathetic individuals in government.

A **Regional Transition Assessment** should be done in areas negatively affected by the transition away from coal before specific regional support is considered. This assessment should gauge the ability of each region to transition in terms of its existing infrastructure and workforce skills, and consider specific regional attributes that lend themselves to regionally-specific diversification and development. Such an assessment must include meaningful input from local residents. Once an overall picture of support needs has emerged, appropriate support programmes and initiatives can be focused in the areas that need them.

The critical need to properly **coordinate planning** means that the establishment of the proposed national JT Task Team must be an absolute priority. In line with international best practice, specific working groups for each stage of the transition should be established. Coherent, coordinated planning and monitoring can only take place when all stakeholders are in agreement as to what plans should be implemented and how they should be enacted and monitored. There is no doubt that the credibility of the entire transition process depends on coordinated, consensual planning.

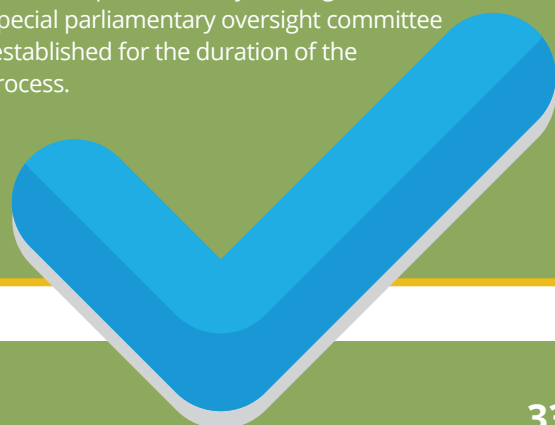
The IRP is still under revision, and this would seem to present South Africa with an opportunity to **reimagine how energy planning takes place**. The IRP could be redrafted to focus not only on economic and technology choices, but to also consider issues of energy justice which prioritise genuine and realisable equality of access and the inter-generational sustainability of energy choices. Ideally it should contain a clear, unambiguous and realistic roadmap to the JET that is so desperately needed to safeguard jobs and realise South Africa's urgent climate commitments. However, international experience shows that energy policy rarely considers questions of energy justice. Research shows that energy planning documents are predominantly drawn up by economists and engineers and are concerned with technology choices and costs [24]. At a minimum, the IRP should acknowledge the need to implement the changes in the energy mix in a way that meets JT principles.

As highlighted elsewhere in this report, coal and electricity are only part of the story, albeit an important and urgent one. **South Africa needs real integrated energy planning**, but the official document for this, the IEP, seems to have dropped off the radar with Government. Given the correlation with a JET, the proposed national JT Task Team could assist in reviving the IEP, and ensuring the next iteration has objectives in line with a transformative JET.

South Africa's energy planning should be in line with its national and international climate change commitments. The current NDC in terms of the UNFCCC will not enable South Africa to meet its specific targets to limit warming to between 1.5 and 2°C. This means that **energy planning going forward should further limit South Africa's GHG emissions** via the Climate Change Bill and the National Development Plan.

To provide legislative support, and building on the work already undertaken by the NPC and in line with South Africa's climate change commitments and the Constitution, a **Just Transition Act** should be passed. This will not only signal high-level political support for a JET, but will entrench parliamentary oversight throughout the transition process. A Just Transition Act should include commitments that are legally enforceable. As best practice demonstrates, the contents of such an Act should be the subject of meaningful consultation and debate by all interested and affected parties.

To enable effective parliamentary oversight of the transition process, a special parliamentary oversight committee should be established for the duration of the transition process.



(B)

IMPLEMENTATION

- the link between worker empowerment, alternative industries, economic resilience and environmental restoration



LESSONS FROM EXPERIENCE

Jobs

The primary lesson from international experience indicates that there should be a **managed decline in the coal sector workforce**. The dismissal of workers in coal mines and coal power stations in the absence of support plans should be avoided at all costs. As one research report makes clear, “a systematic process to mitigate social and labour impacts that starts before any labour layoffs occur can result in a more orderly, less stressful, and ultimately lower cost divestiture process ... Pre-layoff planning and assistance can prepare workers for impending layoffs” [8]. This managed decline should include no new recruitment in the coal sector, early retirement (where possible), worker transfers, on-the-job training, retraining and social assistance until alternative jobs can be found.

There should be a comprehensive and multidimensional approach to the question of job losses during the transition away from fossil fuels. These approaches must be informed by thorough understandings of the specific jobs that are at risk from a transition away from coal. This should encompass not just workers directly employed at coal mines or in coal power stations, but should also include those working in ancillary and supporting industries. For example, consideration should be given to employees involved in the transportation of coal and the machine industries [113]. In addition, jobs will also be threatened in service sectors such as retail in areas transitioning away from fossil fuels if ex-coal workers are not adequately supported. Given these multiple threats, it is essential that a set of realistic options is made available to workers and community members.

International evidence suggests that there is a **net job gain in transitions away from fossil fuels towards RE** systems [98]. That said, in order to reassure organised labour, it is important that “specific examples of green jobs are preferable to hypothetical estimates and numbers in government communications” [98].

To maintain the support of organised labour, if alternative jobs are provided, they should at the very least match the working conditions and salaries previously enjoyed by coal workers. As one report notes, “job creation is clearly a poor proxy for a just transition – what matters more is the kind of jobs, how secure they are, how long they last, and related forms of community resilience” [24]. Therefore, if the transition is to be truly just, workers must be offered “**decent**” jobs as they transition away from employment in the coal sector [113].

It is critically important that transition **jobs should not just be limited to those related to utility-scale RE plants**. Numerous other opportunities exist in the retrofitting of buildings (both commercial and domestic); the decommissioning of coal power stations; the rehabilitation of coal mines; the installation of small-scale RE sources such as solar geysers, and the “greening” of the transport sector [113]. Of course, jobs can also be created in other sectors of the economy.

Women

If the transition is to be truly “just”, then it must **address previous gender imbalances** in the energy industry. Research shows that women are better represented in renewables than in traditional brown energy sectors. That said, they are still grossly underrepresented, making up only 35% of the global renewables workforce, many of whom are in administrative rather than better-paid technical and managerial roles [97]. Evidence from the United Kingdom shows that as men left coal-related employment, they tended to displace working women in other sectors, particularly manufacturing [114]. It is clear from the evidence that there needs to be a genuine commitment to gender equity within the RE sector to address historic patterns of imbalance in the energy sector.

Development and diversification

It should be clearly understood that jobs lost in the “brown” sector are not necessarily absorbed exclusively by the “green” sector. The **diversification of the regional economy in coal-dependent areas is a key strategy** in generating alternative jobs and opportunities for affected workers and communities [100] [115]. This obviously presupposes commitment from both national and regional levels of government and the creation of incentives for the private sector. See Chapter 3.3 for pillars of building economic resilience.

Social protection

Various forms of social protection have also been used. In Germany, workers close to retirement were offered full bridging salaries for up to five years before they became eligible for pensions [113]. In the United States, it has been suggested that workers should receive 100% of their existing salaries for a bridging period of five years, while in Canada plans indicate that workers will receive 75% of their salary for at least two years if they unemployed or, if they do find other work that happens to be at a lower salary, they will receive 90% of their previous salary for two years [116] [101].

Experience shows that one-off payments to workers in the form of “golden handshakes” while easy to implement, are largely ineffective [36].

Retraining and training

Evidence is somewhat mixed as to whether workers from the coal industry have the requisite skills to easily transition to jobs in the renewable sector [97]. Job skills also differ considerably between miners and people who work in power stations. Evidence suggests that almost all displaced workers will need some form of skills training to transition into renewables and other sectors of the economy.

The establishment of a **national body dedicated to the retraining** needs of mine and power station employees has been suggested in the United States, while in Germany the Ruhr Coal Vocational Training Society was established to assist workers to find new jobs [113]. In Canada and Scotland, workers were given access to grants which they could freely use to choose retraining options that appealed to them. However, international experience demonstrates that the availability of appropriate training courses to enable workers to transition into the low-carbon economy is obviously essential [97]. Training also needs to be properly targeted, to match local economic demand.



THE SOUTH AFRICAN CONTEXT Jobs

Estimates vary as to how many direct jobs in the coal sector are actually at risk from an energy transition, but 2017 figures indicate the coal industry employed 82 250 people [117]. According to the then Chamber of Mines¹⁶, as at 2015 the coal industry was responsible for an additional 173 000 indirect jobs in the rest of the economy, with 120 000 of these in the transport sector [118]. Further considerations are the average number of dependants for each direct and indirect job, which is hard to gauge but could be as high as ten per employee [119]. The point is that **the transition will affect millions of people in total, but this affect can be positive through a well-managed JET**.

While the process has been unnecessarily delayed, it is encouraging to note that the **government has begun to assess the impacts of a transition on the labour market**. In 2016, it appointed two service providers to undertake a National Employment Vulnerability Assessment and to draw up Sector Jobs Resilience Plans in relation to the impacts of climate change and climate changes responses in various sectors of the South African economy, including the energy sector. Recent analysis has pointed to the limitations of the SJRPs currently being undertaken, observing that it is little more than a data-gathering exercise and “will not undertake any modelling nor propose particular decarbonisation and coal phase-out pathways” [120].

In addition to this work, the state-funded Council for Scientific

Communities

As has been previously noted, evidence indicates that communities living and working in coal regions must be targeted specifically in relation to job creation and training opportunities. International experience shows that governments have also attempted to support local communities by sustained “fiscal boosts” to regions undergoing energy transitions. Such fiscal transfers have been made to regional levels of government and have largely taken the form of tax incentives for new business and increases in infrastructure spending relating to community welfare [36]. It is, however, very difficult to assess the success of such interventions, partly because of a lack of research, but also because it is difficult to link such incentives directly to specific outcomes.

Evidence from previous labour market transitions indicates that **transition centres** or transition hubs located specifically within each affected area can produce **positive outcomes** for workers and communities. These centres can be staffed by local people, with local knowledge and experience and can offer context-specific assistance with all the programmes and services that need to be implemented during a JET [101].

and Industrial Research (CSIR) has initiated a project to model the socioeconomic risks and opportunities specifically related to a transition from coal to RE. According to the CSIR, it will produce a “national just transition action plan” that will add specific socioeconomic dimensions to the current draft IRP. The research is to be completed in 2020. According to Ntombifuthi Ntuli, who is heading up the research, initial findings indicate that there will be a **net gain of 30 000 jobs in the energy sector between 2020 and 2030, due to the transition from coal to renewables** [121]. It is not clear how relevant this research will ultimately be, given that the current draft IRP is currently undergoing revision within NEDLAC and still needs to be approved by Cabinet.

In terms of new jobs in the utility-scale RE sector, the latest government report states that 40 134 direct job years have been created since 2010, of which 82% were in construction, with the remainder in operations [80]. The decision of the IPPPP office to use “job years” as a job creation metric rather than stating exactly how many permanent jobs have been created by the programme does little to reassure organised labour which remains sceptical about how many permanent jobs are actually being created by this programme.

In 2011 the Green Economy Accord brought industry, government and organised labour together to advance employment in the green sector, targeting at least 300 000 green jobs by 2020.

16. The Chamber of Mines of South Africa is now called the Minerals Council South Africa

Sadly, to date little substantive progress appears to have been made. A recent report assessing South Africa's green economy stated that "opportunities for a greener economic system have yet to be grasped in South Africa ... the economy remains locked into 'brown' energy systems and investments". It called for a renewal of the ideas behind the Green Economy Accord [122]. The Green Economy Accord clearly needs to refocus its efforts to ensure that the opportunities for **retrofitting of buildings** (both commercial and domestic); the **decommissioning of coal power** stations; the **installation of small-scale RE** sources such as solar geysers, and the **"greening" of the transport sector**, are realised in South Africa.

Another area where jobs could be created in South Africa to offset those lost in the coal sector is via the **rehabilitation of coal mines** themselves. The Mineral and Petroleum Resources Development Act (MPRDA) requires mine owners to set aside funds to pay for the rehabilitation of mines once they close. However, recent research concluded that "rehabilitation is often not happening at all: our landscape is littered with unrehabilitated mines". This report noted that it is impossible to know how much money, if any, coal mine-owning companies are putting aside for rehabilitation. The problem is compounded by poor monitoring and enforcement by the government [123]. Nonetheless, if the problem of the rehabilitation of mines is to be properly addressed in the future, a significant number of jobs will need to be created, which would assist with general unemployment.

Women and youth

Unemployment rates among women in South Africa are consistently higher than for men. For example, in 2018, 7.5% more women were unemployed, using the expanded definition of unemployment, than men. In addition, women are more likely to be involved in unpaid labour than men [124]. In terms of employment in the RE sector, women are grossly under-represented, with even the modest targets set for women by the IPPPP office not being met. Women benefited from less than 8% of the "job years" created by the programme to date [80].

One of South Africa's most enduring social problems is its very high level of youth unemployment. At the start of 2019, 55% of those aged between 15 and 24 years were out of work. Even graduates in this age bracket endure an unemployment rate of 31% [125]. The President recently described the rate of youth unemployment as a "national crisis" [126].

Development and diversification

A critical problem is the parlous state of South Africa's economy. International credit rating agencies have rated the economy to be "sub-investment grade", and unemployment is at a 15-year high at 29%, with the expanded definition of unemployment standing at 40% [127]. The economy shrank by 3% in the first quarter of 2019, the single largest fall in over ten years [128]. The **difficulty of creating economic development and regional diversification within this economic climate** is abundantly clear.

Social protection, training for affected workers and communities

Until JET plans are published for South Africa, little can be said specifically about how these three key issues will be handled. It must be noted that many South African coal miners are under the age of 40, meaning that early retirement is not an option, so the utility of this option appears to be limited. Coal miners are relatively well-educated, with upwards of 70% having finished at least high school, in a country where less than 50% of learners achieve even this modest accomplishment [129]. This would, however, appear to bode well for retraining purposes [85].

Something can be said about the issue of training as it relates to coal miners. In terms of the MPRDA (especially section 46(d)), and given effect by SLPs as a condition of being granted a mining licence, all mines owners must have mine closure plans. As part of these plans, mines must create human resources development programmes to ensure that workers have the necessary skills "to ensure improved employment prospects of workers and communities on the closure of the mine". This should include the provision of "skills development plans, learnerships, core skills programmes, and portable skills programmes" with a special emphasis on female employment. Sadly, because of a number of factors largely related to mine owner indifference and the abject failure of the government to enforce legislation, little effective training actually takes place at most mines in South Africa [130] [131]. This obviously have series consequences for mine workers who will be face possible retrenchment due to the energy transition.

Communities are equally vulnerable. Section 46 (c) of the MPRDA states that mine owners must undertake socio-economic development initiatives which are separate from mine operations, and should be aligned to integrated development plans (IDPs) of host municipalities. These plans are deigned to ensure that are other sources of employment on the closure of a mine. However, detailed evidence suggests that this requirement is rarely met in South Africa [130] [131]. Again, this has serious consequences for community members who will be exposed due to the energy transition.

In terms of community development during and after a transition, a word of warning should also be said of the dangers of fiscal transfers to municipalities. Out of 20 municipalities in Mpumalanga, only one received a clean financial audit for the 2017/18 financial year. For example, in the Emalahleni Municipality where many coal mines are located, the Auditor-General (AG) reported R222 million worth of "unauthorized expenditure", R135 million worth of "irregular expenditure", and R110 million worth of "fruitless and wasteful expenditure". When considering Mpumalanga overall, the AG stated that only "3% of the local government budget in the province produced credible financial and performance reports and complied with key legislation, while municipalities entrusted with 97% of the budget failed to achieve clean administration" [132]. It is clear that the suitability of making additional fiscal transfers to municipalities as a means by which to counter the negative effects of a JET needs very serious consideration.

RECOMMENDATIONS FOR IMPLEMENTATION

The South African context starkly highlights why the country is ranked second last in its preparedness for an effective energy transition [91]. The barriers to such a transition are formidable, but it is a reality that a transition from coal will happen anyway, regardless of the state of the economy or the inadequacies of existing government initiatives designed to protect workers after closures have taken place.

Given these challenges, particularly in the job market, a degree of social protection will likely be necessary to protect workers in the short to medium-term. Section 5.2D offers suggestions for financing options.

MANAGING AND CREATING JOBS

Following international best practice, there should be a managed decline in the coal workforce in South Africa. This means there should be a recruitment freeze in the coal sector, early retirement options (which do not prejudice workers' pensions) should be implemented and current employees in the sector should be transferred where possible. In addition to these initiatives, there should be social assistance and training support for all at-risk workers. This **managed decline would be part of the local JET plans for affected area, and complimented by a managed increase in jobs in alternative sectors.**

There are job opportunities in the RE sector. As the evidence above indicates, there is international consensus that a transition from fossil fuels to RE results in a net increase in available jobs. As we have seen, this net increase is also predicted for South Africa. This means that new jobs will become available for the currently unemployed within communities, not just those whose jobs are under threat from the transition. In this way **RE can contribute to a transformative JET by providing a net increase in jobs to tackle unemployment.**

Current concerns on job data can be addressed by research into the gaps (such as where migrant workers come from and where they would prefer to work) and how to communicate information. The latter point includes how the use of job-years as a metric has caused some confusion, and there is a need for a consistent and practical measurement across all sectors to allow proper discussion on job related issues during the transition.

JT CENTRES

The **establishment of JT Centres**, particularly in Mpumalanga would appear to be a precondition for managing a successful JET. Implementation agents and the local JT Task Team could

be based at such centres, but moreover the centres would act as a "one-stop-shop" for workers and community members who will need advice and support during the transition. This proposed centre should be staffed by local people, with local knowledge and experience (adapted from the Latrobe Valley Authority model, Appendix 2). For the proposed JT centres to succeed, they obviously need to be properly capacitated, both in terms of financial and human resources.

Such proposed centres could also become a valuable resources to residents of Mpumalanga more generally as they could include staff to offer general advice and support for those seeking work in the province, especially women and youth.

Given the size of the province and transport costs, it may be necessary to have a number of smaller satellite offices located in Mpumalanga. There may also be a need for similar centres in Limpopo and KwaZulu-Natal.

ESTABLISHMENT OF A TRAINING ENTITY BY THE LOCAL JT TASK TEAM

The local JT Task Team should establish a **dedicated training entity** to attend to the needs of affected workers and communities along with contributing to general upskilling of local people. This entity would also be a good opportunity to address youth unemployment. While the entity should have a specific JT focus, the local JT task team should investigate how to align it with existing education and training facilities such as the TVET colleges [133]. This training entity could be based at, or linked to, the proposed JT Centres described above.

This training entity should be broadly constituted, and ought to work closely with those institutions currently drawing up SJRPs, with industry, with the South African Qualifications Authority, and with senior representatives overseeing the implementation of the Job Summit Framework Agreement of 2018 [84]. This entity should jointly identify specific areas in the economy where there are employment opportunities due to a lack of requisite skills. Training options for those being displaced by the transition should then be aligned specifically with these gaps.

DEVELOPMENT AND DIVERSIFICATION

As per Chapter 3, a JET will require local interventions including economic diversification, creation of alternative industries, infrastructure investment and improvement of 'soft factors'. Since these are location specific, the Regional Transition Assessment should be the basis for developing, with local stakeholder consultation, **a strategy for economic resilience interventions.**

ADHERENCE TO CURRENT MINING LEGISLATION

It is obvious that there should be a complete revision of how both mining companies and the government approach the training of mine workers and communities. As a first step the government, through the Department of Mineral Resources and Energy, should **enforce existing provisions of the MPRDA and SLPs** which make the training of employees and community members a condition of gaining and maintaining a mining licence.

PRIVATE SECTOR SUPPORT

Private companies involved in coal clearly have a vested interest in ensuring that their “company, workforce, and local communities have the skills, investments, and capabilities they need to thrive in the face of rapid climate and commercial change” [134]. Research shows that “individual companies that contribute to a just transition will better manage the risks from a transition to the low-carbon economy and capitalize on related opportunities” [135]. Conversely, private companies face considerable risks relating to stranded assets, inappropriately skilled employees and reputational damage if they do not transition to low-carbon ways of doing business.

While this report focuses on coal companies in particular, it is important for all private companies to transition away from fossil fuels. These necessary changes will result in the creation of new job opportunities as companies meet the need to reduce their emissions footprints via the adoption of new clean technologies and retrofitting existing infrastructure [134].

As a starting point, **commitment to the 2011 Green Economy Accord should be strengthened** to ensure that the opportunities in retrofitting buildings (both commercial and domestic), the decommissioning of coal power stations, the installation of small-scale RE sources such as solar geysers and the “greening” of the transport sector and the economy more generally, are realised.

These new **“green jobs” can be a possible source of employment** for those workers and communities who have been affected by the transition away from coal, and for others that are currently unemployed.

REHABILITATION OF MINES

Rehabilitation work at a number of old gold mines is shows what could be done in ex-coal mining areas in terms of alternative job creation and development. Promethium

Carbon undertook research which examined the benefits of **placing community-based RE plants on land previously used for mining** of gold. The research found that “there is an alternative post-mine life economic and land use scenario” that benefits mining communities after mine closures. To this end, Promethium Carbon has created the Project Evaluation and Development Tool Kit to assist mine owners and communities who are considering RE projects [136].

WOMEN AND YOUTH

A JET should have a clear commitment to gender equity to address historic patterns of imbalance in the energy sector and in the economy more generally. The need to consider the particular case of women within a JET in South Africa is being advanced. In July 2018 a large group of activists came together and called for an “African Ecofeminist Just Transition” which called for greater consideration of the “relationship between patriarchy and climate injustice” during and after a transition away from fossil fuels. The activists produced the Mogale Declaration which sets out 26 “Principles/practices which characterise an African Ecofeminist Just Transition” [137].

Given the severity of the crisis of youth unemployment, it is essential that the employment opportunities presented by a JET are made available to as many young people as possible, and that awareness is raised with the youth about these prospects.

The training entity to be established by the proposed local JT Task Team should **prioritise the training of women and youth by imposing mandatory targets**.

MUNICIPAL ACCOUNTABILITY

To counter the risk of “irregular” and “fruitless and wasteful” expenditure taking place with JT funds at municipal level, a number of institutions should **proactively monitor municipal JT funds** in terms of allocation, spending and accounting. These institutions should include the proposed parliamentary oversight committee established in terms of the proposed Just Transition Act; the national proposed local JT Task Team; the Auditor-General; the National Treasury and the Department of Cooperative Governance and Traditional Affairs.



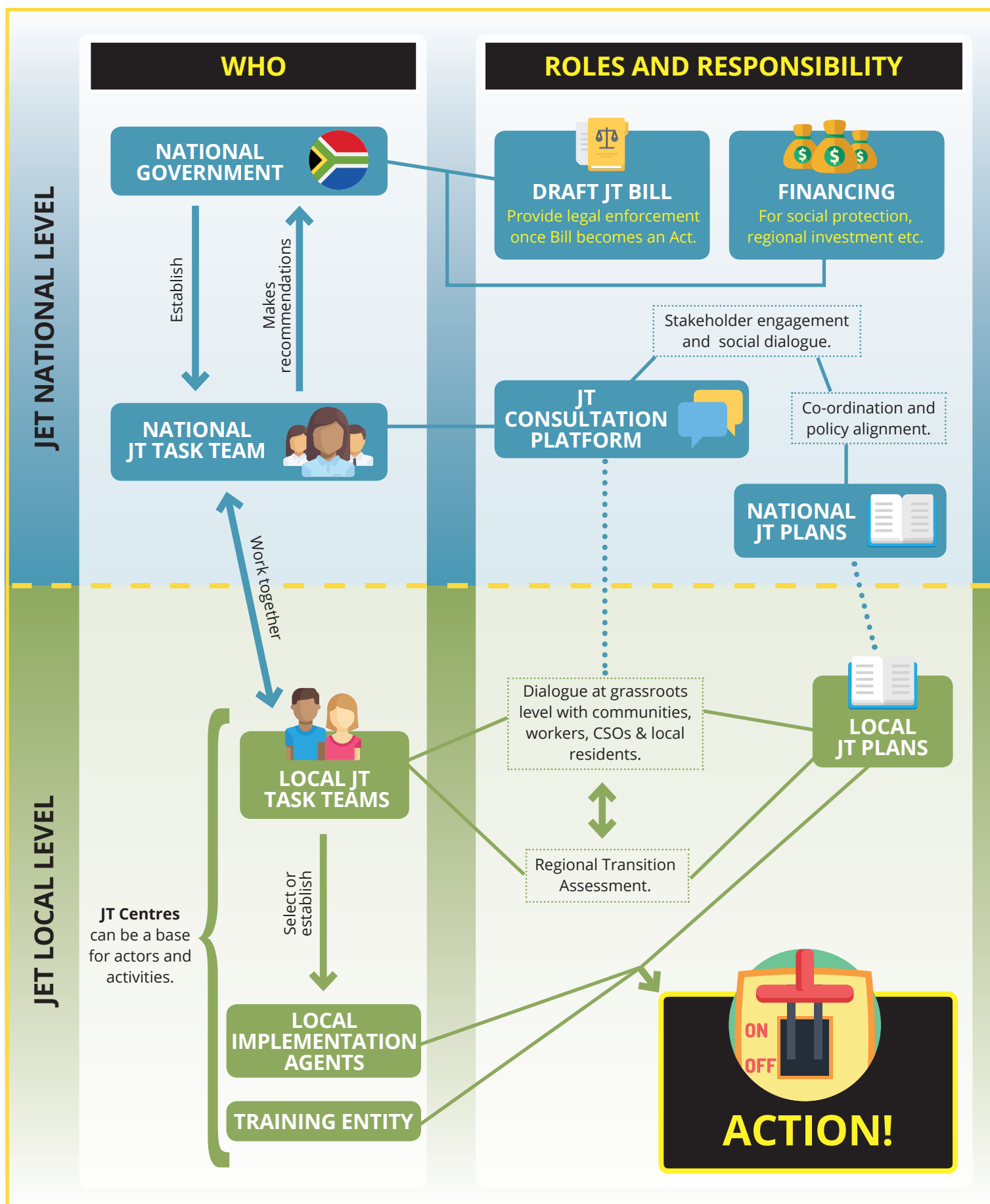


Figure 8: Links between some of the recommendations from “Consultation, oversight and planning” and “Implementation”

(C)

OWNERSHIP OF RENEWABLE ENERGY



LESSONS FROM EXPERIENCE

One of the ways in which the negative impacts of the transition on workers and communities can be improved is by ensuring that RE developments take place within communities previously reliant on fossil fuels. These developments can include RE manufacturing hubs and the building and operation of community-owned utility-scale RE plants.

International experience proves that, under certain circumstances, communities can benefit significantly from the development of utility-scale RE plants. While there are a number of different community ownership models, the one which offers the best hope for South African communities undergoing transitions is the “not-for-profit community-based” model [66]. This model, which can be constituted as a cooperative or a community trust, has social justice as its core guiding principle. Such institutions have voluntary and open membership, are democratically controlled by community members and, most importantly, generally do not seek profit, but rather return revenues for further cooperative and/or community development [138].

An example of this kind of initiative is the CRELUZ member-run co-operative in the state of Rio Grande do Sol in Brazil. This cooperative, which was formed in 1999, has 20 000 members and runs six small hydro-electricity plants (a total of 4 MW).

It states that its primary aim is to supply electricity to all who need it. The cooperative generates and sells its own electricity to its members and returns all its profits into building more generation capacity, local economic development projects, and through providing free electricity to those who cannot afford to pay. The cooperative provides 600 families with free electricity and employs 87 people who are provided with health insurance, transport, food and extensive training opportunities. In addition, CRELUZ has a sliding tariff scale through which wealthier users subsidise poorer families [139].

Research illustrates that successful community initiatives like CRELUZ are founded on strong commitments to inclusive social justice. Many are “driven by political aspirations beyond being part of the change or transition to community energy”. These aspirations include “more social equity and the empowerment of disadvantaged social groups” [140]. This type of community-owned RE project would seem to be ideally placed to counter the negative consequences that befall communities during and after the transition away from coal. They democratise the production and distribution of energy, and they also provide jobs, local economic development initiatives and go some way towards protecting the especially vulnerable in society.



THE SOUTH AFRICAN CONTEXT

The development of utility-scale RE energy plants in South Africa has followed a largely commercial trajectory. Initiated in 2010, the REIPPPP has to date procured 6 422 MW¹⁷ of RE from 112 service providers (See Chapter 4). In line with its “pro-market” orientation, the government chose to procure this energy from private companies via a competitive auction system.

In accordance with the government’s commitment to foster local economic development, bidders were not assessed on price alone. While 70% of the “score” a bidder received was based on price, the remaining 30% was based on the bidders’ socio-economic development commitments and on how well these were articulated. These commitments include (with their respective weighting in brackets): job creation (25%); local content (25%); ownership (15%); management control (5%); preferential procurement (10%); enterprise development (5%) and socio-economic development (15%).

In terms of ownership in particular, the bid criteria state that a minimum of 2.5% of each project must be owned by the local community (effectively an equity shareholding in each company) with a goal of 5% local ownership. In effect, this means that only 4.5% of the overall bid assessment was specifically related to ownership. According to the bid criteria, the would-be owners of this equity stake must live within 50 km of the RE development in question.

The government claims that R27 billion in net income (in real terms) will accrue over the life (assumed to be 20 years) of the projects to local communities through their equity ownership via community trusts that have been established to manage profits from their ownership shares. The government also states that the 2.5% minimum local community ownership figure has been exceeded, claiming that 9% of REIPPPP projects are owned by local communities [80].

17. As of March 2019, 3976 MW had been connected to the grid, providing about 5% of South Africa’s electricity.

Despite these claims, there are a number of serious problems with the REIPPPP in terms of community development and revenues. The programme assumes a passive beneficiary model, with community members having little or no say in what “development” takes place on their behalf; what developments have taken place have been unevenly spread due to problems with community identification and the 50 km rule; dividend payments will not be made to communities until at least 2028, while the majority of profits that are generated from REIPPPP flow overseas because overseas companies hold the majority of shares in most projects. In addition to this, the overwhelming majority of projects are not located in areas where coal mining and coal power stations are located.

The REIPPPP’s rationale and ideological/political foundations appear to be in opposition to the types of systemic change that is necessary for a JET to take place. REIPPPP is “pro-market”, involves significant penetration of private capital which is looking for profitable shareholder returns, and exists within a sphere that the government has largely vacated, outside of its obligation to assess bids during the auction process. What benefits there are for community members are not of their choosing, are limited in scope and are almost entirely mediated by the interests of private capital. Such benefits that exist tend to be welfarist and fail to ask, let alone begin to address, the fundamental questions that need to be asked if systemic change is to take place during a JET in South Africa.

RECOMMENDATIONS FOR OWNERSHIP OF RENEWABLE ENERGY

It is clear that RE, both in terms of its manufacture and its application, can contribute significantly to ensuring that workers and communities from regional coal economies are protected during the transition.

With planning and political will, the **manufacture of RE components could take place in Mpumalanga** and other coal-dependent regions of South Africa. This would include the manufacture and assembly of components for all current forms of RE technology. If ex-coal workers receive appropriate training – both in terms of quality of training and subject matter – there is the opportunity for jobs losses related to the transition to be more than made up with new job opportunities, which would help with unemployment in the region.

There is, however, one precondition which has to be satisfied for this form of economic diversification to take place. There needs to be a genuine and **unwavering commitment to the wholesale adoption of RE by the South African government** before private companies, both local and international, will establish manufacturing hubs in the country. Only with such a commitment will companies invest the necessary resources to create RE production

facilities [141]. If production facilities were to be established in South Africa (along with their associated value chains), Mpumalanga would make sense as a location because, being in the north east, it is close to other parts of southern Africa. South Africa’s long history of cooperatives should provide a good basis for the successful **establishment of “not-for-profit community-based” RE plants** [142], some of which could be based in Mpumalanga. This model provides the most benefit to communities.

What is needed, therefore, is the political will to facilitate the creation of such “not-for-profit community-based” RE plants in South Africa. This presupposes a move away from the private profit orientated focus of REIPPPP, to the development of a RE programme that has a JET at its core.



(D)

FINANCING POSSIBILITIES



FUNDING OPTIONS

Undertaking a JET will be an expensive undertaking. Evidence shows that in most cases where transitions have taken place, or are currently taking place, governments shoulder most of the financial burden. They do so via social protection payments, regional infrastructure development, stimulating economic diversification and retraining programmes. Research shows that mining companies have been very successful in socialising the losses and liabilities from their mining activities [36]. While it is inevitable that fiscal demands will be made on government, for example the Spanish government recently established a €250 million transition fund, there are other options for raising the necessary fiscal support for a JET.

Carbon tax

A ring-fenced carbon tax can be used to raise the funds. This has the added advantage of contributing to an energy transition.

Reallocating fossil fuel subsidies

While the specific amounts governments pay out in fossil fuel subsidies differ, the International Monetary Fund (IMF) estimated that globally they accounted for 3.8% of global Gross Domestic Product in 2015, an equivalent value of USD4.7 trillion [143]. This shows massive potential for such subsidies to be diverted into a JET. The removal of fossil fuel subsidies also prevents the “locking-in of unsustainable patterns of energy production and consumption” which is a major impediment to an energy transition [144].



COST OF DOING NOTHING

When considering the significant costs of a JET in South Africa, it is necessary to be fully aware of the costs of doing nothing, or of not properly planning for the inevitable transition. An overwhelming amount of evidence suggests that not implementing a timely, fair and effective transition from coal is far more costly than implementing one [28].

Regions which have experienced an energy transition in the absence of plans and without due preparation, such as the coal regions in the United Kingdom and Poland, have been left with many negative consequences. These include, “high dependency ratios (non-working to working population), low educational attainment, below average wages and wage stagnation, environmental problems related to site remediation” [36].

Costs should therefore be considered both financially and socially. In financial terms, it was recently calculated that it could cost South Africa as much as R2 trillion between 2013 and 2035 if the country fails to transition away from fossil fuels. This cost is predominantly made up of lost coal sales due to market changes precipitated by climate change mitigation strategies, and stranded fossil fuel

Specific coal tax on coal companies

Coal companies are often large international corporations or subsidiaries of such corporations. Many of these corporations, such as Glencore or BHP make vast profits. In 2018, BHP recorded net profits of USD3.7 billion, while Glencore reported net profits of USD3.4 billion [145] [146]. Given the magnitude of these profits, and their historic accumulation, a strong argument can be made for the imposition of a coal transition tax or royalty on coal mining companies. This is especially just, given the massive fossil fuel subsidies they received in the past [113].

Green Climate Fund

There is growing international pressure to revise the terms of the Green Climate Fund to enable it to fund JETs from coal to RE [75]. This would release funds for the specific aim of contributing to JTs, rather than assisting with technology transfers and mitigation programmes.

International financial institutions (IFIs)

In the interests of all global citizens, IFIs could release funds at sub-market interest rates to enable countries to finance their JET plans.

Regardless of source, it is imperative that such JET funds are ring-fenced for their stated purpose and do not get absorbed into the general fiscal regimes of beneficiary countries.

assets abandoned due to uncompetitive costs and climate change mitigation strategies [147]. An additional R20 billion can be added to this cost up to 2052 if the government allows the building of two independent coal power plants, Thabametsi and Khanyisa [148].

The social costs are also significant. If a JET does not take place, coal-dependent regions could endure prolonged strike action and social unrest as the social contract between organised labour and government, already under strain because of the failure to properly plan for a transition, unravels completely. The public health costs of not transitioning away from coal must also be considered. The chronic occurrence of bronchitis and asthma in the vicinity of coal power stations and mines is estimated to cost upwards R33 billion per year in hospital admissions and lost workdays [149].

Mining and generating power from coal is also very water-intensive. Approximately 7% of South Africa's water is used in the coal industry, with regional figures far in excess of this amount. Coal mining and burning also pollute water sources, the satisfactory clean-up of which is estimated to cost hundreds of billions of Rands [150]. Therefore, the social and economic costs of this cannot be overstated in a water-scarce country like South Africa.

RECOMMENDATIONS FOR FINANCE

Based on international experience, there is no doubt that a JET in South Africa will be costly. It is likely to cost tens, if not hundreds, of billions of Rands between now and the time the transition has been completed. The NPC has recommended that the PCCC conducts an audit of funding opportunities [151]. South Africa could source the necessary funds using a combination of options.

CARBON TAX

South Africa's current carbon tax is too low, and there are too many exclusions and discounts to make a meaningful financial contribution to a JET at present. The tax is currently set at R120 per tonne of carbon dioxide, but allowances can lead to up to a 95% reduction in this standard rate, meaning that companies could pay as little as R6 a tonne. It has been argued that the tax should be at least R750 per tonne to have any meaningful impact on emissions in South Africa [152]. The rate of taxation is expected to increase significantly, and exclusions to fall away, by 2023. Eskom has recently expressed its alarm at these proposed changes, claiming that by 2023 the tax could cost it in the region of R11.5 billion a year [153]. The obvious solution to this predicament is for Eskom to implement a JET as soon as possible. **The carbon tax should be increased to a rate that promotes meaningful emissions reduction and a proportion of the funds ring-fenced for JET work.**

FOSSIL FUEL SUBSIDIES

According to the IMF, fossil fuels subsidies cost South Africa USD45 billion in 2015 [143]. In terms of coal specifically, a recent report calculated that the coal sector received R56 billion in subsidy support in 2016/17 [154]. As other countries have done, **these massive subsidies should be gradually shifted towards funding a JET in South Africa.**

COAL TRANSITION TAX

A number of significant international and national mining companies mine coal in South Africa, including Glencore, Anglo American, South32 and Exxaro. These companies have diversified mining portfolios in South Africa and have benefited, and continue to benefit, from fossil fuel subsidies. **A coal transition tax should be investigated as way to get coal companies to contribute to JET financing.**

INTERNATIONAL FINANCIAL INSTITUTIONS

The Eskom sustainability task team, along with Meridian Economics (an advisory group and think tank), are developing a model that could raise finances for a JT. This "just transition transaction" is a new idea that could raise up to R200 billion,

provided Eskom accelerates its transition away from coal-fired electricity generation relative to the current draft IRP [155]. A mandate from government is required to develop the model further. Essentially, by lowering emissions faster than the current electricity plan dictates, through the increased addition of RE and reduction in coal use, climate finance institutions would 'pay' for that faster decarbonisation by providing low- or zero-interest loans to Eskom. **Innovative models that leverage international climate finance should be explored as a way of establishing a JET fund.** If such deals were to go ahead, South Africa should ensure that it protects its fiscal sovereignty, and does not agree to onerous conditions that limit its ability to implement economic policies of its own choosing.

ENDING TAX AVOIDANCE

According to research carried on the 2010 - 2014 financial years, the South African government lost at least USD37 billion in revenue from illicit financial flows out of the country, principally made up of "trade misinvoicing", whereby goods are either over- or under-valued to avoid Value-Added Tax and income taxes (a form of trade-based money laundering). Over the five-year period covered by the study, the equivalent of USD7.4 billion per year was lost to the South African Revenue Service [156]. If the authorities were to address this misinvoicing, significant additional funds would flow to the government which could be used to help fund a JET in South Africa. **Government should clamp down on tax avoidance to provide funds for addressing the triple challenge.**

USING FUNDS FROM THE PUBLIC INVESTMENT CORPORATION (PIC)

A total of 87% of the PIC's funds are held by the Government Employees Pension Fund, which as of March 2018, had a value in excess of R1.8 trillion. The argument has been made that as this fund has more than enough liquidity to meet its pension payment obligations, it could be used to help Eskom fund a JET, rather than Eskom having to raise funds on global markets or plunge the South African government into further debt [157]. While this is certainly an option, it needs further investigation. This is especially the case, given that the PIC is currently the subject of a judicial commission of enquiry into allegations of corruption [158]. **Government should investigate if PIC funds can be responsibly used for projects that benefit South Africa, such as Eskom reform.**

6

Concluding remarks

A primary objective of this study was to identify practical steps to move towards a JET in South Africa. To this end, the study proposes an outline of what is required for a proper consultation process to produce national and local JT plans, which will include energy. The recommendations include suggested entry points for implementation, who should do it and how to finance it. A JET is part of a much needed general transformation process, so we need to keep in mind that there is a bigger JT picture and other areas of interest while working on changes in the energy sector. Drawing on collective civil society input, we propose five essential building blocks: “accessible and affordable electricity”, “corporate and business reform”, “shift in ownership of energy”, “empowerment of workers and communities” and “environmental restoration and protection”, as well as the overarching principle of energy democracy. These six pillars could give guidance to the continued discussion around JET in South Africa.

Reviewing international coal transitions gave valuable lessons that can be adapted for South Africa. One important insight was that we have to get the basics right, such as proper planning and consultation. In many cases this has failed to happen and people have had to live with the consequences. Dedicated entities for planning, management and implementation, which have government support, must be established for the process to succeed. Establishing this framework is a pressing task that needs to be done in South Africa.

Conditions are unique in every country and South Africa faces specific challenges that are not necessarily analysed in other countries’ energy transitions. For example, the question around “How to factor accessible and affordable electricity into JET planning?” will require special attention and further research in South Africa, as lessons from the Global North appear limited in this context. The same applies to corporate and business reform which will need some innovative thinking, given the current economic and regulatory situation in South Africa, particularly for crisis-ridden Eskom.

A stocktake of JT/JET related components in South Africa shows that while the terms are becoming more mainstream, and many discussions are taking place, there is no coherent strategy in place for how to actually get started. There are also contradictory messages coming from national government and while the NPC has made inroads in terms of consultation, greater capacity and reach is required.

Our study is meant to stimulate further debate but also push the discourse toward action. There is enough common ground that has emerged to date from the stakeholder dialogue to start “doing” while the talking continues. Action is way overdue, and the space to delay any further has long passed.

Why is the situation urgent?

The coal sector alone provides 3 clear examples:

1. There are plans afoot for China to build a new power station as part of the EMSEZ project in Limpopo (Chapter 3). In addition to increasing the use of coal, which is not indicative of an energy transition at all, the electricity will only supply the industrial activities on the site and not the local people. A further concern is that this power station is not included in the current draft IRP, which seems to contradict the logic of an “integrated” plan if some facilities can be omitted. In no way would the authorisation of this power plant be compatible with a JET, and if the special economic zone does go ahead, it should get power through new renewable resources with ownership structures that benefit the local population the most.
2. Similarly, the ongoing push from national government for two new coal IPPs, Thabametsi and Khanyisa, is not aligned to a JET trajectory. At least on this front, major South African banks have been pulling out of financing them. Around the world, the risks of stranded assets in the fossil fuel sector are being taken more seriously, and it is encouraging to see finance institutions in South Africa following suit. The divestment movement has sought to accelerate climate change action by calling for investors to take their money out of fossil fuels. This is a necessary and powerful strategy for the energy transition, but it is important that divestment does not take funds away from the JET side of the equation and the social obligations that these companies have.

3. Eskom's Hendrina power station is closing down and there appears to be nothing resembling a JET plan for the workers. In Australia, a similar situation occurred at Hazelwood power station (Appendix 2). While prior planning would have been best, at least when Hazelwood did close, both state and federal governments provided funding for transition projects. In addition, the Latrobe Valley Authority was established which has been recognised as a good model for work on JET. The closing of Hendrina provides an opportunity for the South African government to show its commitment to a JET. The establishment of a local JT Task Team or equivalent

that looks at energy and other relevant sectors, would initiate the process of protecting the workers and communities affected by Hendrina and further imminent power station closures. As an initial step, the workers should be consulted as to what their immediate needs are, followed by an investigation into longer term options. It is this type of thinking that must go into the Eskom reform process, regardless of how the overall restructuring or unbundling of the utility unfolds. Since Eskom is state owned, national government can insist that these type of JET initiatives happen.

Plans for a new nuclear build in South Africa have not yet been abandoned, and the developments around this need to be followed closely. This report has not looked at nuclear energy, because we do not see it as an element of a JET due to concerns around cost, inflexibility, long construction times, centralised nature and waste.

What can civil society do now?

The ongoing support for new coal, recent obstruction of the emerging RE industry, lack of readiness to transition and the absence of JET plans clearly indicate the lack of political will for a JET from the South African government to date. But in the end, nothing significant is going to happen if there is not the political will to do so.

An ongoing priority for civil society, including labour, is to further develop strategies to put more pressure on government to take JET (within a JT framework) seriously. Building on the lessons about the power of alliances, stronger connections between existing campaigns in South Africa could accelerate the realisation of these strategies. Given the absolute importance of political will, cross disciplinary collaboration on *"How to make government prioritise and act on JET issues?"* is possibly the most important topic for further research. There is a similar need for tactics on how to tackle vested interests and get business buy-in for the transition. Civil society can unite around the urgent coal related issues mentioned above and explore innovative financial models, such as those suggested in Chapter 5. The creation of an institutional framework for a JET as part of a wider JT is another rallying point. Discussions have shown that there are many different opinions within civil society and labour relating to JET. Yet these disputes have also shown that there is sufficient mutual territory to act now and move collectively in the right direction.

As a final thought, **the framing of the JET movement can be rooted in the opportunities it presents.** A well-managed JET, will lead to a nett increase in decent jobs that positively affects workers and their families. Communities can benefit significantly from economic diversification, local infrastructure investment and environmental restoration. Pollution reduction will improve the health of people and ecosystems. A JET can accelerate GHG emissions reduction to meet, or improve, our climate change commitments. Business has the chance to reduce its risk and develop alternative local industries. The confluence of climate change work and social interests is an opening for the environmental and labour movements to collaborate.

The argument that South Africa has more important issues to deal with is not valid as a transformative JET can contribute to tackling the triple challenge of poverty, inequality and unemployment. Given all these opportunities, and the socio-economic challenges that South Africa faces, decision-makers and leaders need to embrace a JET in a meaningful way. Here is a real opportunity to remake our energy future, and we must take it, together.

Appendix 1

Just transition principles from some proponents

Some of the leading proponents of a JT as listed below, stress that we have to realise that there is no “one size fits all” solution, but that every country needs its own vision and approach to make the transition happen. Consulting all interested and affected parties within each country and the need for social dialogues is raised across the board, to ensure transparency, equality and fairness during and after the transition process. The International Labour Organization as well as the International Trade Union Confederation specifically mention policy designs and plans as crucial if this shift to more sustainable solutions is to happen.

For all proponents the creation of decent jobs, the retraining of affected workers to increase their employability as well as the implementation of social protection initiatives are key to a successful JT. While the European Trade Union Confederation emphasises the importance of mobilising trade unions to actively engage in the transition, the Just Transition Alliance includes points on rights to clear air, water, land and food and environmental protection.

PROPONENT	JT GUIDELINES OR PRINCIPLES
International Labour Organisation (ILO) [23]	• Social dialogue to gain consensus on goals and pathways to sustainability. • Policies must respect, promote and realise rights at work. • Policies must take gender into account to promote equitable outcomes. • Coherent policies across sectors to provide an enabling environment for stakeholders to drive transition. • Need for just transition framework to create decent jobs and social protection. • No “one-size fits all” solution, so policy design is place-specific. • International collaboration amongst countries.
International Trade Union Confederation (ITUC) [159]	• Investment and policies for green and sustainable jobs. • Research and assessment into employment impacts to prepare for change. • Government to facilitate consultation with all interested and affected parties. • Capacity building and retraining of workers. • Implementing a wide range of social protection initiatives for workers. • No “one-size fits all”, so each region needs its own economic diversification plan.
European Trade Union Confederation (ETUC) [160]	• Economic diversification and industrial policy for quality jobs. • Social dialogue and participation of relevant stakeholders during policy planning • Education, training and skills to increase worker employability, along with mapping future needs • Social protection including evaluating stranded assets. • Mobilise trade unions to actively engage in transition.
Just Transition Alliance [161]	• Everyone has the right to clean air, water, land, and food. • Sustainable development can happen along with a healthy economy and environmental protection. • Solutions need local, regional, national and global solidarity. • Fair policies on economic, trade, health and safety and environmental issues to be developed with those people most affected by the transition. • Cost of the transition should not be borne by current and future victims of environmental and economic injustice. • Communities should be able to hold entities responsible for committing environmental and economic injustice to account.

Appendix 2

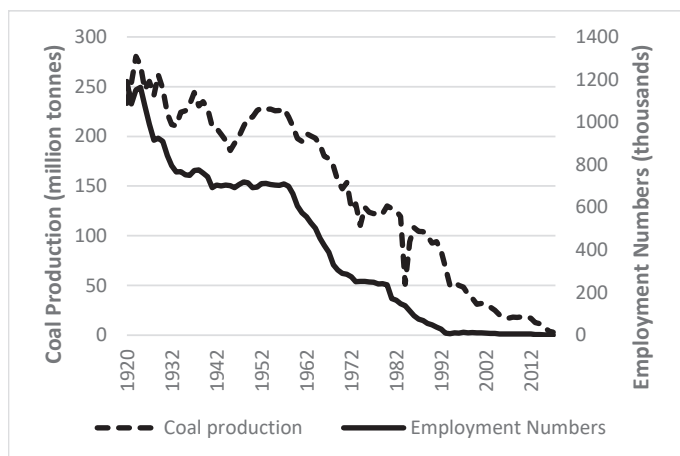
Country summaries and additional lessons

United Kingdom¹⁸



National coal transition

The UK has essentially moved away from coal production and use, but this long decline since the 1920s was not as a result of government phase-out plans until very recently. Many commentators view the UK transition as how not to do a fair and equitable transition, as measures put in place for workers were inadequate and dialogue with labour unions was largely ineffective. However, there are also positive components.



Drivers

- Reduced profitability of coal sector.
- Air pollution, 1960s; recession, 1980s.
- 1990 onwards: cheaper coal imports and North Sea gas.
- 2010 onwards: energy efficiency, decarbonisation policies, introduction of RE, coal power station closures due to EU non-compliance for pollution.
- 2016 – Carbon tax caused further reduction in coal use.

Features

- The shift did not start as an explicit political decision.
- Overall, the transition lacked organisation and coherent strategy. A collection of were measures added to deal assist workers and communities, but their suitability is in question.
- Social conflict escalated over time, culminating in a year-long miners' strike in 1984 – 85, led by the mineworkers' union which Prime Minister Thatcher wanted to suppress.
- Coal work was the highest paid manual labour in the UK. While some jobs were created to counter losses, they were often less well paid.
- 2015, a coal phase-out by 2025 was announced by the UK national government [162].

Justice elements

Workers

- Redundancy payments (but only 6-12 months wages), early access to pensions.
- A minority were funded for training courses, often of short duration.
- There were some jobs in regeneration of mining areas.

Communities

- UK and EU funding for colliery site reclamation.
- A charity for community projects was established: the Coalfields Regeneration Trust. [163]
- There was infrastructure investment in former coal regions, such as the sustainable village planned for Staffordshire [164].

Consumers

- Solar panel subsidies were made available, but these are now much reduced.

Lessons

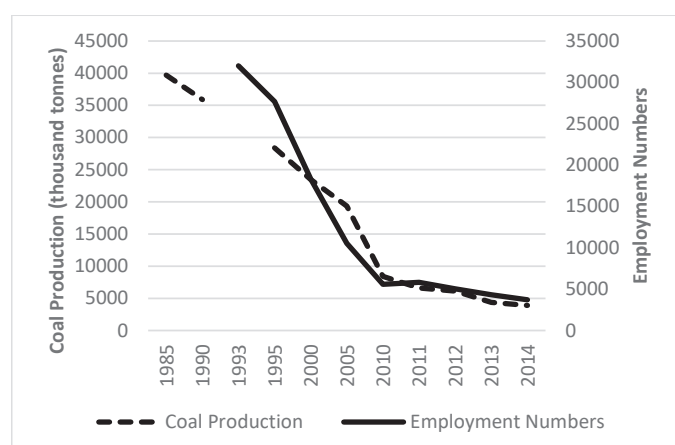
- A mature economy can transition away from coal.
- The electricity market can direct change: e.g. the "dash for gas" and the introduction of a carbon tax.
- Rebuilding mining communities takes a long time, and is still ongoing in the UK.
- There is a need for proactive, forward thinking plans for workers, rather than reactive, ad hoc measures.

18. Compiled from the UK Coal Transitions study [178], or the E3G report [184]. Graph figures from Our World in Data [5].

Spain¹⁹

National coal transition

In the last two decades, Spain has made a concerted effort to phase out coal via successive government policies, which were developed with unions.



Drivers

- Closure of non-competitive mines.
- High costs and subsidies for coal. Spanish coal was less inefficient than imported coal).
- EU regulations on price support and emissions reduction affected Spain.
- Overcapacity in electricity generation because of investment in RE investment and reduced demand for electricity.

Lessons

- There were issues with how money was allocated. In the 1998 – 2005 plan, training only received 8% of the budget, with infrastructure (78%) and business projects (15%) receiving the rest.
 - “There aren’t opportunities here. Firms able to create employment have not been set up, but we have the best sidewalks and streetlights.”
- This case highlights the need for creating alternative industries or employment sectors rather than just financial payouts.
- AJT can be financed by converting coal subsidies.



Features

- 1990 – 1997, plans around coal price support mechanisms.
- 1998 – 2012, two plans to reduce coal production and employment.
- 2013 – 2018 – plans to close units that were not able to survive without support.
- No alternative industries were created, early retirement was the main mitigation policy.
- The closures were financed from the Spanish budget.

Justice elements

Workers

- Included in the plans from 1990 onwards.
- Compensated for voluntary termination of jobs.
- Support for early retirement – workers could receive a salary of 2 to 3 times the minimum wage until retirement age [165].
- Worker placement and training support has been weak.
- In 2018 the €250 million Plan del Carbón replaced subsidies to the coal industry with a sustainable development plan that had union support.

Communities

- Funding for infrastructure and business projects.
- Restoration of degraded areas.

19. Compiled from Coal Transition in Spain study [38]

Netherlands²⁰ – Limburg

Regional conversion

Between 1965 and 1990 the Limburg region was converted from underground, hard coal mining to high value-added sectors (health services, chemical processing, logistics, financial administration, etc).



Cathedral in modern Limburg²¹

Drivers

- Discovery of Europe's largest natural gas field in 1959.
- Cheaper imported oil.
- Oversupply of steel and coal.
- Increased costs of coal mining.
- In 1965, the government decided to end coal mining, but almost all the mines were in Limburg.

Features

- There were no significant labour protests. It appeared that the writing was on the wall and parties worked together. In fact, labour stood to benefit from an earlier exit while the company still had money.
- Over 10 years to 1975, 50 000 workers left mining.
- Dutch State Mines (which ran the Limburg operations) was an active player. It was financially stable at the time and diversified. Reputation was important, so there were generous programmes to address psychological aspects of worker transition.
- Government made deals with companies.

Justice elements

Workers

- There were no formal redundancies in the period 1965 – 1974. All workers were employed elsewhere, bridged to pension, etc.
- However, by 1978, the Limburg region had unemployment of 13% compared to the national average of only 6%.

Communities

- Structural change programmers run by local authorities
- Investment by public sector into supporting infrastructure, roads, education facilities (including a university), innovation and entrepreneurship.

Consumers

- Substantial gas subsidies were introduced to encourage domestic use.

Lessons

- Accepting the need for transition is important for affected people to cooperate.
- Dutch State Mines reinvented itself to become a chemical company
- Reliance on the central government might have been taken too far – it caused delays in policies geared to local conditions.
- Some estimates are that between 14% and 30% of reconversion subsidies were lost in bribes and extortion.
- While there was some short-term success, immediate post-coal jobs did not prevent job losses later.

20. Compiled from Coal Transition in the Netherlands study [181].

21. Photo: Martin Kraft, CC BY-SA 3.0 (<https://creativecommons.org/licenses/by-sa/3.0/legalcode>)

Germany – Ruhr²²

Regional conversion

Since 1957 the Ruhr region has undergone a transformation from underground hard coal mining to a knowledge-based economy with many educational institutions.



The Zollverein mine is now a world heritage site²³

Drivers

- Air pollution. From the 1960s, there were calls for “blue skies above Ruhr”.
- Imported coal and oil became cheaper than local coal.
- Subsidies kept local coal going until 1990.
- EU policies – the Emissions Trading System and RE directive led to change.

Features



- Densely populated area allowed for other land use and activities.
- Long phase-out period, financed mainly from the state budget and the EU.
- Union protests – miners had a strong sense of identity and pride.
- Opposition from the steel sector.
- 22 universities and colleges were built between 1965 and 2014.
- Soft factors (culture, leisure, and natural beauty) were neglected for a long time. Eventually these were addressed by programmes such as “IBA Emscher Park”, a ten-year environmental and urban renewal programme.

Justice elements

Workers

- Initially, coal workers could move to metal sector jobs.
- Early retirement and redistribution of shifts were introduced to avoid layoffs.
- More recently, there are employment options in the expanding RE sector.
- As at August 2018, Ruhr has unemployment of 9.5% compared to the national average of only 5.2%, but ex-miner-related unemployment is only 3%.

Communities

- Reclamation of the Emscher River, and reconstruction of the Rhine-Herne Canal and green belts.
- A network of parks and opportunities for social, cultural and sporting activities were provided.

Lessons

- Propping up existing industries financially instead of focusing on new sectors is a mistake.
- Shift decision-making to local level to reduce resistance.
- Cities within an affected region need to coordinate restructuring to avoid duplication.
- Investment in soft factors is important to draw other investment.

22. Compiled from Coal Transition in Germany study [182] and Ruhr Eco-restructuring paper [186].

23. Photo: Unukorno, Wikimedia Commons, public domain use.

Canada – Alberta and Ontario²⁴



Transition in progress

Both Alberta and Ontario are making a shift away from coal but still retain other fossil fuels (oil and gas) as core aspects of economy.²⁵ Both provincial and national coal phase-out plans have support programmes for workers, which were developed with unions and are widely viewed as being in line with the International Labour Organization JT principles.



Despite coal phase-out, Alberta's tar sand operations²⁶ continue to have enormous environmental consequences

Drivers

Alberta:

- Cheap and easily available oil and local natural gas.
- Declining export potential for coal (long distance to seaport).
- A reputation as Canada's main contributor to GHG emissions
- The turning point was a change in ruling party in 2015. The New Democratic Party adopted the Climate Leadership Plan (CLP): phasing out coal by 2030, introducing a carbon price, and introducing an RE target of 30% by 2030.

Ontario:

- Health concerns and cross-border pollution control legislation.
- Pressure from grassroots action and bilateral agreements.
- A mixture of renewables could replace coal.

Features

- Provinces could implement legislation without going through federal government, as Alberta did, but in 2016 there was also a national commitment to coal phase-out by 2029.
- In 2018, federal government established a Task Force on Just Transition for Canadian Coal Power Workers and Communities.

Alberta:

- The electricity market was redesigned to include a "capacity market"²⁷, which reduces risk for building new renewable assets [166].
- Industrial carbon taxes were used to pay out coal power companies.
- Up to 13 out of 18 coal power stations will be converted to gas.

Ontario:

- The state government absorbed all phase-out costs.
- Doctors were trusted messengers on health and air quality warnings.

Justice elements

Workers

- The Coal Workforce Transition Fund provides CAD 40 million for income support to coal sector workers.

Communities

- The Coal Community Transition Fund provides CAD 5 million for economic diversification and development.
- The Community and Regional Economic Development Program provides ~CAD 30 million over two years to increase investment in rural communities around Alberta.

Consumers

- A price cap of 6.8 cents per kilowatt-hour is in place for Alberta electricity bills until May 2021.

Lessons

- A change in ruling party can mobilise action on energy transition, listen to stakeholders that were previously ignored, and displace entrenched vested interests.
- In Alberta, the process gained the support of power companies, unions and local NGOs. The mines were in opposition, and as a result did not negotiate any financial support.
- In Ontario the coalitions that formed around health concerns were highly effective.

24. Compiled from the IISD reports on Alberta's [32] and Ontario's [185] coal phase-out.

25. Alberta has the world's third largest reserve of oil, mostly in the form of tar sands.

26. Photo: Howl Arts Collective, licence CC BY 2.0 (<https://creativecommons.org/licenses/by/2.0/legalcode>)

27. Suppliers receive revenue for the capacity they are obliged to have available in addition to the electricity actually sold

Australia – Latrobe Valley²⁸

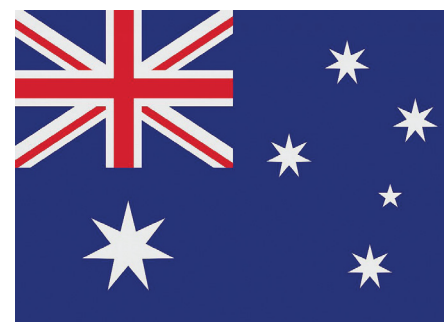
Local governance with national support can work well

Australia is the world's largest coal exporter. The closure of the Hazelwood power station in Victoria prompted the creation of a locally run authority to manage the transition in that region. This could be a model for JT implementation arrangements elsewhere.



Features

- Hazelwood was the oldest and most carbon intensive power station in Australia when it was closed.
- It operated for over 50 years, and was privatised in 1996 with a decline in employment.
- Only five months' notice of closure was given (announced in November 2016, closed March 2017). Approximately 1 000 jobs were lost (including supply chain).
- The reasons for closure: were low-carbon investment policy, lower alternative energy prices, the high cost of continued safe operation, and oversupply of electricity in Victoria.



Governmental responses to closure

- The federal government provided AUD 43 million for infrastructure, job creation, diversifying the regional economy and some retraining funds.
- The Victoria state government provided AUD 266 million over four years (the largest regional assistance package in Victorian history) for the establishment of the Latrobe Valley Authority (LVA), business investment, and job creation in a wider area.
- In 2017, the Mine Rehabilitation Commission was established.

Latrobe Valley Authority (LVA)

- Run by a team of local staff who collaborate with residents of the valley to do "things that matter" for the community.
- Government of Victoria provides grant funding that is administered by LVA.
- Fundamentals of the LVA approach:
 - Build on community strengths and capability.
 - Lead collaboration and innovation.
 - Draw on and use the best ideas for what works.
 - Support opportunity for all
- Results as at February 2019:
 - 1 434 workers and families are supported by the Worker Transition Service.
 - 865 have been employed through the Back to Work Scheme.
 - 135 community projects are supported by the Community Facility Fund.
 - 962 jobs have been created through Economic Facilitation Fund.

Lessons

- Ways to encourage private companies to move towards best practice and avoid late notice closures include:
 - Market pressure or incentives for companies to have JT plans.
 - Regulation around JT for private companies.
- LVA:
 - Importance of relationships and trust in a transition process.
 - Innovation requires co-creation between community and businesses.

28. Compiled from Coal Transition in Australia study [183] and Karen Cain presentation [40].

29. Photo: Mriya, licence CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0/legalcode>)

Lessons from other large coal economies

United States

The USA has the third highest coal consumption in the world, but since 2008 there has been a downward trend in coal production, use and jobs [167].

Disruptive technology – fracking³⁰

Coal was already in decline due to unfavourable market economics, but the fracking revolution ramped up the rate of decline [167].

Unexpected policy responses

The Clean Air Act of 1990 limited sulphur dioxide emission from power plants. Rather than reducing coal use, it shifted coal production from Appalachia (where the coal had high sulphur content) to the Powder River Basin (where coal had lower sulphur content) [167].

Backsliding due to a change of administration

Former President Obama introduced the Power Plus Plan in 2016 to aid coal-impacted communities. However, since President Trump took over in 2017, he has been trying to revive the coal industry and roll back policies linked to coal phase-out. Trump's first budget proposal also sought to drastically cut funding for key programmes aimed at supporting communities and promoting economic development and in coal regions where mining jobs vanished [168].

The need for strong regulation

Faced with company bankruptcies, coal executives gave themselves bonuses while short-selling their company stocks; gutting worker healthcare and pensions. This indicates the need for regulated and state-led JET plans for companies to prevent situations that are devastating for workers [169].

China

While China is still the largest producer and user of coal in the world, there is already a cap on coal consumption by 2020 and since 2016 there has been a ban on new domestic mines [170]. While there is still massive planned investment in new coal power plants, there seems to be a paradoxical political consensus on the need to phase out coal [171].

Air quality as a driver for managed decline of coal

Air pollution, linked to fossil fuel combustion, became a national social issue and smog was particularly bad in the Beijing area.

As a result, detailed coal consumption reduction targets were developed at provincial and city level [172].

Scale of the coal jobs issue

Estimates are that over the seven-year period up to 2020, approximately 2.3 million coal miners in China will require re-employment [173]. As a starting point for transition support, a 30 billion yuan (USD4.56 billion) fund is reported to have been established in 2016 to assist in redeploying around 1 million workers as small and inefficient coal mines close [174].

New coal and stranded assets

Despite the current coal cap, Carbon Brief estimate there is 198.6 GW of capacity planned or under construction in China [175]. This is over four times the total coal fired capacity in South Africa. Furthermore, there is pressure to increase the cap, and China is an exception to the world trend of declining investment in coal [176]. To avoid stranded assets and limit carbon emissions, it is crucial that China revises its new coal ambition.

Poland

Starting in 1989, Poland transformed from centrally planning to a free market economy, and the restructuring of the coal sector was intimately linked to this process. Although the goals of improving efficiency and profitability while reducing employment in the coal mining sector were achieved, the government programmes failed to adequately address the re-employment issue [35].

Golden handshakes are the least sustainable compensation option

Within the Miners' Social Package, there was a higher once-off payment (unconditional) or a lower once-off payment with the right to free retraining (conditional). The unconditional offer was far more popular, but a few years down the line these miners were less satisfied and were more likely to remain unemployed. Conditional financing packages that facilitate upskilling and reward retention at a new job should be prioritised.

Desperation can lead to illegal and dangerous mining

High unemployment persisted in the Wałbrzych region following closure of the last colliery. Poverty among ex-miners led to "bootleg" mining in self-made pits with a high accident risk [177].

30. Fracking is short for hydraulic fracturing of rocks such as shale to release gas.

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