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SOUTH AFRICA'S JUST ENERGY TRANSITION

WE NEED A HOLISTIC LENS TO ENSURE OUR TRANSITION OBJECTIVES

The Just Energy Transition is especially nuanced in the South African context. This is due to our significant current socio-economic challenges and the role of the coal sector in the economic landscape of municipalities in, especially in Mpumalanga. This paper summarises a key observation by BDO regarding the viability of our current planning related to the Just Energy Transition.

South Africa's current Just Energy Transition planning focuses on job creation, or rather, job substitution in the context of developing secondary economies. However, in the absence of targeted educational and health support, given the current socio-economic context of the Mpumalanga Province (as a proxy example), these initiatives cannot be sustainable in the long term.

This is because the building blocks that will be required to drive the envisioned change as a result and impact of the Just Energy Transition, in 10-15 years from now, are left at the wayside.

THESE BUILDING BLOCKS ARE:

- ▶ Equitable access to early childhood development to build the necessary educational foundation for the future skills we will need in the face of the Just Energy Transition; and
- ▶ Improved community health to support skills diversification and productivity in support of the Just Energy Transition.

BACKGROUND AND PROBLEM STATEMENT

During the past United Nations Climate Change Conference of the Parties (COP26), coal, as a sector, was villainised. COP26 saw 23 nations make commitments to phase out coal. Banks and financial institutions also made landmark commitments to end the funding of unabated coal, including major international lenders like HSBC, Fidelity International and Ethos.

France, Germany, the UK, the US and the EU announced an \$8.5 billion package of grants and concessional finance over 3 to 5 years to accelerate the retirement of coal plants and the deployment of renewable energy in South Africa. South Africa also took an ambitious Nationally Determined Contribution (NDC) to the COP26 – signalling a renewed

commitment to ending our reliance on fossil-fuel based energy.

However, this is much easier said than done in the South African context. South Africa's mining sector, specifically the coal sector, will face increasing pressure, in how this transition is planned, how impacts are considered and mitigated and how secondary economies will be supported and established in communities reliant on the coal sector.

Currently, there is significant dialogue related to a Just Energy Transition (JET) concept. We appreciate that a JET will not happen spontaneously without a well-planned and inclusive framework for this transition, ideally considering the input and implications across and within various government departments. Without

such a framework, which considers the immediate impacts of the JET and the necessary long-term planning to support these impacts, we can expect a slow and challenging transition.

However, the key risk in the current discourse related to the JET is the short-term reaction we are planning for instead of a long-term systemic shift. Instead of the long-term economic transition's basic building blocks, we focus on switching off power stations and how to best mitigate the immediate outfall.

The JET must be a transition where we consider the social context of this economic shift and unpacking the interrelated nature of critical social sustainability issues to build resilience in most affected communities.

THE INTERSECTION OF EXISTING SOCIAL CHALLENGES CONSIDERING THE JUST ENERGY TRANSITION

Key to South Africa's green deal agreed at COP26 is skills development to manage the societal impacts of the transition away from coal.

However, this reference to education isn't only related to new manufacturing or altered mining skills. The transition to greater renewable energy integration and the establishment of alternative secondary economies will require extensive skills across the value chain of renewable energy – from mining to manufacturing, operation and implementation. Therefore, basic education and a resilient workforce are of paramount importance.

Responding to and planning for the JET is not only about greenhouse gasses, energy or the environment. It's more complex and should be considered as such. The JET should be about education, health, developing a resilient workforce and enabling access to basic infrastructure. Importantly, these issues must be planned for in the current timeframe, considering the future generation stepping into this changing landscape.

This change in thinking requires us to gear the JET towards holistically addressing the broad range of social issues from skills shortage to basic education and nutrition, as the basic building blocks to support South Africa's low-carbon transition.

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WE MUST CONSIDER BASIC EDUCATION AS PART OF THE JET

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Communities impacted by this move away from coal are typically characterised by low levels of education, further exacerbated by limited access to formal educational infrastructure, a limited skills base and low levels of household income.

In Mpumalanga, 69.2% of children are multidimensionally poor (UNICEF 2020). Multidimensionally poor children suffer on average 4 out of 7 deprivations. These deprivations include nutrition, health, education, protection, water and sanitation, housing and information.

A lack of school facilities, sub-standard types of shelter, and long distances to the nearest health centre are the key factors that further drive the poverty rate. In other words, social infrastructure that is important for normal development is lacking in these communities.

Early childhood development and primary education are fundamental to ensuring the long-term viability of the JET. Quality schooling should then create the necessary skills children will require to become productive citizens. This includes the ability to access post-school educational opportunities which will determine their career choices and options. The earlier investment is made a child's education and the developing of educational facilities, the greater the rate of return to investment in human capital. This return on investment is known as the Heckman curve¹, illustrated in figure 1 below.

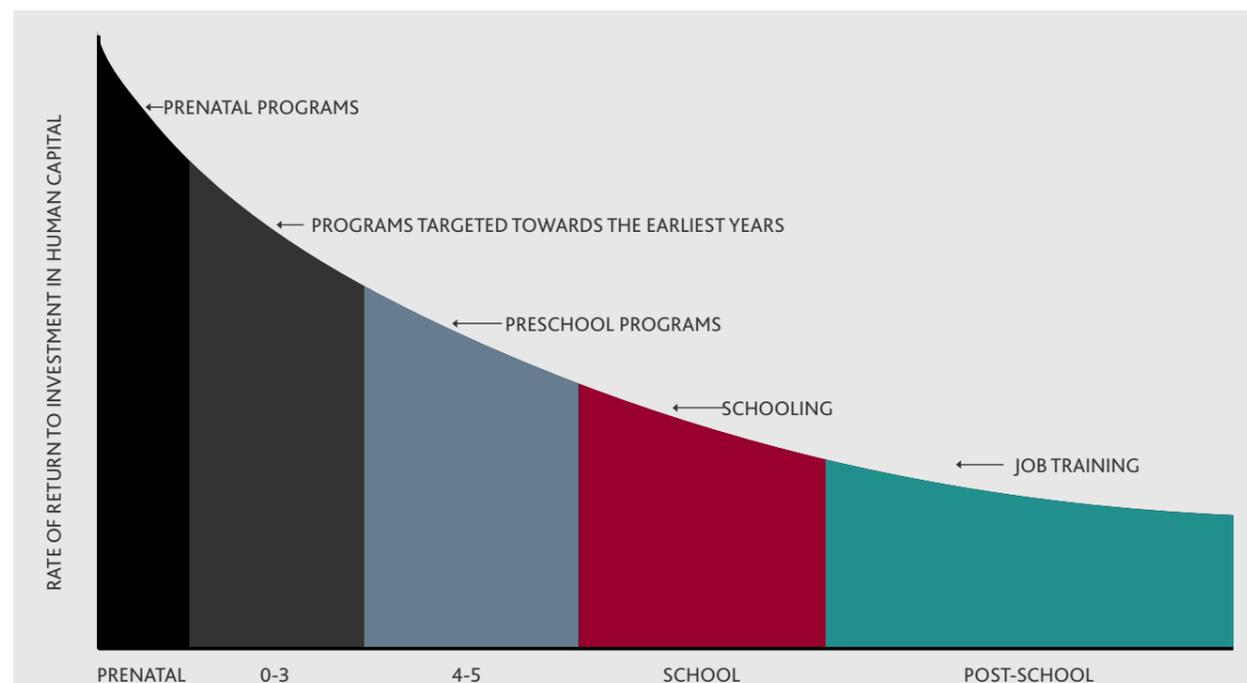


Figure 1: The Heckman curve: Economic impact of investing in early childhood learning

¹<https://heckmanequation.org/resource/the-heckman-curve/> | ² IRENA, World Energy Outlook, 2022

SHOULD WE NOT VIEW THE JET AS AN OPPORTUNITY TO DEVELOP THE NECESSARY HUMAN CAPITAL WE NEED FOR A LOW-CARBON FUTURE

In this regard, focusing only on the immediate impacts of job losses and reactive skills diversification will not enable communities' functional and sustainable continuation in areas most affected by a diminishing coal sector. Whereas we need this short-term focus to ensure the continuation of economic livelihoods, we also need to recognise that this focus should be supported and pro-actively enhanced through recognising the building blocks for sustainable long-term economic diversification.

Women, youth, and marginalised communities can be persuasive agents of change in delivering renewable energy services, creating local jobs, and catalysing rural economies². However, these social groups are often left behind when it comes to access to quality education systems.

The skills we will need to scale up our renewable energy sector and develop the supporting value chains to support the industry will also be an important factor in determining where local value creation can be maximised.

Therefore, enhancing and leveraging our domestic capabilities to service a diversified energy mix will require carefully crafted incentives and rules, business incubation initiatives, supplier-development programmes, support for small and medium enterprises and promotion of key industrial clusters.

WE MUST CONSIDER HEALTHCARE AS PART OF THE JET

This interrelationship between poverty, employability, education, and health can also be illustrated by considering nutritional and/or health challenges in these communities. In addition to educational limitations, these communities have repeatedly raised health-related issues through a recent JET dialogue series as a critical concern for economic sustainability—respiratory health affects workers' ability to get employment and children's school attendance.

South Africa's disease burden includes four broad cause groups: infectious diseases (excluding TB and human immunodeficiency virus (HIV)); maternal, perinatal and nutritional disorders; HIV-related illnesses and TB; non-communicable diseases including diabetes and ischaemic heart disease and injuries³. Food security and undernourishment impact the communicable and non-communicable groups directly. In addition, nutrition also plays an important role in the HIV-related and TB group. The interaction between food security and health includes several key aspects, such as the impacts of under-nutrition and undernourishment, food insecurity-influenced weight gain, and food deprivation.

One of the critical challenges resulting from a lack of proper nutrition and a high disease burden is stunting. In Mpumalanga, 21% of children are stunted because of poor nutrition, a lack of information and educational support to inform nutritional choices, and a lack of proper housing to enable improved nutritional practices. Stunting is associated with poor brain development, which affects a child's cognitive development, educational attainment, and productivity in adulthood.

This will ultimately affect the development potential of these communities, even more so considering the JET and related economic shifts. It is critical to enhance existing healthcare structures and proactively develop a workforce that will develop the skills and societal resilience to manage the impacts of the JET.

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³Groenewald, Bradshaw, Day & Laubscher, 2014

WE ARE NOT TALKING ABOUT THESE BUILDING BLOCKS IN OUR JET DISCOURSE

Research prepared by Phronesis Analytics⁴, however show that decision-makers and policy developers are not holistically addressing the socio-economic issues. Figure 2 illustrates that discussion points in speeches and parliamentary discussions focussed on the environmental aspects related to the JET. Social or economic factors beyond the green energy transition were ranked significantly lower than those with an environmental focus.

The highest-ranked keywords identified using machine learning in the analysed speeches are:

 Environmental: 'government green transition'	 Socio-economic: 'increase sustainable jobs'
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In parliamentary discussions the highest ranked keywords are:

 Environmental: 'energy transition'	 Socio-economic: 'current employment'
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Using Phronesis Analytics' machine-learning-enabled keyword analysis, there is a relatively narrow focus when exploring the socio-economic dimensions of 'just energy transition' and 'renewable energy'.

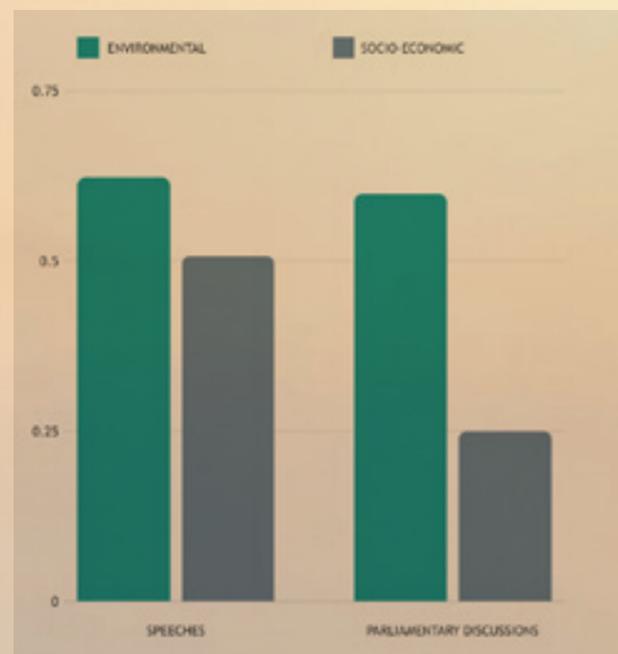


Figure 2: Illustrative comparison of highest-ranked environmental and socio-economic keywords

When going beyond environmental factors, close to exclusive focus is placed on job creation, presumably to boost economic growth. In this context, training and skills development seem to emerge as a topic – through skills development, more South Africans are assumed to be able to be included in an emerging 'green economy'.

In parliamentary discussions, the highest-ranked socio-economic topic cluster linked renewable energy to skills development, presumably also towards building a green economy. The emphasis here, in distinction to that of government speeches, seems to be placed on the training and education component. It should be noted, though, that the priority of discussions on skills development and education, pales in comparison to, for example, infrastructure development and 'green buildings'.

This limited focus of the socio-economic concepts linked to both 'just energy transition' should be noted, especially when considering both concepts' significant and broad socio-economic dimensions. This illustrates our problem statement in that the focus regarding the JET is on managing job losses rather than preparing locally impacted communities for a different employment landscape. When considering job-creation, the context of these communities must be considered in terms of educational support to drive the skills required for a JET.

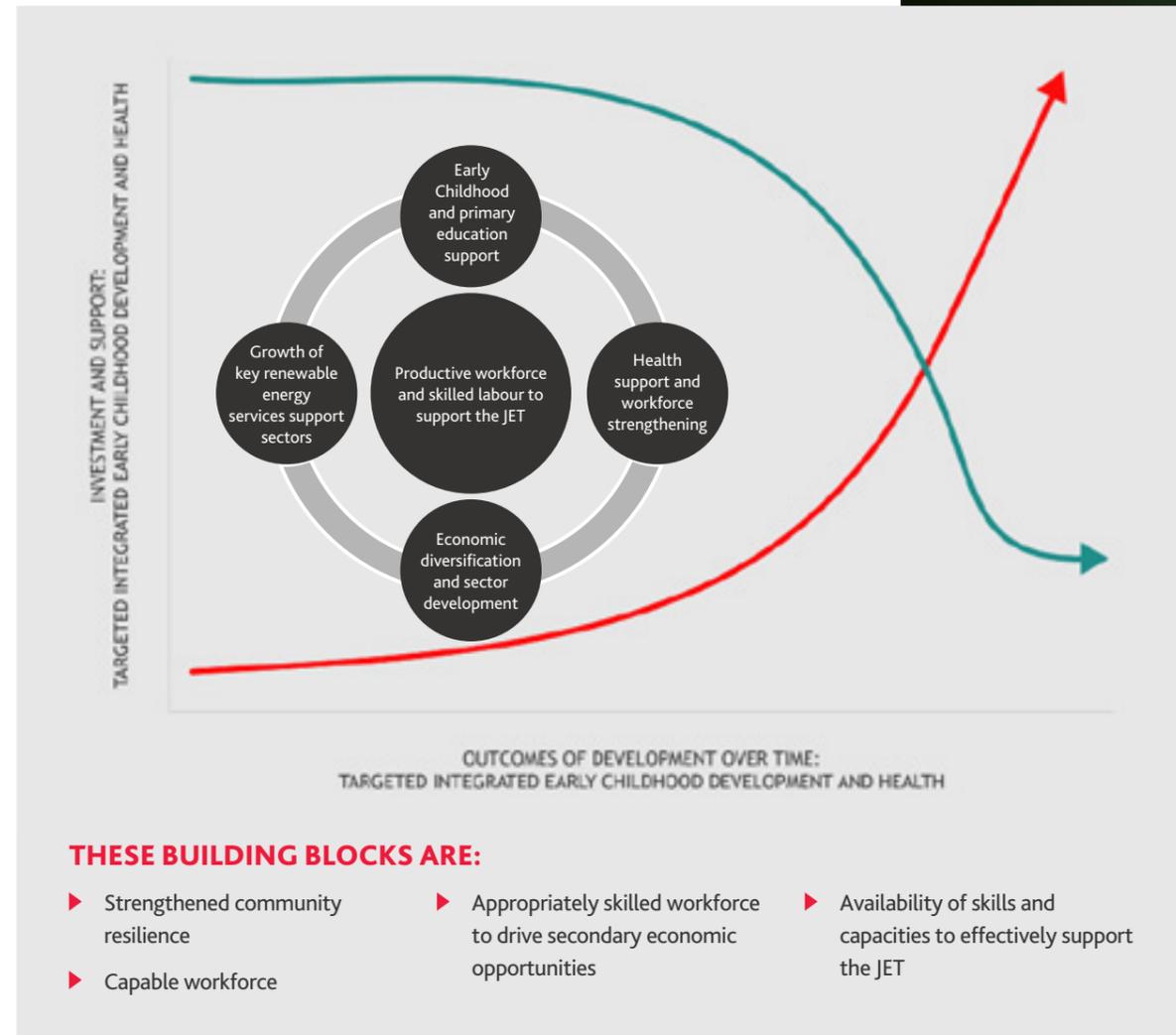


Figure 3: A selection of highly ranked topic cluster identified in parliamentary discussions

THE JET SHOULD BE ABOUT EDUCATION, HEALTH, DEVELOPING A RESILIENT WORKFORCE AND ENABLING ACCESS TO BASIC INFRASTRUCTURE.

⁴Phronesis uses artificial intelligence to help companies craft better strategies. They do so by making sense of vast amounts of messy qualitative data. Phronesis merges artificial intelligence and human expertise to analyse unstructured qualitative data such as policies, legislation, speeches, meeting minutes, reports, and news articles to improve strategy formulation.





CONCLUSION

Although we are discussing the JET, both in affected communities and at a decision-making level, we are only discussing the risks of this transition from a reactive rather than a proactive responsive perspective. This means that we view the risks associated with the JET from a labour perspective, from a short-term or immediate point of view. We should, in addition to this, consider how to strengthen the community base from which to develop and diversify skills to adequately support the establishment of new economic sectors in areas affected by the JET for the impacts of the JET in the next 10-15 years.

The below diagram indicates the need for targeted support over the short term for educational and health initiatives as the building blocks to support and enhance the longer-term objectives of the JET. The JET cannot happen unless we address key sustainability foundations. As argued in this paper, the key to the JET is not only labour substitution or secondary economic development. Labour and economic diversification must be supported and enhanced by adequate early childhood development and primary education as well as targeted health care to ensure an aptly skilled and able-bodied workforce to drive and adapt to the changing context of our energy landscape.



**FOR A CLEAR PERSPECTIVE,
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