intellidex
Researching Capital Markets and Financial Services

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Funding social justice in the energy transition

A role for private sector financing at scale?

Commissioned by

THE AFRICAN CLIMATE FOUNDATION

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Researching Capital Markets and Financial Services

About Intellidex

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

This report was commissioned by the African Climate Foundation (ACF). It was produced independently by Intellidex and the contents represent the views of Intellidex and its analysts and not necessarily ACF.

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Abbreviations

ACF African Climate Foundation

ACPF Access to Clean Power Fund

ALMP Active Labour Market Programmes

ASISA The Association for Savings and Investment South Africa

B-BBEE Broad-Based Black Economic Empowerment

BPO Business Process Outsourcing

CDFI Community Development Finance Institutions

CF Climate Finance

CFP Catalytic Finance Partners

CIS Collective Investment Scheme

CO2 Carbon dioxide

COP Conference of Parties

CRE Community owned Renewable Energy

CSI Corporate Social Investment

DFI Development Finance Institution

ESCO Energy Service Company

ESD Enterprise & Supplier Development

ESG Environmental, Social and Governance

FABE Free Basic Alternative Energy

FBE Free Basic Electricity policy

FOSE Electric Social Compensation Fund

GDP Gross Domestic Product

GOF Green Outcomes Fund

GSS Green, Social and Sustainability

ICE Internal Combustion Engine

ICMA International Capital Markets Association

IMF International Monetary Fund

IPP Independent Power Producers

IRP Integrated Resource Plan

JET Just Energy Transition

JTF Just Transition Fund

JTT Just Transition Transaction

KPI Key Performance Indicators

LPG Liquified Petroleum Gas

NGO Non-profit Organisation

NPO Non-profit Organisation

NPV Net Present Value

ODA Official Development Assistance

OECD Organisation for Economic Co-operation and Development

PBII Place-Based impact investing

PCC Presidential Climate Commission

PFMA Public Finance Management Act

PCFTT Presidential Climate Finance Task Team

PPA Power-Purchase Agreement

PPP Public Private Partnerships

PV Photovoltaics

PVT Private

REIPPPP Renewable Energy Independent Power Producers Procurement Programme

RMB Rand Merchant Bank

SAVCA South African Venture Capital Association

SDG Sustainable Development Goals

SHS Solar Home Systems

SIB Social Impact Bond

SME Small and Medium Enterprises

SMME Small and Medium Enterprises

SOC State Owned Company

SPV Special Purpose Vehicle

SSEG Small-Scale Embedded Generation

UNRISD United Nations Research Institute for Social Development

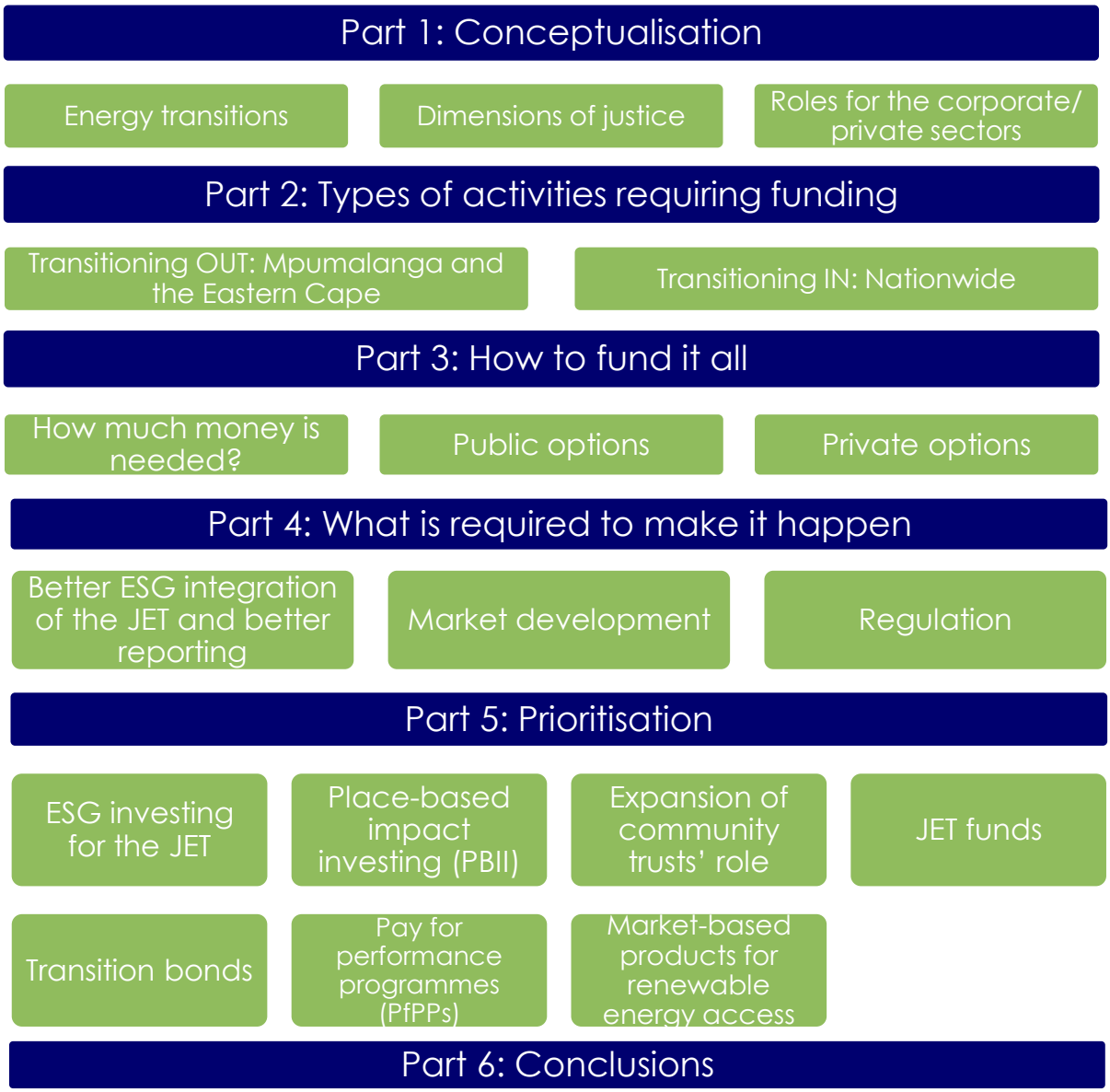
1. Report structure

In this report, the second of three we are writing on scaling financing for the just energy transition, we investigate the complex and nuanced issues related to mobilising financing at scale for the social justice aspects of South Africa's just energy transition. Before exploring how this can potentially be done, we first interrogate key concepts, including defining energy transitions, investigating the dimensions of justice, and considering the role of the private sector in a just energy transition.

Once the conceptual issues are better understood, we identify two types of activities that will require funding for a successful just transition in South Africa. We centre this around a new concept, which we tie much of this paper together on, of Transitioning OUT and IN in relation to the old carbon intensive economy and the new decarbonising economy:

- **Transitioning OUT:** Mpumalanga and the Eastern Cape
- **Transitioning IN:** Nationwide

Readers should consider these two activities throughout the report and consider funding options, recommendations and the prioritisation of the various options discussed in this report with this framing in mind.



2. Executive summary

In all countries, the transition to a new, low-carbon energy system is not just a technical exercise in establishing which technologies can best suit our needs for electrification at the lowest financial and carbon emissions cost. The changing structure of the energy system will affect patterns of employment and ownership – not only within the energy sector. This far-reaching systemic change will have distributional consequences: there are clear potential winners and many potential losers. The energy transition therefore requires a political process of negotiating this distribution of losses and gains in a fair way. Failure to do so will lead to an intensification of already unsustainable levels of unemployment and poverty.

These broad social risks and how they can be alleviated is the foundation of this report. However, given the scale of the potential social risk, the costs of their mitigation and the likely difficulties that the state will experience in meeting all these costs on its own, we focus in particular on the potential contributions that private capital can make – and ultimately if this can be sufficient, or if not what measures need to be taken to ensure such financing flows are scaled. In this sense this report focuses more narrowly within the broader set of issues around private sector capital mobilisation across the whole transition that our first report (here) highlighted.

South Africa is a particularly interesting example of the need to balance the social and the technological issues – with its large and historically powerful centralised electricity sector and its reliance on coal mining. South Africa obviously also has huge issues of inequality and poverty to contend with, as the backdrop for the transition. Shutting down this carbon intensive sector as the energy system pivots to renewable and other cleaner forms of energy production puts over 100,000 jobs – and many of these workers' dependents and communities – at risk. This is what we term the social risk associated with "**transitioning out**" of the old energy system. Workers in the sector will need a mix of early retirement packages, retraining and relocation support. Communities that host(ed) coal-intensive production facilities will also need economic restructuring where new industries and businesses are built that can absorb stranded workers. This work is urgent: a country plagued by extreme unemployment and poverty cannot afford further deterioration in these indicators.

This economic restructuring goes a step further than compensating those who are liable to lose their jobs. It is a more sustainable approach to the transition that seeks to build a new energy economy where people are able to meet their needs into the longer term. New, inclusive economies will need to be built not only in ex-coal communities but throughout the country. This is what we term "**transitioning in**". Part of this is already under way: renewable energy has grown steadily over the last decade with more rapid growth forecast for the next few years. While this has been dominated by utility-scale infrastructure to date, growth is expected in smaller-scale solar installations. This represents an opportunity to employ many people in the operations, management and maintenance of decentralised energy systems across the country. This would contrast with the trends in the large-scale renewable energy sector to date, which has been dominated by large companies and development banks. Other parts of the green economy that we detail in this report also represent substantial opportunities for more localised and inclusive economic growth.

The following JET-related activities therefore require funding:

(1) "Transitioning out": measures to ensure workers and their communities are not left behind in the transition **away from coal.** This is where most of the discussion relating to "justice" is focused, for example in the JET-IP and in the public debate. This is to be expected given the size of South Africa's coal industry, its political power and the many livelihoods that depend on it.

(2) "Transitioning in": this includes (a) planning for and facilitating social justice in the **new** energy economy and (b) climate mitigation and adaptation measures. In (a), the *energy* economy includes the production of energy as well as the

secondary industries that will rise around the new energy system such as transport and sustainable agriculture. Our primary focus is on energy production infrastructure. This area of funding has not been subject to as much scrutiny in South Africa, but it is central to JET planning elsewhere (for example in the European Union).

It is difficult to pinpoint exactly how much these activities will cost. This is partly due to the very different understandings of what social justice is and what the scope of JET planning should be. In this report we reference two detailed costing exercises: one conducted by the World Bank and the other by the Presidential Climate Finance Task Team (PCFTT) in the Just Energy Transition Investment Plan (JET-IP).

The World Bank estimates that the cost of the energy transition in total will be R8.5tn in net present value (NPV) between now and 2050. Approximately half of this (R4.2tn) is required for the low-carbon transition. This involves building less carbon-intensive energy infrastructure and associated industries, for example fuels, construction and vehicles. R2.4tn will be required for climate adaptation, including building smarter, more climate-resilient cities and infrastructure and developing better, less wasteful water and waste management systems. The remainder – **R1.87tn** – is earmarked for social justice initiatives that cut across both adaptation and the low-carbon transition. This includes, for example, social ownership projects, skills training and other labour market activation programmes that will contribute to the creation of an inclusive green economy.

The JET-IP takes a more limited view of what is required to secure social justice (albeit over a shorter period). It calculates a **R60bn** funding requirement over the next five years for initiatives in Mpumalanga to cater for ex-coal workers and communities. Specific activities budgeted for include repurposing of old coal plants, skills retraining initiatives and small business support programming. Beyond Mpumalanga, **R3.2bn** is pencilled in for localisation and piloting of social ownership models in other parts of South Africa.

Given our broader and longer-term understanding of the scope of social justice in the energy transition – that is, that it applies equally to building an inclusive new green economy as to helping coal-dependent communities diversify their livelihoods – we prefer the World Bank calculations. These figures can be used as a rough guide that helps us to envisage the scale of the funding that will be required to promote positive social outcomes and to prevent deterioration in poverty and unemployment that a completely unplanned transition would likely bring about.

But R2tn is an enormous amount of money. It is unlikely that the state will be able to meet this funding gap without correspondingly large increases in taxation (though there is a definite role for more taxation and other public interventions that we detail in the third and final report in this series). Private investment will therefore be required.

The central question then of this work is "can the private sector play a meaningful role in financing the Just components of the transition."

However, the market for investments in the JET that offer financial, environmental and social returns all at the same time is very small at the moment in South Africa and indeed globally nascent too. What are the options that are currently available and how can the growth of this market be stimulated? We investigated options through an extensive literature review of what has been achieved in other countries. We also spoke to various stakeholders in South Africa who are active in different capacities in the country's energy transition and in attempts to maximise its social returns.

In the table below, we summarise some of the options for private investors interested in participating in financing the *just* energy transition, but in particular also where there are blockages and problems to be overcome in realising them.

A cross-cutting theme to get money flowing into new, untested investment areas is blended finance (an often abused term). This is characterised by the provision of first-loss catalytic capital by philanthropic, impact or public investors that can reduce the risk profile for more commercial investors. In this way the frontier associated with a minimum willingness to invest can be lowered for commercial investors. These "derisking" interventions may be useful in a context where money needs to flow rapidly into unchartered territory and where investments need to be tested and proven and can include structures aimed at both "transitioning in" and "transitioning out" projects.

Nonetheless it is important to note that the reduction of investment risk for private capital as part of a derisking agenda can create a different set of risks; risks that could undermine the objective of derisking in the first place. The excessive subsidisation of private returns or subsidisation in areas where it is not needed, effectively reduce the fiscal space available to the state to meet the social expenditures that are required to protect against the fallout from climate disasters and other social needs.

Opportunity	Description	Barriers to overcome
ESG investing	The easiest starting point for getting investors and funders to start planning for JET issues is to incorporate JET dimensions into existing ESG strategies. We recommend adoption of the Impact Investing Institute's Just Transition Framework to structure new investments and reporting on their effects (Spengler et al., 2021). The framework addresses both environmental and social dimensions of the transition.	ESG investing as currently practised is very risk oriented and tends not to seek out opportunities to actively promote ESG outcomes. Subsequently, capital is being diverted away from certain markets (for example carbon-intensive economies such as South Africa). This bias will need to be overcome to enable capital to flow to new areas where it is needed.
Place-based impact investing	These are investments aimed at yielding appropriate risk-adjusted financial returns as well as positive local impact, while also addressing the needs of specific places to enhance local economic resilience, prosperity and sustainable development (Impact Investing Institute et al., 2021). The aim is to address structural constraints to economic growth and regional development, chiefly access to finance, to reverse the long-term decline of, in particular, small towns that once hosted significant industries (Impact Investing Institute et al., 2021).	Fiduciary duty; lack of pipeline; aggregation of smaller opportunities for larger investors; not enough local investors (see also *community trusts)*.
Community trusts	Community trusts that have been established in the REIPPPP show promise as holders of community assets and in disbursing funds to various welfare projects. They should, however, be endowed with the freedom to become more active financial actors so they can diversify their incomes and grow their assets, all for the purposes of driving local economic and social development in the typically small towns in which they're based.	Regulation surrounding impact investing – that is, investing for both financial and social return – is ambivalent and prevents many non-profit organisations from becoming active financial actors. In addition, community trusts often do not have access to financial expertise that could help them to grow and diversify their asset base.
JET Funds	The establishment of private debt and/or private equity funds for JET-promoting businesses can help to get funds to flow into economic activity that maximises green and social outcomes. These could be capitalised using blended structures.	Communities in transition will need solutions that are designed from the ground up and community objectives might not align with commercial investor objectives. Blended structures require multi-stakeholder coordination which can be difficult to manage.

Transition bonds	These instruments can be used to support hard-to-abate sectors to transition from carbon-intensive to net zero over the next three decades. It allows organisations to continue accessing funding despite performing poorly on climate metrics, granted that an issuer has strategically embedded a pathway to net zero.	The transition finance market is still nascent and issuers are hesitant to utilise these given the lack of evidence base as well as risks associated with greenwashing. Mixing social and environmental KPIs in a single instrument might not be feasible and thinking around how transition bonds can include social justice aspects still needs to be developed.
Pay for Performance Programmes	There are potentially millions of adults that need to receive effective labour market programming – such as skills training for green economy opportunities and matching/ intermediation services. Structuring these programmes on an outcomes basis has a track record in promoting youth employability in South Africa and could be expanded to the green economy.	These instruments are expensive, difficult to arrange and typically time-consuming to structure. They help solve specific challenges, but are difficult to scale. Regulatory hurdles prevent large scale participation by domestic philanthropic funders.
Market-based products for renewable energy	The market for financial products to finance renewable energy projects is small but the rapid expected growth of solar represents an opportunity: for financial institutions to develop more, better products, and to specifically develop products for the mass market. The bulk of the population is currently not conceived of as a target market for solar energy and this is large missed opportunity for banks and mass rollout of cheaper, cleaner solar energy.	The stringent financing terms by commercial banks' asset managers for small scale renewable energy projects/ developers. Small-scale solar is still seen to suffer from risky and/or untested business models particularly where this is outside familiar contexts such as installations in residential complexes or large businesses. Pilot projects and innovative first-movers from the financial institutions are required.

We emphasise that much of what is recommended above has never been done before in the South African context or, if so, only on a very small scale. Globally it is often new or not scaled. It will require bold leadership, innovation and experimentation from asset owners and managers, investors and, ultimately, shareholders that are committed to promoting and securing social justice in a world marked by accelerating climate and social instability.

Returning to our central question, though, of if the private sector has a role to play in financing social justice issues at scale – the answer is undoubtedly 'yes'. Indeed, simply put it must do, given constraints on the fiscus and limits to grant and concessional offshore financing available. Such funds that are available will have to be used innovatively to unlock private financing at scale. However, we should not underestimate the hard work and innovation required to achieve this – without which we will be left only with some interesting small funding pilots and small innovate case studies rather than a broader, dynamic funding eco system.

As such the simple recommendation here is that without this work to provide the foundation for the private sector's financing role to grow and scale – insufficient funds will likely be unavailable for the Just aspects of our transition to be properly and thoroughly dealt with. That is the burning platform here, and why we have written this report.

3. Introduction

This is the second of three reports on scaling private sector financing for South Africa's just energy transition (JET). Intellidex was commissioned by the African Climate Foundation (ACF) to investigate various aspects of private financing for JET, including firstly investigating the capital market infrastructure that exists and the various pools of private sector financing that could be tapped for JET. These issues were discussed in the first paper, titled Financing South Africa's Just Energy Transition: Capital market developments to scale private sector mobilisation. The first report provides context on the complexity of mobilising as much as R8.5-trillion – an unprecedented scale of funding – over the next 30 years to transition the economy. Furthermore, this has to be done in a just and equitable way to avoid further deepening South Africa's triple challenge of poverty, unemployment and equality. The sheer scale of financing needed will require significant capital allocation from the private sector and various blockages exist to unlocking that. Further research is required to help overcome the barriers that will prevent large-scale private sector participation in financing JET.

In this report we explore how private, particularly commercial, capital can be deployed to fund activities, interventions and programmes that promote **social justice in South Africa's energy transition** – the "J" in JET. We explore the types of interventions that are required and how (if possible) to attract private sector investment to those interventions. This discussion looks at the types of investments that are feasible and address the rationale for a greater role for the private sector in what is traditionally regarded as the primary domain of the state and non-profit sectors.

First, we attempt to provide clarity on the concepts of "transition" and "justice". These concepts are often not explicitly defined in the public discourse on the JET and when they are, they are rarely defined consistently.

As we will show, social justice considerations apply equally to the process of **transitioning from** a certain kind of energy system to the process of creating a new energy system – what we are **transitioning into.** Transition from and transition into are thus the two parts of the JET. Despite the frequent recognition of these two aspects of transition in policy documents and academic literature, plans overwhelmingly focus only on the first part: transitioning out of brown industries and the immediate welfare losses that this will generate for narrowly defined groups of people, such as coal workers and their communities.

The narrow focus is certainly understandable. The coal and associated industries have the most to lose in the short term. Through no fault of their own, many thousands of workers stand to lose their livelihoods and the immediate financial and psychological impacts of this loss cannot be minimised by any expectation of undefined, future benefits in a nascent green economy. This represents a clear political risk as well. Without proper planning for the compensation of these losses and for future livelihoods, large-scale and potentially violent protest action becomes a distinct possibility. Social unrest and highly visible costs of abandoning coal would also undermine wider popular support for the green transition.

But in countries with large burdens of poverty and inequality there can be no justification for not considering and planning for social justice in the "transitioning into" investments. We and many other countries are undergoing a "sociotechnical transition" – the centrality of energy to modern economies means that large-scale change in the energy system (where and how energy is produced and by whom) has the potential to change the country's developmental pathway. The energy transition thus represents a major opportunity to plan for and work towards **economy wide** social justice rather than more limited compensatory activities in transitioning coal communities.

In this planning there are clear roles for the private sector. First, banks and other financial sector actors can allocate capital to various activities and create value and can withhold or withdraw financing from activities that destroy it. Similarly, investors can move capital between companies to finance those that take environmental and social justice seriously and work with portfolio companies to make allocation decisions that support a just transition. They can also purchase sovereign, municipal and other public sector bonds dedicated to financing just transition initiatives (Landwehr et al., 2022), or expand their definitions of fiduciary duty to encompass the preservation of social and ecological interests as opposed to simply the protection of shareholders' dividends (Baue & Thurm, n.d.). Unfortunately, investments in social and environmental health tend to be viewed as costs, with minimal accounting for the ways in which environmental degradation – that disproportionately affects those outside the commercial sector – will eventually cost investors through increasingly unstable and even unviable business environments and financial markets.

Nonetheless, financial returns and social value do not always move in opposing directions. Where they do, taxation must be used to achieve balance, as detailed in our next report of this three-part series. In this report we explore where they might not, or where this can be engineered through subsidies and other incentives, and thus highlight current and future opportunities for investors to contribute to social justice in the energy transition while pursuing financial returns. These opportunities arise from the development of new, more inclusive and labour-absorptive industries with broader consumer bases and greater participation of small businesses; the creation of innovative financial products; and the development of green infrastructure such as public transport that makes entire economies function better (International Labour Organisation, 2022). Articulating these to private investors in terms of risk and reward however is not easy and receives little focus. Appealing to systemic de-risking and support of wider (for example) sovereign holdings works in some cases where a whole portfolio systemic view can be found. But again this is not widespread yet in any context, let alone JET. We also discuss approaches to the prioritisation of social outcomes, especially for impact investors.

This report has been written for many different actors involved with and interested in our transition more broadly and in particular those "just" aspects that need attention – for investors in equity and bonds who need to think more on these issues beyond the simple lens of ESG; for pension trustees and bank executives who need to be challenged to think outside the box to solve some of our country's knotty problems; and for policy makers and politicians who need to understand the complexity of this subject but also need to understand what needs to be done to ensure a successful transition.

A successful transition will be difficult and faces numerous challenges. It requires a united effort from all stakeholders with a clear framework for local and international investors to enable financing to be channelled to the critical areas.

4. Conceptualisation

Energy transitions

An energy transition is best thought of as a developmental pathway that starts with an economy that is dependent on one type of energy system and approaches its end with the increasing dominance of a new system. At its most basic, the transition involves changes in the technologies used to produce energy. But the importance of energy to the functioning of all parts of modern economies means that these changes will have much broader effects. New energy technologies imply new business models and working arrangements, shifting patterns of production and consumption, and new public policies governing infrastructure development, siting, incentives and subsidies, pricing and tariffs, skills development and taxation. Energy transitions are thus often described as "socio-technical" transitions due to the far-reaching social change initiated by the introduction of new energy technologies (Geels, 2019).

A **just** energy transition is commonly understood as ensuring that the social change that accompanies technological transformation improves welfare across society. This is complex both conceptually and practically. In this section we explore the conceptual difficulties and disagreements and describe the types of activities that will need to be fulfilled (and funded) to promote social justice in the energy transition.

The first modern energy transition unfolded in the 19th century as Europe shifted from biofuels (wood) to fossil fuels (coal) as the primary means of generating energy (steam), leading to industrialisation and to fundamental changes in the organisation of economies and the process of economic growth. Despite the enormous gains in productivity that this change produced, industrialisation inflicted enormous social costs on European workers accompanied by brutal, extractive colonialism in the global south, leading to large increases in inequality between countries (see for example (Milanović, 2019) and within industrialising countries (Piketty & Rendall, 2022). It would take over 100 years for the efforts of social rights movements in Europe and anti-colonial struggles to begin to revert these trends. At the same time, coal-fuelled industrialisation and the continued dependence on energy produced from coal and other fossil fuels led us to the environmental emergency that is driving the next energy transition.

Renewable energy is far less polluting than coal-powered electricity and associated fossil fuel industries like petrochemicals. This is, in itself, a social good: besides reducing the volume of greenhouse gas emissions that most scientists believe pose an existential risk to our societies, there will be profound effects on health from improved air quality. South Africa has a particularly egregious record of violating rights to health by building coal-fired power plants, oil refineries and other toxic industries close to historically black human settlements, or forcibly removing black populations to live near these sites. Notable examples include eMalahleni in the Mpumalanga coal belt, which by some estimates is the town with the worst air quality on earth (Machogo, 2018), while perversely, parts of the town have no electricity at all for weeks at a time (Mabuza, 2022); and the former "group areas" in the south of Durban ("cancer valley"), with extremely high incidence rates for various cancers and respiratory illnesses and continued neglect of community concerns by government and business in the democratic era (Kings, 2014; Mngoma & Dlamini, 2015).

Many people still earn incomes from their work in these industries. The term "just transition" originates in the labour movement of the US in response to the introduction of legislation intended to improve air quality and population health by regulating high-polluting industries. Realising this could result in the closure of some facilities, workers in the oil, chemicals and nuclear industries advocated for employers and local authorities to develop plans with them to retrain and provide social support, especially in mono industry and "company towns", and to develop cleaner production methods in factories that would remain open (Spanne, 2011). Securing justice was seen as

ensuring that workers in polluting industries and their dependants did not pay the price for a transition to new, cleaner industries that, while representing a net gain for society through better health and environmental outcomes, would deprive many of their livelihoods.

South Africa's JET brings up similar labour issues. Trade & Industrial Policy Strategies (TIPS) estimates that around 125,000 direct and indirect jobs could be lost in the coal value chain (Makgetla et al., 2020). This figure includes those directly employed in coal mines, generation facilities and petrochemicals. More livelihoods are at risk when considering jobs in associated industries such as catering and logistics, as well as the high levels of dependency in South Africa, with each worker supporting three other people on average (Holborn, 2013)[1].

An abrupt closure of the coal industry would thus leave many people – most of them not well-off to begin with – without jobs and reliant on the country's meagre social protection system. Although employment modelling indicates significant net job gains as the renewable energy industry expands (World Bank Group, 2022), this is unlikely to happen fast enough to absorb large-scale job losses. In addition, the coal industry is concentrated in Mpumalanga province, while renewable energy is growing most substantially in the Cape provinces.
Even if air quality and general health improve, and if lower greenhouse gas emissions play a role in reducing the incidence of extreme weather events which disproportionately affect those without a significant safety net in asset ownership and private insurance, there are immediate, concentrated welfare losses for a large group of people that must be planned for to achieve justice in the energy transition.

The examples from the US and SA imply that the JET is primarily about compensation (financial or by giving a tangible stake in the new energy system) for those who have a stake in the old energy system and stand to lose when it shuts down. It appears to be the most widespread understanding of what the scope of the JET is in the local media and among high-profile politicians.

But the preceding discussion of sociotechnical transitions, and the experience of the first modern energy transition, suggests we need to be more broad-minded than limiting planning to the compensation of those who will lose their jobs. The JET involves building new economic sectors based on the production and usage of renewable energy *in addition* to winding down the coal sector. These sectors include renewable energy utilities; small-scale embedded generation; electric vehicles; batteries; and the associated value chains in parts manufacturing and logistics. Assuming that new economic activities in these green sectors will not replicate past structures of exclusion and/or exploitation is perhaps naive. The energy transition – due to its society-wide scale, alongside the nature of the technology itself (it is decentralised and significantly expands the potential number of producers of energy), presents an opportunity to set South Africa on a different economic trajectory; one that generates less poverty and inequality and that is less dominated by small, powerful groups.

These sorts of issues, though lying outside the compensatory framework for coal sector participants, are integral to the just transition as it is defined by South African authorities. The nationwide consultative processes undertaken by the Presidential Climate Commission (PCC) to arrive at a democratic understanding of the just transition led to the following, expansive definition (Presidential Climate Commission, 2022):

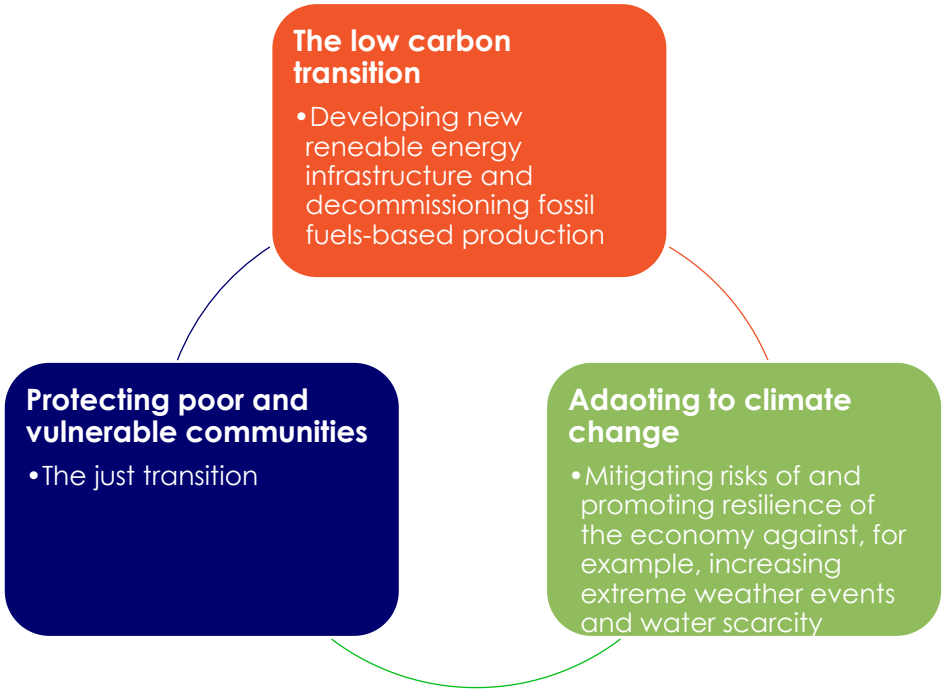
[1] *This is an old figure but increasing unemployment since 2013 suggests dependency will have worsened over the last decade.*

A just transition aims to achieve a quality life for all South Africans, in the context of increasing the ability to adapt to the adverse impacts of climate, fostering climate resilience and reaching net-zero greenhouse gas emissions by 2050, in line with best available science. A just transition contributes to the goals of decent work for all, social inclusion, and the eradication of poverty. A just transition puts people at the centre of decision making, especially those most impacted – the poor, women, people with disabilities, and the youth – empowering and equipping them for new opportunities of the future. A just transition builds the resilience of the economy and people through affordable, decentralised, diversely owned renewable energy systems; conservation of natural resources; equitable access of water resources; an environment that is not harmful to one's health and well-being; and sustainable, equitable, inclusive land use for all, especially for the most vulnerable.

The more universal aspirations of the South African public for the energy transition are clear (for example, "decent work for all, social inclusion"), as are the desire for popular ownership and participation ("puts people at the centre of decision making"; "decentralised, diversely owned renewable energy systems"). It reflects a desire for a transition to an inclusive economy where decent work, ownership and empowered participation in the economy are broadly distributed. This desire is undoubtedly (at least partly) a reaction to the failures of South Africa's economy to improve standards of living – it is the country with the highest recorded levels of income inequality and is one of the worst-performing developing countries in the 21st century: real per capita income in 2021 was roughly equal to its 2006 level (Milanović, 2022).

The World Bank (World Bank Group, 2022) recommends that South Africa address **three interconnected transitions:**

Figure 1: Three interconnected transitions



Source: World Bank Group

The just transition is meant to apply to both (1) and (2), for example, by supporting coal workers' livelihoods, ensuring equitable access to clean and affordable energy and prioritising adaptation measures for those most vulnerable to climate change risks such as , for example residents of informal settlements and rural areas. It thus seeks to avoid exacerbating existing social and economic inequalities by empowering the vulnerable *throughout society* to withstand climate change *and* participate in the new energy economy, for example through SME and skills development. The same report estimates that half a million jobs could be created in climate-related sectors such as renewable energy, green manufacturing, construction, services and non-coal mining.

Dealing only with the first of these transitions and limiting social justice considerations only to those who will lose out in the short term (coal workers) is common (International Labour Organisation, 2022; Landwehr et al., 2022). This is an approach to transition planning that the UNRISD (Just Transition Research Collaborative, 2018) calls a "status quo" approach. It is led by the corporate sector, mostly through voluntary action. It proceeds largely from the recognition that the green economy represents increasingly profitable business opportunities but that the transition to it carries social risks for business. Compensation of the workers and their communities that immediately stand to lose their livelihoods as we transition out of the old system is therefore the guiding principle. This can take the form of retraining employees (or workers in investee companies) for new green jobs. For those who cannot be retained, common measures include funding to assist with relocation and private funding (often co-funded by the state) for pensions and early retirement. States provide incentives for businesses to engage in JET-aligned activities, such as tax breaks for skills retraining.

The guiding principle is to do no harm. This is related to the Pareto optimality principle of classical economics, by which a social state is defined as optimal if additional goods cannot be distributed (or improvements to society's wellbeing cannot be improved) without making at least one person worse off (Cudd, 1996). On the way to achieving this social state, Pareto "improvements" can be made through actions that benefit at least one person without harming anyone else.

In the transition context, the status quo planning orientation assumes that workers in declining sectors not being compensated would be the opposite of a Pareto improvement. This also applies to the view that greater corporate rates of taxation, as well as mandatory transition programming, would be welfare-defeating.

The approach is agnostic about whether status quo economic arrangements and relationships, and their possible replication in new sectors, are harmful; instead, it focuses on whether *changes* are likely to impose any costs. It is thus limited to a reproduction of the existing economy but with a different energy system. While this to our minds is minimally or simplistically "fine" and passes the bar, the question really is whether the first best outcome should be positioned towards considering more emergent opportunities and derisking broader portfolios to enable ventures with larger upside potential.

In contrast, structural reform[2] approaches would focus on all three transitions. For example, attempting to build an inclusive new energy sector implies a need to reform existing exclusive and extractive norms and institutions that would prevent broader participation. Interventions include, for example, plans for collective ownership and management of the new energy system and a more active role for workers, communities and other groups in directing their own development, in turn addressing the deeper causes of disadvantage and the need to be compensated. These causes might include poor foundational education (addressed through transformation of basic education); living in a

[2] *The UNRISD also defines transformative/radical approaches to transition planning that go further than structural reform of existing systems and advocate for their replacement (for example anti-capitalist or degrowth movements), as well as managerial approaches that resemble status quo approaches but with more extensive state involvement in setting regulations and defining incentives for managers to incorporate into their business plans, for example occupational health and safety regulations, and requirements to devise social and labour plans in a consultative (and not necessarily participatory) way.*

declining town (create new industries or promote urban migration through smarter, denser development of cities); or limited asset ownership (build community assets such as community trusts). Structurally oriented plans thus seek to do more than short-term damage control and envisage more inclusive economies. This contrasts with more censitary decision-making where economic participation is determined by the size of the stakeholder's monetary stake in the transition.

In summary, energy transition planning involves looking both at what we are transitioning out of (the decommissioning of existing energy infrastructure and planning for the workers that will lose their means of earning a living, and communities their economic base, as a result) and what we are transitioning into (production of new energy infrastructure, on a large and small scale, alongside the growth of associated sectors). In situations characterised by excessive baseline exclusion and inequality, addressing both sides of the transition is key.

Dimensions of justice

The reduction of social exclusion and inequality are pursuits of social justice. American philosopher and critical theorist, Nancy Fraser's, framework for analysing this has become popular in the policy and practice of the energy transition. This framework can be applied to any type of transition policy or plan, whatever its origination – that is, whether it is a strategy developed by a governmental entity, a private company or a civil society organisation. It describes social justice in three dimensions:

Figure 2: Dimensions of justice

Source: (Fraser, 1998)

The three dimensions are interlinked. For example, if, as part of the country's JET, the coal and petroleum sectors are rapidly shut down without planning for the job losses, this would imply that workers and their communities that have depended economically on these sectors would disproportionately bear the costs of the transition. They may benefit in the longer term from a greener economy but in the near term would lose jobs and livelihoods.

The **distribution** of costs and benefits of the transition is thus unequal, and the needs and rights of workers and communities who derive their living from "dirty" industries are not **recognised.** Similarly, this scenario implies that these workers and communities have not been adequately consulted and have not been able to influence the direction of policy – implying **procedural** injustice.

Intellidex conducted research on justice in the energy transition aiming to understand how "just" is the energy transition in SA in a liberalised energy generation context. The research found that while the REIPPPP model was successful in achieving

some social aspects of the JET through the social development commitment but self-generation does not have guiding principles or socioeconomic development commitments.

There are clear political risks on this front for projects, in our view. Some companies have incorporated JET elements such as community ownership, skills development, enterprise & supplier development etc at corporate level mainly and something at project level and therefore social justice element is not achieved. To this end, the study recommended that business together with government will eventually need to design a renewable energy sector guide or charter to ensure socioeconomic factors are dealt with in the context of the energy transition to ensure social justice is achieved.

The study found that the energy transition is inevitable and in order to achieve justice, government, independent power producers, financiers and corporate off takers need to ensure that the social element is incorporated in all renewable energy projects to achieve impact.

Roles for the corporate/private sector

The focus of this paper is in exploring how to bring more commercial capital into the financing of the social aspects of the JET. As we describe in section 5, an equitable energy transition will cost trillions of rands. Public budgets simply will not suffice and taxation can only go so far. Moving private finance into more sustainable, social value-adding activities is a cornerstone of the sustainable investing movement and is envisaged in the Sustainable Development Goals (SDGs). Business will need to invest in new technology and infrastructure and banks will need to finance climate-positive projects – all while maximising social benefits.

A status quo approach that seeks to manage the social risks from the coal transition is a good place to start because it focuses on immediate risks. But creating a bigger, more representative and more inclusive private sector should be part of our transition vision as well. **Inclusive economic growth can be conceived of as contributing to social justice.** For example, economic growth in deindustrialising or stagnating areas, and/or where growth strategies are targeted at expanding the economic agency of low-income or otherwise marginalised populations, can itself constitute a *social* benefit, where jobs are created and small businesses flourish, hence contributing to social justice (Rubin, 2006).

In small businesses, the potential for employment growth is generally greater than in larger businesses. In South Africa, approximately two thirds of total (formal) employment is in the small business sector. This is a significant proportion but still somewhat lower than in comparable economies and the sector demonstrates remarkable resilience (for example in net job creation numbers (Tsebe et al., 2018)) despite an extremely unfavourable operating environment (load shedding, crime, inadequate service delivery, high municipal rates, among other challenges).

Boosting the small business sector can be achieved only by incorporating elements of structural approaches to transition planning that overcome the constraints inhibiting these developments. One such constraint that is more easily addressed by private actors is unequal access to financial capital.

But dominant actors in the energy sector, and in the economy more broadly face no immediate incentive to correct for market failures and historical legacies; activities which carry costs. In some cases, this can be incentivised. Examples include regulations to promote credit provision by banks to entrepreneurs in underserved markets, or subsidies for activities in new economic sectors undertaken by emerging actors. In others, the state will have to lead through taxation of the winners to amass revenues that can be deployed for public good purposes, such as improved basic education and social protection. In yet other

cases, **there could be projects that resemble true win-win scenarios with benefits for investors and broader society, but the opportunities are hamstrung by problems i**ncluding demand-supply intermediation or insufficient scale. In sections 4 and 5 we explore some of the options and what could be done to make them more viable.

Across the various options, social benefits need to be structured and measured. The focus on procedural and material inclusion as central tenets of social justice has been adopted by the Just Transition Finance Challenge, a UK-based initiative managed by the Impact Investing Institute that aims to mobilise private and public capital for the just transition globally. Its signatories manage assets of over £3.6tn.

The institute developed the Just Transition Investment Framework in 2021 (Spengler et al., 2021) as a guide for structuring just transition investments, regardless of sector, asset class or type of investor. It has three elements along which all JET investments should be measured: advance climate and environmental action; increase community voice; and improve socioeconomic distribution and equity. In case studies in this report we detail how this has been applied to real investments and explore its potential for wider usage.

5. Types of activities that need funding

Given our understanding of what the JET entails, alongside the vision of the South African public as encapsulated by the PCC, we split the JET-related activities requiring funding into:

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

(4) "Transitioning in": this includes (a) planning for and facilitating social justice in the new energy economy and (b) climate mitigation and adaptation measures. In (a), by *energy* economy we mean the production of energy, as well as the secondary industries that will rise from the new energy system such as transport and sustainable agriculture. Our primary focus is on energy production infrastructure. This area of funding has not been subject to as much scrutiny in SA but it is central to JET planning elsewhere (including the EU).

Transitioning OUT: Mpumalanga and the Eastern Cape

World Bank modelling predicts that faster growth rates can be achieved over the next decade – doubling from the 2009-2019 average to 2,3% per year – if South Africa fully commits to the JET. This higher growth path could result in a net jobs gain of roughly 1-million.

But many will lose their jobs, as transitioning out entails the decommissioning of existing fossil fuels-based infrastructure. The coal and petroleum sectors are very large employers, both directly and in their supply chains. In addition, car manufacturing is set to be heavily affected as the production of internal combustion engines comes to an end in the 2030s.

Shutting down or reorganising entire sectors will lead to tens of thousands of job losses and to the potential immediate impoverishment of these workers and the people they support. Other industries set to suffer in the energy transition include transport, metals, agriculture and tourism, (Makgetla et al., 2020; World Bank Group, 2022). In all of these sectors there are many unskilled or low-skilled workers – up to 90% of workers in coal mining and power plants for example (World Bank Group, 2022). Several are also concentrated in poorer provinces with unemployment rates already higher than the national average. In the Eastern Cape and Mpumalanga, expanded unemployment is 45% and 40% respectively. Further deterioration of this situation is untenable and threatens societal, economic and political stability.

To prevent these workers and the communities dependent on these sectors from bearing the costs of the transition, various livelihood-protecting initiatives are required. This entails more short-term compensation to protect against the immediate threat of job loss in the form of retraining and social protection measures such as temporary cash transfers and early retirement. But it also requires more *proactive* rather than *reactive* planning (Just Transition Research Collaborative, 2018), via the creation of a new, labour-absorbing green economy in these regions. This avoids targeting errors (for example, failure to reach populations that are affected by short-term economic changes but are not directly employed in a coal mine) while creating economic networks of economic opportunity and in turn more entry points for people needing to find work or establish a small business.

Box 1: Economic restructuring

Germany's Ruhr region is a good example of economic restructuring. Its economy was historically dependent on coal mining, with the sector employing close to 500,000 people at its height in the mid-1950s. It has overcome significant opposition to economic restructuring and shifted to a knowledge, service and technology based economy with a large university and transport and engineering sectors (for example in waste management and other environmental technologies). At the same time, it has completely shut down the coal industry (roughly 3,000 workers remained when the last two plants closed in 2018).

Shutting down coal was achieved through a mix of early retirement, relocation and retraining (for service and other energy jobs) measures. This shift was enabled by large public and private investment and collaboration with unions. But overcoming opposition for restructuring from the coal industry was difficult and only gained momentum in the 1980s with the introduction of more decentralised, local planning and engagement strategies with partners throughout the region in the collaborative development of new industries (Just Transition Research Collaborative, 2018; World Resources Institute, 2021).

This requires a more enabling small business environment, with access to finance and other developmental inputs for start-ups and growing firms. It will also require labour market matching and skills training to enhance labour mobility, as recommended by the World Bank Group (2022), but with a much greater focus on small business needs than has been achieved in South African Active Labour Market Programmes (ALMPs) to date. This will tackle the relatively more binding human resources constraint for small businesses as well as youth unemployment at the more skilled end of the workforce distribution. At the lower skill end (that is, matriculants, high school dropouts, those transitioning out of coal), green economy skills training programmes will be required, alongside demand mapping capability in the green sector, along the lines of what has already been achieved in the business process outsourcing (BPO) sector in Gauteng (see for example the experience of Bonds4Jobs - Khan, Theobald, & Kruger, 2021a).

Across all these initiatives, focus should be retained on empowering people to participate in the new energy economy, in ways that are amenable to the small business/social enterprise form. This includes small-scale embedded generation (SSEG), community owned renewable energy (CRE), sustainable agriculture and ecotourism. Alternatively, larger-scale investment in labour absorptive activities should be encouraged, for example in water and waste management (such as waste-to-energy facilities). While these are constitutionally mandated municipal functions, private participation is permitted and could certainly be scaled.

For example, the waste sector could absorb much larger numbers of low-skilled jobs for the currently unemployed, while simultaneously creating new job opportunities for both an unskilled and skilled workforce, in the private and public sectors. Researchers at the University of KwaZulu-Natal have developed a model to calculate the social and environmental impacts of different waste management practices, ranging from landfill to anaerobic composting. The model shows that moving away from landfill-only solutions (the dominant current method) and greater adoption of, for example, recycling, composting and waste-to-energy, could significantly contribute to job creation while also being less environmentally damaging (Kissoon, 2018a)[3]. Another study estimates 45,000 additional formal jobs and 82,000 informal jobs could be created in the waste sector, as well as the creation of 4,300 SMMEs (Godfrey, 2021).

[3] (Since this study was published, the UKZN team has substantially expanded the scope of this work, including in the development of an app to forecast and optimise job creation, cost and health and environmental outcomes in specific locations based on contextual factors such as weather and local resourcing.

The third and final paper of our three-part series of reports will focus on the financing aspects for Mpumalanga. We will investigate options to mobilise financing at provincial and municipal levels in compliance with the PFMA, as well as exploring ways in which the private sector can get involved in some of these aspects. Given that Mpumalanga is the most at-risk region in the energy transition, it is likely to require disproportionate public financing support from a national budget perspective and the limitations and implications around this matter will be explored in more depth.

Transitioning IN: Nationwide

As noted above, the end of coal will give way to a new energy industry. This will be characterised by the development of new renewable energy infrastructure. Associated carbon-intensive industries – like transport (the second most carbon-intensive after electricity)[4] – will also undergo large-scale change.

The following examples from SA and abroad demonstrate how the creation of the new energy economy can have negative social justice implications:

a. New utilities can be built where local communities don't want them and feel worse off for their presence, which often drives "not in my backyard" protest action. Evidence shows utilities can use lots of water and energy, leading to local shortages; be locally polluting; kill wildlife and damage or destroy biodiversity; and disrupt local economic activity and locals' sense of place. In small towns in the Northern Cape, solar facility construction has led to large influxes of external workers, putting pressure on housing and basic and social services (Mabele, 2021)). In coastal northeast Brazil, wind farms have been unpopular, with the siting of facilities and privatisation of surrounding land obstructing livelihoods for low-income fishing communities (Araújo et al., 2020).
b. Electric vehicle (EV) production is less labour-absorptive than internal combustion engine (ICE) vehicles due to EVs having fewer parts. They also need less longer-term maintenance. Finally, about as many people are employed in petrol stations as in coal mining (with some estimates as high as 140,000 people (Maseko, 2022)). Refuelling patterns will change with EVs, so these jobs are also at risk. The transport sector will therefore see sustained job losses. But these losses will not be compensated for by consumer welfare gains. SA's inability to invest in or build a functional public transport system (or even prevent the disintegration of the currently inadequate system) shows no signs of being resolved. Instead, EV production will be biased towards private vehicles, which are unaffordable for most South Africans even before taking into account the steady upward trend in global prices (The Verge, 2022). Notwithstanding the distributional concerns, the EV industry is unlikely to significantly benefit anyone locally for the foreseeable future – South Africa currently does not have sufficient electrical capacity to guarantee a substantial charging network.
c. The small-scale, embedded generation (SSEG) market is currently biased towards industrial settings (70% of installations), with residential growth dominated by housing estates and high-income households (Poorun & Radmore, 2021). This leaves the small business sector and most households reliant on the increasingly expensive and dysfunctional Eskom. In informal settlements and rural areas, many still rely on dangerous and/or expensive methods for cooking and lighting (such

[4] *Change includes expansion of commercial and passenger rail; greater manufacturing and more widespread adoption of green vehicles; and retrofitting of existing vehicles.*

as paraffin lamps and candles) and electrification (charging shops). Incentives are required for investments in the mass market that improve clean energy access for all, thereby also meaningfully reducing the country's carbon footprint.

d. SSEG technology is ideal for decentralised ownership and management. Communities across South Africa could run and maintain their own facilities, like Europe's "energy communities", creating local jobs and assets and stimulating local economic development. But without concerted policy direction and enabling regulation, this will not happen.
e. Mining is synonymous with labour abuse, health problems and environmental damage – issues that need to be explicitly managed. This applies equally to mining of minerals required for renewable energy such as lithium, cobalt, copper and graphite (Crawford & Odell, 2022). For example, copper mining can drain scarce freshwater and contaminate remaining supply.
f. The REIPPPP is the regulatory framework structuring the development of utility scale renewable energy infrastructure (solar, wind, biomass and hydro facilities) by the private sector. Through five auction rounds generation capacity of **6,353.15MW** has been procured and **6,178.15MW** is operational. However, research shows that the programme is dominated by large companies and South African development banks, with few benefits for communities in the form of better electrification, jobs and (functional) local ownership (Khan, Theobald, Kruger, et al., 2021a; Müller et al., 2021; Wlokas, 2015).
g. The same research shows that in the isolated cases where local ownership works well, this could have transformative effects especially in small towns with large burdens of poverty. But in policymaking and sectoral circles there is an increasing willingness to drop provisions for community ownership from the regulatory framework because it is seemingly too difficult to implement. At the same time, in the embedded generation space, which is set to grow rapidly, there are no equivalent "social license to operate" provisions at all.

Maintaining the status quo in each of these areas *will* exacerbate existing inequalities.

In the World Bank's classification, the activities could be classified as social justice issues in the coal transition. The second sphere of transition – adaptation to climate change – carries its own set of concerns. The World Bank estimates that not planning for adaptation could lead to the impoverishment of an additional 1-million South Africans by 2030. SA is a water scarce country, while the east coast is increasingly prone to flooding. This situation will deteriorate. Severe water scarcity risk is concentrated in the Northern Cape and North West; extreme temperatures in Limpopo; and flood risk in KwaZulu-Natal (World Bank Group, 2022) – all relatively poor provinces.

Adaptation includes (International Labour Organisation, 2022; Landwehr et al., 2022; World Bank Group, 2022):

1. Building climate resilient infrastructure (especially green housing).
2. Retrofitting existing buildings.
3. Better water and waste management.
4. Promoting ecotourism – environmentally friendly holidays and day trips organised around local employment in the sustainable management of water sources and natural ecosystems. Tourism is a large and stable (excepting the 2020-2021 period) contributor to South African GDP, with an expected share by 2025 of 5% (Kay Ann Consulting, 2018). It is a sub-component of the retail and trade industry, which is consistently one of the two largest economic sectors in terms of revenues, SMME representation and employment (ibid).
5. Climate-resilient farming and sustainable agriculture and support for smallholder

farmers in areas where they won't be able to farm anymore.

6. Urban planning and densification to lessen commuting distances and reduce emissions, improve air quality while easing waste and water management. Urban development will accelerate in the Gauteng region in particular as workers migrate from the coal belt to the east (see for example (Coalition for Urban Transitions, 2021).
7. Energy and water efficiency interventions overlaying the above – such as agrovoltaic projects in the sustainable agriculture sector; energy service companies (ESCOs) providing solar panel installations and smart metering systems to households and businesses.

All these sectors are amenable to small business/social enterprise participation. As noted in the previous section, much needs to be done t**o support the small-scale sector –** in ex-coal communities and elsewhere**.** This will require skills training and matching, SME support programmes and expansion of funding initiatives (such as private equity and venture capital funds, community development finance institutions – which we explore in section 5). A practical implication of having a broader approach to transition funding than just support to ex-coal workers is that the scope of any just transition funds/mechanisms becomes larger as the potentially eligible investment pool widens – addressing a constraint to greater private participation, as we discuss in section 5.

Summary

These are the major JET activities that require funding:

Activity	Where?	Role for private (commercial) sector?
Retraining for coal, petrochemicals workers	Mpumalanga, Eastern Cape	Primarily public but with private participation in pay for performance programmes (PfPPs) if appropriate
ALMPs for the green economy	Nationwide	Primarily public but with private participation in pay for performance programmes (PfPPs) if appropriate
Social protection for workers in declining sectors (temporary cash transfers and/or layoff packages for unemployment; early retirement)	Mpumalanga, Eastern Cape	Yes
Water and waste management interventions	Nationwide	Yes – public private partnerships (PPPs)
Small business support (eg to ESCOs, small-scale agri, ecotourism enterprises): incubation (services) and finance	Nationwide	Yes – investment in incubators, VC and PE funds, CDFIs
More socially responsible renewable energy utilities	Nationwide	Responsibility of enforcement of existing standards lies with the public sector; private to devote more resources to consultation and stakeholder engagement
Green public transport	Nationwide	PPPs
Community renewable energy	Nationwide	No, except for financial and other technical advice
Community trust capacitation	Nationwide	No, except for financial and other technical advice

In the next section, we add detail to the final column of the table above.

6. How to fund it all

How much money is needed?

In this section we provide estimates of the amounts needed for justice-aligned investments in the transition. The very different understandings of what the JET is and what activities need to be undertaken to fulfil it have resulted in substantial uncertainty about how much money is required. Nonetheless, two sets of credible figures have been developed by the World Bank and by the PCC in the JET-IP. It is outside the scope of this paper to interrogate the methodologies used to calculate the figures. The numbers simply assist in developing a broad range within which to situate investment expectations.

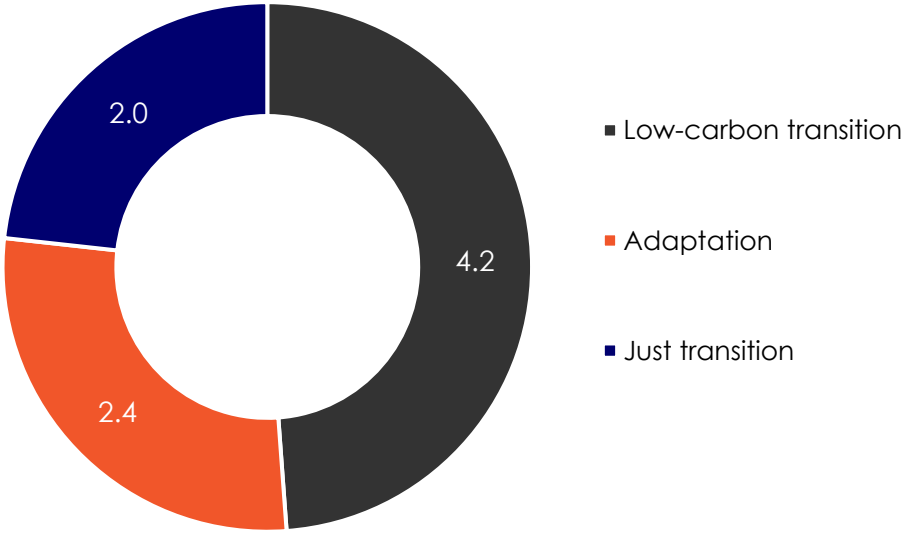
The World Bank

The World Bank estimates that the three sets of activities described above – the low-carbon transition, adaptation and building an inclusive green economy – will require the equivalent of 4.4% of the value of GDP every year to 2050, or R8.5tn in cumulative net present value (World Bank Group, 2022). Half of this (R4.2tn) will need to support the low-carbon transition (especially building the new electrical and transport sectors); 28% (roughly R2.4tn) is forecast for adaptation (the development of climate-smart and resilient infrastructure and cities, water and waste management, sustainable agriculture and public transport).

The remainder (nearly R2tn) is required to support "just transition" initiatives – that is, initiatives intended to ensure that developments in the coal transition and in adaptation are inclusive. This includes R581bn in NPV between 2022 and 2050 for skills training and matching interventions (ALMPs).

Beyond amounts required per sector, there is no further breakdown of costs for specific activities, or disaggregation of amounts by asset class (eg private equity).

Figure 3: NPV of the just energy transition costs, Rtn



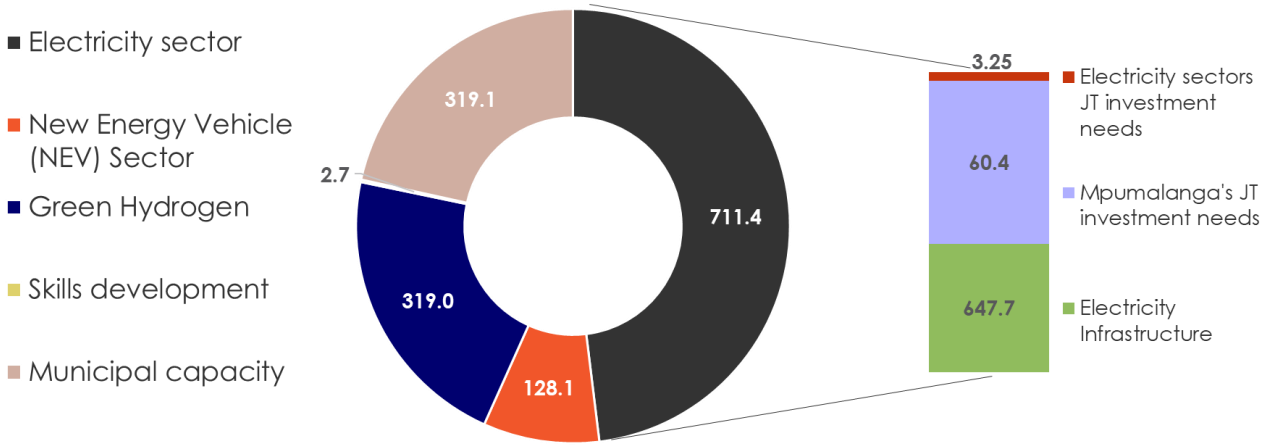
Source: World Bank Group

The JET-IP

South Africa's investment plans for the JET are contained in the JET-IP. It includes a lot of more specific costing, including of social aspects.

In total, it estimates that R1.45tn is needed for investment in the low-carbon transition over the next five years.

Figure 4: JET IP funding requirements, R billion



Source: South Africa's JET IP 2023-2027

Table 1: Priorities, types of instruments, and entry points for investors

Priority Investments	ZAR billion	Proposed Instrument					
		Concessional	Commercial	Budget	Grant	Guarantee	Venture Capital
Electricity							
Decommissioning of coal plants	4.10	Climate Finance (CF)	DFI	Government (Govt.)	–	–	–
Solar	233.00	–	Private (PVT)	–	–	–	–
Wind	242.00	–	PVT	–	–	–	–
Transmission grid strengthening	132.00	CF	DFI	Govt.	–	–	–
Distribution (Eskom & municipalities capacity)	333.00	CF	DFI	Govt.	–	–	–
Batteries	23.00	CF	DFI	Govt	–	–	–
Electricity Subtotal	**967.00**						

Priority Investments	ZAR billion	Proposed Instrument					
		Concessional	Commercial	Budget	Grant	Guarantee	Venture Capital
Just energy transition (Mpumalanga)							
Repurposing of coal plants	3.40	CF	DFI, PVT	Govt.	–	–	Venture Capital (VC)
Repurposing of coal mining land	13.00	CF	DFI	Govt.	DFI	–	–
Improvement of infra-structure for development	12.00	–	DFI	Govt.	–	–	–
Diversification of local economies	24.00	CF	DFI	–	CF, DFI	–	VC
Care for coal workers	6.00	CF	DFI	Govt.	CF, DFI	–	VC
Investment in youth and preparation of future generation for transition	0.70	–	–	Govt.	CF, DFI	–	–
Policies for post-mining redevelopment	0.05	–	–	–	CF, DFI	–	–
Plan and capacity for success	1.30	–	–	Govt.	CF, DFI	–	–
JET (Mpumalanga) Subtotal	**60.40**						
Just energy transition (Electricity Sector)							
Manufacturing and localisation of the clean energy value chain	1.60	CF	DFI	–	–	DFI, CF	VC
Piloting social ownership models	1.60	CF		Govt.	CF, DFI		
JET (Electricity Sector) Subtotal	**3.20**						
NEVs							
Value chain investments	41.00	–	PVT	–	–	–	VC
Fleets, chargers, storage, and local assembly	6.00	CF	DFI	Govt.	–	–	–
Goods and service logistics assembly	7.00	–	PVT	–	–	–	VC
Local supply chain and knowledge sharing	2.00	–	PVT	–	CF, DFI	–	VC
R & D market integration	2.00	–	–	Govt.	CF, DFI	–	–
Reduction of NEV purchase price and development of charging infrastructure	70.00						
NEVs Subtotal	**128.00**						
GH_2							
Feasibility	4.50	–	–	–	–	–	–
Capital cost	163.50	–	–	–	–	–	–
Project development	1.00	–	DFI, PVT, CF	Govt.	–	CF, DFI	–
Infrastructure	150.00	–	DFI, PVT, CF	Govt.	–	CF, DFI	–
GH_2 subtotal	**319.00**						
TOTAL	**1 480.00**						

Source: South Africa's JET IP 2023-2027

Most of the funding is earmarked for the electricity sector, responsible for 45% of SA's emissions.

Social justice interventions are conceptualised as *separate from* the rest of the activity of the transition. And these justice elements are a very small proportion of the total: R64bn (4%). The vast majority of these funds are earmarked for Mpumalanga, with just R3.2bn (0.2% of the total) for efforts to promote justice and inclusion in the energy system more widely. The latter includes costing for localisation and piloting social ownership models. It is disappointing that models of social ownership that have been proven to work under certain conditions and with the right resources – community trusts – have been neglected.

This minimalistic, largely compensatory approach to social justice is at odds with the JET-IP's and PCC's definitions of it, and the way the rest of the JET-IP document frames it. It is not meant to be something separate and contained, like charity. It is meant to be a guiding principle for all economic activity. The structurally minded intentions of planning thus give way here to a rather limited status quo-type approach.

Nonetheless, $8.5bn of the JET-IP's funding needs was committed (approximately R150bn) with much fanfare at COP26. The details of the funding have not been ironed out yet, nor any allocations to specific projects, so there is room for new ideas about expenditure. While 4% is in grants; the rest is in commercial and concessional loans (with the latter representing about 63% of the total). Only R16m is earmarked for "social investment and inclusion", presumably for the activities shown in the table above in Mpumalanga. Also to support ex-coal communities, the World Bank approved a $497m loan in November 2022 to support the decommissioning and repurposing of the Komati coal-fired power plant using renewable energy and batteries (World Bank, 2022b).

An unspecified portion of the total has been set aside for programmes, co-planned with community representatives, to support local livelihoods during the transition. The programmes are expected to benefit approximately 15,000 people and will include skills training, incubation support and business development services for new and existing small businesses that are expected to create jobs in agriculture, local manufacturing and digital technology.

Eskom has transferred the majority of Komati employees from the power station to support and augment skills in other power stations and areas of the business in line with operational requirements. The Komati Training Facility is already operational and is reskilling workers and members of the community. It was developed by the South African Renewable Energy Technology Centre of the Cape Peninsula University of Technology and the Global Energy Alliance for People and Planet. Funding was secured from development finance institutions.

Eskom states in a press release that the Komati Repowering and Repurposing project is one of the largest coal-fired power plant decommissioning, repowering and repurposing projects globally and will serve as a global reference on how to transition fossil-fuel assets. Next up are Camden, Hendrina, Arnot and Grootvlei and prefeasibility studies to repurpose them began in 2016.

This is the type of activity that needs (a) to be replicated elsewhere in Mpumalanga to accommodate the rest of the coal workers – about 105,000 – who will need to access new livelihoods; and (b) to be carried out elsewhere in the country to develop an inclusive green economy and ensure adaptation and resilience to climate change. According to the JET-IP's costing, R64bn is required for the more limited conception of social justice. The World Bank's more realistic estimate of about R1.87tn to 2050 is what we work with here.

This is a very large funding gap and domestic and foreign commercial capital will be required to fill it. Domestic capital in particular will be required to reduce South Africa's foreign debt burden and associated exchange risk.

Public options

1. Taxation

The most obvious tool for the state to generate revenue is through new taxes. "Windfall" taxes are possibly a viable option. They kick in when profits earned are determined less by internal dynamics of production and more by external circumstances. For example, the EU and UK have introduced windfall taxes on profits of oil and gas companies stemming from war-induced shortages and energy prices rocketing as a result of the invasion of Ukraine. This includes price cap measures on renewable energy companies to prevent price gouging.

In the South African context, similar price caps could be introduced on electricity charges to consumers as the costs of coal-fired production continue to increase due to Eskom's inefficiencies and carbon taxes. This would be critical to ensuring that affordable, cleaner energy is widely available, thus contributing to distributive justice in the energy transition. It would also mitigate concerns about "disaster capitalism" – the common claim that public assets are being sold off to private developers under the pretext of system collapse to exclusively promote private interests at the expense of the public interest.

But more broadly, windfall taxes could also be applied to the early movers in the energy transition – most significantly, renewable energy utilities, solar panel manufacturers and mining companies (those that mine minerals required for renewable energy such as cobalt and lithium). This is happening in other countries such as the UK but only where returns for renewables are tied to windfall gains in terms of marginal electricity pricing driven by gas and given prior subsidies in such countries being clawed back. The more general idea where a no-subsidy environment like SA sees such taxes would be problematic.

An alternative could be to apply levies to new projects, which would cascade through the supply chain and perhaps be administratively simpler for this reason. However, taxes of either type in an area of the economy whose growth is a priority sector would be difficult to get right – especially while thinking about imposing subsidies too. A possible trade-off could be to apply windfall/first mover taxes on energy and mining companies and at the same time to dispense with the socioeconomic development requirements of spending portions of revenue on charitable activities, simplifying to local ownership only. This is administratively simpler for companies to deal with, requires fewer dedicated internal resources, and hands discretion over spending and priorities to communities. In the same vein, smaller taxes could be levied on higher-income consumers and ESCOs, but this would likely discourage faster rates of household and small business installation and be experienced as a punishment for leaving the dysfunctional public system (load shedding), despite the equity arguments that could be made for taxing higher-income consumers and producers in order to expand mass renewable energy access. Overall we find it challenging to find a solution that would be political, logistically and policy compatible.

The IMF recommends that whether applied to fossil fuel or renewable energy companies, windfall taxes should be levied on a permanent basis to promote a stable and predictable tax regime for investors. They should also be levied on a clear measure of excess profit (such as profit above a specific return without reference to specific price levels or time periods) rather than on revenues to deter reduced investment and inflationary pressure (Baunsgaard & Vernon, 2022).

The other tax type that will be essential and far less controversial is the carbon tax, which would expand revenues for social inclusion measures while encouraging domestic private investment and allocation of capital to green projects and reducing carbon intensity across the economy. Phase 1 of SA's carbon tax regime started in 2019. A more substantial shift to phase 2 was meant for January 2023 but has been delayed to January 2026. Not dealing with this puts three quarters of the country's exports to the EU at risk (World Bank, 2022b). The current rate of R144 per tonne needs to be increased significantly to improve incentives and investments in green energy and in energy efficiency among South Africa's big energy consumers.

Regarding the uses of tax revenues, they should finance activities that do not make sense from a commercial perspective, such as social

protection for transitioning workers; strengthening basic education in maths and science to foster skills development in the (future) green economy; subsidies for renewable energy installations in households and small businesses; and to provide grant funding in blended finance vehicles (such as JT funds, as described later). Existing participatory structures in the PCC should be used to determine public priorities for expenditure.

2. Green, social and sustainability bonds issued by public entities

Bonds with clear rules for the use of proceeds enable financing of projects that target defined environmental and/or social benefits. Green, social and sustainability-linked debt instruments, often referred to as thematic bonds (World Bank, 2022a), go further by committing to measurable sustainability targets defined through KPIs. Examples of such instruments issued by public authorities include the UK's inaugural green sovereign bond, issued in September 2021, which was both the largest yet to be issued at £10bn and the first to commit to measuring the social co-benefits of its financing (Robins et al., 2021).

While the thematic bond market has grown significantly in recent years to $3.5tn in outstanding debt (September 2022), sovereigns present a small fraction of issuance (9%) and only 15% of the total amount reissued was in emerging markets (13% of emerging market issuance was done by sovereigns) (World Bank, 2022a). The table summarises emerging market sovereigns that have issued thematic bonds.

Table 2: Emerging market sovereign thematic bond issuance as of September 2022

Country	Date of issuance	Size of issuance	Type of instrument
1. Benin	July 2021	€500mn	Sustainability bonds
2. Chile	c. 2019	US$32.9bn	21 Thematic bonds: - Social (11) - Sustainability (5) - Green (4) - Sustainability-linked (1)
3. Colombia	September 2021	Columbian peso 750bn (US$195mn)	Green bond
4. Ecuador	January 2020	US$400mn	Social bond
5. Egypt	June 2020	US$750mn	Green bond
6. Fiji	November 2017	Fijian dollar 40mn (US$28.9mn)	Green bond
7. Guatemala	April 2020	US$500mn	Social bond
8. Indonesia	March 2018	US$1.25bn	Green sukuk
	February 2019	US$750mn	Green sukuk
	June 2020	US$750mn	Green sukuk
	June 2021	US$750mn	Green sukuk
	September 2021	€500mn	Sustainability bond
	May 2022	US$1.5bn	Green sukuk
9. Malaysia	April 2021	US$800mn	Sustainability sukuk

Country	Date of issuance	Size of issuance	Type of instrument
	September 2022	Malaysian ringgit 4.5bn (US$970mn)	Sustainability sukuk
10. Mexico	September 2020	€750mn	Sustainability bond
	July 2021	€1.3bn	Sustainability bond
	May 2022	Mexican peso 20bn (US$977mn)	Sustainability bond
	July 2022	Mexican peso 20bn (US$730mn)	Sustainability bond
	August 2022	US$2,2bn	Sustainability bond
	September 2022	Japanese yen 75.6bn (US$549mn)	Sustainability bond
11. Nigeria	December 2017	Nigerian naira.10.7bn (US$29mn)	Green bond
	June 2019	Nigerian naira 15bn (US$41mn)	Green bond
12. Peru	October 2021	US$3,25mn	Sustainability bond
	November 2021	€1bn	Social bond
13. Philippines	March 2022	US$1bn	Sustainability bond
	April 2022	Japanese Yen 70.1bn (US$559mn)	Sustainability bond
14. Poland	December 2016	€750mn	Green bond
	August 2018	€1bn	Green bond
	March 2019	€2bn	Green bond
15. Serbia	September 2021	€1bn	Green bond
16. Seychelles	October 2018	US$15mn	Blue bond
17. Thailand	August 2020	Thai baht 30bn (US$964mn)	Sustainability bond
	September 2022	Thai baht 35bn (US$956mn)	Sustainability bond
18. Uzbekistan	July 2021	Uzbekistani som 2tn (US$235mn)	Sustainability bond

SA has yet to issue a sovereign thematic bond, which creates challenges for the market in terms of pricing these instruments. While a sovereign green bond curve, for example, is not essential for market players to adopt these debt-funding instruments – as we have seen in the local market – there is value in developing such a curve as it significantly increases the market's ability to assess pricing of new corporate and financial institution issuance. The reference price point, in turn, enables the market to identify whether there is a greenium of which to take advantage. A sovereign curve has the potential to support larger-scale issuance of thematic bonds and it is a low-hanging fruit to pursue. British local authorities have also started to issue community municipal investments, "pointing to the potential for a local climate bond market (ibid). In SA the state-owned Rand Water pioneered the use of these instruments on the continent by issuing a R1.7bn sustainability-linked bond in 2021 (Rand Merchant Bank, 2022). The instrument includes a yield step

down if Rand Water meets various ESG targets. These will be explored fully in report 3.

3. State-managed JT funds

State-managed "just transition funds" are funded through tax revenues (state portion) and through direct investments (by public and private actors). They hold shares in diverse portfolios of JET-related companies, many of which are small businesses. An advantage of these funds that are open to investments include a larger base of potential revenue than tax only, but repayment and exchange rate risks would likely limit the involvement of foreign investors.

For example, the EU's Just Transition Fund (JTF) has assets of approximately €20bn. The fund's objectives are:

Figure 5: EU Just Transition Fund objectives

Source: European Commission

This is achieved through supporting investments in small and medium-sized enterprises, creating new firms, research and innovation, environmental rehabilitation, rollout of clean energy (utility-scale and embedded generation whether led by large or small business or communities), skills training for workers, job matching and employment services (job seeker assistance), and transformation of existing carbon-intensive installations to cut emissions and preserve jobs (as in the Komati example). The €20bn capitalisation is expected to mobilise another €30bn in private investments.

The JTF is pillar 1 of the Just Transition Mechanism. Pillar 2 is the "InvestEU scheme" for investments in a wider range of projects including energy and transport infrastructure, economic diversification and social infrastructure. It has in-built tech and advisory support for implementing partners and a team for identifying, preparing, structuring and designing projects (pipeline development). Stream 3 is the public sector loan facility (loans to public entities)(The European Commission, n.d.).

Another example is Scotland's £500m Just Transition Fund. Projects supported in the fund's first year (2021/22) include support to SMMEs and incubators working in decarbonisation, renewable energy development (eg new offshore wind projects), retrofitting of existing buildings, construction of new smart buildings, a green hydrogen farming pilot project; skills training, and research and pilot projects to test ideas (Scottish Government, 2022).

The Eskom Just Transition Transaction (JTT)[5] also provides a useful example that should be implemented by the public utility and that could also be replicated by other public entities and by private companies that need to decarbonise but will likely face difficulties in accessing the transition finance required to do so. Transition finance is defined by Winkler et al (2021) as "capital provided to economic agents on the journey to sustainable development to adhere to ambitious climate change action by transitioning away from

[5] The JTT was designed by Meridian Economics for Eskom but ultimately not adopted by Eskom.

fossil fuels or other high-emitting activities and predictable funding to ensure social justice for affected communities and workers, in different contexts" (p17). This is distinct from green finance and from coal finance, filling the gap between disinvestment from coal and green finance.

The JTT is a design for a loan facility for Eskom to attract transition finance to repurpose and decommission its coal-powered production units. The facility would be made up of concessionary loans from international DFIs and commercial loans from domestic banks, forming separate tranches in a blended finance vehicle (see Box 2 below for definitions and discussion of blended finance) in a SPV, which would then be lent to Eskom. Long-term debt would be made available to Eskom on condition that the phasing out of coal-fired power is accelerated, assessed against a pre-defined trajectory, with penalties for non-compliance. The concessionary loan component would bring down the overall rate of return required for investors. Eskom however would still pay a market-based rate to the SPV. This difference enables funds to flow predictably into the vehicle over time and constitutes a "just transition fund" to finance activities for affected communities and workers (Winkler et al., 2021).

In the JTT's design, spending is initially focused on limited transition activities in Mpumalanga but is not limited to it – it could expand nationally. In this way, transition finance flowing into a JT fund could also be used as green finance to support renewable energy expansion later as demand for energy grows and as the need to build supply chains etc increases. The JTT does not currently envisage financing renewable energy, due to the idea that it is now doable commercially (whereas finance for transition and in particular social needs is not). However, community owned renewable energy, or social enterprises in renewable energy (for example that are staffed by young people from disadvantaged backgrounds or that have targets for electrification of informal settlements) have not been proven to be commercially viable and proceeds from a JT fund could be used for these sorts of activities.

Winkler et al. (2021) note that the money flowing from the JT fund should be conceived of as public funds due to its public benefit nature. This would require normal public planning processes around the use of the proceeds, similar to normal IRP planning. They also note the risk that non-compliance by Eskom in the wider JTT would mean that funding flows to Eskom stop, for decommissioning activities *and* for social activities. This requires strict monitoring of use of proceeds and clear reporting. Nonetheless, once established, the separate social portion of the fund could attract other investors (particularly foundations and impact investors) and become self-sustaining.

Finally, we noted in section 5.3.1 that revenues from taxation could be pooled and used to support just transition-aligned activities and projects. Below is a possible design.

The PCC could be repurposed into a coordinating mechanism to use pooled funds to distribute to different initiatives. This is likely to be done through the design and development of a just transition finance mechanism that could include elements such as an advisory board, an independent aggregator that provides funding to the full spectrum of grant-seeking projects, and a fully fledged just transition fund that can finance the full spectrum of long-term just transition projects and activities.

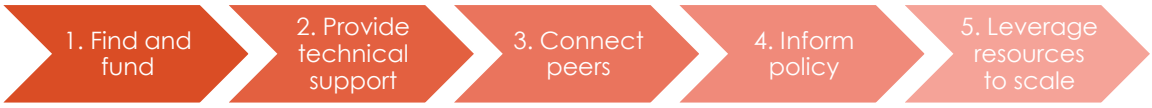
An example of a blended mechanism is the US-based just transition fund (JTF). The fund takes a place-based economic development approach, targeting mining and power plant communities in major coal-affected areas in the US, supporting these communities to become more resilient through the promotion of solutions that are equitable, inclusive and low-carbon. The fund emphasises the importance of collaboration, shared prosperity and community empowerment, built on eight principles.

Figure 6: JTF Guiding Principles

Source: Just Transition Fund

The fund provides various types of monetary and non-monetary support to affected communities, including through grant making, technical assistance, learning via its resource hub and market building through regional and national convenings. It takes a bottom-up approach to finding solutions, leveraging both private and public resources, while at the same time guiding policy changes to support an acceleration of the just transition.

Figure 7: Just transition fund process



Source: Just Transition Fund

This approach has enabled community-based groups to leverage $342m in public and private funding through $12m in JTF grant investments. Funding partners include Bloomberg Philanthropies, Brunckhorst Foundation, Builders Initiative, Google.org, The JPB Foundation, The MacArthur Foundation, The McKnight Foundation, Mertz Gilmore Foundation, The New York Community Trust, Patagonia, Surdna Foundation, Tortuga Foundation, Waverley Street Foundation, The William and Flora Hewlett Foundation, The Workday Foundation and other unanimous donors.

Furthermore, the fund has unlocked more than $100bn in federal funding via the Infrastructure Investment and Jobs Act and American Rescue Plan, and has enacted three state level transition funds directing over $57m to local economic development and transition-related programmes. A snapshot of the fund's cumulative impact since 2015 is provided below:

Figure 8: Just transition fund impact

Source: Just Transition Fund

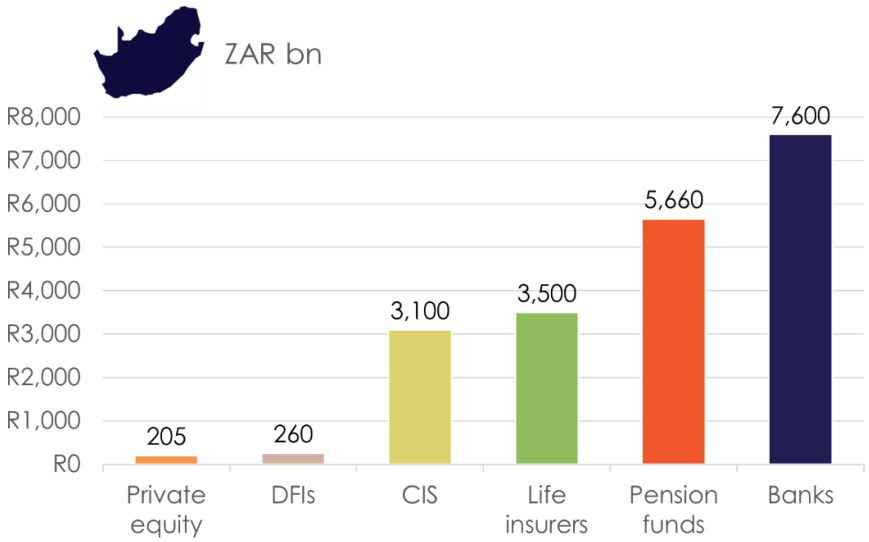
The involvement of both the private and public sectors in this model demonstrates how partnerships can be developed to support the JET and could be a good case study for Mpumulanga's transition from carbon-intensive energy resources.

Private options

South Africa's strained public budgets and the limits to revenue that can be raised through taxation mean it urgently needs to mobilise private capital for the JET, and in particular for JET investments that take the J seriously (how to concretely define these investments is discussed in section 6). In many developing countries, it will be difficult to raise national commercial finance for these investments and many depend on official development assistance or philanthropy to meet their social welfare needs (Landwehr et al., 2022).

South Africa is in the relatively fortunate position of having well-developed domestic capital markets and large domestic savings. The market infrastructure is sophisticated and well regulated, which appeals to international investors. As discussed in detail in the first report, there are various pools of capital that can be leveraged for just transition investments. The graphic below depicts the value of each of the main capital pools, yet there is significant overlap between these funds as many pension funds hold life insurance and collective investment scheme instruments, for example.

Figure 9: South Africa funding pools



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

Although various pools of private capital can be leveraged, it is still mostly absent from the investment activity that is required for the JET, which illustrates the underdeveloped nature of the markets for these investments – either due to market issues (like matching of demand and supply, insufficient pipeline, lack of good data) or to the investments themselves (small scale, no track record, etc).

While there might be a handful of interventions that the private sector can fund on its own, many interventions aimed at addressing the social justice aspects of the just transition simply do not meet commercial investors' return mandates or risk profiles.

This points to a potential role for public finance in crowding in private finance through the use of derisking measures, such as guarantees, equity or concessional loans. These are often fulfilled through blended finance vehicles (see box below).

Box 2: Blended finance

The OECD's definition of blended finance (own emphasis) is "the **strategic use of development finance** for the **mobilisation of additional finance** towards sustainable development in developing countries (OECD, 2023)." The Blended Finance Taskforce, meanwhile, defines blended finance as "the use of development capital to **mobilise additional private finance** for SDG-related investments (Blended Finance Taskforce, 2022)".

A blended finance model uses concessional or non-concessional public or private development funding to mobilise additional, non-concessional public or commercial private capital in a financing structure. Concessional capital is financing offered at a below-market rate to accelerate development objectives (OECD, 2003), whereas non-concessional financing requires market-based returns.

Various instruments can be used by development funders to blend in commercial financiers. These could include, but are not limited to, credit guarantees, where the development funder offers security in the event of non-payment by the borrower; currency hedging, which offers protection against adverse fluctuations in the foreign exchange rate; provision of insurance against risks associated with unanticipated financial loss; technical assistance funding for expert skills and resources; and the provision of first-loss capital, which acts as a credit-enhancement mechanism through the absorption of the first (if any) investment losses.

These blended finance models can be designed according to the relevant stakeholders' requirements, which offers flexibility to different types of funders in terms of the level of risk they are willing to take on to achieve strategic development objectives. Ultimately, these models are designed with the objective of using concessional finance to unlock commercial capital.

The OECD Development Assistance Committee has developed guidance on blended finance outlining best practices when applying this model. The guidance includes five principles (OECD, 2021):

- **Principle 1:** All development finance interventions, including blended finance activities, are based on the mandate of development finance providers to support developing countries in **achieving social, economic, and environmentally sustainable development**.
- **Principle 2:** Development finance in blended finance should **facilitate the unlocking of commercial finance** to optimise total financing directed towards development outcomes.
- **Principle 3:** Development finance should be deployed to ensure that blended finance supports local development needs, priorities and capacities in a way that is consistent with and, where possible, contributes to local financial market development.
- **Principle 4:** Blended finance works if both development and financial objectives can be achieved, with appropriate allocation and sharing of risk between parties, whether the parties are commercial or developmental. Development finance should leverage the complementary motivation of commercial actors, while not compromising on the prevailing standards for development finance deployment.
- **Principle 5:** To ensure accountability on the appropriate use and value for money of development finance, blended finance operations should be monitored on the basis of clear results frameworks, measuring, reporting on, and communicating on financial flows, commercial returns as well as development results.

To overcome reluctance to invest by commercial investors – reluctance that is due to underdevelopment in desired markets and/or (temporary) lack of competitive returns – governments and DFIs can provide finance in a way that reduces or transfers the perceived risks of investments in certain sectors and new technologies, provides access to long-term debt and lowers transaction costs (Landwehr et al., 2022).

Philanthropic funders also have a critical role to play alongside more traditional concessional financiers – such as governments and development banks – in de-risking innovative funding mechanisms (see outcome-based funding example further on).

Blended finance structures have worked successfully in South Africa for social welfare-oriented projects. Notable examples are Bonds4Jobs and the Impact Bond Innovation Fund, targeting youth unemployment and early childhood development respectively. In both cases, public and philanthropic funding with zero or low financial return expectation was used to mobilise traditional commercial capital – capital that proved to be additional from a financial perspective (that is, in the absence of the concessionary component, the investment would have been made into market-rate, no-social return investments instead). In addition, the structure of the vehicles facilitated innovation in the delivery aspect of the social welfare programming, making the achievement of positive social outcomes more likely. See (Khan, Theobald, & Kruger, 2021a, 2021b; Khan, Theobald, Kruger, et al., 2021b) for more details.

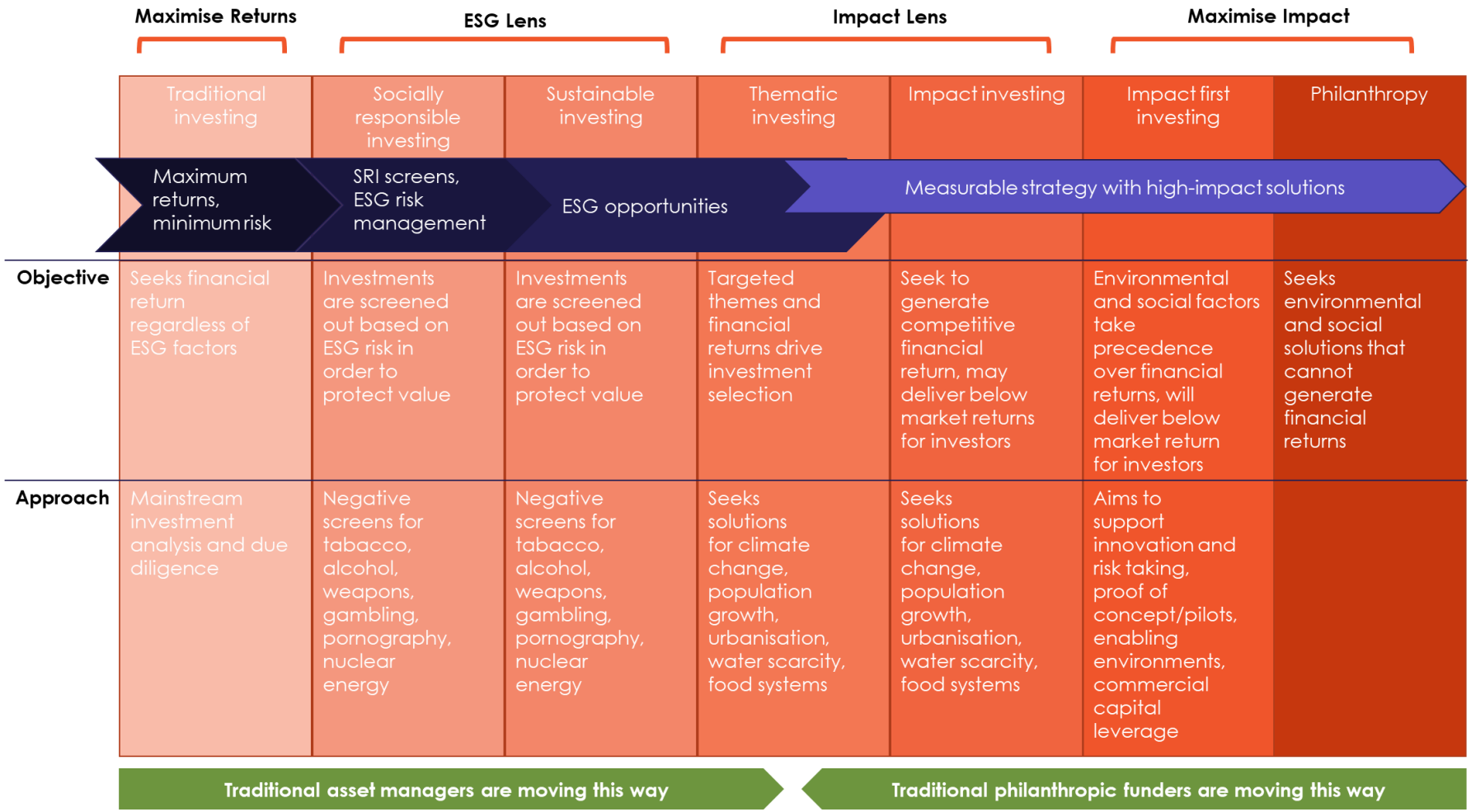
Today in South Africa only R4.9bn of climate finance is blended, mainly structured 10% public finance and 90% private (World Bank Group, 2022). Significant scope exists to grow this number during the growth phase of the climate finance market.

South Africa must get creative and leverage concessional funding to unlock its extensive private savings pool. There is an entire spectrum of capital allocators that will participate in the funding of the JET and investors need to consider the extent to which they have appetite to participate and then identify other types of capital provides to partner with. Various options for the private sector to participate are detailed in the pages that follow. The spectrum of capital providers detailed in the graphic below will provide some context as to the different types of investments.

Below we consider mainly market based and external mechanisms. All of these complement **on-balance sheet funding** by mining companies especially when it comes to renewables investments (embedded generation in particular now), funded with previous windfall commodity price gains. Over time, considering the need to fund social issues for JET at scale – we struggle to see on-balance sheet funding work over the full 30 years of the transition but commodity price and windfall profit cycles through the period will open up space for this to occur.

Many of the issues mentioned here such as community trusts are applicable to capital being provided from balance sheet funds. Such funds are going to be important, in the context of industry right now, for first-mover spending by the mining companies and others. However the margin going forwards in our view is not going to come from here and so our detailed consideration of other routes below.

Figure 10: Spectrum of capital



Source: Adapted from G8 Social Impact Investment Task Force

1. ESG investing for the JET

Investments made to minimise risks related to ESG investing have been highly contested. This is due to significant inconsistencies in how companies get scored on their ESG performance, as well as widespread greenwashing. Many companies and investments whose activities almost certainly worsen environmental and social conditions are able to qualify as ESG-enhancing – through data engineering or simply by the nature of prevalent ESG evaluation processes that tend to treat ESG factors as inputs in the investment decision-making process rather than outcomes to maximise. Prior Intellidex research (Theobald, 2022) with asset managers in developed markets also demonstrates that the risk management approach to ESG investing biases capital flows away from developing markets, due to ESG data points in these markets being significantly worse (or lacking) when compared with those in developed markets. For example, when choosing between investments in Nigeria and Norway, regardless of the merits of the investments themselves, the former starts at a disadvantage due to commonly used country-level data in areas like press freedom and carbon intensity of production.

The value of ESG investments from an alpha-generating perspective is also unclear. Studies showing the financial success of ESG investments relative to standard investments (Ademi & Klungseth, 2022; Ashwin Kumar et al., 2016; Qureshi et al., 2021) exist alongside those claiming the opposite (Armstrong, 2020; International Monetary Fund, 2019; Yue et al., 2020). Part of this divergence is due to the inconsistency in defining what qualifies as an ESG investment.

Cappucci (2018) argues that ESG investing is best seen as a process with differing return expectations as ESG integration in investment decision making becomes more complete. Initially, the costs of developing new systems, of navigating novel complexity and of foregoing screened-out investments, leads investment managers into a "valley" of lower financial returns. Full commitment to ESG integration requires commitment to working through these difficulties and finding ways to identify viable ESG opportunities. Finding these more sustainable opportunities tends to result in better and more stable financial performance relative to the starting position in the integration process. Kotsantonis, Pinney and Serafeim (2016) similarly argue that while many asset managers have committed to sets of ESG principles and risk management frameworks, this is very different to full ESG integration in the analysis and identification of investment opportunities.

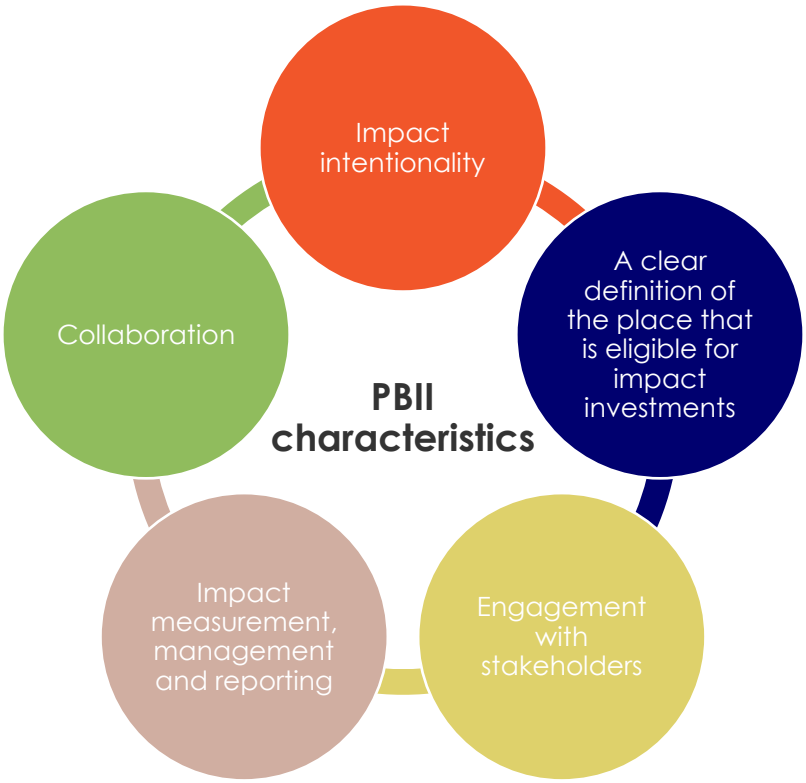
We believe that a more proactive, opportunity based approach has real potential to start moving capital to investments that will contribute to achieving social justice in the energy transition. Even the risk management approach has its benefits in ensuring proper social due diligence of new projects, which would support good community involvement and development. In turn, banks and many investors will look for evidence of this as part of their due diligence.

2. Place-based impact investing

Impact investing moves a step beyond the "ESG opportunity" approach to ESG investing by explicitly measuring the effects of investments along ESG dimensions. In addition, ESG effects (or impacts) are tied to either or both of principal repayment and coupon rates.

Place-based impact investing (PBII) is a growing field within impact investing in the UK and US. It is defined as investment with the intention to yield appropriate risk-adjusted financial returns as well as positive local impact, while also addressing the needs of specific places to enhance local economic resilience, prosperity and sustainable development (Impact Investing Institute et al., 2021). The aim is to address structural constraints to economic growth and regional development, chiefly access to finance, to reverse the long-term decline of, in particular, small towns that once hosted significant industries. PBIIs have five key characteristics (Walker, 2022):

Figure 11: Five characteristics of place-based impact investing



Source: (Walker, 2022), Intellidex

In the developing world context, PBII could also be applied to JET initiatives in peripheral parts of large cities characterised by sustained underdevelopment, such as townships and informal settlements, that face particular local challenges including infrastructural challenges in waste, water and electricity, underdeveloped local capital markets and widespread unemployment.

In the UK, major asset classes are real estate (including social/affordable housing and commercial property), infrastructure (including renewable energy generation and energy services provision by small ESCOs or community run initiatives) and SME finance. PBII also targets public infrastructure (regeneration of town centres in public-private partnerships) and digital infrastructure (Impact Investing Institute, 2022; Impact Investing Institute et al., 2021; Walker, 2022).

Often, PBII is applied to local, small-scale initiatives that tend to not be appealing for large institutional investors, such as pension funds, given their needs for scale and liquidity. Nonetheless, these assets already form part of pensions schemes' portfolios (Impact Investing Institute et al., 2021). The Impact Investing Institute's analysis of market data demonstrates that "investments within the sectors that are key to PBII – affordable housing, SME finance, clean energy, infrastructure and regeneration – can deliver risk-adjusted financial returns in line with institutional investor requirements" (ibid). Investments in most of these sectors are generally in real assets such as housing and infrastructure, so they can also provide predictable income streams.

Key challenges:

- Awareness of the concept of PBII and its costs and benefits (which the Impact Investing Institute is addressing through the establishment of the PBII forum).
- Absence of good measurement tools.
- Project origination: the universe of assets is still small and often in the private markets.

- Capacity issues, and having the time, expertise and skills to source and carry out due diligence on PBII opportunities.
- Challenges of scale including absence of investment vehicles.

Despite the challenges, in the UK there is growing appetite for PBII among pension funds. The UK government recently introduced a target for all Local Government Pension Scheme funds to allocate 5% to local investing, which could draw £16bn into PBII (Private Equity International, 2022). This seems like a small, niche area of investment without much potential to scale – but if we start seeing pension funds stepping in and other large institutional investors and the right sorts of vehicles and pipeline are developed, it could be quite a large movement (eg, PBII funds, origination platforms, centralised management deploying funds to regions, etc). PBII funds in SA could target domestic pension funds and international ones with an appetite for sustainable, localised development and experience of investing in their local economies.

3. A larger role for community trusts

A major innovation in the REIPPPP historically was the requirement that new facilities be part-owned by the communities in which they are located. New facilities are usually built by consortia of energy companies (mostly led by large multinationals, though some local developers have emerged) and development finance institutions. Project companies are established for each new facility and it is in these companies that communities are required to have a stake. In all but one case that we know of (where a non-profit company was established), community trusts (a type of charitable public benefit organisation) have been established to satisfy this requirement.

These community trusts represent a form of the shared ownership model in infrastructure development, rooted in mining. It stands in contrast to the community renewable energy model, characterised by infrastructure that is fully owned and run by communities, and has the potential to overcome several weaknesses in that model (Goedkoop & Devine-Wright, 2016). These include communities (especially in developing countries) not having the upfront capital required for new infrastructure, nor the requisite technical and administrative skills. But unlike in other countries with shared ownership models in renewable energy infrastructure, here individuals in host communities do not have direct shareholding in the project companies. Asset-holding is achieved through trusts which have stakes in the project companies, that are typically set up as special purpose vehicles (SPVs). The community trusts hold, on average, between 9% and 12% equity in these SPVs[6], which translates to total cash flow over the duration of the IPPs' implementation agreements (20 years) of roughly R27bn (Overy, 2018). These figures apply to trusts established through the first four large REIPPP rounds and as such exclude the most recent round 5 projects and associated trusts, for which figures are unavailable.

Aggregate information about how the limited funds flowing into the trusts to date have been spent (the financing is described in the next paragraph) is not available in the same way as it is for IPPs' socioeconomic development spending; an entirely separate activity that is directed by the IPPs rather than the trusts. This is because trusts are not required to submit detailed quarterly reports in the same way as IPPs are.

Regarding socioeconomic spending, R1.6bn has been spent by IPPs in communities to date, with 40% of this going to education initiatives; 22% to social welfare; 24% to enterprise development; 5% to administration; and 5% to healthcare (IPP Office, 2021). The close connections between IPPs and trusts, as well as our qualitative observations in Khan et al, 2021a, shows that where trusts have spent money, it is in broadly similar ways, with activities focusing primarily on education (especially early childhood development projects).

[6] It is difficult to arrive at an exact figure due to missing information for some projects and complex ownership structures.

Our work shows shared ownership in renewable energy has been rather problematic to date (Khan, Theobald, Kruger, et al., 2021a). The trusts that we investigated in this work all required external financing of their IPP shareholding, provided in most cases by DFIs. Funds first flow into the project company that is owned by the trust. The DFIs can withhold or reduce these flows (if an agreement for trickle dividends is in place) depending on the amount left to pay on the loans. The loans have been provided at high rates (typically between 13% and 20%) that provide high yields for state institutions. Locals have not been empowered to participate in planning for infrastructure development or in the use of proceeds flowing from their shareholding; and trust funds accumulate very slowly in the early years of the project or lie idle. This while local access to electricity need not have improved (as all production feeds into the national grid).

None of this, however, detracts from their **potential** to act as strong asset bases and originators of local economic development, structured for example as PBIIs. They could start by becoming involved in social housing or ESCOs, which are among the most popular "S" issues that tend to get funded by ESG and impact investors.

Broader macroeconomic trends justify an approach to community development organised around the JET. Thomas Piketty's work on economic inequality demonstrates that the rate of return on capital has exceeded the growth rate of GDP for some time across major economies, while the concentration of wealth has intensified, and this is the key determinant of growing economic inequality (Piketty & Rendall, 2022) . This is especially true in South Africa (Chatterjee et al., 2022), where ownership of financial and real assets is extremely unequal and largely explains one's position in the distribution of economic wellbeing (the top 0.01% hold more wealth than the bottom 90%). Based on these insights, Branko Milanovic (Milanović, 2019) suggests that expanding asset ownership among the poor is key to expanding economic participation, and reducing inequality, through reducing inequality in capital income earnings. Given that the underlying trend that drives increasing inequality is for returns on capital to exceed GDP growth, redistributive taxation is suboptimal and is limited as a 21st century approach to tackling inequality (ibid). Instead, asset ownership must be distributed more broadly in the population. Nominally, community trusts do this, while also providing scale at entry for low-wealth investors.

The challenges with the community trusts described above are well known in the industry. While there are substantial efforts underway to develop more coordinated responses between trustees and other community development practitioners (see the Initiative for Social Performance in Renewable Energy, INSPIRE, for example), at policy level there is less activity in improving the trusts' operating environment such that their potential to contribute to the just transition (specifically the "transitioning in" dimension) is maximised. Some uncomplicated recommendations include:

- One way to enhance trust functioning could be to dispense with socio-economic development requirements entirely – all "philanthropic" obligations could be focused on trusts, with company CSI staff focusing on doing what they can to ensure that they work through capacity development, for example. This would ensure that the rights and responsibilities of managing substantial funds lie solely with communities. But this depends critically on better financing terms for the trusts (see the last recommendation). Debt repayments have meant that in most cases the only money that flows into communities is from the SED stream, which is primarily dependent on IPP revenue.
- Another constraint is that investing and financial planning require expertise; expertise that many community trustees do not have or cannot afford to access. Incentives could be introduced to change this situation, for example through using South Africa's Black Economic Empowerment programme to incentivise investment houses to train trusts in investment, financial management.
- Better, enforceable rules around trust governance will also be required. These include strict rules and requirements for trustee appointments to ensure clean, experienced governance, as well as

rigorous monitoring and evaluation (M&E). Inviolable borders must also be defined between local governments, energy (and other) companies, and community trusts to promote collaboration and prevent trust capture.

- Opportunities for informed public participation must also be prescribed in a cyclical way, especially at times of trustee elections and appointments and after implementation cycles to engage with M&E reports (every year, for example). Providing limited but clear opportunities for engagement (either to stand for a direct position in the trust's operations or to engage in an oversight role) promotes both recognitional and participatory justice while avoiding endless stakeholder consultations that can be paralysing and ultimately erode distributional justice.
- Change legislation allowing trusts (as a type of non-profit organisation) to invest. Ambiguous regulations prevent many non-profit organisations (NPOs) from engaging in impact investing due to fears that revenue-generating activities could be perceived by authorities as conflicting with prescribed public benefit activities. This could result in the impact investing NPO losing its tax exemption status. In addition, unlike countries like Vietnam and South Korea, South Africa does not have a special taxation dispensation for "social enterprises": small businesses that combine profit activity with public benefit activities such as environmental preservation or decent jobs for vulnerable groups. Introducing such a regime could be useful in promoting small business development in renewable energy and associated sectors (like ecotourism, waste management, water and sanitation and green construction).
- Ensure the continuation of the current trust structure where individuals do not own shares: they are held in trust and managed by (capable and legitimate) trustees. The trust itself remains a community asset and cannot be sold.
- There should be better financing terms for the community trusts. Several trusts have undertaken negotiations for refinancing of their loans with major banks, for example. The DFIs should be also do more in this regard.

Introducing a proper plan to improve social ownership that incorporates the suggestions above is critical to ensuring that the limited gains made to date are preserved and replicated. When community trusts are properly functioning and properly resourced, they could ultimately take on a role as investors and local lenders, so that they operate more like community development finance institutions (CDFIs) in the UK (see for example https://responsiblefinance.org.uk/) and the US (see https://www.cdfifund.gov/). These institutions could provide funding for local economic activity, especially to small creditworthy businesses that struggle to access mainstream finance. They could also invest in future utility-scale infrastructure independently. Community trusts could thus become lynchpins of local economic regeneration in small towns across South Africa as place-based impact investors (and potentially operating even beyond the immediate locality) as CDFIs. This idea relates to the community trusts already established through the REIPPP. But they could conceivably also be established in the coal belt, and initially capitalised in similar ways – for example through stakes in newly developed renewable energy facilities.

Community trusts have expressed interest in investing in other projects in order to extend their lifespan beyond the 20-year power-purchase agreement (PPA) with Eskom but they struggle to obtain funding from the government and the private sector due to expensive financing terms attached to these funding deals. Additionally, when community trusts bid for the renewable energy auctions, the government should give preference with lucrative margins to community trusts. Sibonlanga Community Trust was interested in bidding for bid window 5 projects but decided against it because of low tariffs that made it unfeasible for the community .

Additionally, some trusts indicated that the contracts they signed with the IPP office can be limiting in terms of where and how much they can spend their profits when investing in other business ventures. Some mentioned that their agreement

only allows them to invest within the 50km radius of the original renewable energy plant and can only spend up to 50% of the previous year's profits while others are not allowed to invest in other business ventures. Obtaining exemptions from these contract conditions has proven to be an administrative and compliance challenge for these trusts, as result they choose not to invest in other businesses.

Another community trust that we spoke to expressed concerns about some of the independent power producers treating them as an extension of the IPPs instead of being treated as individual entities. They alleged that some IPPs neglect their social responsibilities to the communities and expect the trusts to take over that role. There is a need for a clear separation of responsibilities from the community trust's responsibilities and that of the IPP. Greater capacitation of trusts and reduction or elimination of the SED requirements on IPPs would remove this role confusion and endow communities with much greater agency in planning context-specific and locally relevant developmental interventions and thus in ensuring a transition into a more just green economy.

4. JET funds

The establishment of private debt and/or private equity funds for JET-promoting businesses, similar to the EU and Scotland examples described above, but *privately* managed, are another way to get funds to flow into economic activity that maximises green and social outcomes. These could be capitalised using blended structures.

One such example is reponsAbility's access to clean power fund. This debt fund targets companies in sub-Saharan Africa across the entire energy value chain that provide off-grid energy solutions to households that are both affordable and reliable. Moreover, it addresses solar potential for the commercial and industrial sector. The funding mechanisms used include senior and subordinates (secured and/or unsecured) corporate loans as well as other structures such as SPVs. It provides funding for various activities, including working capital, inventory financing, asset-based financing (on balance sheet and off balance sheet through an SPV), project financing and refinancing for off-grid enterprises. It also funds mid-state and late stage IPPs.

Table 3: responsAbiity factsheet

Range of loan tenors	*2 -3 years, with longer tenors for IPPs (maximum of 10 years)*
Interest rate (%)	*Varies*
Collaterals or other securities required	*Assignment of receivables* *Lien on the installed equipment* *Pledges of real property assets of company*
Minimum range of ticket sizes	*€1mn - €3mn*
Maximum range of ticket sizes	*>€10mn*
Average ticket size per transaction	*€3 -€10mn*
Fund manager description	*responsAbility is the fund manager for the Access to Clean Power Fund (ACPF). Since the company's inception in 2003, responsAbility-managed funds have disbursed >$10bn in private debt and private equity to companies in the financial inclusion, sustainable food and climate finance sectors whose business models directly support the United Nation's Sustainable Development Goals (SDGs).*

Source: Get.invest

Holdings in these three structures could be publicly tradeable and open to individual and institutional investors. This would be analogous to the investment trust vehicle in the UK. Investment trusts are structured as publicly traded companies. Their key advantage is that they enable investors to hold illiquid assets within a company that allows investors to buy and sell shares daily in a liquid market. Managers do not sell the underlying assets if investors sell the trust company, as is the case with traditional investment funds. This is a good fit for the energy transition where lots of innovation is happening in the private space, and in 2022 several UK investment trusts managed to stay profitable in a challenging macro environment (Ross, 2022). This is also quite different from traditional ESG investing which focuses on large companies (ibid) with often questionable ESG credentials.

5. Transition bonds

Transition bonds are instruments designed to provide heavy emitters an alternative financing tool that can support their journey towards net zero. For many carbon-intensive industries, low carbon solutions are not yet available at scale due to significant technological and/or systemic barriers (Sustainalytics, 2022). These sectors require capital to develop the technology needed to support and enable them to transition, a process that will require a complete organisational transformation or reinvention for many of these organisations.

For entire economies to transition to net zero, decarbonisation needs to occur across various industries and activities, and transition bonds are a tool that can be utilised by specific industries to support this process.

Figure 12: Transition bonds benefits for issuers

Source: Sustainalytics, Intellidex

The key difference between a transition bond and a green bond is that neither the project nor the issuer of a transition bond needs to be classified as "green" when a transition instrument is used. Instead, the transition bond's proceeds are used to finance specific activities that will support the organisation along its emissions-reduction pathway. Proceeds can be used for climate-related transition activities such as (Riordan, 2022):

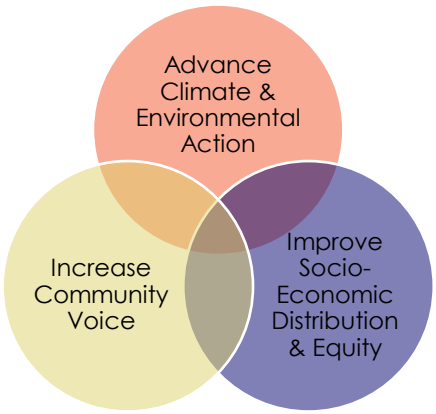
- Carbon capture and storage;
- Switching coal plants to natural gas which produces less greenhouse gas emissions;
- Waste-to-energy;
- Switching diesel powered ships to natural gas; and

- Use of recycled raw materials and/or higher levels of recycling.

A key hurdle for both issuers of and investors in transition bonds is the absence of a structured framework with clearly defined principles for these instruments. While the International Capital Markets Association has developed a set of principles for green, social and sustainability (GSS) bonds, as well as sustainability-linked bonds, its head of sustainable finance and secretary of the Green Bond Principles and Social Bond Principles, Nicholas Pfaff, indicated in late 2022 that ICMA does not intend to develop a set of principles for transition bonds. Transition is not viewed as a product but rather a process, trajectory or theme and hence, ICMA argues, it doesn't make sense to develop principles. Instead, it provides guidance on transition strategies and disclosures for issuers of these instruments in its climate transition finance handbook (Furness, 2022).

The current recommendations on transition finance are tailored specifically to address issues related to transitioning to net zero. There is no consideration for the social aspect of the energy transition. This is where South Africa needs to push the boundaries and explore options to include a social element and develop thinking on what a just transition finance transaction might require. Some conceptual thinking about this has been done by the UK's Impact Investing Institute, which has identified three elements for just transition finance. The risk is that complying with all three elements is considered too onerous for issuers given the level of complexity associated with linking financing to both social and environmental key performance indicators. That does not prevent issuers from utilising social and sustainability linked bonds to raise capital for social transition elements.

Figure 13: The Impact Taskforce's three Just Transition Elements

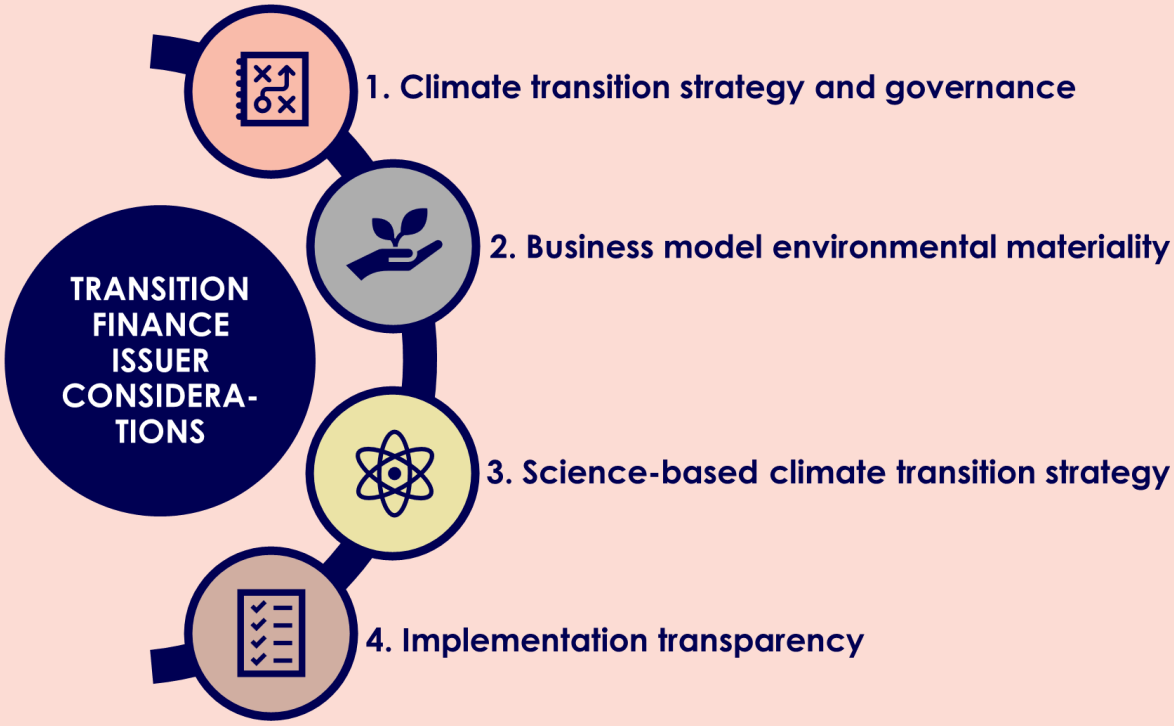


Source: Impact Taskforce (Sprengler et al., 2021)

Box 3: Transition finance issuer considerations

There ICMA Climate Transition Finance Handbook recommends that issuers consider four key elements before endeavouring to utilise a use-of-proceeds or general corporate purpose instrument for transitioning (see graphic below). Each of these elements, when practically feasible, requires disclosures and independent reviews, assurance and/or verification to enhance the credibility of the element. These issuer-level considerations are applicable at an organisation level and will typically be detailed in an issuer's transition bond framework. To develop such a framework, an issuer clearly requires strategic organisational alignment to ensure that the elements are attainable at company level.

Figure 14: Issuer requirements for transition finance



Source: ICMA Climate Finance Transition Handbook, Intellidex

In addition to these elements, there are some issuance-level considerations that must be included in a transition framework (Sustainalytics, 2022), including:

1. Use of proceeds: Alignment of financed business activities and projects with specific transition eligibility criteria
2. Project evaluation and selection
3. Management of proceeds
4. Allocation and impact reporting

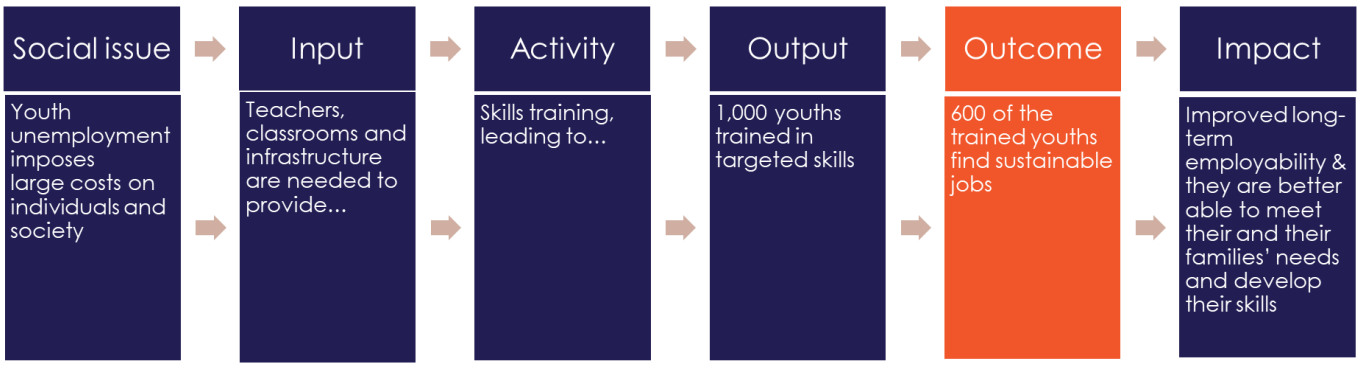
There is significant initial strategic work that needs to get done before an issuer will be able to raise funding with transition instruments. One interviewee flagged this as one of the reasons why the local corporate sector has yet to make use of these instruments to raise funding for transitioning purposes. There is also the risk of organisations being accused of impact washing.

Whereas guidance on best practice for the issuance of thematic bonds in the sustainable finance space has thus far been developed by ICMA, it appears as though the development of the transition bond market and best practice in this area of financing will be shaped by corporate transition plans (Furness, 2022).

6. Pay for Performance Programmes (PfPPs)

PfPPs are a type of outcomes-based contracting model that aims to improve the results from public funded social or environmental interventions. Payments to investors wholly or partly depend on clearly defined outcomes. It shifts the public funding paradigm from the value of funding allocated to specific activities or interventions (activity-based funding) to the results (outcomes and impact) achieved as a result of the specific intervention. Outcomes are typically funded by governments but other development funders can also act as outcomes funders. Investors in these instruments typically include a mix of commercial and concessional financiers.

Figure 15: Outcomes based contracting logic model

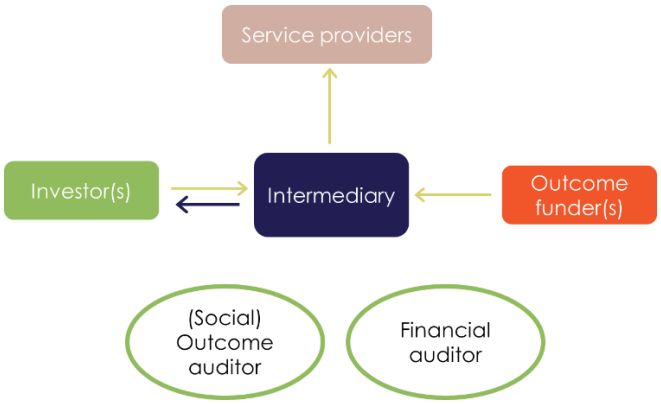


Source: Government Outcomes Lab, Intellidex

The attractiveness of PfPPs is underpinned by three key characteristics: the paradigm shift to outcomes as incentives, as payments are linked to outcomes rather than inputs and activities; more robust governance structures due to the involvement of various public and private sector stakeholders; and risk realignment as the government is only expected to pay for programmes that deliver results.

A social impact bond is a type of pay for performance contract and the structure of such an instrument is outlined below. Investors provide upfront working capital to a technical intermediary, who in turn enters agreements with service providers that are specialists in the particular social outcomes that the model intends to achieve. The service providers have to achieve certain milestones in order to trigger outcomes payments from the investors. For every milestone that the service provider achieves, an independent outcomes auditor verifies the outcomes, which in turn triggers a payment by the outcomes funder to the investor. Investors earn returns based on the efficiencies created by utilising specialist development organisations to deliver the intended outcomes.

Figure 16: Social impact bond structure



Source: Intellidex

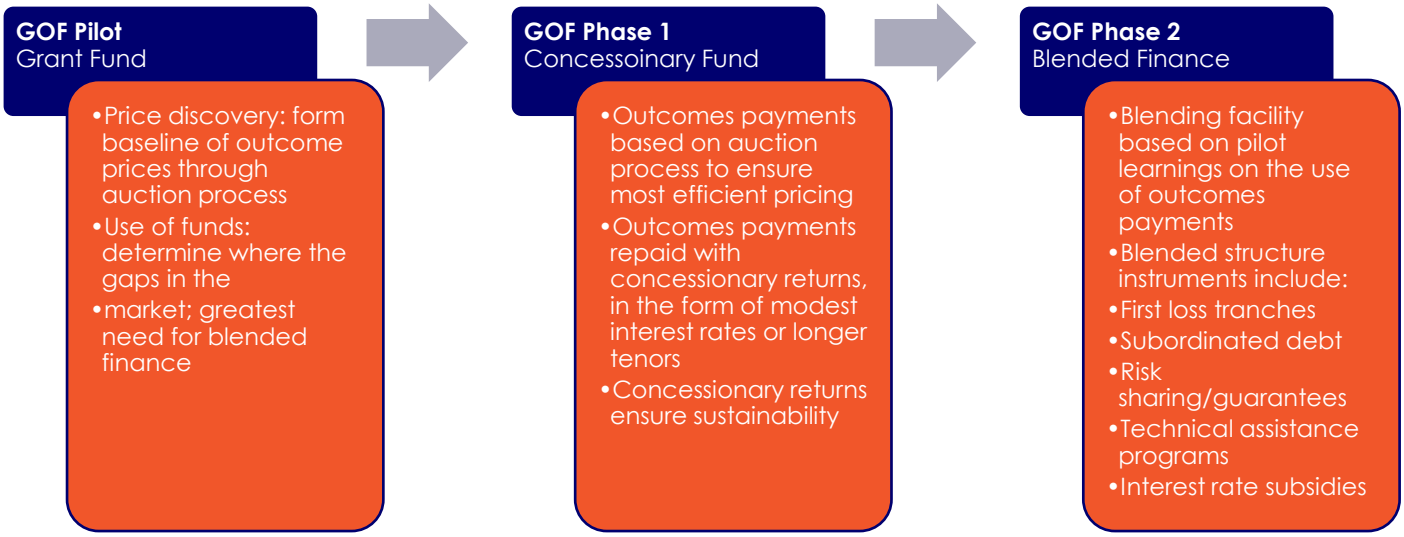
One example of an outcomes based funding contract in the local market is the Green Outcomes Fund (GOF), which was developed by National Treasury's Jobs Fund in partnership with the RMB Fund (part of the FirstRand Foundation). The fund was developed to give private sector fund managers an opportunity to invest in high-growth SMMEs operating in SA's green economy, targeting the energy, water, waste and sustainable agriculture sectors.

While this fund has a broader focus on the green economy, there are elements that are relevant for the just energy transition given the focus on creating permanent direct and indirect jobs in the green sector (including energy), as well as improving access to reliable clean energy grid/source to individuals previously excluded from the traditional energy grid. Furthermore, outcome metrics included energy generation (total installed capacity) and energy efficiency (generic energy saved based on deemed savings values per unit installed).

The partnership between the private (RMB Fund) and public (Jobs Fund) resulted in combined grant capital of R92.6m leveraging an additional R395.5m in investments from private sector investment funds in the South African market. These investors are referred to as catalytic finance partners (CFPs) as they manage and develop small, medium and micro enterprises SMME investment portfolios independently of the fund, in line with predetermined criteria. The CFPs include Business Partners, Conservation International Ventures, Edge Growth and Mergence Investment Managers.

The R488.1m facility was launched on 1 January 2020 and the pilot is running for three years after which a scaling strategy will be deployed. The GOF is considering a three-phased approach to facilitate the evolution from a grant-fund pilot to a sustainable blended structure, as outlined below (Green Outcomes Fund, 2022).

Figure 17: Developing a sustainable blended finance facility



Source: Green Outcomes Fund

The results from the pilot have been mixed. First, the philanthropic funding portion provided by RMB was used to finance the operational management of the programme. These multi-stakeholder interventions are complex and resource-intensive and typically require specialist technical expertise to be executed efficiently. The model therefore requires an operational management funding component for the arranger or technical intermediary coordinating the instrument. This usually has to be funded with

grants, especially during the pilot phase of any project.

This, in turn, can create some challenges for grant funders due to the difficulties related to measuring how much leverage the grant funding ultimately unlocks. One interviewee highlighted that grant makers want to ensure that their funding can leverage additional credit from banks, and in the case of the GOF it is not clear how this can be achieved, especially considering how challenging the domestic operating environment is.

Often, these structures are not replicable and questions remain about the scalability of the interventions.

In the case of the GOF, it is questionable whether the right incentives were set in place to entice the CFPs to aggressively pursue investments that would match the predefined outcomes criteria and in turn trigger outcome payments by the outcomes funder (Jobs Fund). Combining both environmental and jobs criteria, meanwhile, has added another layer of complexity to the GOF and one interviewee indicated that mixing up KPIs has presented significant challenges.

Nevertheless, outcomes based funding models offer a compelling value proposition for the government as an outcomes funder as it can maximise social and/environmental return on development spending by only paying for the outcomes achieved.

Linking these instruments back to JET and they potentially have a part to play in skills training for the green economy. Instruments can be structured such that the skills training programmes are demand-led to ensure that the programmes are tailored to develop the appropriate skills. Such programmes could be appealing to the private sector as well as it has a direct interest in accessing a better skilled workforce.

These models are a great example of how capital providers with different return objectives can collaborate to achieve intended outcomes.

7. Market-based products for renewable energy access

As noted, energy is central to modern economies and is one of the most basic prerequisites to a decent standard of living. The rate of electrification has increased markedly in SA during the democratic era to 85%. In rural areas, the rate rose from 24% to 79% between 1996 and 2019 (Ye & Koch, 2021), But despite this success, low-income households – including those that are grid-connected – continue to use other energy sources, including wood, paraffin and candles. This is amid very large tariff increases that have fuelled inflation and contributed to increasing illegal grid connections, at the same time that 2022 was the worst year of load-shedding on record, with five times more gigawatt capacity shed than the previous worst year, 2021 (Yelland, 2023).

This suggests that even though the majority of the population is grid-connected, load shedding and unaffordable electricity supplied by Eskom limits electricity consumption, which impedes people from meeting their basic needs. Ye and Koch (2021) demonstrate that energy poverty remains widespread in SA. They define it as the situation where a household does not purchase the energy it needs, by using expenditure data in nationally representative household surveys developed by Statistics South Africa. Need is defined with reference to energy requirements for a "reasonable standard of living" that allows for ownership of a fridge/freezer; cell phone; television or radio; and for cooking with modern energy sources. Geysers and other water heating mechanisms are not included. By this measure, 58% of households fall below the energy poverty line and the energy poverty gap (average distance from this line) is 0.23.

The expansion of SA's renewable energy sector will not promote social justice if it fails – as it has to date[7] – to significantly reduce energy poverty.

In other developing countries, off-grid systems have been developed in rural areas where grid extensions are difficult due to remoteness or lack of economic feasibility. The increasing affordability of solar PV technology and solar home systems (SHSs) makes them an increasingly attractive option to alleviate energy poverty, reduce dependence on highly polluting energy and also to stimulate local economic development.

Eras-Almeida et al. (2019) highlight these benefits in case studies of three successful groups of projects in Peru, Mexico and Bolivia. These countries have similar rates of energy poverty to SA and (particularly in the Peruvian and Bolivian Andes and the Peruvian Amazon) priorities of achieving electrification in very remote areas.

The Peruvian case is emblematic. Acciona.org Peru (the local foundation arm of Spanish multinational energy company Acciona, which also operates in SA) owns the SHSs. Customers pay a monthly fee for energy service which includes a daily energy usage allowance. Acciona.org is funded by these fees and by development finance institutions. Over a six-month period it trains local "microfranchisees" who become micro-ESCOs. These entrepreneurs provide technical support, operations and maintenance services and customer support, and sell electrical appliances compatible with SHSs (eg TVs, radios, chargers, fans, ag-tech). Municipalities regulate tariffs, which are set to ensure the costs of investment, operation and management are covered. This is complemented with the Electric Social Compensation Fund (FOSE) which cross-subsidies and covers 80% of the regulated tariffs (the 20% remainder of the tariff is the maximum spent by customers). Electricity consumers with monthly consumption above 100kwh are charged a small monthly fee that helps to capitalise the fund. The tariffs paid by low-income consumers are lower than the monthly cost of alternative energy sources like candles and batteries. In one town (Cajamarca), there are at least 16,000 beneficiaries.

Key success factors across the case studies include:

- Sufficient government involvement and favourable, stable policy for private generation

[7] *This is arguably the result of regulation that maintains Eskom's monopoly on distribution and transmission.*

- Financial sustainability and adequate business models/economic linkages that maintain affordability of electricity services. In particular, fee-for-service models work because they guarantee sustainability of electricity services provision and of the operator while generating incomes for entrepreneurs (microfranchisors). In Mexico, inability of many customers to pay even with cross-subsidies led to the introduction of a microfinance facility in partnership with a local bank. This requires strong consumer protections which do not currently exist in SA (see for example the experience of predatory lending to grant recipients – (Torkelson, 2017)). The ability to pay can be established through georeferencing.
- Clear definition of roles and responsibilities among partners
- Capacity building
- Community participation and training/employment of locals as consumers and entrepreneurs
- Consistent application of technical standards to ensure effectiveness of the SHSs and in turn ensure economic benefit and public support
- Tech integration through app use, for example, can reduce travel expenses for microfranchisers responsible for customer support and O&M while facilitating payment and communication and creating new jobs in software development.

As microfranchising has expanded in each country, incomes through employment and productivity have grown, while access to electricity for lighting, communications and work has improved, creating opportunities in agriculture, water, health and education. Many existing entrepreneurs participate as solar microfranchisees as additional business activities; some don't have any existing or even prior business experience. Monthly earnings have ranged from $240 to $600 per month. In Bolivia, local governments can also act as micro-franchisees.

The greatest challenge in each case is achieving financial sustainability. Each case shows that the microfranchising model with smart tariffs and upfront investment commitments to develop projects can work. Private investors include DFIs, local banks and private companies. **Community trusts** could certainly play a role in this space.

Regarding public funding, SA's free basic electricity policy (FBE) introduced in 2003 provides free electricity up to 50kWh to "indigent" households (which requires registration by households and installation of a prepaid meter), representing about 10% of all households (Ye & Koch, 2021). Moreover, the free basic alternative energy (FABE) policy was introduced in 2007 to provide households that are not grid-connected access to alternative energy such as liquified petroleum gas (LPG), coal, and SHSs. In 2019, more than 1% of households received some form of FBAE service, 70% of which are SHSs provided by municipalities. Despite the inconsistent implementation of these programmes (many do not even know they exist – ibid – while Yelland (2023) claims 70% of FBE's funds have been misappropriated by municipalities), they provide a regulatory and practical framework within which to promote PPPs for SSEG, as in Latin America. They provide a source of funds for the cross-subsidies that stabilise fee for service models – the prerequisite for financial sustainability.

But given the dysfunctionality and resource constraints of many local municipalities, private investment will in many cases be needed. Community trusts represent one source of private investment. MKOPA in East Africa provides a model for more commercial involvement in small-scale energy while retaining the local economic development benefits.

Box 4: M-KOPA case study

M-KOPA is a connected asset financing platform targeting underbanked customers, giving them access to life-enhancing products and services. This is achieved by providing customers with a pathway to products such as solar-powered lighting, TVs, fridges and more. M-KOPA customers report that children's education improves and 55% cite increased study time at home with bright lighting. Nearly 40% note women are the primary beneficiary of solar that empowers them with access to critical, informative content through TV and/or radio. This enterprise offers a stellar example of how blending different sources of early-stage start-up capital has the potential to generate long-term social and environmental impact at scale. For M-KOPA, the funding journey started with incubation at Signal Point Partners in 2011, after which it secured a combination of donor funding and impact capital worth approximately $2.5m (the exact amount is unconfirmed). The company has since raised a total of $263.6m from 27 investors in 16 funding rounds (*Crunchbase*, 2023). It has six global offices, employs more than 1,000 people and has provided more than $600m in credit to more than two million customers, improving in excess of 4.5 million lives (M-KOPA, 2022).

M-KOPA measures how it has an impact on its customers' prosperity, health, connectedness and environmental sustainability (green). The KPIs measured across these four thematic areas include (but are not limited to):

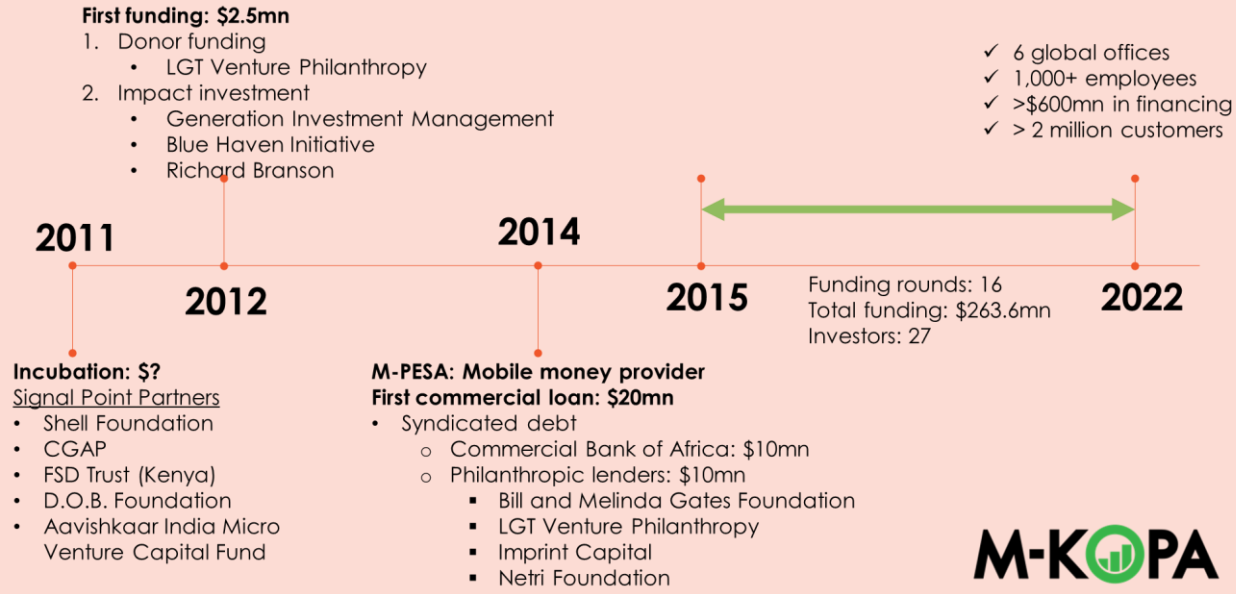
1. Prosperity: the value of credit unlocked for the unbanked, the proportion of customers that report increased earnings, the value of additional income earned.
2. Health: number of fume-free hours for customers, proportion of female clients (use of M-KOPA products free up space for women to attend to the wellbeing of their families), proportion of children that record increase study time.
3. Connectedness: number of first-time mobile internet users, number of mobile money payments received daily, proportion of individuals that feel more connected to the global community.
4. Green: tonnes of CO_2 avoided, tonnes of e-waste recycled, number of energy efficient appliances powered by solar.

The donor funding de-risked the capital for impact investors and M-KOPA might not have secured any commercial financing in the early phases in the absence of the donor funds. M-KOPA demonstrates how a small sum of donor and impact funding can be catalytic in helping organisations reach commercial viability to secure funding from commercial financiers and achieve positive impact at scale.

The company has ambitious goals and targets for the future and plans on achieving the following by 2026:

1. 20-million customers
2. $7bn in credit unlocked
3. 100,000 active agents in the market
4. 2.5-million metric tonnes of CO^2 avoided

Figure 18: M-KOPA funding timeline



Source: M-KOPA, Signal Point Partners, Bertha Centre, LGT Venture Philanthropy, Crunchbase

The demand for PV installations comes mainly from wealthy individuals and companies with the resources to cover the high upfront costs. Most South Africans are unable to meet these costs and many small ESCOs are unable to provide financing options that would allow for staggered payments in instalments. The recent tax incentives for 1 year from Treasury will support households but mainly those already likely to purchase PV in our view – so there are large deadweight losses expected. The tax incentives for SMMEs similarly are likely to see strong overlap. However at the margin we do see both liberating some new power onto grid to a combined 4GW – and may allow some households and SMMEs to purchase larger systems than they would otherwise do.

Banks are starting to play a role in offering innovative financial products for PV installations to the mass consumer base. This would enable much wider, faster uptake of solar PV, contributing to faster uptake of clean energy and also to reductions in utility bills. The recent reforms to the covid Loan Guarantee Scheme to focus on supporting solar PV installers and SMMEs will similarly we think allow greater coverage of companies nationally but is unlikely to shift the dial significantly to those not previously reached.

Another way to expand the reach of renewable energy while reducing costs is to invest in pilot projects that, rather than focusing on full PV installations, focus on the installation of small, locally manufactured solar-powered energy devices in areas that suffer from inadequate electrification. Entrepreneur and climate justice activist Sunny Morgan, with his company Enerlogy, has developed a concept to do so in South African townships. In informal settlements, energy poverty (as detailed earlier in this section) is extensive, where it is not unusual for households to use unsafe and unhealthy paraffin, coal, liquified petroleum gas and candles for lighting, heating and cooking. These are not cheap options: candles, for example, can cost around R80 a month. The phone charging station is also ubiquitous, typically charging around R5 per charge. The installation of solar-powered energy devices resembling batteries, that are capable of powering 4 LED lights, charging a phone and other USB devices, and running a 12V TV, would be a solution that improves energy reliability, affordability and safety in informal settlements. It could also stabilise the larger grid as the need for illegal installations and cable theft falls.

The business model is that customers would pay off the device in small monthly instalments. This would involve a differentiated pricing strategy based on a market mapping exercise: some households would receive devices free of charge (based on assessment of need); the rest would pay off devices in pay-to-own monthly instalments that are substantially cheaper than current energy expenditures. During a pilot project to test the feasibility of the idea, Enerlogy would employ locals to install and maintain the devices after a period of skills training. These locals could eventually become entrepreneurs themselves, buying devices from the local manufacturer and leading teams of their own installers.

However, securing funding for small-scale renewable projects or mini grids can be challenging. Morgan's experience is that projects of this nature tend to be deemed risky by commercial banks and funding institutions. Most small-scale, socially oriented projects lack collateral for securing commercial loans and these loans – as in the community trust example – usually have high interest rates attached.

In addition to the lack of collateral, some of the small-scale renewable energy project owners do not have the necessary skills and capacity to produce a solid business case to justify bank lending. Most South African banks that fund renewable energy projects have several options that can be used to fund small-scale projects:

- Term loan, where funding is secured against the assets in the project developer's balance sheet or can be secured on individual basis based of the client's creditworthiness.
- Asset backed finance, where the client purchases the renewable energy system, and the bank has the rights to the system as collateral in case of default on loan repayment.
- Bond/mortgage attached loan, where the funding will be attached to an existing bond over a property where the bond has

equity While these options are available, they remain out of reach for most people.

These funding options require collateral and yet small-scale project owners such as Enerlogy do not have large balance sheets nor the large assets as collateral to commercial banks to secure the required funding.

Enerlogy is an implementing partner to a non-profit organisation (NGO) that receives foundation funding and provides small solar devices to communities around Dobsonville for free or at a relatively low cost of R3,800.00 per device. The model used by Enelorgy means it does not have large cashflow projections that it can use to secure project finance from private investors. When Enerlogy was contacted, they discussed the need for a socially or community owned renewable energy facility where Enerlogy would be a partner but expressed concern about having local households as off-takers instead of a commercial off taker or Eskom, citing some communities' culture of non-payment as what makes their potential project risky to private investors. The culture of electricity non-payment in South African townships can be detected from the numerous requests to have their debt written off. For instance ,(Omarjee, 2022) notes that Soweto households owe Eskom close to R5bn and would like to have the debt written off. This follows a previous write off of close to R40bn over the past few years. The other challenge to this model is that the commercial banks do not have a great appetite for funding co-operatives because of the nature of their partnership and the long process of recovering their capital should the co-operatives default in their payments.

To this end, Enerlogy believes that the only way it can get access to private capital is through philanthropic capital or corporate social investment capital. However, it is struggling to get an opportunity to connect with the relevant funders.

Nonetheless, involving communities as active prosumers – producers and consumers in new energy systems, rather than passive clients of the distrusted Eskom and municipality – could, with the right leadership, produce results. Projects in a very similar context of non-payment, widespread mistrust in public institutions, and rampant energy poverty in Rio de Janeiro have proved successful (Cipolla et al., 2014). This area calls for innovation from impact investors and investment design teams – there is no reason for blended finance models that have been successfully used in other developing countries to finance solar energy expansion (as described above in Latin America) to not work in South Africa.

7. What is required to make (5) happen

1. Better ESG integration for the JET and better reporting

Incorporating a JET lens – without losing sight of the "S" elements that contribute to social justice – to existing ESG strategies is probably the best way to get the dial moving and to set the groundwork for private capital to move into the JET opportunities described in the previous section. This is something that must happen independently at strategic level in each company. How will overall strategy be modified to account for transition risks and opportunities? How will this affect operations? What incentives will be provided to institute and monitor any new JET-related policies?

For these companies to attract JET-themed investments, and for financial institutions to allocate funds appropriately, it will be essential to be clear about what a JET-compliant investment is, that is at once potentially stimulative of both positive social and environmental outcomes, rather than just green outcomes which has tended to be the norm to date. Taking a specific example, in private generation projects, there is no regulation that compels project owners to contribute to the economic development or the social elements of the just energy transition. However, contributing to the social elements of the transition would satisfy various ESG objectives, including gaining buy in from communities.

In the absence of further regulatory guidance from the state, we recommend that the investment community adopts the Impact Investing Institute's Just Transition Labelling framework (Spengler et al., 2021; see also the "Just Transition Finance Challenge" at https://www.impactinvest.org.uk/project/just-transition-finance-challenge/). This is a simple framework for characterising JET investments.

To comply, investments must:

1. Advance climate and environmental action
2. AND improve socioeconomic distribution and equity
3. AND increase community voice.

These three dimensions align with the pursuit of distributive, recognitional and procedural justice. Some examples of indicators and performance areas that can be used to track performance along these dimensions include (based on insights from Robins et al., 2021):

- Reductions in energy poverty and in carbon emissions (for example emanating from investments in new renewable energy projects)
- The number of jobs created, including the conditions of these jobs such as wages, working hours and non-wage benefits (can they reasonably be described as decent jobs?)
- Disaggregation of impacts by gender, geography and other recognised markers of inequality and disadvantage
- Impacts on local community health
- Numbers of and attendance at social dialogues and stakeholder engagement processes
- Details about retraining and/or early retirement schemes for transitioning workers
- Details about business development services provided for small-scale entrepreneurs
- Place-based investment plans

At the website for the Just Transition Finance Challenge, the Institute has developed a series of case studies that detail various just transition-aligned investments across various asset classes. We encourage readers to consult these cases.

Proper measurement is essential for transparency and to avoid the disillusionment that has accompanied ESG investing. South Africa's first big foreign JET-related investment – the JET-P – has

already been criticised for its lack of transparency – firm details about what form the financing will take and about the exact activities to be funded remain unknown. The Blended Finance Taskforce and Centre for Sustainability Transitions' recommendations for the JET-P could also apply to other large investments that are made at entity level. They include specifying the source of the funds and whether it qualifies as new funding; detailing the terms of the financing; having a robust monitoring and evaluation system; and defining conditionalities relating to payments (for example, whether certain social outcomes need to be achieved prior to payment)(Blended Finance Taskforce & Centre for Sustainability Transitions, 2022).

Another important way to achieve transparency is to give effect to the procedural and participatory dimensions of social justice by consulting with affected stakeholders about plans for new investment activities. But given the difficulties experienced to date in private sector-led community consultations, the PCC should take a leading role in coordinating and/or advising. Per Section 12 of the Climate Change Bill of 2021, the first function of the PCC is to '*(a) advise on South Africa's climate change response and transition to low carbon economy*'. Such advice can be interpreted to include the management of social risks arising from shrinking/stranded assets *and* from declining legitimacy of the just transition broadly.

2. Market development

The development of new JET funds and investments that are serious about promoting social justice, committing to measuring the financial, social and environmental effects of these investments, and then sharing this data publicly, all feed into market development. Demonstration cases developed by bold first-movers would show other financial market stakeholders what is possible in this nascent market.

SA's experience with social impact bonds (SIBs) provides important lessons for the expansion of socially oriented investing (Khan, Theobald, & Kruger, 2021b). These two impact investments demonstrated the potential of partnerships between investors, government and civil society to deliver effective, additional social outcomes while delivering competitive financial returns. In one case, private investment was also additional from a financial perspective: bringing commercial capital to bear in creating social impact that otherwise would have been invested in traditional, financial-only return opportunities. Finally, technical intermediaries proved useful in building capacities of NGOs to improve their monitoring and evaluation systems and to deliver on a results basis. However, these investments took a long time to set up and carried significant transaction costs. This is due to the novelty of the SIB instrument as well as the complexities of negotiating contracts between many parties based on the achievement of social outcomes. The costs of monitoring (undertaken by intermediaries but borne by investors) were also extensive.

It is not unrealistic to expect that these costs will fall as these sorts of investments proliferate and begin to appear less exotic, and as a track record of investments develops. But this rests on transparency. It also requires leadership in developing new JET-oriented markets. First movers are required in:

- Asset management: the design of new vehicles. An area requiring particular innovation is in the design of investments with a larger financial and impact scale. Place-based impact investments may be attractive for CDFIs and other local investors, but not necessarily for larger investors. Scale in JET social investments could be achieved by aggregating several smaller opportunities. This would require expanded roles for intermediaries in coordinating multiple small businesses/social enterprises (see below).
- NGOs: taking on a more social entrepreneurial orientation in the delivery of their mandated public benefit activities. This involves being more open to collaborations with the private sector, and commitments to more robust monitoring and evaluation. Larger foundations should position themselves as innovators and as providing catalytic capital for novel, high-risk propositions that would be unlikely to attract commercial investment without a degree of de-risking. Larger foundations

and social enterprises with experience in impact investing vehicles could also take the lead in building the capacities of other foundations and NGOs to participate in this space. Harambee – the leading youth employment-focused NGO in South Africa – has performed this role in the context of the Bonds4Jobs SIB and beyond that specific context as well. Finally, across civil society, the JET should be mainstreamed in organisational strategy. This is a very niche practice currently.

- Government: establishing a clear regulatory regime for impact investing (which JET-aligned investing would fall under) and continuing work in developing reporting standards (such as that done by National Treasury in developing the Green Finance Taxonomy). Again, adoption or modificiation of the Impact Investing Institute's reporting standards for JET investments seems like the path of least resistance – it is a framework already familiar to many foreign investors and would avoid unnecessary proliferation of diverging standards for investment; proliferation which can lead to confusion and to greater incidence of both intentional and unintentional green- and social-washing.
- In addition, like foundations, governments can also play a role in catalysing commercial capital. This is partly achieved by putting a clear regulatory regime in place and by investing in the development of standards for reporting and/or investment typologies. It is also achieved by de-risking. This entails participating in concessionary layers of blended finance vehicles in similar ways to foundations and other more impact-oriented investors. It could also take the form of providing guarantees. However, de-risking for investors can imply that instead of the reduction of the risk of losses being incurred, this risk is transferred to other parties. In the case of public funds, their use on subsidising private returns can reduce the funds available for the state to meet its public welfare obligations. In this way, the JET can open up new terrain for corruption between the state and the private sector at the expense of the public (Gabor, 2022). The government's active derisking agenda thus needs to be very clearly defined in a specific, time-limited way that assists the JET investment market's initial growth phase without unnecessarily subsidising it into maturity.
- Finally, shareholders will have to play a much more active role than they are used to in South Africa in advocating for an alignment of investment portfolios with the JET.

3. Regulation

In this section we recap some of the major areas of the JET detailed above that require better regulation. These and other issues are the focus of the third paper in the series and will be explored more fully there.

1. Establish innovation districts and business incubators to support SME development in the green economy (ESCOs, ecotourism, green construction, waste management and sustainable agriculture are very promising areas). Preferential taxation regimes for small businesses in these sectors, especially those located in Mpumalanga (and secondarily, the Eastern Cape), would also be helpful.
2. Relatedly establish priority sectors: identify areas of the green economy as priority sectors based on their potential to contribute to social justice (for example due to their potential for labour absorption). Incentives should then be created to invest in these sectors. In India, for example, banks are required to allocate (at minimum) a small, fixed percentage of loans to support national developmental priorities.
3. Regulatory reform for impact investment. This will enable greater participation especially among foundations and social enterprises. These actors are critical parts of the JET ecosystem: the former as providers of first loss catalytic capital, and the latter as implementers of JET

programming and investees. This should also involve establishing a **social enterprise legal structure**, as in South Korea and the UK, or a **social enterprise status** as in Vietnam and Thailand that is conferred on organisations of different types that carry out business activities that are also highly beneficial for the public (eg creating employment in townships; expanding clean, affordable energy access; transport solutions). Whether a status or a legal entity, appropriate tax benefits and incentives must be structured.

4. Incentives, such as tax cuts or extra B-BBEE points, for the provision of technical assistance that contributes to the JET. Such assistance could include financial management training provided to community trustees; or capacity building and training exercises for social enterprises (for example in M&E or business planning).
5. Subsidies and tax breaks on renewable energy expansion (for example as per the US Inflation Reduction Act, 2022); and the introduction of maximum timelines on solar energy installations and other clean initiatives (for example, the EU and Tokyo city) are examples of incentives used to promote the technical aspects of the energy shift.
6. Finally, regulators should continue to refine definitions of fiduciary duty and expand them to accommodate social needs.

8. Prioritisation of private sector-led interventions

In the table below, we rank the private sector-led interventions discussed above by the feasibility of their implementation in the short term.

Intervention	Short-term feasibility/ priority	Description	Actions required from
ESG investing for the JET	**High**	Companies and investors need to take a more proactive approach to ESG investing that identifies ESG opportunities that maximise JET outcomes. This contrasts with the current, dominant risk-management approach to ESG investing that approaches the JET as a set of risks threatening financial/business performance. This new lens is especially relevant for 'transitioning in' activities and could include, for example, investments in solar installations, ecotourism, building retrofitting and water and waste management solutions, alongside tracking of employment, training, community involvement, and environmental outcomes using, for example, the III's Just Transition blueprint.	A redesign of ESG strategy (or a rebalancing that focuses on opportunities as well as risks) is the onus on all corporate, banking and other financial actor boards. Asset managers and financiers must take the lead in designing new investment vehicles and proactively identifying JET-aligned ESG investing opportunities. Involving philanthropy would be useful due to their potential provision of catalytic, first loss capital in blended structures for new investment vehicles without proven track records. Foundations will also need to integrate JET considerations into their organisational strategies/missions.
Place-based impact investing (PBII)	Low	PBII requires a lot more work to become a large-scale, feasible investing movement for localised development. This is due to a shortage of credible local institutions to act as CDFIs, too few investees for PBII and weak consumer markets.	As community trusts become active investors (for example in other energy utilities), they can consider more localised roles in PBII – for example via support to small businesses that will have been beneficiaries of grant-based support offered under IPPs' or trusts' enterprise development and socioeconomic development interventions (which could be seen as preparing for investment-readiness). Larger financial institutions must also reconsider their lending policies which tend to discriminate against smaller, black-owned and/or more remote business owners. Finally, there is a role for philanthropy in coordination: that is, originating and publicising deals/investees; matching investors to investees.

Intervention	Short-term feasibility/ priority	Description	Actions required from
Expansion of community trusts' role	**High**	Probably the majority of community trusts established under the REIPPPP do not have the resources, capacities or even the willingness among trustees to become more active financial actors. This entails expanding asset-holding beyond only the project companies associated with their respective IPPs and investing in other energy projects or more broadly. But several trusts clearly would like to do this and in doing so would be able to expand their communities' shared assets, which could be used as a base to further promote localised economic development that is in line with a vision of a fairer, more inclusive green economy, particularly in the highly unequal areas outside large cities. It would also ensure broader participation in the REIPPPP which currently follows patterns in the rest of the economy with a large degree of foreign ownership and high concentration in ownership. The barriers to this happening are purely administrative and regulatory and could be overcome very easily. A successful, small group of initial investing trusts could inspire similar developments in other communities.	Civil society actors must push for the South African Revenue Service and Treasury to clarify the tax and legal regime applying to trusts, and to clearly specify permissible investment activities and levels of investment. This will require formal submissions to regulatory entities detailing proposed clarifications or amendments to the tax regime governing public benefit organisations. This action could be supported by other actors in the REIPPPP space that have an interest in better-performing trusts, for example, the DFIs and banks (faster repayment; possibilities for building sustained client relationships), and IPPs (more impactful trusts provide a better operating environment and enhance and guarantee IPPs' social license to operate).
JET funds	Medium	This is a medium-term opportunity needing significant market and investee development, as well as possible tax reform to get the right investment vehicles in place.	Asset managers will need to work on developing this market, for example by consolidation of private equity/venture capital investments and investors in existing business incubators; adoption of a JET lens; and then working towards investment readiness for inclusion in JET funds. Marketing of the funds globally (where the JET is increasingly an area of interest for investors) and locally (where significant advocacy will be required).

Intervention	Short-term feasibility/ priority	Description	Actions required from
Transition bonds	Medium	This is also slightly longer term. While there is no shortage of potential investees needing investment for activities that take them towards being more climate- and justice-positive entities, appropriate thresholds and standards need developing to avoid greenwashing.	As described above, there is limited movement in the development of standards for transition instruments, largely due to the conceptual differences between transition (process) and other types of bonds (eg, green outcome-focused bonds), and fears about greenwashing. The onus will lie on companies to develop convincing, actionable and measurable plans that demonstrate how they intend to become better corporate citizens. The same applies to banks and other investors in relation to their investees and companies in their portfolios.
Pay for performance programmes (PfPPs)	**High**	PfPPs for green skills training should be treated as high priority interventions because we know what sorts of skills are required (both for transitioning in and transitioning out), and we also have the design and implementation capabilities for PfPPs in South Africa.	Governments and philanthropy to step in as outcome funders; commercial actors to provide working capital and commit to offtake agreements (for trainees); skills and employment services organisations to map market demand for different green skills and match work seekers to employers.
Market-based products for renewable energy access	Medium	This market is almost non-existent in SA and much work needs to be done to understand its potential.	Banks must take the lead in designing more inclusive financial products for low(er)-income consumers and for small ESCOs to enable broader participation in the new solar sector. In relation to community renewable energy projects, foundations have a key role to play in funding demonstration projects to prove (or disprove) sustainable business models for renewable energy that are owned/ run by ordinary people. Finally, academia must be involved in robust research testing alternative models.

9. Conclusion

In this paper we have explored different options for operationalising the J in the JET. The transition to a new and just energy system that powers a more inclusive economy takes us into unchartered territory – not only in the obvious sense that large-scale economic and technological change is unavoidable but is complex and unpredictable, but also from a financing perspective. Investments that prioritise the achievement of social outcomes that help societies to deal with these uncertainties are rare.

The private sector – companies and financial institutions – will need to become better at addressing the J at the same time that it builds on the small but significant progress in the E.

The easiest way to do this is by better incorporating the JET into existing ESG investing strategies. We have recommended the Just Transition Investment Framework as a standard to use to do so. The standard addresses social and environmental dimensions of the JET and will be useful in helping companies and financial institutions to structure investments. It will promote transparency for the benefit of the government, shareholders and the broader public and facilitate better understanding of what private sector support for the JET looks like.

The framework also promotes a focus on identifying ESG opportunities. This is a vastly underused ESG investing strategy. The norm instead is to apply an ESG risk analysis: ESG factors are treated as inputs in investment decision-making. This often implies that as long as a company or a bank has *thought* about how climate change might affect shareholder value, this is sufficient as an ESG strategy; the effects companies have on ESG outcomes are less relevant. This in turn leads to the unhelpful situation where companies and financial institutions that contribute to carbon emissions, or to worsening the lives of individuals and communities, can achieve high ESG ratings. This is an unsustainable status quo that urgently needs to be rectified. Taking an ESG opportunity oriented approach – combined with the use of a simple, recognised framework for conceptualisation, reporting, and disclosure – will almost certainly be a positive development.

As a first step, an evaluation of existing investments to determine the extent to which they influence – positively or negatively – climate and environmental action; socioeconomic distribution and equity; and community voice, would be a useful screening tool that would be familiar to most investors. The benefit of the just transition framework is that these three dimensions can easily be made to apply to *any* investment in *any* area. This is consistent with the broader view of the transition that we have taken in this report.

Once the use of the standard proliferates, a shared understanding of what it might take for the private sector to contribute positively to the just transition will develop. The focus would then need to shift from risk evaluation – and the accompanying reassessment of investment holdings and corporate activities – towards the more proactive creation of JET-enhancing opportunities.

Because of the scope of the transition, opportunities will exist in multiple sectors and across asset classes. Innovative and committed asset managers, owners and shareholders will need to come together to experiment, co-design investment vehicles and monitor and evaluate performance – the latter in collaboration with social stakeholders beyond narrowly defined shareholders.

In this experimental and early stage in the development of the JET investing market, impact investor, philanthropist and government have important roles to play in creating a conducive environment for funds to flow. Blended finance – where more socially driven investors take first-loss positions in layered investment structures – has shown promise as a tool to catalyse commercial capital into new areas of investment and to build new markets. This could be useful in starting to bring in the large volumes of private capital that will need to complement public spending as we develop and pursue a more just and inclusive economy. More amenable regulation – for example to encourage impact investing or investing in priority sectors – should also be developed.

There are limits to blended finance and to positive incentives, however. There are clear instances where the carrot approach of trying to encourage the private sector to do the right thing with costly subsidies and other incentives (whether these are directly provided by the state or indirectly through the non-profit sector and foregone tax revenues) is the wrong approach. Wherever companies or investment houses are engaged in egregious violations of environmental and social rights, these have to be dealt with through taxation. More aggressive implementation of carbon taxes is going to be critical for this effort. This issue and other interventions to raise public revenues to deal with the challenges and the expenses that will arise from the energy transition are dealt with comprehensively in the third paper in this series of reports.

Another important avenue to pursue is enabling investment by a wider variety of actors. One of these overlooked actors is the community trust. These custodians of community assets in the growing renewable energy sector have to date not had an active financial role: they have not invested in projects independently and depend on a single source of income from their project sponsors. Changing regulation and ensuring that they are capacitated to grow their asset bases (should this be the wish of the trustees and the communities they represent) and in turn their potential contributions to local community and economic development and regeneration could be a game changer. These sorts of actors have shown promise as community development finance institutions, particularly in the UK where they have taken central roles in the growing place-based impact investing (PBII) movement.

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