

A just energy transition to facilitate household energy access and alleviate energy poverty

OVERVIEW

Many in the Global South and some in the Global North cannot afford clean and sustainable energy, and many live in a state of energy poverty. A just energy transition is a chance for economies to start again with a clean slate and do things differently. In the Global South, where many cities are growing and where generation is inadequate, the opportunities abound. This policy brief argues that energy poverty and access must be brought boldly into the Just Transition debate. Only then is change possible. The brief offers an overview of current understanding of what constitutes a just energy transition and what is meant by energy poverty and access by giving a snapshot of the European Union and Sub-Saharan Africa context. The brief concludes with outlining some of the policy gaps.

INTRODUCTION

Reducing energy poverty and increasing access to energy is a core component of a just transition to a low-carbon, climate-resilient economy and society. Yet it is often overlooked. Despite South Africa's high electrification rate, it is estimated that 43% of South African households are energy poor, meaning they cannot meet their basic energy needs and are therefore being denied a fundamental human right. Although not explicitly stated in the literature or the South African Constitution, energy as a basic human right is implied in the Constitution and is recognised globally. A suite of pro-poor policies, some specifically aimed at energy, have not fully achieved their objectives and have failed to solve South Africa's persistent problems of poverty, inequality and unemployment.

Despite global agreements and ambitious goals to eliminate global poverty and ensure sustainable energy for all, it is proving difficult to eliminate poverty, which includes energy poverty, especially in the Global South. The imperative to tackle climate change and transition to a low-carbon future has brought to the fore the concept of a just transition whereby the poor and vulnerable are not further disadvantaged and are fully engaged in not only identifying the challenges but also determining solutions.

Given the extent of energy poverty globally and specifically within South Africa, this cannot be dealt with as a separate issue.

In the 21st century, far too many people lack access to electricity and, or cannot afford this basic right. A just energy transition that encompasses energy equity would leverage the much-needed change within the climate arena.

INTERWEAVING ENERGY POVERTY WITH THE JUST TRANSITION AGENDA

Just energy transition

Just (energy) transition has become a buzz-phrase over the past few years as different countries change the ways their energy industries operate. Most countries have decided to transition to low-carbon energy production and promote renewable energy technologies to mitigate the damage caused by burning fossil fuels and rising greenhouse gas emissions (Worrall et al., 2018).

Global commitments to address the climate change crisis have forced many countries to commit to lowering emissions and develop climate change mitigation frameworks. This generally includes a coal phase-out strategy, as is already happening both locally in South Africa and globally.

This has also resulted in Development Finance Institutions starting to divest from coal-based energy systems and supporting renewable energy generation, backed by rapid advances in technology and increasingly cost-competitive renewable energy (Healy and Barry, 2017; Winkler, 2020).

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The energy transition has to consider the existing inequalities and not perpetuate an unequal economy or leave people in a worse condition than they are at present. It is essential that the poor and disadvantaged are part of developing and identifying solutions and a way forward they should be part of the decision-making processes.

There is, however, no single definition of what is meant by a just energy transition (which is the focus of this policy brief) or indeed a Just Transition, which is broader than energy alone and encompasses not only mitigation but climate resilience and the whole ecosystem. Thus, a just transition is also about taking care of the environment by rehabilitating and repurposing the whole economy so that it operates in an environmentally-sustainable manner for present and future generations. The concept was first developed in the 1970s by the Oil, Chemical and Atomic Workers Union in North America to secure workers' jobs and livelihoods that would be jeopardised by transitioning from fossil fuels (ILO, 2018). It has in recent years become much more linked to climate change generally (Heffron and McCauley, 2018; Smith, 2017).

For countries in the Global North, such as Germany and the Netherlands, even though transitioning from fossil fuels has meant the loss of some jobs, several plans to mitigate these impacts have been implemented. Some of the solutions included early retirement packages for workers who were approaching retirement age, and reskilling younger workers to fit the renewable energy market or be able to branch out into other industries and sectors. Generally, unlike countries in the Global South, the Global North has the financial and human capacity and resources to mitigate energy transition impacts.

In the Global South, countries that have made some advances in their energy transition processes have also prioritised job losses but from a perspective of equity. For instance, countries such as Uruguay, Mexico and Indonesia have made it clear that, for everyone to benefit from an energy transition, it has to be just and ensure the protection of jobs in the affected sectors, and that livelihoods are not negatively impacted (Aung et al., 2020; CAF, 2013; Sierra, 2016; Worrall et al., 2018). In particular, the energy transition has to consider the existing inequalities and not perpetuate an unequal economy or leave people in a worse condition than they are at present. It is essential that the poor and disadvantaged are part of developing and identifying solutions and a way forward. In other words, they should not be negatively impacted by a low-carbon transition and, most importantly, they should be part of the decision-making processes. Decision-making does not only reside with government from a policy perspective or with business (such as the mining

sector) from a vested interest perspective, but must include those who will be most affected.

Within the South African context, the notion of all people having a voice can be traced back to the struggle against apartheid and pre-dates the recent just transition thinking. Important guiding documents, such as the Freedom Charter (1956), the 1994 Reconstruction and Development Programme (RDP) and the 1996 Constitution, were all born out of engagement and bringing the voices of the people to the debate and ultimately influencing key decisions. As such, public participation was later integrated into many of the democratic government processes and policy development. It is unfortunate to observe that, as the years progress, public participation has largely become a tick-box exercise and genuine engagement with the poor is not taking place. Meaningful public participation that ensures that the voice of the poor and marginalised is heard is when the essence of the justice of a just transition needs to take place and, at a certain level, is the hardest part of the transition to achieve in a meaningful manner (Lewis Foundation, 2019).

A just energy transition should also focus on how gender concerns relate to policy in the energy sector. Gender mainstreaming of energy policies and strategies should be at the core of planning a just energy transition. This should ensure that advancing the energy system considers the way it will affect men and women and its impacts on gender relations. Several studies have revealed that women have not been able to exploit all opportunities available in the energy sector – not of their own doing, but because of the type of laws, restrictions and culture that impede their advancement in the energy sector (Aung et al., 2020; ENERGIA, 2020; Lieu et al., 2020). Studies have also shown that, when women do participate in the energy sector, it is often in entry level and administrative positions rather than senior, technical, practice and decision-making positions (IRENA, 2019). It is therefore imperative that a just energy transition ensures that green jobs and skills training support women's entry into the renewable energy sector (ILO, 2015).

Limited participation in the energy sector by women affects the implementation of energy policies and strategies as they lack the voice of women and, consequently, fail to highlight their needs. There is an opportunity at the macro-level of planning for an

Energy poverty can be summarised as the inability to meet one's energy needs, especially the needs directly impacting the household. Energy poverty is due to several factors, which include but are not limited to lack of income.

energy transition to integrate gender issues by creating equitable conditions to ensure that women participate equally as men. In most cases, due to lack of good financial standing and valuable asset ownership, it is difficult for women to have access to capital to start a business or participate in a renewable energy business venture as a shareholder. It is therefore imperative that an energy transition policy explicitly considers how women and men will participate and have access to equitable opportunities that will ensure equality in wealth distribution. This too could mitigate the impacts of energy poverty.

Energy poverty

This section explores the meaning of energy poverty. Energy is essential for human life to survive. Although there are different schools of thought about the right to energy, it is important to recognise that access to affordable, clean, reliable and sustainable energy is generally accepted as a basic human right. This should not depend on an individual's or household's wealth status, but on the basis of acknowledging that lack of access to energy perpetuates poverty, and stunts human survival and development.

In an attempt to define energy poverty, the complexities and context that may lead to different definitions by different people must be acknowledged and appreciated. Policy Brief 08 on accelerating SDG 7 achievement by the United Nations, defines energy poverty as lack of access to electricity and clean cooking fuels or technologies. This United Nations brief also makes a distinction between the developing and developed world contexts, where lack of access is often associated with the developing world (UN, 2018a).

To emphasise the urgency and need for the world to focus on reducing poverty, the Millennium Development Goals (MDGs) were formulated in 2000 followed by the Sustainable Development Goals (SDGs) in 2015. Noticeable in the MDGs was the lack of focus on energy and the extent to which energy can reduce poverty. Thus, even though the MDGs managed to reduce poverty by half from 2000 to 2015, and succeeded in lifting more than one billion people out of extreme poverty, by 2015 the need to continue the efforts to eradicate dire poverty remained great (UN, 2015b). Among other new goals, affordable and clean energy (Goal 7) was included in the SDGs to ensure affordable, reliable and sustainable energy for all (UN, 2018). To accelerate the achievement of Goal 7, Sustainable Energy for All (SE4All) was established to ensure access to

affordable and clean energy for household use as well as for productive uses. Activities supported and mobilised by SE4All include a clean cooking programme, energy access in remote rural areas, healthcare improvement, policy and regulatory frameworks that aim of leave no-one behind and reduce energy poverty.

Considering multiple definitions, energy poverty can be summarised as the inability to meet one's energy needs, especially the needs directly impacting the household. Energy poverty also tends to mainly affect low-income households due to several factors, which include but are not limited to lack of income, household power dynamics, distance and lack of transportation, lack of energy subsidies and low-literacy levels.

Energy poverty can cause malnutrition and other health-related issues (especially among women), such as respiratory diseases (due to smoke inhalation while cooking on open fires) and skeletal deformity (due to constant carrying of heavy firewood loads on their heads) (Aklin et al., 2018; Appleton et al., 2019; Clancy et al., 2016; Nkosi et al., 2021). Energy poverty also limits income-generation activities, such as those in the informal food sector where people earn a living by selling cooked food on the side of the road (Mohlakoana et al., 2018).

Living in energy poverty results in limited security especially at night in places where there is no lighting, exposing women to dangers of gender-based violence (ESI-Africa, 2020). In the South African context, energy poverty can be closely linked to apartheid era spatial planning, which has perpetuated inequalities in the built environment (Knox et al., 2018). These spatial inequalities remain two decades after democracy while energy poverty deepens as the poor remain on the periphery of cities and towns far from economic and other opportunities.

Overall, more people experience energy poverty in the Global South than in the Global North. Tracking the progress made on the global commitments and agreements, such as the MDGs and SDGs, shows that although some progress has been made by some countries, many are still unable to meet these goals and energy poverty persists in the world. In learning from such "failures", it is imperative that the just energy transition commitment goals are substantiated with intent and action that will not render them unattainable and that do not prolong and deepen energy poverty.

INSIGHTS FROM THE EUROPEAN UNION AND SUB-SAHARAN AFRICA

Energy poverty is experienced by people living in the Global North and the Global South. Although the extent of energy poverty may differ based on various context-linked factors, it is undisputed that countries in the Global South have weaker measures in place to deal with energy poverty. It is therefore critically important that an energy transition in the worst-affected countries advocates for an end to energy poverty.

Experience from the European Union

In the past few years, energy research has drawn attention to the experiences of energy poverty in high-income countries. Between 50 and 125 million Europeans cannot afford to pay for adequate indoor thermal heating in winter and cooling in summer (European Commission, 2020). The European Union declared that energy poverty is one of its major challenges and needs immediate attention. The most affected regions in the European Union are those in Central, Eastern and Southern Europe, but it is also acknowledged that households in countries such as France, Ireland, the Netherlands, Germany and the (former EU member) UK also experience energy poverty.

Adding to the problems of lack of ability to pay for heating and cooling is that many households cannot afford to insulate or ventilate their homes effectively as they often reside in old buildings with outdated energy efficiency mechanisms. Homeownership (or lack thereof) also influences people's exposure to energy poverty because of the type of conditions and regulations that may not favour affordable home renovations that may also lead to efficient heating and cooling. The typical European model is that of homeownership, rentals and social housing, and these three groups have access to different types of grants and are subject to different legislation and therefore have different options for investing in efficient energy technologies (Middlemiss et al., 2021, p. 7).

The European Commission recognises that alleviating energy poverty would contribute to a fair and just energy transition, not only by enforcing emission reductions by high polluters, but also by investing in initiatives, such as the Green Deal Renovation Wave. This initiative is seen as a sustainable way to eradicate energy poverty, improve the health of citizens and to ensure that an energy transition is inclusive. It is "designed to boost the structural renovation of private and public buildings, thereby reducing emissions, boosting recovery and addressing energy poverty" (European Commission, 2020: 1).

Experience from Sub-Saharan Africa

The World Economic Forum's Transition Energy Index, which attempts to benchmark the performance of countries' energy systems,¹ is dominated by countries from the Global North (Sweden, Norway and Denmark notably top the ranking) while the Global South countries lag behind. An African country holding a decent spot is Namibia at number 59 followed by Kenya at 61 (out of 115 countries ranked). South Africa ranked at number 106 out of 115 countries in 2020. Using the same criteria of measurement, South Africa dropped to 110 in 2021, a move in the wrong direction and a clear sign that the country's rate of energy transition readiness is slow (WEF, 2021).

Looking at Africa, in particular Sub-Saharan Africa, a just transition that facilitates access to safe and reliable energy and reduces energy poverty is vital. The challenges in Sub-Saharan Africa, however, are very different to the experiences in the North.

Poverty is widespread in the region and it is estimated that well over 50% of Sub-Saharan Africa's urban population are slum dwellers (Bawakyillenuo et al., 2018; World Bank, 2017, 2018). Inequity and severe poverty are the norm. Access to modern and safe energy is limited and energy consumption per capita is far lower than the global average, as is the region's contribution to global greenhouse gas emissions. The continent, apart from South Africa, produces little electricity and where there is access, electrification rates are low. As many as 600 million people (out of a population of 1.1 billion) lack access to electricity in Sub-Saharan Africa while 80% of the population continue to use traditional biomass as the main energy source for cooking with considerable health impacts, such as indoor air pollution and environmental damages (Bawakyillenuo et al., 2018; IEA, 2017).

Increasing the generation of electricity would assist in moving the majority of the population out of abject energy poverty, given the low levels of electrification. However, how this is approached and the tapping into renewable energy sources is critical in overcoming the region's developmental and poverty challenges and contributing to global renewable energy commitments. Many cities and countries have sustainable energy targets and strategies. Yet both financial and human resources remain constrained, affecting implementation. There is a strong need to facilitate and support capacity building within governments and address poor governance and generate political will. The region is not a high-carbon emitter (apart from South Africa), therefore tapping into the opportunities associated with the transition to a low-carbon economy is often not prioritised.

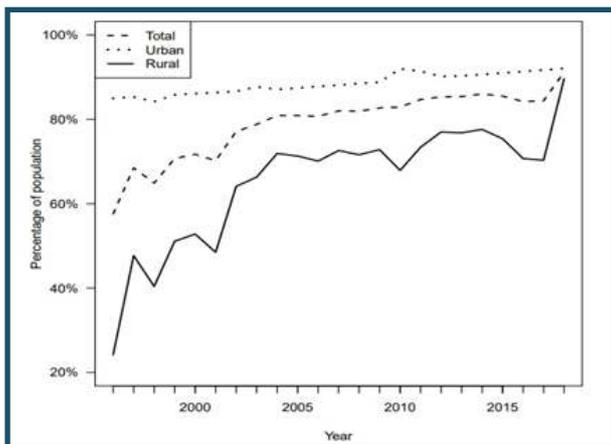
"If you take out South Africa, Sub-Saharan Africa uses 81 gigawatts of electricity for a billion people. That's the same amount of energy as the whole of Germany... Electricity access is a critical part of the energy transition for developing countries." Damilola Ogunbiyi, CEO of SE4All (2021).² This quote emphasises that what the region needs is electricity and there is an opportunity to generate electricity through renewable energy technologies, supporting not only global agendas but also offering much needed safe energy.

A just energy transition will be beneficial if it can support the developmental agenda of the region through increasing safe and affordable energy access, building local manufacturing and jobs and thereby supporting a clean and renewable energy future. This requires good governance, strong leadership and moving away from the domination of large utilities to a decentralised energy system which facilitates and empowers women and the communities and, in doing so, puts poverty and energy poverty alleviation at the core.

¹ The index benchmarks countries on the performance of their energy system and their readiness for transition to a secure, sustainable, affordable and reliable energy future.

² World Economic Event. The Road to COP26 and Beyond event on 27 May 2021. Video clip link.

Figure 1: Percentage of population with access to electricity in South Africa, 1996-2018



Source: Ye and Koch, 2020

STATE OF ENERGY POVERTY AND ACCESS IN SOUTH AFRICA

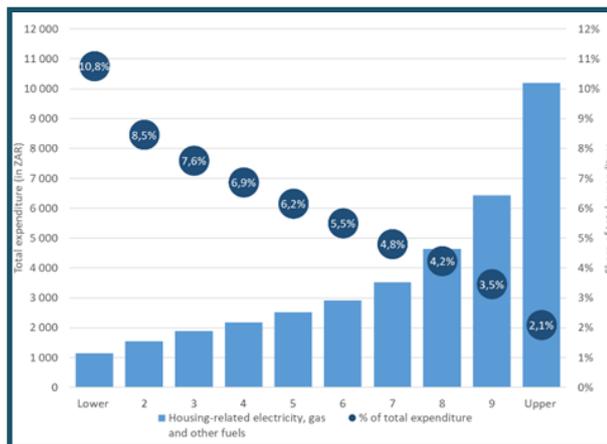
Household energy access and use in South Africa

In 2018, the number of South African households with formal electricity connections was 85% (Stats SA, 2018), although electricity rates vary across provinces, cities and from rural to urban areas. The City of Cape Town had, in 2020, a 97% electrification rate while the Limpopo and Gauteng provinces reached 92% and 78% respectively (Hermanus, 2020; Ledger, 2021).

Despite this high electrification rate, 43% of households were considered to be energy poor in 2013 (DoE, 2013). This is mainly due to affordability, meaning that even when households have access to grid electricity, they continue to use traditional and unsafe energy sources and fuels. As shown in Figure 2, poor households often spend well over 10% of their income on energy compared to high-income households which generally spend 2%-3%. Thus, electricity connections do not guarantee use of this energy source. In 2018, more than 5% of South Africa's 17 million households used candles as the main lighting source (Stats SA, 2018). Further, many households are disconnected from their electricity supply due to non-payment. These households usually rely on free electricity provided by the state (see section on Policy considerations for South Africa on page 6) (Ledger, 2021).

An issue that is often overlooked is that grid electricity is not the ultimate solution to the lack of access to energy or to energy poverty. The traditional energy ladder assumes that low-income households' energy use follows the energy ladder, whereby a household would transition from traditional energy sources, such as wood, to eventually using modern energy services, such as gas and electricity, as their income status improves (Mohlakoana et al., 2018).

Figure 2: Household expenditure on housing-related energy in South Africa in 2014/2015 (in ZAR and share of total expenditure)



Source: TIPS, based on data from Statistics South Africa's Living Conditions Survey 2014/2015

The reality is that, even though low-income households may have access to electricity connections, they continue to use different sources of energy depending on a number of factors, such as availability and affordability of electricity, the type of food being cooked, and the dependence on wood and paraffin when their electricity credit has been depleted. Ledger (2021) outlines the difficulties households face in accessing and affording electricity. She states that the energy system undermines the country's transformation and socio-economic development goals by not providing sufficient energy for all. Coupled with this is that energy access and poverty issues are not given attention in the just energy transition as the socio-economic issues are mainly limited to employment.

Energy poverty is particularly prevalent in informal settlements and among backyard dwellers. As urbanisation has grown and people have moved to cities in search of better opportunities, the country has seen the burgeoning of informal settlements. They are generally found on the periphery of cities, on land that is not proclaimed for housing and therefore not eligible for the provision of basic services such as electricity. Backyard shacks are built onto a formal house. Often a makeshift cable is run from the main house to the shack to supply electricity but this results in the household paying higher rates and puts a strain on the infrastructure and existing services. Some municipalities have developed innovative responses to providing electricity in informal settlements through the "maypole method" whereby electricity is supplied to a number of households using a pole and single transformer. Despite these measures, access to electricity is not universal. Informal homes are also exposed to the dangers of using candles and paraffin in dwellings that are built with non-permanent materials that perish easily. Recent research estimated that there are at least 10 shack fires a day in South Africa (Wang et al., 2020).

One of the coping strategies households used was to ask for help through social media. people put requests for electricity credits/units with a picture or details of their meter number on social media while tagging celebrities or trending topics with the hope that their message would be retweeted and seen by many people, which would enable them to get assistance.

Although it cannot be confirmed that all these fires are due to household use of paraffin or candle, these fuels accelerate the rate at which the fires spread within the informal settlements as they are the most common energy sources among low-income households. Kimemia and Van Niekerk (2017) show that most shack fires can be attributed to unsafe paraffin appliances which are unfit to use, even though some are approved by the South African Bureau of Standards (SABS). These devastating fires not only lead to the loss of valuable personal belongings, such as legal documentation, and survivors with severe burn wounds, but often also result in loss of lives.

COVID-19 impacts

The coronavirus pandemic has had untold economic and social impacts worldwide. When the pandemic hit South Africa in 2020, the country was already going through economic hardship with high unemployment rates, especially among the youth. At the end of the first quarter in 2021, the unemployment rate hit 32.6% with the expanded figure sitting at 43.2% and the youth jobless rate at 74.7% – a steady increase since the fourth quarter of 2019 (Stats SA, 2019; 2021).

The pandemic has revealed (once more) the depth of poverty and inequality in the country, highlighting that poor people are dependent on the state's assistance more than ever before, with lower prospects of securing employment and a decreased ability to pay for food, education and basic services.

The negative impacts of the pandemic have also given rise to and further entrenched energy poverty whereby people simply cannot afford energy for lighting, cooking and space heating. Most of those on the frontlines are women taking care of the sick at home, providing meals for their families and communities and bearing the brunt of energy costs associated with nurturing and care work. At the height of the first wave of the pandemic, there were several interventions to supply communities in need with food parcels and cooked meals, but no provision was made for energy needs. Some of the food in the parcels could not be consumed because households could not afford to buy electricity or other sources of energy for cooking. One of the coping strategies that households used was to ask for help through social media. Several people put their requests for electricity credits/units with the picture or details of their meter number on social media while tagging

celebrities or trending topics with the hope that their message would be retweeted and seen by many people which would enable them to get assistance. At the height of the first wave of the pandemic, a number of social network users responded positively to these electricity credit requests, which showed an understanding of the impacts of energy poverty among the general public (Mohlakoana, 2020).

The pandemic has placed South Africa's inequalities centre stage, highlighting once more that the current policies and that relief interventions are insufficient. A just energy transition would have to address these policy failures and ensure a sustainable and resilient structure is in place that would ensure the protection of the poor by providing accessible and affordable energy for all, especially in times of great need such as the global pandemic.

POLICY CONSIDERATIONS FOR SOUTH AFRICA

Current and historical policies

South Africa has developed many policies and frameworks supporting a just transition within all three spheres of government although no specific just transition policy is in place. The question is to what extent does the policy, regulatory and capacity landscape support a just transition and therefore support addressing energy poverty? To contextualise the current policies and strategies concerned with energy access, distribution and transitions, a look back in history is necessary to understand the foundations of policy in the democratic South Africa and the role of electricity monopoly utility Eskom in this.

Electricity supply in the country was driven by mining industries and controlled by Eskom, which was established in 1922. The vertically-integrated utility is responsible for 97% of electricity generation (although this is slowly changing given insufficient supply capacity and a drive for renewable energy) and transmission of electricity. However, distribution to customers is shared almost equally by Eskom and 184 licensed municipalities. During the apartheid era, municipalities distributed electricity to historically white areas and Eskom to the black townships and some traditional rural "homelands". Since 1994, this picture has remained largely unchanged and in some areas both Eskom and municipalities are providing electricity to households,

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resulting in tension, particularly around allocation of subsidies to the poor because basic service provision is a municipal and not an Eskom mandate.

The RDP policy of 1994 was “government’s strategy for fundamental redistributive transformation” and seen as a “policy instrument which would direct the progress of the country’s transformation strategy” (RSA, 1994). The RDP focused on rebuilding South Africa’s economy while bridging the gap between the rich and poor and bringing equal resources to all citizens. For access to the delivery of energy services, the RDP stated target-based electrification goals with the aim of connecting 2.5 million households by 2000. This goal would signify a new era of service delivery with the aim of providing equal access to energy services that were previously denied to the majority of citizens.

The RDP clearly outlined the role of the state in meeting the basic needs of the whole population by providing housing, water and sanitation, energy and electrification, telecommunications, transport, nutrition, healthcare, education, land and social security. The ultimate goal of the RDP was to redress the inequalities in the social, political, economic and spatial spheres which characterised the old South Africa (RSA, 1994). The RDP document stresses that the electricity distribution system in place pre-1994 supported an unequal system and that the numbers of people with access to safe energy was completely inadequate. Energy was then recognised as a basic need and fundamental to addressing poverty. But the RDP was short-lived. While some of the basic service delivery elements continued in new forms, the holistic drive for redistributive transformation was lost.

Following the RDP there were several policies for the development of the country. For the energy sector, the White Paper on Energy Policy was published in 1998 to provide guidelines on how South Africa was to increase energy security for all its citizens through affordable energy services, improved governance and a better economy. The objectives of the White Paper included increasing access to affordable energy services; improving energy governance; stimulating economic development; securing energy supply through diversity; and managing energy-related environmental impacts (DME, 1998). On increasing access to affordable energy services, the White Paper acknowledged that “households suffering unemployment and poverty rely on less convenient and often unhealthy fuels” and that this perpetuates poverty (DME, 1998). The White Paper does not address the issue of energy transition for households,

except for the part of planned research on low-smoke fuels and the provision of such fuels as transition energy for remotely located rural households. This may be due to the fact that the White Paper was published in 1998 when the need for an energy transition from coal-based electricity generation to renewable energy technologies was not as pressing. In any event, many of the goals of the White Paper were not achieved and implementation failed to reach its objectives.

After 2000, a significant amount of responsibility for planning and implementing the electrification programme was moved from Eskom to the then-Department of Minerals and Energy (DME) where it was referred to as the Integrated National Electrification Programme (INEP). This has become the electrification programme for the whole country. However, to manage the challenge of providing energy services to households in rural areas without access to grid electricity, INEP developed a solar photovoltaic (solar PV) programme which was implemented in partnership with the private sector. While the electrification programme has been enormously successful – the percentage of the country with access to electricity has risen from 36% in 1994 to close to 87% now – the initial goal of 100% electrification by 2014 has not been achieved (see Figure 1). The goal posts have continuously moved to the future and thus, despite these policies and programmes being in place, the country still faces major problems with energy access for the poor in both rural and urban areas; and where there is access, affordability to use that electricity is a major challenge.

In an attempt to make electricity more accessible to those connected to the grid and for alternative energy services to reach the poor, the government formulated two energy subsidy policies known as Free Basic Electricity (FBE) in 2003 and Free Basic Alternative Energy (FBAE) in 2007. No other pro-poor energy subsidy or energy poverty policies have been introduced by the government. These two subsidies and some of the challenges in their implementation are discussed in the following sub-sections to highlight the difficulties in managing energy poverty.

Free Basic Electricity (FBE) Subsidy – 2003

The Free Basic Electricity policy was published in 2003 by the then-DME. In the foreword by the Minister, it is mentioned that the FBE policy “seeks to address ways and means through which government intervention can bring relief to poor electrified households and ensure socioeconomic benefits from the electrification programme” (DME, 2003).

The administration of Free Basic Electricity has been under scrutiny for various reasons, including the complaints that 50kWh is insufficient to meet monthly household energy basic needs, especially cooking.

Households that qualify to receive FBE are provided with 50 kWh on a monthly basis. Some municipalities, particularly metros, provide higher amounts. The City of Cape Town provides 60kWh; eThekweni municipality provides 65kWh; and the City of Polokwane and City of Tshwane provide 100kWh.

In the implementation process of the FBE, households classified as indigent by their local municipality are eligible to receive this electricity subsidy. Depending on the municipality, where households are not formally registered as indigent, their qualification for receipt of FBE is determined by their monthly electricity consumption, whereby those consuming less than 250kWh automatically receive monthly FBE.

The administration of FBE in the whole country has been under scrutiny for various reasons, including complaints that 50kWh is insufficient to meet monthly household energy basic needs, especially cooking. According to the FBE policy document, the research done to determine a solution for households that cannot afford to pay for electricity showed that “56% of households in South Africa connected to the national grid consume on average less than 50kWh of electricity per month” and that “50kWh per month is considered adequate electrical energy to meet the needs for lighting, media access and limited water-heating and basic ironing (or basic cooking) for a poor household” (DME, 2003: 8).

The process by which households are approved to receive FBE in the different areas of the country is also of concern. As stated in Ledger (2021), not all households that should be receiving FBE because of their income status and living conditions actually receive the subsidy. The qualifying criteria tends to be cumbersome and automatically eliminates households that are in need of this subsidy and in some cases includes those that are not in need. In 2020, it was noted that Eskom had 900 000 registered indigent customers qualifying for FBE but only 700 000 households were accessing it (ESI-Africa, 2020).

There are many reasons, according to Ledger (2021), as to why the FBE roll-out is failing to reach the intended recipients. The grant municipalities receive from the national government is not ring-fenced which results in some municipalities using the money for other purposes, particularly as many are faced with increasing financial problems. The economy has shrunk, municipalities are paying higher bulk electricity prices and less businesses and high-end users are cross-subsidising the poor as they turn to rooftop PV and implement efficiency, all affecting how municipalities balance their accounts. They have

limited budgets and this curtails their ability to provide basic services at the level they are mandated to and want to.

Free Basic Alternative Energy (FBAE) – 2007

In 2007, the then-DME published the FBAE policy as an intervention by the national government to ensure delivery of alternative basic energy services aimed at alleviating energy poverty for indigent households in unelectrified areas (DME, 2007). Some of the FBAE objectives include addressing socio-economic issues that arise from inadequate provision of energy to households, such as job creation, and to minimise health risks by promoting safe use of energy carriers.

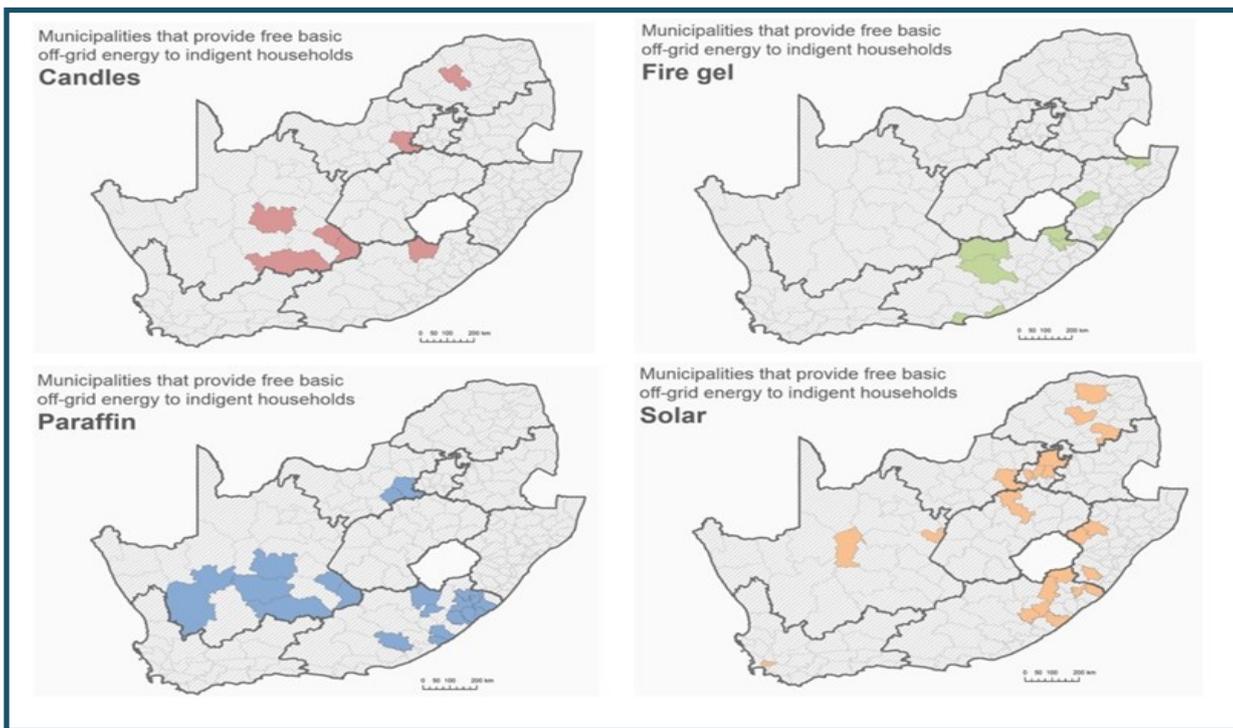
In 2018, of the 213 municipalities in the country, 49 indicated they are providing FBAE to households without grid electricity connections. This was in the form of fee-for-service payments for household solar PV systems for 3.5 million households, paraffin for 86 500 households, candles for 13 700 households and gel fuel for 19 600 households as illustrated in Figure 3 (Stats SA, 2018). In a country that has up to 85% of its households connected to the electricity grid, it is concerning that there are households still depending on harmful and dirty fuels, such as paraffin and candles. Most concerning is that, as part of FBAE policy implementation process, municipalities deliver these fuels despite the known dangers (such as household fires) usually caused by use of paraffin appliances and candles as well as paraffin poisoning, especially among impoverished households. Thus in 2018, eleven years after publication of the FBAE policy, municipalities were still not prioritising safe, clean and sustainable alternative energy services to indigent households.

As with the FBE, the FBAE implementation process has not been fully successful because of unreliable methods used to register indigent households, the absence of ring-fencing of FBAE subsidy funds (which leads to municipalities using them for other services unrelated to energy) and the lack of capacity within the local municipalities to implement the FBAE in a satisfactory manner. Municipalities have complained of not receiving enough support from the national

³ *The City of Polokwane provides this amount as part of its Indigent Support Programme and the City of Tshwane through its Indigent Programme Management which registers indigent households to have access to basic municipal services such as electricity, water and sanitation.*

⁴ *In the South African context, indigent households are those that cannot afford access to basic services such as water, sanitation, energy, refuse removal, housing and healthcare, mainly due to their low-income status, which is usually below the set poverty line.*

Figure 3: Municipalities that provided FBAE too indigent households in 2018



Source: Stats SA, 2018

government on the implementation process, which was expressed as a disconnect between the policymakers and policy implementers. Lack of knowledge among households about the FBAE subsidy and the registration process also makes implementation difficult (Mohlakoana, 2014).

Some policy recommendations on FBE and FBAE implementation include the need for the government to consider complexities that accompany the process, especially because actors at various levels of government have their own motivations and this influences the implementation process.

The classification of households as indigent and the selection criteria for those that qualify for these subsidies need to be revised to be transparent and inclusive. There needs to be an objective and reliable evaluation system in place to monitor implementation, which will result in accountability and transparency. One of the ways to address the energy transition and energy poverty is through targeted energy subsidies (Ledger, 2021; SEA, 2020). As household circumstances are always changing, especially for low-income earners, an integrated energy solution approach needs to be considered to provide diverse and sustainable energy solutions and empower municipalities to deliver services as mandated by the South African Constitution.

Municipal constraints and gaps in policy

There is a gap between policy intention, the national government transfers to municipalities and their ability to self-finance not only FBE but also the suite of basic services and other obligations they are required to provide under the Constitution.

Municipalities are structured to operate on neoliberal business accounting lines and yet paradoxically are also expected to function in a developmental manner. These two roles are diametrically opposed. Because they are expected to generate funds from the sale of electricity and other service charges, the amount they receive from the national government in grants and transfers is relatively small. The revenue municipalities generate is declining, and with a stressed economy, higher bulk electricity prices mean there is a substantial gap in their ability to provide services for all and to maintain the infrastructure required to deliver those services.

Municipalities are inconsistent in how they manage energy poverty, and a lack of strong governance and inequitable distribution of electricity all affect the extent to which energy poverty persists in South Africa (Ledger, 2021). An integrated energy solution approach could address some of these challenges.

The amount allocated for FBE and the resources made available for FBAE are clearly not sufficient to meet basic energy needs of poor people. Even if all those deserving of the grant received it, the amount is so small that households would continue to use unsafe fuels.

A just energy transition considers the role and capacity of local municipalities in steering the local economy and service delivery towards an inclusive transition process. It is at this level that community and household energy transition concerns and potential benefits should be highlighted to ensure fair and just outcomes for citizens and marginalised communities.

CONCLUSION

A just energy transition demands an integrated energy approach that is driven by protecting not only the environment but ensures that no one is left behind and that all have equal opportunities. This approach paves the way for new energy and technological systems that can be locally produced and owned and are supported by regulations that open spaces rather than closing down opportunities. It requires strong governance and political will to drive the transformation. Renewable energy industrialisation should take centre stage in ensuring future energy security and creating sustainable employment, especially for those that will be losing their jobs in the coal and electricity value chains.

Above all, an integrated and just approach should guarantee and facilitate affordability of energy services that can meet basic needs for everyone regardless of their income status. To this end, the current subsidies in place need to be revisited with specific reference to the value of those subsidies and how they are implemented so that all intended recipients receive the allocated subsidy. Updated FBE and FBAE policies with clear implementation guidelines should be part of an integrated approach and the just energy transition planning to ensure affordability and access of energy services, especially the non-grid generated electricity. This has major implications for how local government is funded and how it manages its revenue sources.

In the South African context, a priority area in ensuring a just energy transition is the inclusion of historically disadvantaged groups to participate and contribute to the country's economic development. This includes growing various skills through education and training, shifting numerous activities in line with sustainability objectives and promoting self-generating cooperative models. There is also a need for all stakeholders, such as practitioners, utilities, independent power producers, academia, government and international partners, to collaborate in the transition process to ensure that it produces balanced outcomes. In-depth, evidence-based socio-economic studies focusing on a just energy transition in the South African context are needed to influence policy at different levels, from formulations to implementation.

In essence, this policy brief highlights that, for a just energy transition to take place, energy poverty must be addressed. In a country such as South Africa with deep and historic inequality and poverty, which are evident in relation to access to energy, this is even more pressing. One possible solution is to develop an integrated energy approach and this should be woven into all just transition planning. A holistic solution is required to ensure that the transition not only creates local jobs and ownership, and addresses gender differences but enables a space for the poor and disadvantaged to be heard.

REFERENCES

- Aklin, M., Bayer, P., Harish, S.P. and Urpelainen, J. (2018). Escaping the energy poverty trap: When and how governments power the lives of the poor (1st ed.). MIT Press.
- Appleton, A.A., Denny, K.J., Moore, P.V., Hernández, D., Jessel, S. and Sawyer, S. (2019). Energy, poverty, and health in climate change: A comprehensive review of an emerging literature. In *Frontiers in Public Health* | www.Frontiersin.Org, 7, 357. Available at: <https://doi.org/10.3389/fpubh.2019.00357>
- Aung, M. T., Koski, J., Bernadette, Y., Resurrección, P., Kartha, S. and Yuerlita, M. (2020). Low-carbon transitions in West Sumatra, Indonesia: Gender and equity dimensions. Available at: www.sei.org.
- CAF. (2013). Challenges and opportunities for Latin America's sustainable energy development. Development Bank of Latin America.
- Clancy, J., Dutta, S., Mohlakoana, N., Rojas, A.V. and Matinga, M. (2016). The Predicament of Women. In L. Guruswamy (Ed.) *International Energy and Poverty: The Emerging Contours* (1st ed., pp. 24–38). Routledge Taylor and Francis Group.
- DME. (1998). White Paper on the Energy Policy of the Republic of South Africa. Department of Minerals and Energy.
- DME. (2003). Electricity Basic Services Support Tariff: Free Basic Electricity Policy. Department of Minerals and Energy.
- DME. (2007). Free Basic Alternative Energy Policy: Households Energy Support Programme. Department of Minerals and Energy.
- DoE. (2013). A Survey of Energy-related Behaviour and Perceptions in South Africa: The Residential Sector. Department of Energy.
- ENERGIA. (2020). The ENERGIA Gender and Energy Research Programme: A Short Overview of the Results. International Network on Gender and Sustainable Energy. Available at: www.hivos.org
- ESI-Africa. (2020). GBV: How Access to Electricity is Empowering Women. ESI-Africa. Available at: <https://www.esi-africa.com/event-news/gbv-how-access-to-electricity-is-empowering-women/>.
- European Commission. (2020). Commission Recommendations (EU) 2020/1563 of 14 October 2020 on Energy Poverty. In *Official Journal of the European Union*, L357(35).
- Healy, N. and Barry, J. (2017). Politicizing Energy Justice and Energy System Transitions: Fossil Fuel Divestment and a "Just Transition." In *Energy Policy*, 108, 451–459.
- Heffron, R. J. and McCauley, D. (2018). What is the 'Just Transition'? In *Geoforum* (Vol. 88, pp. 74–77). Elsevier Ltd.

- Hermanus, L. (2020). Exploring Costs and Trade Offs for Free Basic Electricity Access.
- IEA. (2017). Energy Access Outlook 2017. International Energy Agency-OECD. Available at: <https://doi.org/10.1787/9789264285569-en>.
- ILO. (2015). *Gender equality and green jobs: Policy Brief*. International Labour Organization.
- ILO. (2018). Just Transition Towards Environmentally Sustainable Economies and Societies for All. International Labour Organization.
- IRENA. (2019). Renewable Energy: A Gender Perspective. International Renewable Energy Agency. Available at: www.irena.org
- Kimemia, D.K. and Van Niekerk, A. (2017). Energy poverty, shack fires and childhood burns. In *South African Medical Journal*, 107(4), 289–291. Available at: <https://doi.org/10.7196/SAMJ.2017.v107i4.12436>.
- Knox, A.J., De Groot, J.R. and Mohlakoana, N. (2018). Post-apartheid spatial inequalities and the built environment Drivers of energy vulnerability for the urban poor in South Africa. Available at: <https://www.ebsco.com/terms-of-use>.
- Ledger, T. (2021). Broken Promises. Available at: <https://rekordeast.co.za/318517/claiming-free-electricity-promise-north-residents/>.
- Lewis Foundation. (2019). Deep Transition Delving into social and economic justice in transitions to a climate-responsive economy.
- Lieu, J., Sorman, A.H., Johnson, O.W., Virla, L.D. and Resurrección, B.P. (2020). Three sides to every story: Gender perspectives in energy transition pathways in Canada, Kenya and Spain. In *Energy Research and Social Science*, 68, 101550. Available at: <https://doi.org/10.1016/j.erss.2020.101550>.
- Middlemiss, L., Mulder, P., Hesselman, M., Feenstra, M., Tirado-Herrero, S. and Straver, K. (2021). Energy poverty and the energy transition: Towards improved energy poverty monitoring, measuring and policy action.
- Mohlakoana, N. (2014). Implementing the South African Free Basic Alternative Energy policy: A dynamic actor interaction. University of Twente.
- Mohlakoana, N. (2020). Unravelling South Africa's Just Transition: Unpacking the energy-level Impacts.
- Mohlakoana, N., De Groot, J., Knox, A. and Bressers, H. (2018). Determinants of energy use in the informal food sector. In *Development Southern Africa*, 36(4).
- Nkosi, N.C., Burger, R.P., Pauw, C. and Piketh, S.J. (2021). Solid fuel use in electrified low-income residential areas in South Africa: The case of KwaDela, Mpumalanga. In *Journal of Energy in Southern Africa*, 32 1 SE-Articles). Available at: <https://doi.org/10.17159/2413-3051/2021/v32i1a8086>
- RSA. (1994). White Paper on Reconstruction and Development. Republic of South Africa.
- SEA. (2020). State of Energy in South African Cities 2020. Sustainable Energy Africa.
- Sierra, W. (2016). *Uruguay: Revolution Rather than Energy Transition?* 20 June 2016. Heinrich Boll Stiftung Global Dialogue. Available at: <https://us.boell.org/en/2016/06/20/uruguay-revolution-rather-energy-transition>.
- Smith, S. (2017). Just Transition A Report for the OECD. Available at: <https://www.ituc-csi.org/just-transition-centre>.
- StatsSA. (2018). Energy and the poor: a municipal breakdown. June 2018. Statistics South Africa,. Available at: <http://www.statssa.gov.za/?p=11181>.
- StatsSA. (2019). Inequality Trends in South Africa: A Multidimensional Diagnostic of Inequality. Statistics South Africa. Available at: www.statssa.gov.za.
- StatsSA. (2021). Statistical Release P0211: Quarterly Labour Force Survey Quarter 4: 2020. Statistics South Africa. Available at: www.statssa.gov.za.
- UN. (2015). The Millennium Development Goals Report 2015. United Nations.
- UN. 2018a). Accelerating SDG 7 Achievement. Policy Brief 08. Interlinkages among energy, poverty and inequalities. United Nations.
- UN. (2018b). Analysis of the Voluntary National Reviews Relating to Sustainable Development Goal 7. United Nations. Available at: <https://sustainabledevelopment.un.org/contact/>
- Wang, Y., Gibson, L., Beshir, M. and Rush, D. (2020). Preliminary Investigation of Critical Separation Distance Between Shacks in Informal Settlements Fire. In *The Proceedings of 11th Asia-Oceania Symposium on Fire Science and Technology*. Springer Singapore. Available at: https://doi.org/10.1007/978-981-32-9139-3_28.
- WEF. (2021). Fostering Effective Energy Transition: 2021 Edition. World Economic Forum.
- Winkler, H. (2020). Towards a theory of just transition: A neo-Gramscian understanding of how to shift development pathways to zero poverty and zero carbon. In *Energy Research and Social Science*, 70. Available at: <https://doi.org/10.1016/j.erss.2020.101789>.
- World Bank. (2017). Population Living in Slums (% of Urban Population) – Sub-Saharan Africa. The World Bank IBRD-IBA. Available at: <https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS?locations=ZG>.
- Worrall, L., Roberts, L., and Whitley, S. (2018). Enabling a Just Transition to a Low-carbon Economy in the Energy Sector: Progress and lessons in Emerging Markets. Available at: www.odi.org.
- Ye, Y. and Koch, S.F. (2020). Measuring Energy Poverty in South Africa Based on Household Required Energy Consumption.