Backyarding:

Energy poverty and the shift to renewable energy

Practice Brief 4: 2024

BACKYARD MATTERS
ENABLING PEOPLE, PLACE & POLICY

ISANDLA institute

Acknowledgements

Backyard Matters is a partnership initiative between the Development Action Group (DAG) and Isandla Institute.

The project recognises that backyard housing is a community-driven response to housing shortages for many who fall through the cracks of state programming and unaffordable private rentals. Backyard housing, however, remains a neglected and sometimes invisible sector. The project is aimed at strengthening the backyard rental market and contributing towards well-managed, quality rental stock that provides affordable, dignified and safe housing solutions in thriving neighbourhoods. The project thus advocates for inclusive policy and programming that embraces the voice, needs and agency of backyard residents and landlords as an integral part of the municipal community. Backyard Matters is funded by Comic Relief.

Cover image: Isandla Institute/Eric Miller: Mfuleni

ISANDLA
institute

Executive Summary

The energy crisis in South Africa is often highlighted by the recurring phenomenon of loadshedding, which, in the democratic history of post-apartheid South Africa is a relatively recent development. Loadshedding – the deliberate shutdown of electric power in a part or parts of a power-distribution system to relieve some of the demand when the system is over-burdened – has progressively intensified since 2007. While corruption and mismanagement of state infrastructure at Eskom has contributed significantly to the loadshedding crisis we face today, South Africa, like other developing countries, has failed to effectively transition and diversify its energy sources away from a system that is carbon-based, non-renewable and environmentally unsustainable, placing the entire energy system at risk. Loadshedding has had varying impacts ranging from inconvenient to life-threatening. However, loadshedding only presents one facet of a much more pervasive crisis faced in South Africa: that of energy poverty. Energy poverty is complex and multi-faceted, with a number of drivers (both historical and evolving) that must be addressed. Energy poverty disproportionately impacts economically and socially marginalised communities living in conditions of informality, including those who live in backyard dwellings in under-serviced townships and in informal settlements. As part of an annual Community of Practice (CoP) event hosted by Isandla Institute, human settlement practitioners as well as colleagues working directly in the field of energy and energy poverty came together to discuss the nature of energy poverty, its relation to the larger energy crisis, as well as the prioritisation and strategic decision-making required by a range of stakeholders to find sustainable pathways to mitigate its impacts.[1] The CoP also highlighted some of the innovative initiatives that have positively contributed to increased access to safe, reliable and renewable energy at the household and communal level and the lessons that can be incorporated into future initiatives.

---

[1] The CoP, held on 14 February 2024, was co-facilitated by Dr Megan Davies (Centre for Sustainability Transitions: Stellenbosch University) and Thandeka Tshabalala (Senior Professional Officer: Energy Poverty Alleviation (Sustainable Energy Facilitation Branch), Energy Directorate with the City of Cape Town and PhD candidate at the Centre for Sustainability Transitions). The theme of the CoP was 'Examining energy-poverty and how it impacts communities.' Inputs were made by Thandeka Tshabalala, Reshmi Wolvers (GreenCape), Simon Mayson (Economic Development Partnership (EDP) and Noah Schermbrucker of People's Environmental Planning (PEP). The CoP was attended by the City of Cape Town, Community Organisation Resource Centre (CORC), Development Action Group (DAG), Economic Development Partnership (EDP), Federation for the Urban Poor (FEDUP), GreenCape, Isandla Institute, Informal Settlements Network (ISN), Legal Resources Centre (LRC), Ndifuna Ukwazi (NU), People's Environmental Planning (PEP), Project 90 by 2030, Tournesol and the Western Cape Department of Infrastructure (Human Settlements branch).

Introduction

Without electricity, women and girls have to spend hours fetching water, clinics cannot store vaccines for children, many schoolchildren cannot do homework at night, and people cannot run competitive businesses.

(United Nations: Sustainable Development Goal 7)[2]

Electricity is integrally linked to the realisation of every socio-economic right and the right to dignity, life, safety and an environment that is not harmful to health and wellbeing.

Access to energy is considered to be essential to living a dignified life. Sustainable Development Goal 7 (SDG7) calls for ensuring universal access to affordable, reliable and sustainable energy for all by 2030. This includes 'improving energy efficiency, increasing the share of renewables and further diversifying the energy mix while ensuring affordability of energy for citizens.'[3] As is the case with many developing countries, in the absence of access to electricity, economically vulnerable households in South Africa use alternatives, such as coal, wood, gas and paraffin (amongst other sources) to meet their energy needs. This is particularly prevalent in under-serviced rural and urban areas, such as informal settlements and the townships where backyard housing is predominantly located.

Access to energy has historically been measured in terms of facilitating access to electricity, with individual household connection to the national electrification grid as the ultimate goal. Post-apartheid the government therefore embarked on an ambitious electrification drive with the objective of improving the living standards of the majority of South Africans. While electricity is not included as a stand-alone right in the Bill of Rights, it is considered to be integrally linked to the realisation of every socio-economic right as well as key civil and political rights like the right to dignity (10), life (11), safety (12) and an environment that is not harmful to health and well-being (24). As a local government competence, electricity forms part of the basic service delivery mandate of local government, considered to be the most important function of every municipality.

[2] *United Nations: Sustainable Development Goal 7, Target 7.1. (https://www.un.org/sustainabledevelopment/energy/#:~:text=In%20a%20nutshell%2C%20without%20a,people%20cannot%20run%20competitive%20businesses)*

[3] *Ibid.*

Given the importance of energy to living a dignified life, the national policy on free basic services provides that every indigent household must receive, in addition to free basic water, sanitation and refuse removal services, a monthly allocation of free electricity to meet their basic household energy needs. The Free Basic Electricity Policy (2003) has pegged this amount at 50kWh per household per month. In instances where access to the electricity grid is not possible, the National Free Basic Alternate Policy (2007) makes provision for alternate energy sources to be provided to indigent households. To ensure that all municipalities can fulfil this mandate, free basic services are funded by the national equitable share allocation from the fiscus. In addition to free basic service allocations, municipalities are obliged in terms of the Local Government: Municipal Systems Act 32 of 2000 to provide life-line tariffs for indigent users.

Access to the grid does not automatically translate into access to increased energy and the benefits it enables.

Despite these measures aimed at making electricity more accessible, particularly to economically marginalised communities, there is a gap between what the data tells us and the lived experiences of those who have no or limited access to energy. Data from the General Household Survey estimates that for households in formal dwellings, access increased from 76,7% in 2002 to 89,8% in 2023, while for those in informal dwellings it rose from 52,3% to 58,3% (Stats SA, 2024). Note that the proportion of households in informal dwellings without access to electricity is still high and, as will be further discussed, that access to the grid does not automatically

Isandla Institute/Shaun Swingler

A significant number of households in South Africa either experience some form of energy poverty or can be described as living in a perpetual state of energy poverty.

translate into substantive access to increased energy and the benefits it enables. Thus, it is argued that a significant number of households in South Africa either experience some form of energy poverty or can be described as living in a perpetual state of energy poverty.

Given the pivotal importance of access to energy, it is concerning that the energy sector in South Africa is currently in crisis mode for a number of reasons. Apart from compounded backlogs and the impacts of loadshedding, the increasingly devastating consequences of climate change must be addressed. In the context of extreme temperatures and threats from natural disasters, unsafe and energy inefficient homes cannot absorb these impacts. Recognising that the current, dominant reliance on coal as a non-renewable resource to fuel the national energy supply is no longer sustainable, South Africa has embarked on a just energy transition to shift from coal-based energy to cleaner sources of energy. The Just Transition Framework for South Africa (PCC, 2022) sets out policy measures and commitments to decarbonise the economy whilst ensuring that 'no one is left behind' through the job losses and knock-on economic affects that are expected. In addition to coal mining, the Just Energy Transition Investment Plan (JET IP) 2023-2027 (The Presidency, 2022) identifies other carbon intensive sectors such as the automotive industry, agriculture and tourism, as priority areas of intervention and support.

Against this background, this practice brief examines the concept of energy poverty and how it manifests in practice, the many complex impacts and drivers of energy poverty, as well as some of the opportunities and inherent challenges in the just transition processes. Initiatives, particularly partnership-based approaches, aimed at alternative energy service provision to improve household and/or community access to energy show great promise in overcoming energy poverty. Significantly, the voice and agency of communities in all these issues and processes must be enabled.

Isandla Institute/Shaun Swingler: Langa

What is energy poverty and how does it manifest in practice?

While there is no accepted uniform definition of energy poverty, there is agreement that it is multifaceted and far-reaching, with different methodologies used to assess energy need and how it impacts the quality of household living standards.

People may have access to the national electricity grid, but are unable to access electricity throughout the month because it is simply unaffordable.

In its simplest form, energy poverty is experienced in households when there is insufficient access to (modern) energy resources to fulfil everyday household activities, such as cooking, indoor heating, lighting, cooling and communication – all of which are considered necessary to having an acceptable quality of life.

The International Energy Association refers to this as the basic energy bundle required to live in dignity (IEA, 2020). The amount of energy required to satisfy the basic energy bundle is also impacted by the extent to which household structures are currently energy (in)efficient. The expenditure approach looks at the percentage of household income spent on accessing energy and the extent to which other household necessities, such as access to water and/or food, are sacrificed to attain energy. It also evaluates the cost of the efforts to attain access to energy, for example in time spent in gathering materials, such as wood. In the South African context, it is estimated that over 50% of households are affected by energy poverty (Lesala et al, 2024:6; Kotch et al, 2024).

In measuring access to electricity, it is important to not only focus on access to the grid, but also the sustainability of supply and whether it meets household needs. Research has revealed that people may have access to the national electricity grid and have an electricity meter, but are unable to access electricity throughout the month because it is simply unaffordable (Oyekale & Molelekoa, 2023:3). Once the free basic energy supply is depleted, many households revert to using cheaper means of non-renewable energy

such as gas, paraffin, wood and coal, which can have immediate and long-term health impacts. To try to extend the limited electricity supply many households revert to the practice of energy stacking, whereby they rely on different forms of energy, including non-renewables, for different activities to ensure that electricity lasts longer throughout the month (Wernecke et al, 2024). So, for example, a common household choice is to opt to use coal, paraffin or gas for cooking and heating to allow electricity to be used for lighting. Electricity stacking, by continuing a reliance on non-renewable sources of energy for certain activities, continues to place people at risk and negates some of the positive impact of connection to modern, more efficient sources of energy.

A common household choice is to opt to use coal, paraffin or gas for cooking and heating to allow electricity to be used for lighting.

A third lens through which energy poverty is interpreted is that of the capabilities or human development index approach. This approach examines how access to resources and capabilities that are necessary to improve the standard of living are hindered when energy poverty persists. More specifically, this approach examines how energy poverty limits an individual or household's access to education, health, improved nutrition and employment opportunities, amongst others. It is indisputable that access to modern energy sources, like sufficient lighting, internet access and tools or appliances, which are crucial as a mode of production in small businesses, all improve the capabilities for household economic development (PCC, 2023:5). However, it is also true that realising the economic potential envisioned in the capabilities approach requires a level of access to energy above that of simple subsistence, which in South Africa is not currently achievable solely in terms of the free basic energy allocation (Buttress, 2023; Ledger & Rampedi, 2022:65).

Arguably, in the South African context all three approaches to energy poverty are applicable. The Multi-dimensional Energy Poverty Index (MEPI) incorporates all the above considerations, including access to modern energy sources, reliability of energy services, affordability and the quality of energy infrastructure in assessing energy poverty, interrogating how these factors intersect to shape the lived experience of energy poverty in the South African context (Ye & Kotch, 2023; Oyekale & Molelekoa, 2023).

Impacts of energy poverty

For those who live in informal contexts such as informal settlements and backyard housing, the impacts of energy poverty are particularly severe, both at a household and communal level.

Concerns about how to access energy and mitigate the consequences of energy poverty can lead to mental distress and longer-term depression for those who consistently experience energy poverty.

In using non-renewable energy sources like gas, wood, coal and paraffin for domestic activities such as cooking and heating, household air pollution is a major contributor to poor health, with women and children disproportionately impacted (Buthelezi, et al, 2019). The use of combustible fuels is a key contributor to the high disease burden and mortality rates in South Africa. Households that use fuels like paraffin also manifest substantially higher risks for injury, directly through fires or indirectly through scalding, ingestion and toxic fume inhalation (Van Niekerk et al, 2022).

Research further reveals that energy poverty not only impacts physical health, but also that there is a correlation between mental distress and energy poverty (Koomson, 2024). Concerns about how to access energy and mitigate the consequences of energy poverty can lead to mental distress and longer-term depression for those who consistently experience energy poverty. Women in particular bear the brunt of this mental distress. Energy poverty creates a gendered burden in that key decisions related to how to run the household often fall to women. In many households, a choice must be made each month between electricity or food (Ledger & Rampedi, 2022). The decision-making also extends to the type of food that is consumed. For example, while choosing to purchase food that does not require refrigeration or long cooking times seems to be more cost-effective, the food often has less nutritious value. Women are also forced to make choices between economic activity or ensuring sufficient energy for other household activities like enabling children to study for longer hours.

The impacts of energy poverty are not limited to specific social groups or households. The use of inefficient and unsafe appliances and even candles for lighting is a safety hazard. It is estimated that paraffin stove failures

resulting in explosions are often implicated in the 5,000 shack fires that occur in informal settlements annually (Van Niekerk et al, 2022). The flammable materials commonly used in the construction of homes in informal settlements (and backyard housing) further facilitates the spread of fire. In addition, a significant proportion of households in under-serviced areas resort to illegal electricity connections, which are a significant and often deadly safety hazard with multiple negative knock-on impacts within the broader municipal community (Geyevu & Mbandlwa, 2023).

Energy poverty also shapes the prospects of households and communities to improve living conditions and access economic development opportunities through, for example, home industries and small businesses (Ledger & Rampedi, 2022).

Furthermore, insufficient lighting in informal settlements creates an enabling environment for conditions of violence and crime. It limits movement and visibility in the public realm and impacts the safety of all residents, but in particular women, children and shift workers who have to travel outside of peak hours. It may even shape if or how small industries operate (Isandla Institute, 2023).

Finally, energy poverty also impacts public service provision. As highlighted in recent case law, basic service delivery cannot take place without sustained access to electricity, most notably demonstrated by the far-reaching consequences of loadshedding.[4] Public amenities that people rely on, including clinics, libraries and schools, are all impacted by loadshedding and poor electricity infrastructure, directly impacting the availability and quality of services rendered to communities (Damons, 2024). Residents who live in more affluent areas and are not as reliant on public amenities to meet their needs and/or are serviced by institutions which utilise alternate power sources, do not experience the same reality. It is thus important when addressing the disproportionality of access to energy, that vulnerable and marginalised groups are at the forefront of policy and programmatic responses.

Energy poverty shapes the prospects of households and communities to improve living conditions and access economic development opportunities.

[4] *United Democratic Movement and Others v Eskom Holdings SOC Ltd and Others (005779/2023;003615/2023;022464/2023) [2023] ZAGPPHC 1949 (1 December 2023).*

Drivers of energy poverty

What then are the key drivers of energy poverty and what are the pathways to improved energy security and improved living conditions? As explored below, many of the drivers of energy poverty are not new.

Income poverty

The invisibility of informal housing in backyards and the lack of legal recognition given to informal settlements means that basic services are not, or insufficiently, rolled out.

There is a direct correlation between income poverty and energy poverty. The inequitable cost differential is demonstrated by the fact that the poorest households allocate an average of 27% of household income to energy consumption compared to the rich who spend only 6% (on average) of their income on energy (Lesala et al, 2024:6). This assessment does not take into account the time and energy spent in securing alternate energy sources in low-income households. As stated above, in already impoverished households, women often have to make the choice between spending limited financial resources on energy or food. Whereas the intention behind free basic electricity as well as life-line tariffs for energy consumption was to assist households to attain sufficient energy for dignified living, research undertaken by the Black Sash reveals that women often use their social welfare grant, intended as a social assistance safety net, to meet other vital basic energy needs of the household (Ledger & Rampedi, 2022; Black Sash, 2021).

Unrecognised housing realities in informal settlements and backyard housing

The rate of urbanisation and informal settlement growth far exceeds government's ability to respond and provide access to electricity, thus resulting in a growing percentage of informal settlements being without formal energy and with limited prospects of connection. For example, in Cape Town it is estimated that there are roughly 683 informal settlements (City of Cape Town, 2023:112). It is further estimated that there will be 500 000 households in informal dwellings by 2028 (GreenCape, 2024).

High rates of urbanisation and associated growth in informal settlements and the backyard housing sector compound inherited service delivery backlogs. As noted previously, less than 6 in 10 informal households have access to electricity. However, this statistic doesn't capture all aspects of energy poverty, such as reliability and affordability. The invisibility of informal housing (particularly in backyards) and

the lack of legal recognition given to informal settlements in particular mean that basic services are not, or insufficiently, rolled out (Isandla Institute, 2022).

Many informal settlements are built on occupied land, which include land that has not been zoned or is not deemed suitable for residential use, thus these settlements do not have the capacity for the infrastructure needed for basic services. Once a settlement has been earmarked for upgrading, it can take 8 to 15 years for the administrative and technical processes to be completed, with residents accessing varied forms of basic services (GreenCape, 2024). In informal settlements that have not yet been earmarked for upgrading many households experience severe energy poverty often without access to even free basic energy.

However, once recognised, there are programmes in place to incrementally improve access to energy in established informal settlements. In the context of backyard housing, often the main property on the erf is the locus of municipal attention and backyard residents are overlooked in the extension of free basic services. Backyard residents often access basic services via the main house. Disputes around consumption and the liability to pay for services can be a key source of contention and may even accelerate a breakdown in the relationship between tenant and landlord (Isandla Institute, 2022). Extending infrastructure to enable backyard residents to access their own basic services would not only ensure that their rights to basic services are fulfilled; it would also go a long way to alleviating these tensions. Municipalities argue however, that the legislative framework regulating the financial decision-making of municipalities, more specifically, the provisions of the Municipal Financial Management Act 56 of 2003 (MFMA) does not permit the extension of infrastructure such as electricity meters on private land. While certain municipalities provide services to backyard residents living within the perimeter of municipal housing rental units) on public land, they are reluctant to extend it to those living on privately owned land.

In evaluating the provisions of the MFMA as well as other key legislation that governs local government, like the Municipal Systems Act, research and various legal opinions conclude that there is no specific provision that prohibits the investment in infrastructure on private land for the purposes of basic service delivery.[5]

Extending infrastructure to enable backyard residents to access their own basic services would not only ensure that their rights to basic services are fulfilled; it would also go a long way to alleviating tensions.

[5] *See: Isandla Institute 2021. See also: Senior Counsel Opinions Regarding the Provision of State-funded Services on Private Land in eThekwini Municipality. 2022. https://parks.durban.gov.za/storage/Documents/iQhaza%20Lethu/SC%20Legal%20Opinions%20Upgrading%20Private%20Land%20eThekwini%20with%20Foreword.pdf*

Unclear and/or inadequate targeting of free basic services

While free basic services are funded by the equitable share, municipalities retain discretion in terms of the quantum and how they choose to identify and register indigent residents. The amount of the free basic allocation, while guided by the national policy, may therefore differ from municipality to municipality. Municipalities have the discretion to provide for additional allocations above the prescribed minimum of free basic service allocations funded by their own municipal revenue. However, as municipalities are accountable for expenditure in terms of the equitable share, provision of less than the budgeted amount for vulnerable households within the municipal area must be justified (National Treasury, 2024).

Despite receiving allocations for indigent households in terms of the equitable share allocation, municipalities are not providing free basic electricity to all vulnerable households.

Research by PARI indicates, however, that despite receiving allocations for indigent households in terms of the equitable share allocation, municipalities are not providing free basic electricity to all vulnerable households as part of their basic service delivery mandate. Less than 25% of indigent households budgeted for in the equitable share allocation for local government receive free basic services (Ledger, 2021:32).

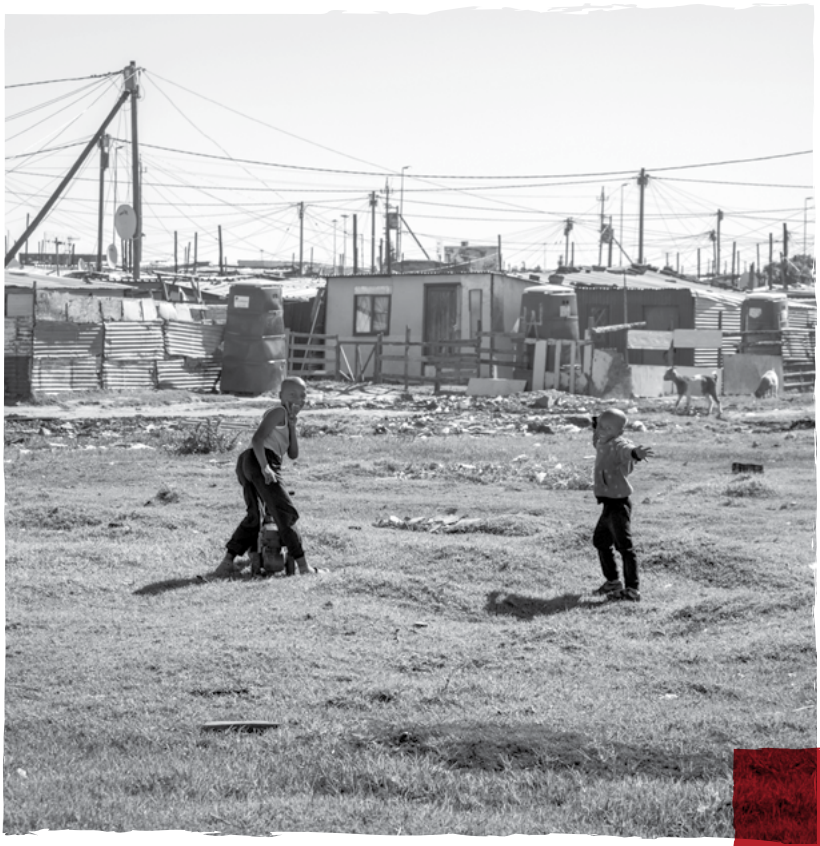
A review of indigent policies reveals that most municipalities make no or limited programmatic provision for backyard residents, which is unconstitutional.

Municipal debt and debt servicing

As electricity is the biggest revenue source for municipalities, some of the consequences of mismanagement at Eskom have been absorbed at the local level. This is seen in, for example, the increased tariffs approved by NERSA and the knock-on impact it has on municipal electricity tariffs. There is, however, also evidence of corruption and mismanagement at the municipal level where bulk electricity is distributed (Khonjelwayo & Nthakheni, 2021). Due to worsening economic inequality, communities increasingly accumulate electricity debt that they cannot repay (Ledger, 2024). Coupled with poor administration as well as endemic corruption in certain municipalities this has meant that municipalities are heavily indebted to Eskom. In the fight to recoup charges from municipalities, which is essential to maintaining the sustainability of the grid, it is economically vulnerable communities who are most impacted. The terms of debt servicing arrangements concluded between municipalities and Eskom, as facilitated by the National Treasury, have directly undercut the budget for free basic services (National Treasury, 2023).

In the face of crippling debt, there is a perverse incentive to allocate all local funds (municipal revenue and the equitable share allocation) to servicing the debt as a priority, above that of free basic service provision (Ledger, 2023). These arrangements allow the proverbial 'lights to remain on' for affluent users who can afford to pay for, and therefore continue to receive, services, whilst the budget providing for indigent users is subject to debt servicing conditions and rigid oversight to ensure austere expenditure of municipal revenue meant to service economically vulnerable residents.

The budget providing for indigent users is subject to debt servicing conditions and rigid oversight.



Isandla Institute/Shaun Swingler

Loadshedding: Lack of investment in maintenance and corruption

A key contributing factor to the energy crisis relates to the mismanagement and corruption that has marked the operation of Eskom, the chief parastatal responsible for electricity generation. Loadshedding in part is due to the fact that planned maintenance was not executed on key infrastructure timeously, with power stations run beyond their capabilities and resulting in system breakage. Though initially considered a temporary measure, it has persisted for over 16 years and provides a key example of both the long-lasting effects and the multiple ways in which energy poverty affects developing countries. Loadshedding reached its pinnacle in 2023, with the most frequent number of loadshedding days since 2007, with dire economic consequences.

Loadshedding has disproportionately impacted vulnerable groups who are unable to access alternative energy sources.

That translates into a cost (in lost economic activity) of R224 billion for the period 2020 to 2023. At the beginning of 2023, various calculations estimated that approximately 650,000 jobs had been lost by the end of 2022 due to loadshedding, with that number expected to rise to 800,000 in 2023 (Ledger, 2024:2).

From a socio-economic perspective, loadshedding hinders access to essential services and resources and impacts daily operations of businesses, often leaving small-scale and marginalised businesses in precarious situations. Though loadshedding has initially impacted every individual and community within the country, it has disproportionately impacted vulnerable groups who are unable to access sustainable or alternative energy sources, including inverters, private solar grids and generators (PCC, 2023).

Loadshedding resilient hubs for backyard tenants, City of Cape Town

The City of Cape Town has embarked on a process to understand and respond to energy poverty experienced by backyard housing tenants. In 2024, the City appointed the Western Cape Economic Development Programme to identify how city-owned community facilities could be transformed into energy hubs for local residents (with the primary target being tenants in backyard housing) during periods of loadshedding. This could be done through the installation of renewable energy systems at community facilities such as clinics, sports grounds, libraries and help centres.

The project is still in its early stages of development, which includes developing the technical and financial specifications, identifying appropriate sites, developing a decision-making matrix and community engagement. The possibility of sharing surplus energy generated will also be explored. The project is expected to be concluded in the course of 2024.

The rise of private/'off-grid' solutions

Due to the continued impacts of loadshedding, affluent energy consumers and businesses are moving to alternative (sometimes renewable) and mini-grid/off-grid solutions. In a relatively short period of time there has been an exponential increase in the demand for solar panels, inverters and batteries (Jacobs, 2024). While this ensures energy access for those who can afford it, it deepens energy poverty for those who can't. This trend brings out an obvious tension between the need to protect the national grid to ensure universal access and the possibility that only the poor are left reliant on a failed or failing energy system, which more affluent citizens have abandoned in favour of private generation (Swilling, 2023; Culwitt Fatti & Khanyile, 2023). Moreover, when more affluent citizens or economic actors abandon the national grid in favour of private, 'off-grid' energy solutions, municipalities will not be able to raise the revenue needed to cross-subsidise service provision, particularly to low income and indigent households that are unable to pay for their electricity consumption.

There is an obvious tension between the need to protect the national grid to ensure universal access and the possibility that only the poor are left reliant on a failed or failing energy system.

Isandla Institute/ Eric Miller: Mfuleni

Climate change and the Just Energy Transition: Leave no one behind?

South Africa, like the rest of the world, is facing the very real consequences of climate change. Climate change has manifested in severe challenges like increased incidents and severity of flooding, drought and temperature extremes, increasing the risk of fire and the need for improved household insulation from extreme weather conditions.

It is important that as opportunities and incentives in the form of renewable and alternate technologies are realised, communities are included in processes from the ground up.

Those who live in conditions of informality are disproportionately exposed to and impacted by these consequences, despite being least responsible for contributing to the status quo (Isandla Institute, 2023a). South Africa can furthermore not sustain the current reliance on coal as a non-renewable resource to fuel the national energy supply. Not only is it unstainable because of limited supply, but it has also contributed to unprecedented levels of pollution that has disproportionally impacted those who live in the areas where coal is produced.[6]

While South Africa is in the process of transitioning its economy from one based on coal to one using renewable energy, this presents both challenges and opportunities, including the loss of jobs in carbon-based sectors. Unless mitigated, this, in turn, will deepen inequality and rampant unemployment. It is therefore important that as opportunities and incentives in the form of renewable and alternate technologies are realised, communities are included in processes from the ground up. Whether it is in the form of communities receiving renewable technology in informal contexts or new production and/or employment opportunities which emerge in the local context, it must result in equal benefits for all, equal say for all, and be able to address existing injustice and inequality for people and for the environment. Part of harnessing a ground-up approach, fundamentally, means a clearer understanding of how energy poverty is experienced at a household and communal level. Ledger (2021:6) points out that by ignoring what is happening in households of poor South

[6] *Trustees for the time being of Groundwork Trust and Another v Minister of Environmental Affairs and others (39724/2019) [2022] ZAGPPHC 208 (18 March 2022).*

Africans, we are 'building and entrenching two parallel energy systems: a visible, clean system based on renewable energy generation to which access is effectively limited, alongside a largely invisible, dirty and dangerous system that is the only option for millions of households.' This, equates to a 'disorderly transition', rather than a just transition (Swilling, 2023).

It is clear that if alternative, renewable energy sources are to be used outside of those who can currently afford them, the state in partnership with other stakeholders must take various interventions to make this available, particularly to the vulnerable communities living in conditions of informality. There are certain municipalities (particularly the metros) and provinces that are already pursuing proactive steps to pilot renewable energy programming. Of South Africa's 257 municipalities, 21 municipalities across 7 provinces supplied solar home systems to 149 919 households in 2022 (Stats SA, 2024). Larger scale projects such as the micro-grid solar rollout in 14 informal settlements across Gauteng are holding the promise of achieving impact at scale (Ngcobo, 2024). Similar initiatives are taking place outside of government, such as the solar lighting initiative in Khayelitsha led by the non-profit organisation People's Environmental Planning (PEP), which negotiated a partnership with a local private sector entity. Clearly, the state cannot tackle the scale of need alone. What is required is an 'all of society' approach that embraces partnerships between the state, private sector, civil society and communities to explore alternate energy sources and sustainable systems of energy supply.

If alternative, renewable energy sources are to be used more widely, the state in partnership with other stakeholders must take various interventions to make this available.

PEP: Solar Lighting Initiative in Khayelitsha[7]

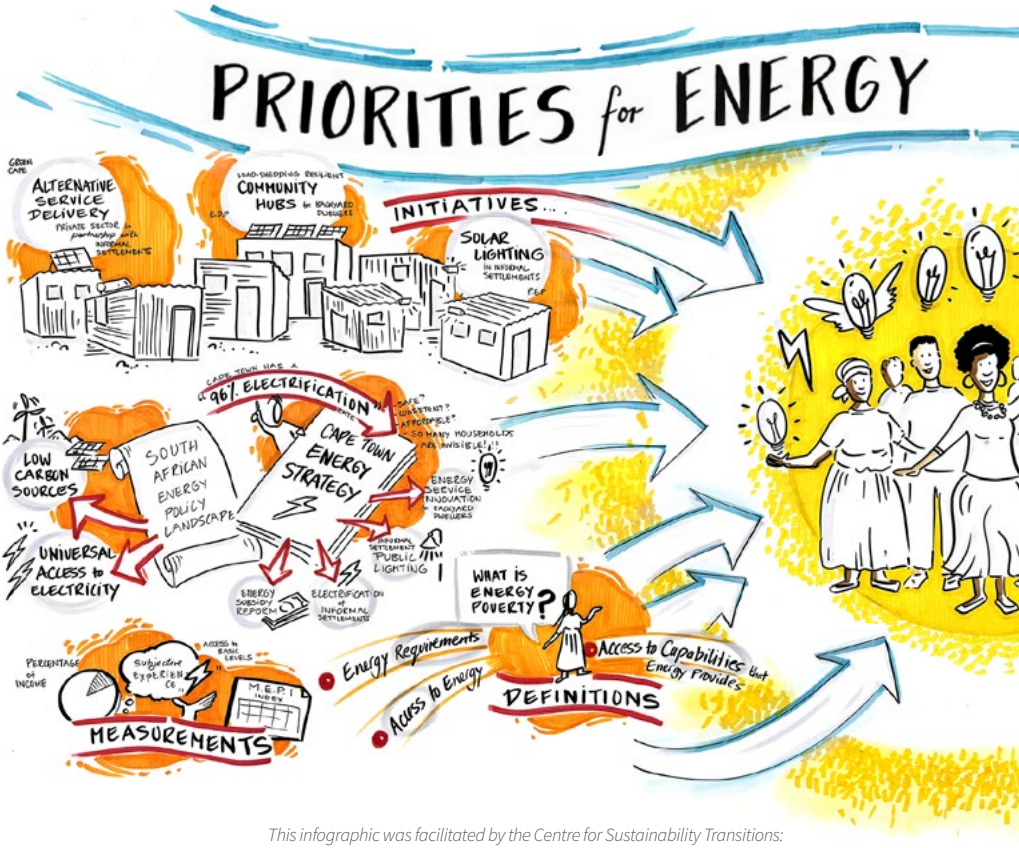
Increased lighting within informal settlements enhances visibility and perceptions of safety and reduces opportunities for crime and violence for local residents. The solar lighting initiative of PEP installed 200 individual lights on informal structures in four settlements in Khayelitsha, with plans of replicating and expanding the model to other informal settlements. Interestingly, the organisation initially proposed the installation of solar lights to improve indoor lighting, but through the community engagement process it became clear that the priority for residents was to improve the safety of pathways in the settlement. The lighting units have been installed by community members employed by PEP in efforts to create employment opportunities and establish community investment and ownership, ensuring the maintenance of the lighting systems. Feedback from residents is that it has exponentially improved safety within their communities and fostered a sense of community ownership over the infrastructure.

[7] *See: PEP. Khayelitsha Solar Lighting. https://peoplesenvironmentalplanning.org.za/current-projects/khayelitsha-lighting/#:~:text=In%20early%202022%20PEP%20was*

Conclusion

There is no silver bullet to the crisis of energy poverty. It requires urgent national government leadership and a range of interventions at every sphere of government. It also requires the involvement of other stakeholders, who have the potential to contribute to finding new and sustainable pathways to change.

Bearing in mind that change is happening at an unprecedented pace, escalated by loadshedding and the slow pace of diversification and large scale roll out of renewable energy initiatives, there is concern that the privatisation of access to energy will have many unintended consequences.



This infographic was facilitated by the Centre for Sustainability Transitions: Stellenbosch University, with funding from the Volkswagen Foundation.

The failure to take proactive measures to provide for economically vulnerable and marginalised communities means a likely worsening of the status quo and regression of rights. An important starting point is to obtain real-time data that reflects an accurate assessment of energy poverty and what is required to mitigate it.

We need an 'all of society' approach that embraces partnerships between the state, private sector, civil society and communities to explore alternate energy sources and sustainable systems of energy supply. Pilot projects require partnerships to enable replication at scale and to demonstrate the potential of increased energy access. Sustainable solutions can, however, only gain traction if communities are fully part of the deliberative engagement processes that see the transitioning of these projects from bright ideas to energy-efficient realities.

References

Butters, C. 2023. The energy transition — it's not just about the technology. Daily Maverick. https://www.dailymaverick.co.za/opinionista/2023-03-05-the-energy-transition-its-not-just-about-the-technology/

Black Sash. 2021. Children, social assistance and food security. https://blacksash.org.za/wp-content/uploads/2023/09/Children_Soc_Assistance_Food_Security.pdf

Buthelezi, SA, Kapwata, T, Wernecke, B, Webster, C, Mathee, A & Wright, CY. 2019. Household fuel use for heating and cooking and respiratory health in a low-income, South African coastal community. International Journal of Environmental Research and Public Health 16(4). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6406283/

City of Cape Town. 2023. Integrated Human Settlements Five-Year Sector Plan 2022/23 – 2026/27: 2023/24 Review. https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Integated_Human_Settlements_Sector_Plan_2022-2027_Review.pdf

Culwick Fatti, C & Khanyile, S. 2023. South Africa's power crisis: Going off the grid works for the wealthy – but could deepen injustice for the poor. The Conversation. https://theconversation.com/south-africas-power-crisis-going-off-the-grid-works-for-the-wealthy-but-could-deepen-injustice-for-the-poor-200288

Damons, M. 2024. Cape Town school in the dark because it owes thousands to Eskom. Daily Maverick. https://groundup.org.za/article/delft-school-remains-in-the-dark-after-owing-thousands-in-eskom-arrears/

Department of Mineral Resources and Energy. 2003. Electricity Basic Services Support Tariff (Free Basic Electricity) Policy for South Africa. GGN. 1693 Government Gazette 25088, 4 July 2003

Department of Minerals and Energy. 2007. Free Basic Alternative Energy Policy: Households Energy Support Programme GGN 391. Government Gazette 29760, 2 April 2007

Geyevu, M & Mbandlwa, Z. 2023. Economic conditions that lead to illegal electricity connections at Quarry Road Informal Settlement in South Africa. International Journal of Special Education 37(3).

International Energy Association. 2020. Defining energy access: 2020 Methodology. https://www.iea.org/articles/defining-energy-access-2020-methodology

Isandla Institute. 2021. The obligations and powers of municipal governments to provide basic services for backyard dwellers on private land. Legal Opinion by Advocate Budlender, G SC. https://isandla.org.za/en/resources/item/download/244_4e9c0176c8666ba24fd88d2386d4f7f0

Isandla Institute. 2022. Backyard housing: an essential part of the solution to South Africa's housing crisis – a submission into the proposed new Human Settlements policy and Human Settlements bill. https://isandla.org.za/en/resources/item/download/276_b9cea3762cb7e49ed8ae2da0a92b0c4e

Isandla Institute. 2023a. Making sense of a just urban transition for informal settlement upgrading. https://isandla.org.za/en/resources/item/download/382_63a73ce237c8deec45447f0848c96426

Isandla Institute. 2023b. Making urban safety matter in neighbourhood development https://isandla.org.za/en/resources/item/download/343_55d0408f61d7a51c2c63c3caf318a725

Jacobs, S. 2024. South Africa imported R17.5 billion of solar panels in 2023. Daily Investor (online). https://dailyinvestor.com/energy/45761/south-africa-imported-r17-5-billion-of-solar-panels-in-2023/

Khonjelwayo, B & Nthakheni, T. 2021. Determining the causes of electricity losses and the role of management in curbing them: A case study of City of Tshwane Metropolitan Municipality, South Africa. Journal of Energy in Southern Africa 32(4). https://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S1021-447X2021000400004

Koch, SF & Ye, Y. 2021. Measuring energy poverty in South Africa based on household required energy consumption. Energy Economics 103. https://www.sciencedirect.com/science/article/abs/pii/S014098832100428X

Koch, SF, Blessings, N & Ye, Y. 2024. Income elasticity of residential electricity consumption in rural South Africa. Energy Economics 131. https://ideas.repec.org/a/eee/eneeco/v131y2024ics0140988324001130.html

Koomson I. 2024. Energy poverty and mental distress in South Africa: Assessing linkages and potential pathways. World Development Sustainability (4). https://www.sciencedirect.com/science/article/pii/S2772655X2300071X?ref=pdf_download&fr=RR-2&rr=8845b413a9a63ea0

Ledger, T. 2021. Broken Promises: Electricity access for low-income households: good policy intentions, bad trade-offs and unintended consequences. Energy and Society Working Paper #2 (Public Affairs Research Institute). https://pari.org.za/wp-content/uploads/2021/04/broken-promises21-04-21c.pdf

Ledger, T & Rampedi, M. 2022. Hungry for electricity. Public Affairs Research Institute. https://pari.org.za/wp-content/uploads/2022/09/Hungry-for-Electricity-Digi-19092022.pdf

Ledger, T. 2023. Eskom's debt relief for municipalities strips households of their free basic services. Daily Maverick (online). https://www.dailymaverick.co.za/article/2023-05-12-eskom-debt-relief-for-municipalities-strips-poor-of-free-basic-services/

Ledger T. 2024. Rapid electricity supply diversification in municipalities is the key to economic recovery, municipal financial sustainability and an early end to loadshedding. Policy Brief. Public Affairs Research Institute. https://pari.org.za/wp-content/uploads/2023/12/20240419_Municipal-policy-brief.pdf

Lesala, ME, Shambira N, Makaka G & Mukumba P. 2024. Exploring energy poverty among off-grid households in the Upper Blinkwater community, South Africa. Sustainability 16(11). https://doi.org/10.3390/su16114627

Ngcobo, K. 2024. Plans for micro-grid solar rollout in 14 more informal settlements. https://www.timeslive.co.za/news/south-africa/2024-02-19-plans-for-micro-grid-solar-rollout-in-14-more-informal-settlements/

National Treasury. 2023. Municipal Debt Relief Circular for the 2023/24 MTREF. MFMA Circular No. 124. https://www.treasury.gov.za/comm_media/press/2023/20230510301%20MFMA%20Circular%20No.%20124%20-%20Municipal%20Debt%20Relief.pdf

National Treasury. 2024. 2024 Budget Review: Explanatory Memorandum to the Division of Revenue (Annexure W1). https://www.treasury.gov.za/documents/national%20budget/2024/review/Annexure%20W1.pdf

Oyekale, AS & Molelekoa, TC. 2023. Multidimensional Indicator of Energy Poverty in South Africa Using the Fuzzy Set Approach. Energies 16(5). https://doi.org/10.3390/en16052089

Presidential Climate Commission (PCC). 2022. A Framework for a Just Transition in South Africa. https://pccommissionflo.imgix.net/uploads/images/22_PAPER_Framework-for-a-Just-Transition_revised_242.pdf

Presidential Climate Commission (PCC). 2023. Recommendations from the PCC on South Africa's Electricity System. https://pccommissionflo.imgix.net/uploads/images/PCC-Electricity-Planning-Recommendations-Report_2023-06-01-143447_hccs.pdf

Swilling, M. 2023. Massive bottom-up response to the power crisis sees spike in private energy generation. Daily Maverick. https://www.dailymaverick.co.za/article/2023-08-22-massive-bottom-up-response-to-the-power-crisis-sees-spike-in-private-energy-generation/

Statistics South Africa. 2024. The State of South African Households in 2023. https://www.statssa.gov.za/?p=17283#:~:text=Since%202002%2C%20there%20has%20been%20a%20notable%20increase%20in%20access,%25%20to%2058%2C3%25.

The Presidency. 2022. South Africa's Just Energy Transition Investment Plan (JET IP) for the initial period 2023-2027. https://pccommissionflo.imgix.net/uploads/images/South-Africas-Just-Energy-Transition-Investment-Plan-JET-IP-2023-2027-FINAL.pdf

United Nations. 2024. Sustainable Development Goal 7. https://www.un.org/sustainable-development/energy/

Van Niekerk, A, Kimemia, D, Seedat, M & Annegarn, H. 2022. Energy impoverishment and burns: The case for an expedited, safe and inclusive energy transition in South Africa. South African Journal of Science 118(3/4). https://doi.org/10.17159/sajs.2022/13148

Wernecke, B, Langerman, KE, Howard, AI & Wright, CY. 2024. Fuel switching and energy stacking in low-income households in South Africa: A review with recommendations for household air pollution exposure research. Energy Research & Social Science (109).

Isandla Institute
admin@isandla.org.za
www.isandla.org.za