



# **The IRR's Blueprint for Growth :**

## **Reinforcing South Africa's Growth through Infrastructure**

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July 2025  
Anlu Keeve



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222 Smit Street (Virtual office),  
Braamfontein Johannesburg, 2000, South Africa  
PO Box 291722, Melville, Johannesburg, 2109, South Africa  
Telephone: (011) 482–7221

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Authors: **Anlu Keeve**

Editor: **John Endres and Terence Corrigan**

Typesetter: **Mbali Mayisela**

Cover Design: **Bonginkosi Tekane**

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# Executive summary

South Africa's infrastructure is falling apart. Years of neglect, poor management, and underfunding have left the country's water systems, electricity supply, and transport networks in crisis mode. The issues are rooted first in policy failures, but also in operational, technical and management failings in the state institutions responsible for managing these systems, yet the consequences are felt more widely: as the infrastructure is collapsing, its breakdown is depressing economic growth and discouraging investment. Fixing this demands immediate and decisive action.

High levels of government borrowing, which crowds out private investment by pushing up interest rates, lend additional urgency to this work. High interest rates discourage capital investment in infrastructure, which is the backbone of economic activity.

The declining quality and reliability of the public infrastructure is perhaps most visible in the nation's water systems. Nearly 30% of water supply systems are in critical condition. Rural areas are the worst off, but some urban centres like Johannesburg also face frequent water cuts.

Rolling electricity blackouts (loadshedding) have crippled businesses and households for nearly two decades. Solving the economic crisis caused by the outages represents an enormous challenge owing to Eskom's inefficiencies, corruption, and soaring electricity prices.

Rail and port inefficiencies have shifted freight to road transport, causing more damaged roads, higher transportation costs, and increased safety risks. South Africa's ports, ranked among the worst globally, contributed to R150bn in lost export revenue in 2022 alone.

To reverse decades of decline, South Africa needs practical, immediate action. The following measures can help stabilise these important sectors and pave the way for long-term recovery:

## Water infrastructure:

- Open transparent PPP procurement systems;
- Improve municipal asset management;
- Implement a targeted skills development program;
- Give local water management teams greater autonomy;
- Streamline communication channels and data capturing mechanisms;
- Prioritise water loss and Non-Revenue Water management;
- And prioritise investment in water infrastructure in rural areas.

## Electricity infrastructure:

- Remove bureaucratic regulations that slow down generation expansion and drive up costs;
- Ramp up private power generation;
- Separate Eskom into generation, transmission and distribution entities;
- Remove race-based procurement and hiring policies;
- Prioritise payment collection;
- And secure exemptions from costly green mandates.





### Ports, rail and road infrastructure:

- Establish a specialised railway police unit;
- Set up consultation networks;
- Open transparent PPP procurement systems;
- Improve communication networks between stakeholders and operators;
- Set up regular meetings that focus on improving container and truck management;
- And digitalise and standardise all management and logistics.

However, fixing South Africa's water, electricity, rail, road, and port infrastructure must not be treated as merely a technical task that requires more money and expertise. It will require changing the rules that govern how decisions are made, who makes them, and on what grounds. Without that, no amount of capital or technical support will be sufficient.

Fixing South Africa's infrastructure will be neither quick nor easy, but the stakes are too high for half-hearted attempts. By implementing these recommendations, the Government of National Unity can lay the groundwork for recovery of the country's water, electricity, and transport networks, and with them, the economy as a whole.

## Introduction

"South Africa is in a state of crisis." This statement remains as true today as it was a year ago – if not more so. While the 2024 elections and the formation of a Government of National Unity (GNU) initially sparked cautious optimism, the political mood has shifted. The GNU has come close to collapsing on multiple occasions, and it now seems more a matter of when the Democratic Alliance (DA) – one of the GNU's anchor tenants – will exit than *if*.

Despite the instability, a few positive signs have emerged, mainly driven by non-ANC ministers pushing ahead in their respective portfolios. But these have not been enough to shift the trajectory of the country. The economic crisis, especially in the form of low growth, chronic unemployment, and entrenched poverty, remains unresolved. The GNU's survival – and its credibility – now depends on whether it can confront this crisis directly and start delivering visible, measurable change.

The main goal should be to grow the economy. Over the past 15 years, South Africa's per capita income has shown minimal growth. In 2008, it stood at \$12,628 (measured in constant purchasing power parity 2021 international dollars). However, by the end of 2024, it had only increased marginally to approximately \$13,186 in inflation-adjusted terms, equating to a paltry compound annual growth rate of 0.27%.<sup>1</sup>

This modest rise of \$558 (4.4%) over a period of 16 years pales in comparison to other emerging economies such as Vietnam (117% increase), India (118%), and Bangladesh (164%), where per capita incomes have more than doubled over the same period, fuelled by market liberalisation and strategic investments, particularly in infrastructure.



The Institute of Race Relations (IRR) has argued that a series of policy interventions are needed for South Africa's economy to grow.<sup>2</sup> Critically, people and businesses need to feel secure that their property and assets are safe, and that they have the liberty to deal with and employ whom they wish, when they want and where they want. This sense of security of life and property, paired with autonomy in decision making, reduces the perceived risk of investment decisions. People are more likely to commit scarce resources when they have the freedom to make investment decisions based on their personal judgment, in a safe and stable environment that can provide a reliable return on their investment.

To offer this security to both South Africans and foreign investors, the country must place the protection of property rights, the removal of race-based policies, and the deregulation of especially the labour market, at the top of its list of priorities.<sup>3</sup>

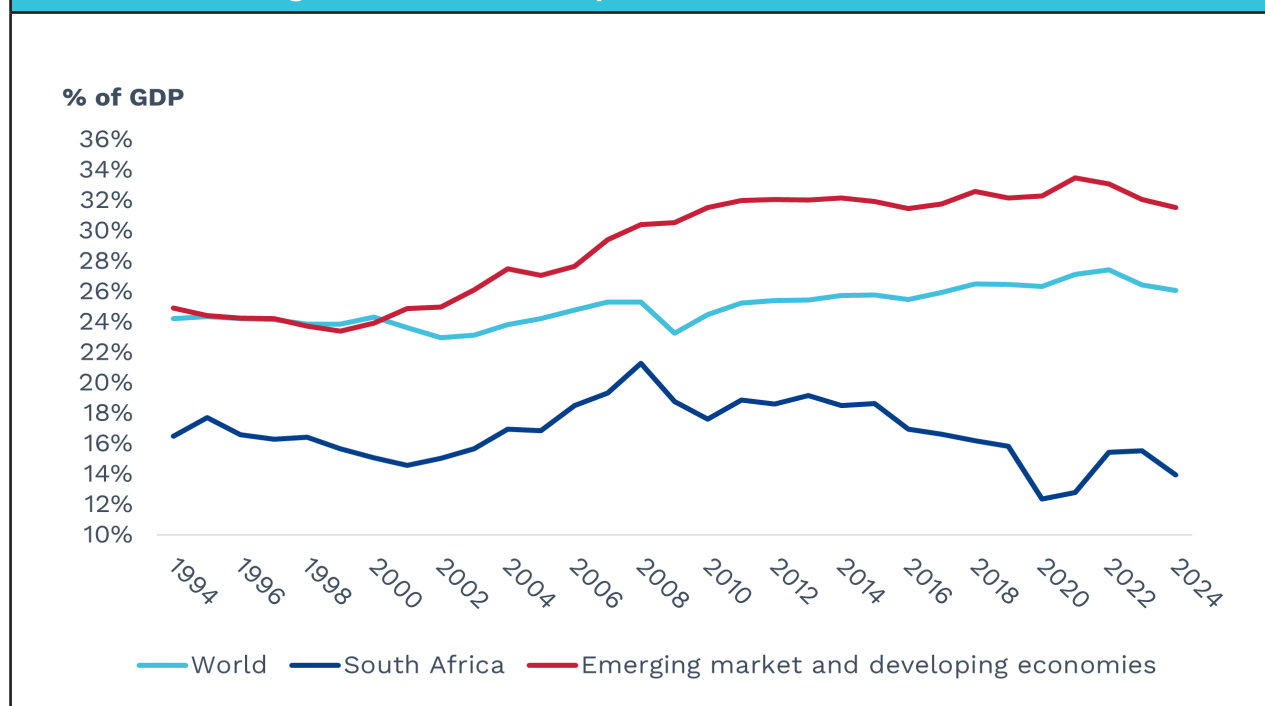
However, these steps alone will not be sufficient.

Today, at 76.9% of Gross Domestic Product (GDP), the debt ratio is at its highest point since 1947.<sup>4</sup> The cost of servicing this debt consumes 22c of every Rand collected as revenue.<sup>5</sup> This is restricting economic growth by tying up public finances in servicing debt. Funds that could have been allocated to other important priorities are unavailable for the purpose. High levels of government borrowing also soak up the economy's lending capacity, pushing up interest rates and discouraging businesses from borrowing money to make capital investments. The state thereby crowds out economic activity in the private sector.

This situation significantly impacts infrastructure, which forms the backbone that sustains economic activities, facilitates trade and multiplies productivity. Without well-maintained roads, rail and ports, and stable energy, communications and water supply networks, achieving and maintaining economic growth will be an uphill battle.

For this reason, any comprehensive reform agenda must include infrastructure as a priority. It is imperative that a fundamental set of infrastructural objectives be achieved for the economy to grow. Gross fixed capital formation (GFCF) is a useful measure here because higher levels represent a tangible expression of greater "confidence" in the country's future. The South African government's 2012 National Development Plan (NDP) set a total GFCF target, as a percentage of GDP, of 30% by 2030.<sup>6</sup> Since 1994, 20% was achieved only once, in 2008 (21.6%). Currently, GFCF is projected to rebound to an ambitious 5% growth in 2025, after contracting by 3.6% in 2024, with an expected medium-term average growth of 4.6%.<sup>7</sup> However, in Q1 2025 GFCF contracted by 1.7%, putting a damper on hopes for a recovery.<sup>8</sup>

Figure 1: Gross fixed capital formation, 1994-2024



Source: International Monetary Fund (IMF); Own illustration

South Africa's fixed investment ratio remains well below global and OECD averages. Countries that sustain rapid growth typically maintain investment ratios above 25%. To meet the NDP target of 30%, public-sector investment needs to increase from 4.1% of GDP in 2023 to 10% of GDP by 2030, if the traditional 2:1 ratio of private to public investment is maintained. Private-sector investment would accordingly have to grow from 10.8% of GDP in 2023 to 20% of GDP by 2030.<sup>9</sup>

Currently, total public sector infrastructure spending for the 2025/26 – 2027/28 period is projected to be R1.03 trillion, around 4% of GDP.<sup>10</sup> This spending is divided among state-owned companies (R410.9bn), provincial and national governments (R215.9bn) and municipalities (R200.8bn) over the medium-term.<sup>11</sup>

Spending on economic infrastructure makes up 81.5% of the total public-sector infrastructure budget for the medium-term period, most of which is spent – often inefficiently – by state-owned entities to improve water and sanitation (R156.3bn), electricity (R219.2bn), and transport infrastructure (R402bn).

Infrastructure (roads, bridges, ports and railways) does not take shape of its own accord, and nor does it hold that shape. If these assets are not maintained, they fall into disrepair and decline. The longer this process continues, the more difficult it is to arrest and reverse. The decline of some aspects of South Africa's infrastructure stock is easier to see and experience than that of others. In small towns, for example, roads are ground to dust by heavy trucks transporting coal and mineral ores, unable to use railway lines that have either been stolen or allowed to fall into disrepair.

Water provision is another critical area where the lack of planning and maintenance is producing more problems which, if unaddressed, will manifest in large-scale harms to health and society. What is taken for granted now is by no means guaranteed to always exist.

Although South Africans have experienced significantly fewer days of loadshedding since the start of 2024, the fact that South Africa has coined a term for the rolling blackouts that have afflicted it since 2008 makes a strong point.

The problems across various areas of infrastructure cannot be solved overnight. But the decline can be understood, taken responsibility for, and investment once more placed on an upward trajectory. Achieving this requires prioritising reforms that stabilise and expand infrastructure so as to drive economic growth towards a target of 7% of GDP annually.<sup>12</sup> This requires both practical policy changes, but arguably, and more importantly, ideological insights and changes.

This paper will show throughout that the deterioration in infrastructure is closely tied to the country's policy choices. As an opening example of this connection between policy and outcomes, the late CEO of the IRR, John Kane-Berman explained it best:

“One of the important components of policy at all levels of government is the promotion of “transformation”. This has been held by the Constitutional Court to be a “constitutional imperative”. According to the ANC, it includes the policy of affirmative action referred to above, as well as the promotion of black business and other measures designed to redress the impact of apartheid and bring about “fundamental change in the structure, systems, institutions, and patterns of ownership, management, and control of the economy.

One consequence of these policies is that the DWS has sometimes left posts unfilled rather than dilute its racial transformation targets by hiring whites<sup>14</sup>. Highly qualified specialists (ranging from engineers to microbiologists and ecologists) were also placed under great pressure to leave, long before retirement age. Many resigned, while their replacements rarely had the same qualifications and experience. Sometimes when highly-skilled people were pressurised to leave to meet transformation targets, their skills were not transferred to those replacing them. The “purges” of professional staff took place at the same time as water was nationalised, undermining the ability of DWS to operate effectively. The transformation imperative has also affected procurement decisions. Dr Eberhard thus said that contracts for water supply were often awarded according to black economic empowerment points rather than on the basis of technical competence.”<sup>13</sup>

This paper takes that idea seriously because it recognises that infrastructure is one of the foundations of social cohesion – it enables people to live with dignity, access opportunity, and trust public institutions. The choices made in government, from who own the resource, to who gets hired and how infrastructure is maintained or neglected, reveal the influence of specific political and ideological priorities. Understanding that link is the first step to reversing the decline. Once that is clear, attention can turn to the reforms needed.

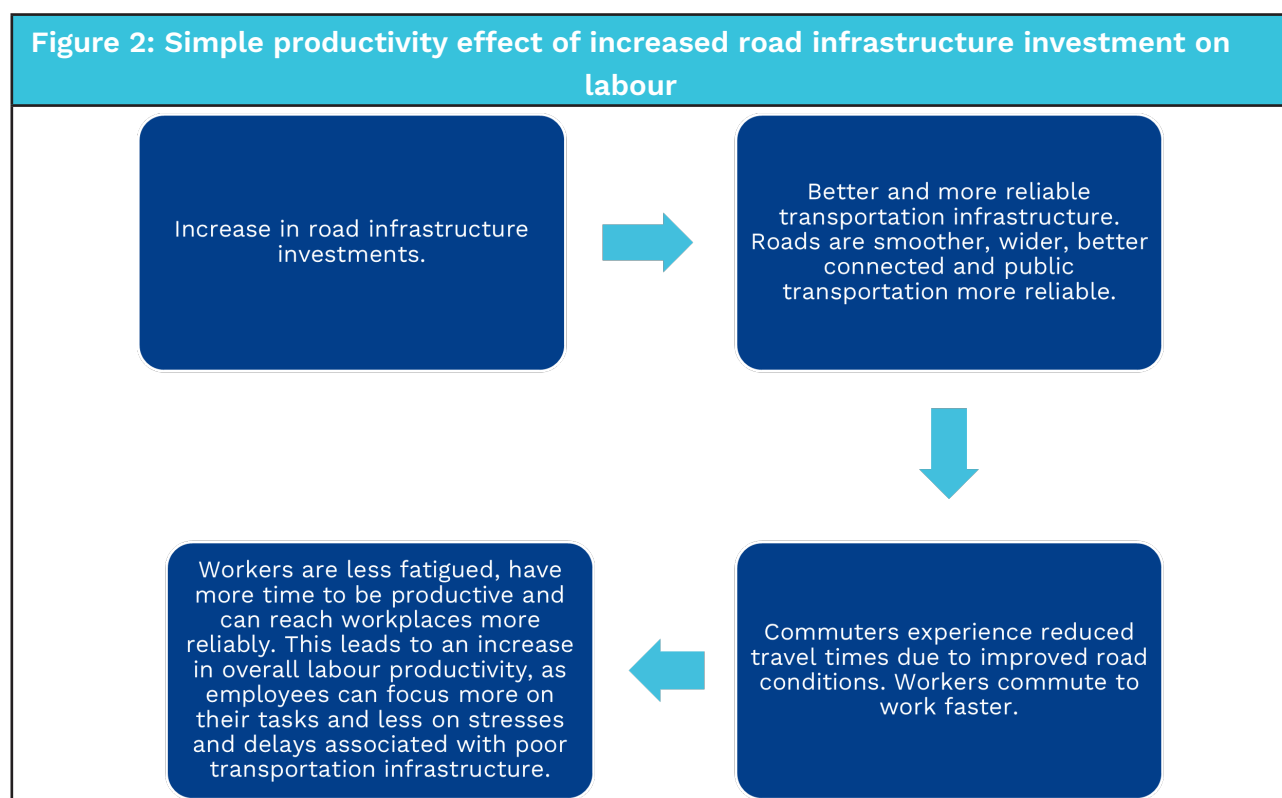


But what should those infrastructural reforms be? In this paper, we explore the current state of infrastructure in South Africa. To this end, the paper first examines the theoretical link between infrastructure and economic growth. It then analyses the current state of infrastructure across four key sectors individually – water, electricity, ports, and rail and roads – and recommends targeted solutions for each.

## What does the theory say?

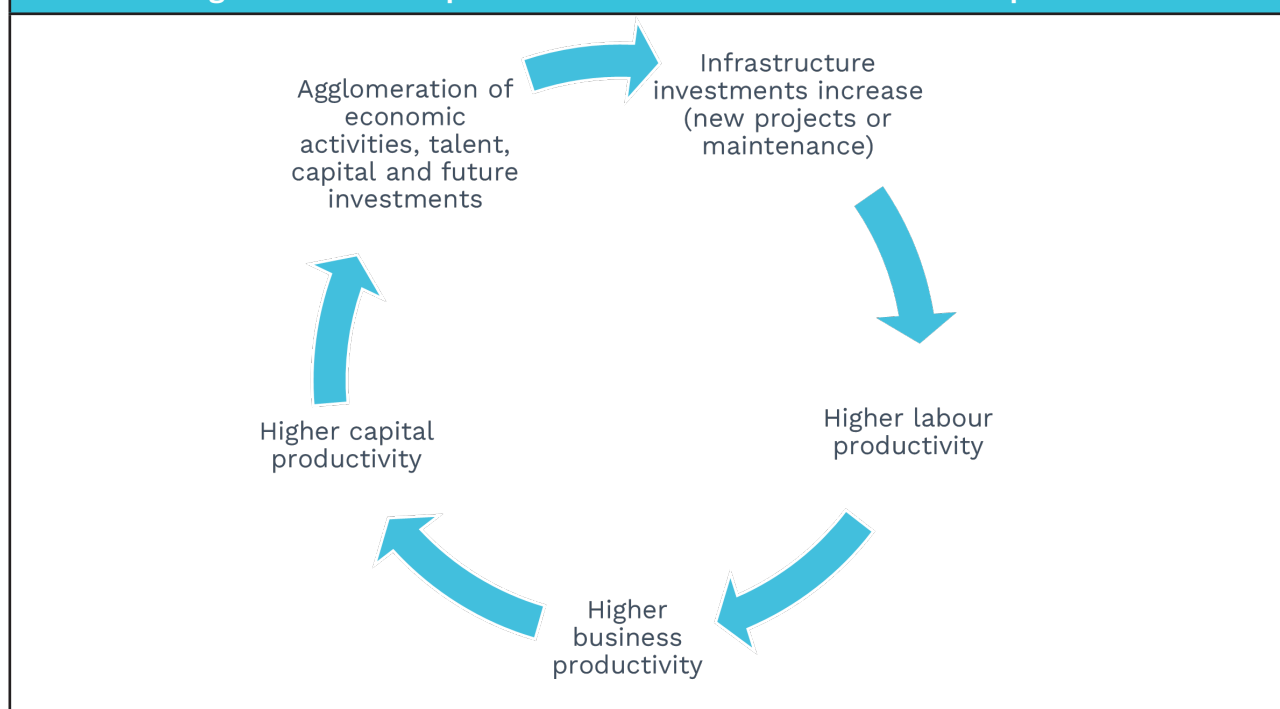
Infrastructure – such as ports, roads and rail, and water and electricity services – has a simple productivity effect. As a rule, augmenting infrastructural assets (like building more roads or making the electricity supply more reliable) makes other resources, like labour and capital, more productive.<sup>14</sup>

Figure 2 illustrates an example of the anticipated impact investment in infrastructure will have on labour productivity. Specifically, it illustrates how investing in road infrastructure reduces travel time and improves accessibility. These improvements directly benefit labour and businesses on a microeconomic level.



However, this is only one aspect of the simple productivity effect. Figure 3 illustrates the broader knock-on effect of infrastructure investments on various aspects of the production chain.<sup>15</sup> For instance, good roads reduce travel times, reliable electricity amplifies the effects of human action, and communication infrastructure improves the flow of information, which makes workers and businesses more efficient.<sup>16</sup>

Figure 3: Broad impact of infrastructure on labour and capital



The positive effect of infrastructure investments is evident. For example, building infrastructure attracts private businesses to invest in remote or less developed areas. New roads and bridges, as well as reliable electricity and water supply, make a remote area accessible to businesses and make it more attractive for companies to set up operation in such an area. This leads to new stores or factories, services, and more employment opportunities.

The investments from these businesses lead to increased economic activity, which in turn generates higher tax revenues for the government. The government can then reinvest higher tax returns in further infrastructure improvements and stock increases. As infrastructure improves, regions become more interconnected, which facilitates trade and the efficient movement of goods and services, boosting economic growth.<sup>17</sup> Therefore, as businesses invest and expand into newly accessible areas, they stimulate economic growth in these areas.<sup>18</sup>

However, these benefits often concentrate in already thriving areas.<sup>19</sup> This is because new infrastructure fosters the creation of new ideas and products.<sup>20</sup> In turn, innovation attracts further investment which drives technological growth and economic activity. A reinforcing cycle of prosperity is created, where thriving regions continue to grow while underdeveloped areas are left behind.

These patterns of development are observed because economic activities concentrate spatially owing to economies of scale and transportation costs.<sup>21</sup> Businesses benefit from producing on a larger scale because it reduces costs per unit. Furthermore, lower transportation costs make it easier for businesses to serve larger markets from a single location and therefore encourage agglomeration. As the number of companies offering different products and services increases, economic complexity rises and creates more economic niches for entrepreneurs to exploit. Regions, for these reasons, develop into “cores” of high economic activity and “peripheries” of less developed areas.<sup>22</sup>

On the labour market, the concentration of multiple firms in a single location offers workers more job opportunities, which reduces unemployment. It also makes it easier for firms to find the workers they need, which reduces the risk of labour shortages. Since firms are located closer to each other, they can share ideas and information more easily. Information spillovers can in this manner lead to better ways of producing goods and services and make these firms more efficient than those that are isolated.<sup>23</sup>

These positive effects in developed areas, as noted earlier, often mean that underdeveloped areas are neglected. This results in widening economic disparities and exacerbates the lag in underdeveloped areas. This does not mean that cities like Cape Town should neglect the maintenance and development of infrastructure in well-established areas like the Atlantic Seaboard. Infrastructure development naturally occurs in these regions due to the existing levels of their development and should not be halted. However, it is crucial to invest proactively in infrastructure in underdeveloped regions to stimulate their growth, balance economic development, and promote the natural growth that will result from these initial investments.

The following sections will examine the current state of infrastructure in key sectors and propose solutions to increase investment where it is most needed to ensure that all regions and sectors can benefit from improved infrastructure and economic opportunity.

## **Water Infrastructure – A decade of decline**

South Africa's water infrastructure faces a growing crisis, as unmaintained systems and supply chains strain water supply systems (WSSs) nationwide. This affects communities and businesses and has substantial implications for public health and economic stability.

Yet this decline is especially striking when placed against the country's long tradition of engineering excellence during which South Africa stood out globally for its ingenuity in water engineering and innovation in water systems management. The country's history is filled with examples of early innovation – from the construction of the Cape's first dam in 1663 and Johannesburg's remarkable 19th-century pumping system that drew water from the Vaal River to support a city with no natural supply, to the role of South African engineers in designing and bringing to life the world's largest plant for recycling wastewater into drinking water in Windhoek.

That tradition was not sustained. In the decades that followed, policy choices undermined the institutional and economic conditions needed to attract and enable long-term private investment in water infrastructure. Because of this, before addressing the many operational, financial, and institutional failures that followed, it is necessary to recognise that most of them stem from a common origin: a policy regime that centralised control, politicised appointments and procurement, enabled corruption, and created a deep-seated hostility to private sector involvement thereby closing off capital, innovation, and expertise to enter the system. These choices disrupted institutional integrity, weakened accountability, and left key infrastructure vulnerable to neglect and capture. Most of what has gone wrong in the water sector began with how it was governed.

A major turning point came with the National Water Act 36 of 1998 that nationalised South Africa's water resources, placing them under state control and making all water use subject to state authorisation. According to DWS, roughly 80,000 water use licences are in effect. The Act explicitly directs officials to factor in race and gender criteria into licensing decisions, as part of national transformation targets.<sup>24</sup> However, rather than advancing the constitutional promise of access to water, political interference has added layers of uncertainty and additional administration delays and costs.

The effects of this breakdown are materialising in the form of widespread water outages – or “water-shedding” – which pose serious risks for business and inhibit the country's growth potential. Water infrastructure failures are no longer confined to smaller towns or more rural areas; some of the richest, most densely populated cities, such as Johannesburg, are encountering more frequent water cuts.

This breakdown has also created fertile grounds for corruption. A revealing example is the lucrative business of water tanker operations that developed in response to water shortages. Both the Limpopo drought of 2015 and Cape Town's “Day Zero” created opportunities for the private sector to profit from the sale of water. Specifically, during Cape Town's severe drought, private vendors began selling water, tankers, pumps, and filters online to profit.<sup>25</sup>

The growth of the water tanker industry has opened the door for organised criminal networks that exploit weak oversight and profit from breakdowns in public supply. These groups – often referred to colloquially as “water tanker mafias” – secure contracts through bribery, sabotage infrastructure to extend their operations, illegally sell municipal water, extort residents, and in some cases, tamper with supplies to artificially drive-up demand. The rise of tanker mafias is part of a broader pattern of flawed policy choices that have opened multiple avenues for exploitation and management.

So, while these policy choices are the root of the crisis, their effects are most visible in taps running dry. For this reason, although policy reform should be the priority, it must be met with practical steps to stabilise service delivery. Approaching it in this manner, because of the nature of the interventions, will both relieve the pressure on the ground and reinforce the broader policy reform efforts.

To fully assess the state of water systems in South Africa, the following section will explore both the Blue Drop assessment – covering the current quality of drinking water – alongside the drivers of decline and the urgent need for sustainable solutions to ensure reliable access to safe, dependable water supply across all consumption demands.

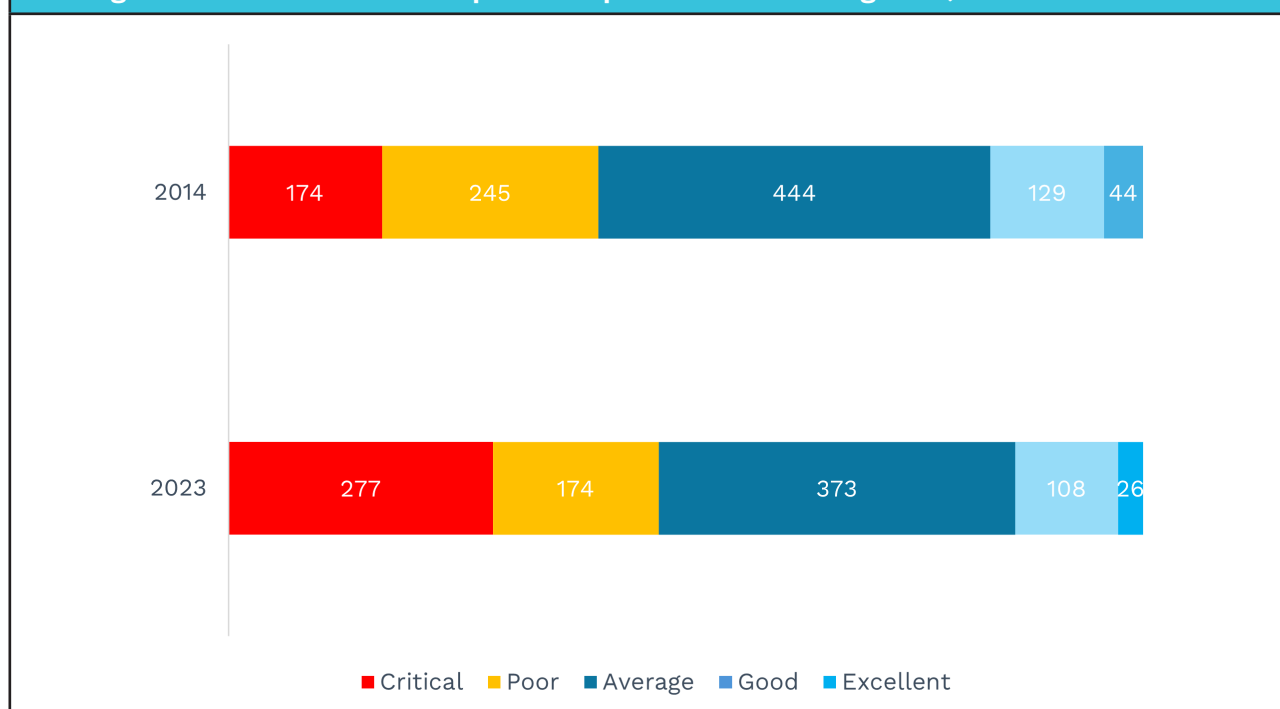
## Reality on the ground

The late Luna Leopold, a prominent American hydrologist and geomorphologist, aptly stated, “The health of our water is the principal measure of how we live on the land.”<sup>26</sup> The 2023 *Blue Drop Report*, released by the Department of Water and Sanitation (DWS) presents the findings from the 2021-22 audit cycle and offers an in-depth look at the current state of drinking water quality in South Africa.<sup>27</sup>





**Figure 4: National Blue Drop scores performance categories, 2014 and 2023**



Source: *Blue Drop Report, 2023*; <sup>28</sup> Own illustration

Figure 4 illustrates the decline in drinking water quality over the past ten years. In 2023, nearly 30% of WSSs were classified as being in a critical state, requiring “urgent intervention for all aspects of the water service business”.<sup>29</sup> This marks an increase of 103 WSSs, rising from 174 in 2014 to 277 in 2023. The decline in performance is further highlighted by the reduction in systems achieving Blue Drop Certification, with only 26 WSSs meeting the standard in 2023, compared to 44 in 2014.<sup>30</sup>

Figure 5 provides an overview of what it means for a WSS to achieve Blue Drop Certification. WSSs scoring above 95% receive Blue Drop certification – indicating excellent performance – while those scoring below 31% are classified as being in critical condition.

**Figure 5: Water supply system performance categories and scores**

Categorisation			
Key	Condition	Score	Description
	Excellent	≥95-100%	Excellent situation, need to maintain via continued improvement.
	Good	≥80-<95%	Good performance, some room for improvement.
	Average	≥50-<80%	Average performance, ample room for improvement.
	Poor	≥31-<50%	Very poor performance, need targeted intervention towards gradual sustainable improvement.
	Critical	0-<31%	Critical state, need urgent intervention for all aspects of the water services business.

Source: *Blue Drop Report, 2023*; <sup>31</sup> Own illustration

In terms of physical water infrastructure stock, the proportion of households with access to piped or tap water has increased only modestly over the past two decades, from 86.5% in 2004 to 87.7% in 2024.<sup>32</sup>

However, this national average conceals stark provincial disparities. The Western Cape leads with near-universal access at 99.0% of households enjoying access to piped or tapped water, followed by Gauteng at 98% and the Northern Cape at 95.1%. In stark contrast, access in Limpopo has dropped to just 62.9% in 2024, down from a high of 84.0% in 2010. The Eastern Cape has similarly regressed, declining from 79.2% in 2012 to 69.9% in 2024.<sup>33</sup>

This limited access has very real effects. For instance, in Limpopo 18% of households take between 31 and 60 minutes to fetch water. In KwaZulu-Natal, this is the case for 31% of households. By contrast, every household in the Western Cape reported fetching water in under 30 minutes.<sup>34</sup>

Beyond access, the reliability of water supply is another important indicator of ageing or inadequate water infrastructure. Nationally, in 2024, 33.7% of households reported water interruptions lasting at least two days, and 13.9% of households reported water interruptions every week.<sup>35</sup>

However, the burden of these interruptions is not equally shared. In Mpumalanga, the Northern Cape and Limpopo, 66.2%, 58.0%, and 52.0% of households, respectively, reported water interruptions lasting at least two days in 2024. The North West (49.6%) and Eastern Cape (47.6%) followed closely. In KwaZulu-Natal, close to 40% of households reported interruptions every week. By contrast, only 5.6% of households in the Western Cape reported interruptions that lasted at least two days and only 0.8% of households reported interruptions every week.

Gauteng presents a muddled picture. Although the province receives a lot of media attention for its water supply issues – often suggesting the province is in crisis – the underlying data suggests a more nuanced situation. In 2024, only 3.3% of households reported interruptions every week, while 52.6% reported no interruptions at all. The bulk of households fall somewhere in between: 22.4% reported interruptions a few times per year, 13.9% a few times per month, and 3.4% once per month.<sup>36</sup> This indicates that although Gauteng is not facing the constant disruptions seen in some rural provinces, its residents are living with inconsistent and unreliable service. The data also points to a deeper infrastructure problem. In 2024, 23.4% of households reported interruptions lasting at least two days, up from 15.4% in 2022, suggesting that the water interruptions are becoming longer and harder to resolve.

Overall, these figures point to a shift in the nature of water inequality – the concern is now less about whether there is a tap nearby, and more about whether the tap delivers water reliably.

As South Africa's population grew by about 21.9% in a decade, from 51.7 million in 2011 to 63 million in 2024, the demand for water has naturally increased.<sup>37</sup> However, despite this rising demand, per-capita water consumption has remained relatively constant, fluctuating between 191 and 218 litres per day over the last decade.<sup>38</sup>

This is still higher than the global average of 173 litres per person per day – a difference which is partly explained by the high levels of municipal non-revenue water. Currently, around 41% of water in the system is classified as non-revenue water, generating no revenue for municipalities. This includes losses from theft, unbilled consumption, and leaks, with leakages alone estimated to account for about 35%.<sup>39</sup> While stability in individual water use has mitigated some pressure, the rise in absolute demand due to population growth and the increasing formalisation of housing continues to strain the existing water infrastructure. Forecasts indicate that by 2030, demand will exceed supply by 10%.<sup>40</sup>

Compounding this issue is the deteriorating efficiency of the existing water infrastructure. Between 2016 and 2023, water losses rose by 4.3%, reaching 40.8% of total system input.<sup>41</sup> The Infrastructure Leakage Index (ILI) has worsened from 4.0 in 2013 – indicating well-managed physical losses – to 7.0 in 2023 – indicating poorly managed physical losses. In 2023, non-revenue water (NRW) reached 2.08bn m<sup>3</sup> per year, amounting to 47.4% of total system input. Several provinces have water losses exceeding 50%.<sup>42</sup>

There is an urgent need for increased investment in water infrastructure in rural areas. Provinces like Limpopo, the Eastern Cape, and Mpumalanga remain severely underserved.

Even though more people across the country now have access to water, the quality and reliability of water systems have worsened, as shown in the 2023 Blue Drop report. At the same time, many people in rural areas still live in poor conditions. These two factors –declining system performance and ongoing rural underdevelopment – widen the gap between rural and urban areas, making existing inequalities worse.<sup>43</sup>

There is a great deal of evidence from across South Africa of communities battling for regular access to safe drinking water. One stark example is the Mafube Local Municipality, which received the lowest score in the Blue Drop Report, at just 4.3%.<sup>44</sup> In Mpumalanga, the Dipaleseng Local Municipality scored 7%, followed by Kamiesberg Local Municipality with 8%.<sup>45</sup> All three municipalities have attracted media attention due to concerns over access to safe drinking water and issues of corruption and mismanagement of water infrastructure funds.<sup>46</sup>

There are several factors contributing to this decline and the risks that exacerbate it.<sup>47</sup> Among these are non-payment of contractors, laboratories and service providers, leading to equipment failures, dysfunctional pumping and treatment infrastructure, and disruptions to the provision of essential services.<sup>48</sup> Vandalism and theft of electric cables, equipment and civil structures further degrade infrastructure.<sup>49</sup> Several WSSs are operating beyond their design capacity, and numerous WSSs have not undergone necessary infrastructure upgrades, extensions and refurbishments. The situation is compounded by the presence of boreholes that are not operational, and the lack of flow monitoring.<sup>50</sup>

Furthermore, overall technical and management capacity, and the competence of key personnel – such as managers, superintendents, process controllers, engineers, technicians, technologists and scientists – vary significantly. However, this is not entirely the result of a skills gap. It stems from long-standing policy decisions, including politicisation of the civil service, cadre deployment, and the breakdown of skills development institutions such as SETAs, TVET colleges, and public schools.

These policies have weakened the pipeline of qualified professionals and have enabled appointments based on political criteria rather than technical competence. The result is that many institutions operate without the skilled personnel required to do everyday tasks like ensuring water quality, responding to system failures, and notifying water users of non-compliant water quality, which poses serious health risks.<sup>51</sup>

As for the latest Blue Drop Report, by 2023, 45% of municipalities cannot provide the most basic information, often including monthly consumption figures. If the problems of service delivery and water losses are to be resolved at all, the problem must first be understood – regular and accurate data is key. For this, communication between municipalities and national authorities should be streamlined and free of duplication. Resolving many of these problems involves additional budget, skills and capacity, acutely so in small and rural municipalities where the large number of boreholes and indigent consumer bases make it much more difficult to accurately measure supply and consumption. Given that these municipalities make up around 25.3% of the total water use and 31.9% of the population, the government can achieve significant, immediate gains by prioritising improvements in these municipalities.<sup>52</sup>

It is evident that South Africa's water infrastructure is under great pressure.<sup>53</sup> The lack of safe, reliable water poses a great threat to the economy and food security. The escalating water troubles South Africa's largest poultry producer, Astral Foods, has experienced over a number of years at its plant in the Lekwa municipality are a case in point.<sup>54</sup>

After apartheid ended in 1994, South Africa experienced substantial growth in formal housing as part of efforts to improve living conditions, rising from 64% in 1996 to 84.1% in 2024.<sup>55</sup> However, this is in support of the argument made by Katy Eales, an independent consultant and researcher, in 2011 that the South African government has worked hard to ensure everyone has access to water and sanitation; the local government restructuring process has led to rapid infrastructure expansion, but institutional capacity to manage these services has not kept pace.<sup>56</sup>

The government introduced policy changes, restructured institutions and invested heavily in building infrastructure. However, while expanding access to water is relatively easy, maintaining and running these services reliably is much more challenging.<sup>57</sup> The latter requires effective management and operation, maintenance, revenue collection, and building good relationships with communities.

## Where to from here?

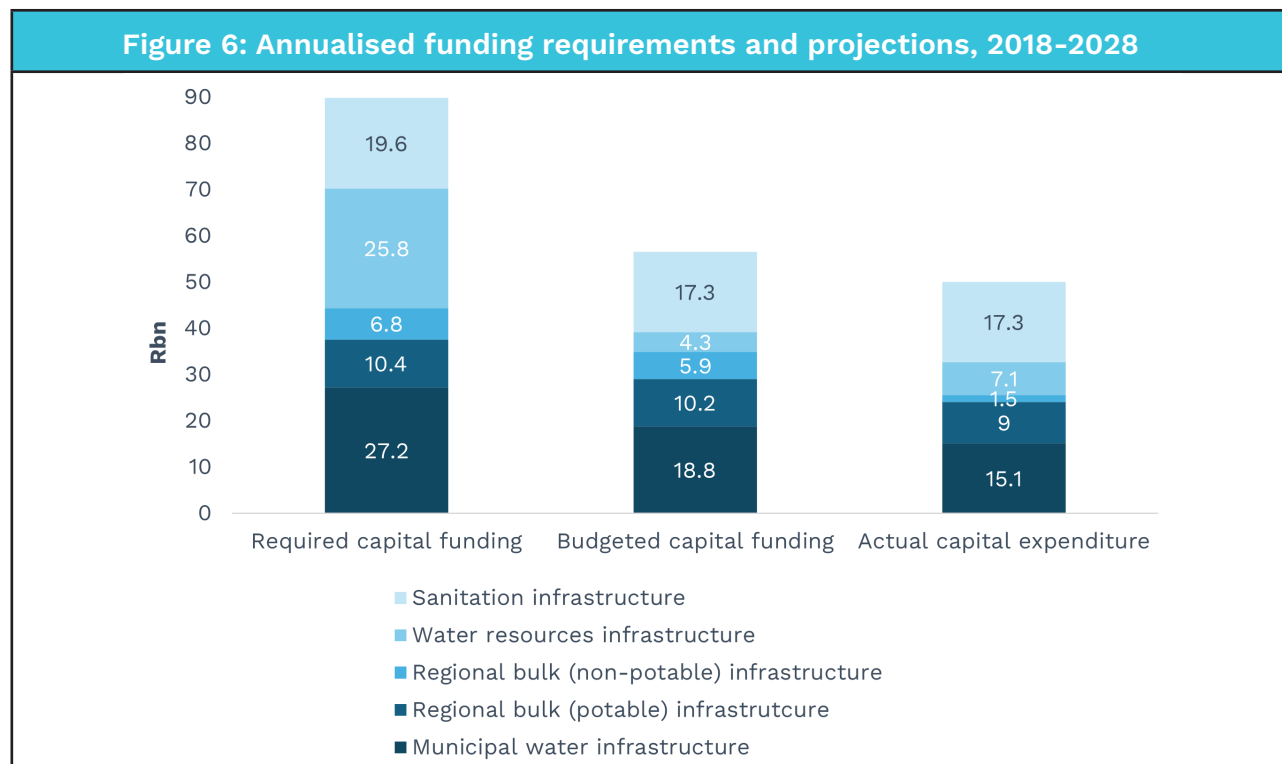
To improve long-term water security, South Africa should prioritise reducing physical water losses and NRW across all municipalities. The NDP sets a clear target to reduce NRW by 15% below the business-as-usual trajectory by 2030.<sup>58</sup>

Modelling by the DWS shows that if urban water losses are reduced from 35% to 15%, and domestic per capita consumption is brought down from 237 to 175 litres per day, the country could move from a projected 10% water deficit in 2030 to a 3% surplus.<sup>59</sup> Achieving this will require a dual focus on efficiency and infrastructure investment, alongside diversifying water source options. This includes re-use, desalination, increasing groundwater use, and improving surface water yield. These interventions are essential to close the supply-demand gap and prevent a national water crisis.



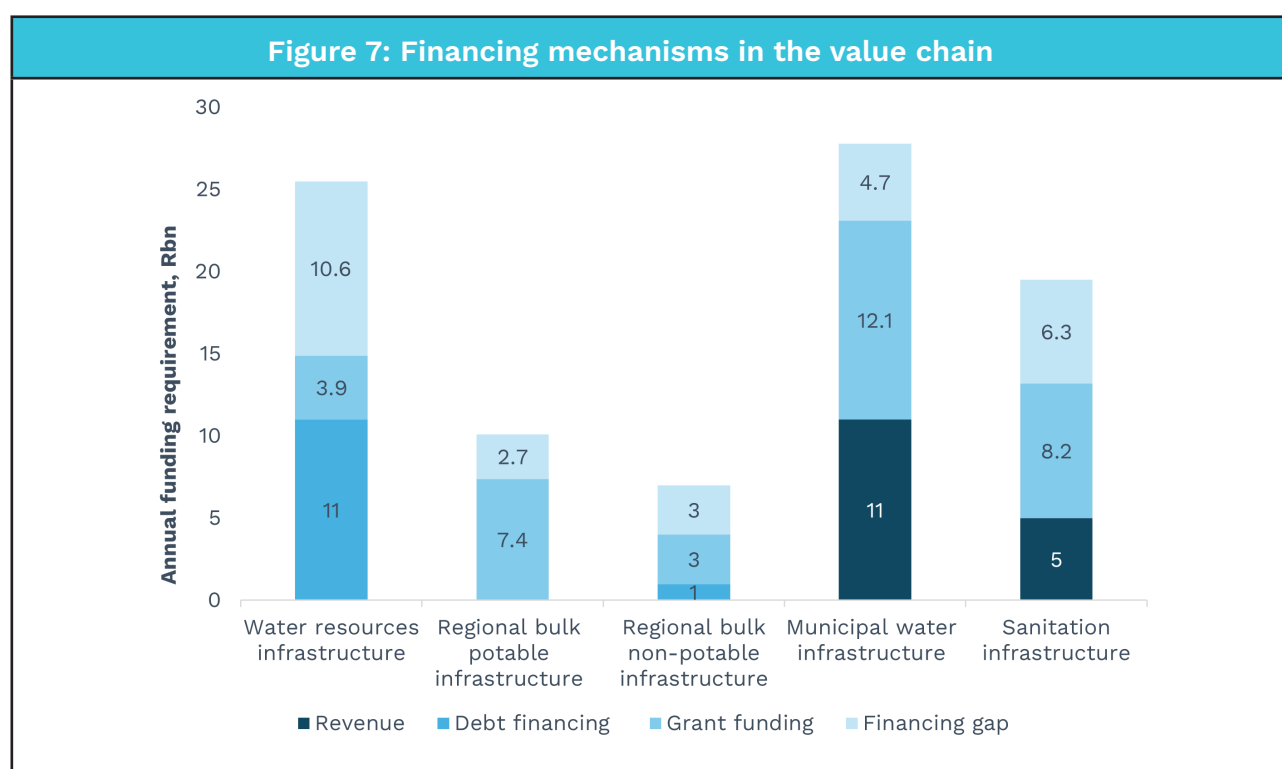


The National Water and Sanitation Master Plan (2019) estimated that achieving universal access to water and sanitation over the ten-year period from 2018 to 2028 would require R898bn in funding. At the time, only R565bn was projected to be available annually, leaving a funding shortfall of R333bn per year.<sup>60</sup> Figure 6 presents the breakdown outlined in the Master Plan, showing the funding required, amounts budgeted, and actual capital expenditure.



Source: National Water and Sanitation Master Plan (2019).<sup>61</sup>

Figure 7 illustrates the financing mechanisms expected to support investment across different parts of the water value chain. It breaks down the projected annual funding flows by source.



Source: Green Cape, 2025 Market intelligence report;<sup>62</sup> Own illustration

Municipal water and sanitation infrastructure together account for the largest share of required funding; R27.8bn for municipal water infrastructure and R19.5bn for sanitation infrastructure annually. Despite these needs, projected revenue and debt financing fall far short.

Municipalities face a funding gap of R12.1bn for water infrastructure and R8.2bn for sanitation infrastructure, even after accounting for expected debt and revenue contributions. This financing pressure at the local level is a serious obstacle to restoring and maintaining important water infrastructure and is compounded by institutional limitations at the municipal level, including poor cost recovery and billing. These challenges have also weakened the creditworthiness of many municipalities, making it harder to attract private finance or engage in blended financing models.

Municipalities typically rely on a mix of grants from national government, property tax collected, and service tariffs to fund water infrastructure. Tariffs account for around 80% of all municipal funding in the water and sanitation sector. However, since many municipalities fail to recover operating costs because of non-payment from users, large proportions of households benefit from the free provision of basic services.

There are substantial financial demands in getting the country's infrastructure networks back on track. The government alone cannot fund and manage the restoration and expansion of these systems. It faces budget constraints, competing priorities and limited technical expertise, which make it ever more difficult to handle the extensive maintenance and expansion needs of the country's infrastructure effectively.<sup>63</sup> To turn around the deterioration of the infrastructure network, local municipalities and national government need to collaborate proactively with the private sector.

The government needs assistance and the opportunity for collaboration exists. The DWS, for example, recognised this and recently encouraged municipalities to seek partnerships with private sector counterparts.<sup>64</sup> The director-general of the DWS, Sean Philips, highlighted that metros and municipalities struggle to secure funds for maintenance and repairs. In a July 2024 media briefing, Mr Philips announced the establishment of a water partnership office fund in collaboration with the SA Local Government Association (SALGA) and Development Bank of Southern Africa (DBSA). This office has the mandate to provide funds to municipalities to facilitate partnerships with the private sector.<sup>65</sup>

As a result of various local and national government entities recognising the need to collaborate with the private sector, at the time of the 2024 national budget, 15 projects were at the inception phase, 19 projects at the feasibility study phase, six have completed the feasibility studies, and 10 projects were starting the procurement process.

In the 2024 *Budget Review*, National Treasury noted that an infrastructure finance and implementation support agency would be established over the course of the 2024/25 financial year, to coordinate the planning and preparation of large projects and to engage directly with private financial institutions.<sup>66</sup> Since then, there has been no new communication on the establishment of such an agency.

Public-private partnerships (PPPs) open various market opportunities for collaboration between companies and government entities to improve water infrastructure.<sup>67</sup> These partnerships can help resolve critical needs such as repairing, refurbishing, replacing, maintaining and expanding systems.<sup>68</sup>

In cases where municipalities or the government need to improve service efficiency without relinquishing control over their assets, the “affermage” or lease agreement model allows the public sector to retain ownership of the infrastructure while outsourcing day-to-day operations to the private sector. Private entities are contracted to manage daily operations, conduct maintenance and protect the water supply system – these entities do not own the infrastructure but are responsible for its efficient management. The public and private counterparts would negotiate a contract outlining the scope of work, duration of the agreement and the performance metrics that will determine the compensation structure. Private entities are compensated based on performance metrics, such as service reliability, water quality and customer satisfaction. This performance-based compensation incentivises the private partner(s) to maintain high standards and deliver quality service.

## Case studies

In recent years, South Africa has seen several successful PPPs and private-sector interventions that helped turn around failing water infrastructure services.

South African Water Works (SAWW), a private company that manages water concessions in KwaZulu-Natal and Mpumalanga, exemplifies the success of public-private collaboration in a lease agreement model. SAWW manages Siza Water (RF) (Pty) Ltd. and Silulumanzi (RF) (Pty) Ltd., two water service providers, and serves as an example of the potential of collaborative efforts in the water sector. Both service providers began operation in 1999 under 30-year agreements – one servicing the Ballito area within the iLembe District Municipality, including less affluent communities at Shakaskraal, Shakashead, Shayamoya, Etete, and Nkobondo; the other servicing areas within the City of Mbombela.<sup>69</sup> Siza Water is involved in construction, maintenance, billing and debt collection, and other operational activities.

One of its standout achievements is the construction and operation of a direct water reuse plant that produces three million litres of potable water daily. This success resulted in Siza Water being rated the third-best water service provider in South Africa in 2023. Its technical excellence has also been acknowledged through several accolades, including South Africa’s Best Water Service Provider (2014), the Wilson Award of Excellence (Fraser & Shalokraal WWTW), the Wise Award, and ISO certifications across environmental, safety, and quality systems.<sup>70</sup> Moreover, Siza Water managed to cut water losses (NRW) from 50% at inception to 8% in 2021, and achieved a 97% bill collection rate for services provided.<sup>71</sup>

Silulumanzi, meanwhile, supplies 120 million litres of safe drinking water to 400,000 consumers daily and is the only service provider in Mpumalanga to have received Blue Drop certification in 2023.<sup>72</sup> These accomplishments underline how PPPs can effectively improve water infrastructure and service delivery to benefit the communities. They set a high standard for public and private sector cooperation.

## Recommendations

As outlined earlier, many of the operational and technical failures in South Africa's water infrastructure are symptoms of policy failures. Reversing the decline therefore requires dealing with the underlying governance and policy environment that enabled it, particularly by depoliticising water governance.

Responsibility for water management must be transferred from local governments to an independent regulatory body. Municipal control over water revenues has often resulted in funds being diverted away from functions such as billing and maintenance. An independent structure, insulated from political interference, would help ensure that revenues are reinvested into the system and that service delivery is properly managed.

Furthermore, to alleviate the current burden on the water infrastructure network and reverse the negative effect it has on the quality of drinking water, we recommend:

- The most urgent step is to eliminate corruption and ensure that qualified professionals are appointed to all relevant institutions, including water boards and state-owned entities responsible for water supply. This is important because without competent leadership and operational integrity, no investment or technical intervention will deliver lasting results.
- Improve municipal asset management. This includes establishing the most suitable PPP model to fulfil the needs of municipalities and the national water infrastructure network;
- Implement a targeted skills development program to address inconsistency in technical and management capacity. Standardise training across all levels of management to ensure that all personnel meet minimum competency standards. Mandate continuous professional development. Academic institutions and private sector experts can fulfil this role. This will ensure personnel stay updated with the latest industry standards, technologies and best practices, and foster a culture of excellence and accountability;
- Give local water management teams greater autonomy, both in terms of decision-making and in hiring. When coupled with targeted training, this will enable personnel to tailor solutions specific to local problems and priorities;
- Streamline communication channels between government departments and municipalities, and simplify data capturing mechanisms;
- Prioritise water loss and Non-Revenue Water management; and
- Prioritise investment in water infrastructure in rural areas.

In the context of a national government under pressure from rising expectations and tight finances, and numerous municipalities under similar pressures, there are ample opportunities for businesses, working with communities and local government, to prioritise and invest in water infrastructure maintenance, expansion, and upgrading. Given the country's water-scarce status, the adequate management of available water resources is crucial for future job creation and growth prospects.



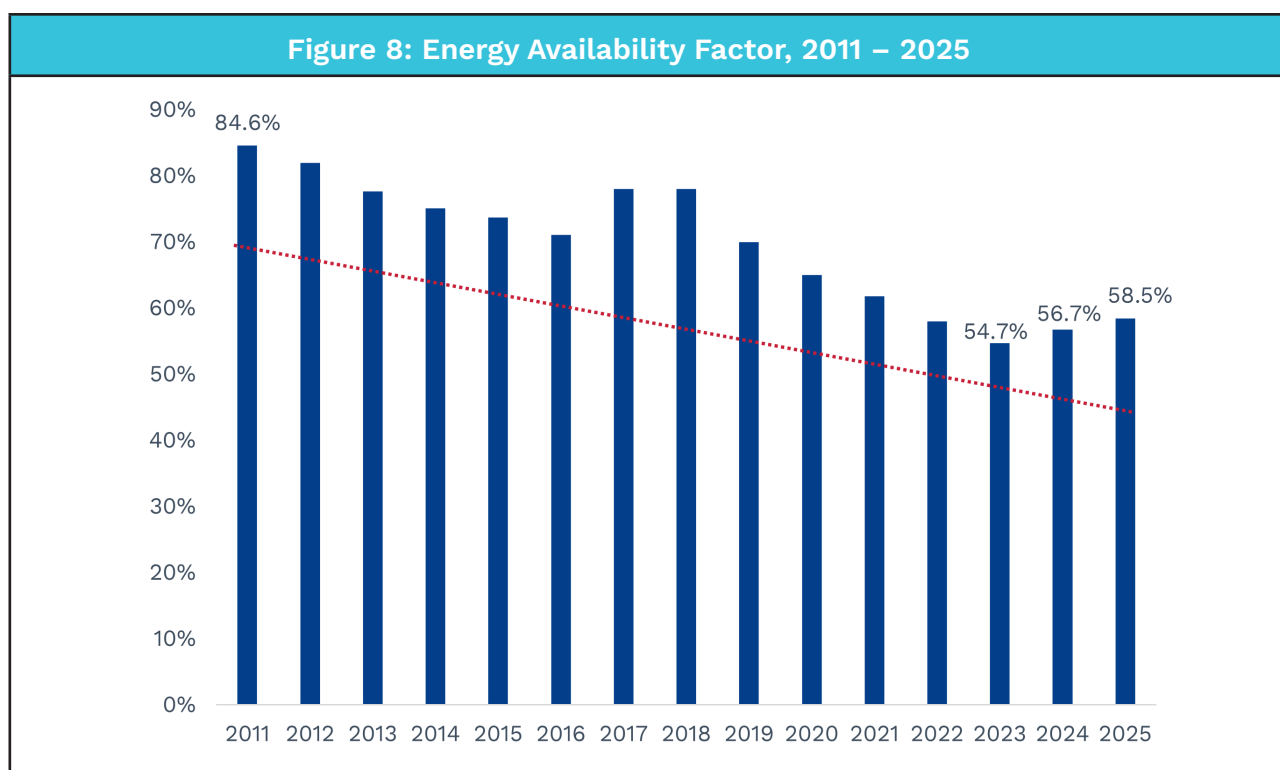
# Electricity – Two decades of darkness

A stable supply of power is essential to the operation of a modern economy. Historically, competitively priced electricity was an important economic advantage of South Africa's. For the past 15 years, the steady supply of electricity has not been guaranteed. In a rare instance of consensus, South Africa's power crisis is acknowledged to impose a hard limit on the country's economic growth potential.

## Reality on the ground

South Africa has experienced almost two decades of loadshedding (2007-2025, with additional "load limiting" or "load management" implemented in some areas during 2023 and 2024). The origins of this crisis need not be explored here, but it is worth noting that South Africa has singularly failed to deal with it over this prolonged period. Ricardo Hausmann, a development economist at Harvard University and former planning minister of Venezuela, notes that this is exceptional globally: no other country that has experienced power shortages has seen them persist for so long, a situation that speaks to the failure of political mechanisms to drive a solution.<sup>73</sup>

The state of South Africa's electricity supply system is captured in its Energy Availability Factor (EAF), which expresses the share of installed generation capacity available to produce power. It is a measure that takes account of energy losses, both those resulting from planned maintenance and those resulting from equipment failure.



Source: Eskom Weekly System Status Reports; note 2025 only includes the first six months of the year;<sup>74</sup> Own illustration

The decline is apparent from figure 8, though it is important to understand the data behind it. In 1999, the EAF stood at 91%.<sup>75</sup> When the first rounds of the power crisis hit, in 2007/08, the EAF was at a still respectable 84.8%. In 2012/13, it dipped below 80%, in 2018/19, below 70%, and reached just 56% in 2022/23. In other words, over the course of this period, South Africa's EAF has fallen by a staggering 35 percentage points. However, since the peak of loadshedding in 2023, the EAF has stabilised somewhat to 58.5% for the first 6 months of 2025. As a result, loadshedding has been kept at a minimum in 2024 and the first half of 2025.

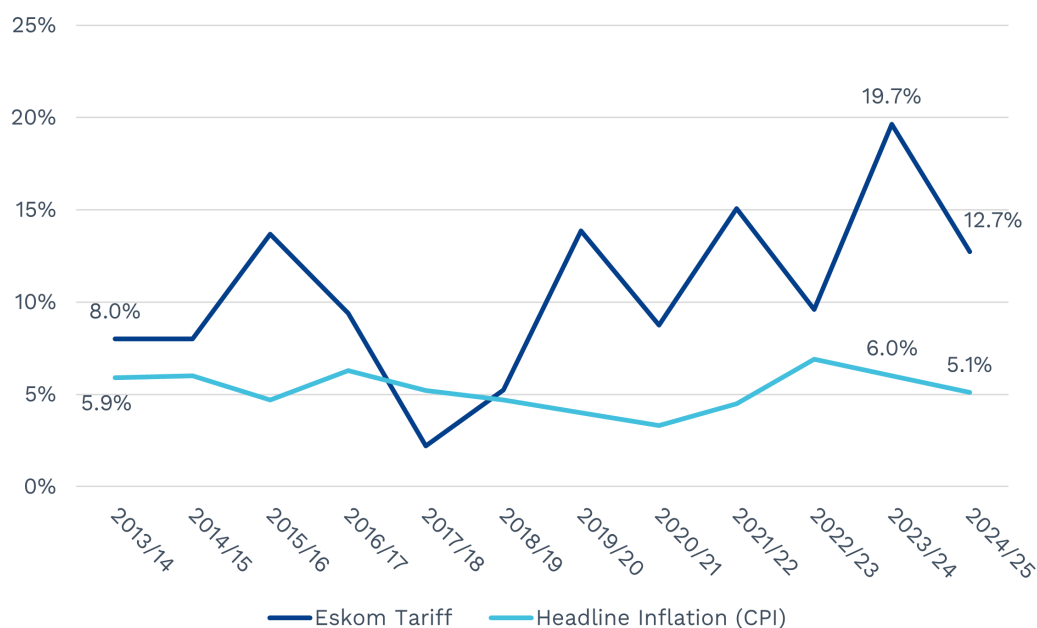
In brief, the decline in the EAF – or the electricity supply system more broadly – can be ascribed to the combined effects of decisions made and paths taken. The initial crisis arose from a failure to invest in generation capacity. By the time new power stations had been commissioned, damaging shortages had become part of life. That newly built stations significantly exceeded their budgets and took far longer to complete than planned exacerbated the shortages. Over time, postponing necessary maintenance repeatedly could temporarily delay episodes of loadshedding, but ensured that in the future, plant failures would be more severe. This has now become a recurrent concern.<sup>76</sup>

Eskom was further used to promote goals other than power provision, notably to advance the government's empowerment agenda through procurement – it also became a central site of corrupt extraction. Indeed, the construction of new power stations at Medupi and Kusile was mired in controversy for the benefits accruing to the ruling party and its cronies, and for the stations' design flaws.<sup>77</sup> In addition, there was a longstanding reluctance, probably ideological, to countenance the private provision of electricity. It was only in 2021 that the private sector was permitted to operate generating facilities of up to 100 megawatts (MW), a cap that was removed the following year.

On top of this, as figure 9 depicts, electricity tariffs have been rising at a rate far above that of inflation, so not only is power less readily available but it is also more expensive. In 2022, Sean Moolman, chief operating officer at Power Optimal, noted the following on overall average increases:<sup>78</sup>

In the period from 1988 up to the 2008 electricity crisis, electricity tariff increases did not keep tread with inflation. This was partly due to government policy to keep electricity tariffs as low as possible for poor communities, but also due to Eskom having an oversupply of electricity (in the 1990s) and not investing in new capacity (in the 2000s). Between 1988 and 2007, electricity tariffs increased by 223%, whilst inflation over this period was 335%. From the 2008 electricity crisis onwards, there is a clear and sharp inflection point for electricity tariffs in South Africa. From 2007 to 2022, electricity tariffs increased by 653%, whilst inflation over this period was 129%. Thus, electricity tariffs increased four-fold (or quadrupled) in real money terms in 14 years.

**Figure 9: Eskom tariffs vs. headline inflation (Consumer Price Index [CPI]), 2013-2024**



Source: Statistics South Africa (Stats SA), CPI Headline (P0141), 2024;<sup>79</sup> Eskom Integrated Report, 2013-2023;<sup>80</sup> Own illustration

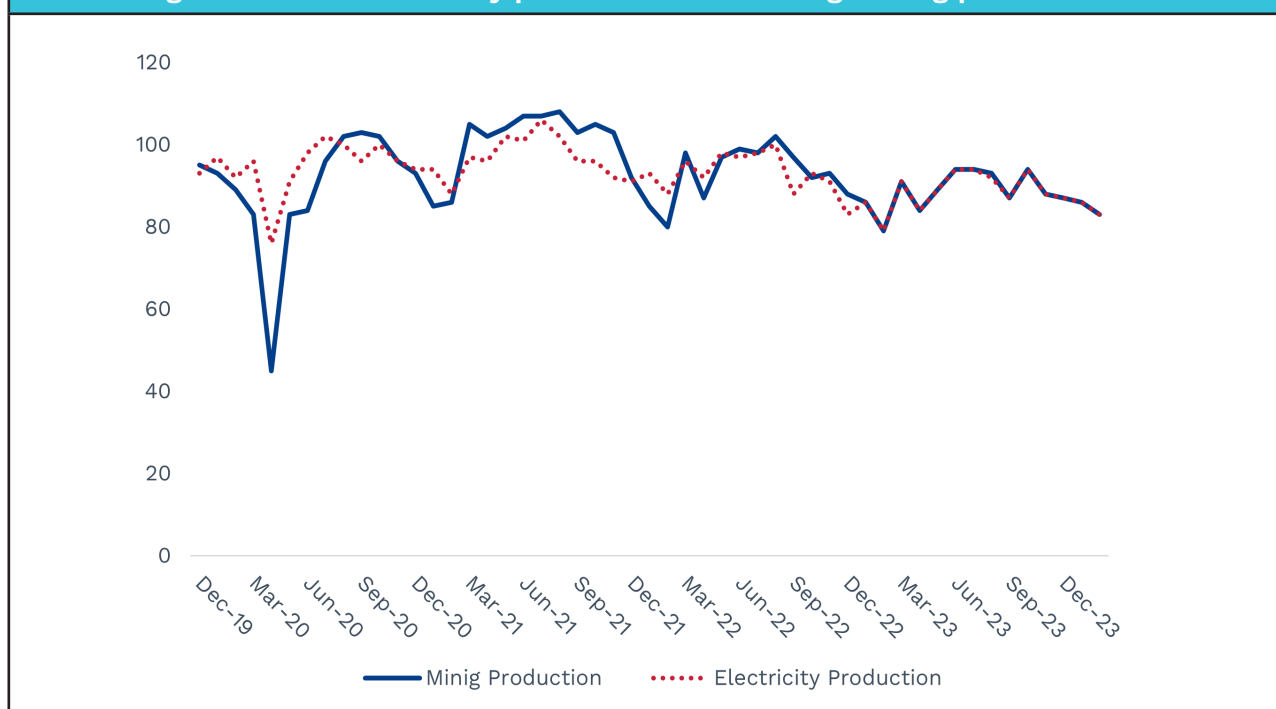
The impact of this has been dire. A study by Nova Economics for Eskom Holdings in 2020 – before the dramatic escalation of loadshedding from 2021 to 2023 – attempted to estimate the cost of loadshedding between 2007 and 2019. Their report commented:<sup>81</sup>

We have estimated that loadshedding cost the South African economy nearly R35bn in the 12 years between 2007 and 2019. Had all the loadshedding experienced over the period taken place in a single quarter in 2019, it would have resulted in a 5% contraction real q/q GDP growth. To put this into perspective the total cost of loadshedding at R35bn is roughly equivalent to the impact the 2008/09 financial crisis had on GDP growth.

A 2023 review by the South African Reserve Bank (SARB) estimated that the effect of loadshedding the previous year had been to reduce GDP growth by between 0.7 and 3.2 percentage points. The SARB noted that other institutions had put this at between 0.4 and 4.2 percentage points.<sup>82</sup> Earlier in the year, the SARB has estimated the daily cost of the power crisis — at the time, cutting power for between six and twelve hours a day — was costing the economy between R204 million and R899 million a day.<sup>83</sup>

This has been felt in individual sectors. In mining, an analysis by Nedbank put forward a basic equation of a 2% decrease in annual mining output for every 1,000 gigawatt hours (GWh) of loadshedding. Escalating electricity costs were altering the cost structure of the industry and now accounted for 10% to 15% of the costs of mining operations.<sup>84</sup> The 2023 annual overview of the Minerals Council South Africa, an association representing the interests of the mining industry, repeatedly highlights the constraint to the industry that the electricity crisis represented.<sup>85</sup> Hugo Pienaar, chief economist at the Minerals Council, has explained this visually with a graph (figure 10) linking mining output to that of electricity. The trends line up closely.<sup>86</sup>

Figure 10: How electricity production is affecting mining production



Source: Minerals Council, Facts and Figures Pocketbook 2023;<sup>87</sup> Own illustration

For the agricultural sector, the electricity crisis strikes at on-farm production – crops and livestock – as well as on the broader population. Electricity is essential to power modern agriculture. For example, in South Africa’s often dry conditions, irrigation is necessary – some 20% of maize, 34% of sugarcane and around half of wheat is produced under irrigation.<sup>88</sup> Irrigation systems require power. Indeed, there are darkly amusing anecdotes of farmers having to drive out to their fields in the dead of night to switch pivots back on.<sup>89</sup> In the livestock economy, power is necessary to run chicken breeding and dairy operations, for example. Where power fails, commercial farming of this nature cannot be done, as chickens die, cows cannot be milked, and the milk cannot be stored.

As Agri SA argued in 2022:<sup>90</sup>

Electricity is central to modern farming practices and the recent increase in load-shedding has seriously disrupted farming operations. Pumping stations, irrigation, cooling and other systems all depend on power supply. While some farmers have the means to move away from the power grid, most are unable to do so. This is especially true for the most vulnerable small-scale farmers. Farmers forfeit their water quotas for irrigation purposes when the power is off — an irrecoverable loss that paralyses farms.

Downstream activities are also vulnerable. These include activities such as milling and baking, and the cold storage facilities that are required for moving perishable products from farm to market.

This is imposing considerable costs on the agricultural sector, most notably by requiring expensive investments in generators to complement the compromised electricity system, and sizeable outlays for diesel to power them. This comes at the expense of investment in expansion and innovation.<sup>91</sup>

Associated with the economic costs of loadshedding has been the destruction of employment. Towards the end of 2023, Kgosientsho Ramokgopa, the electricity minister, said in an address to power station employees that 640,000 people had lost their jobs in 2022 as a result of loadshedding and that a further 800,000 could be lost in that year.<sup>92</sup>

The challenges posed by loadshedding also impact specific sectors such as food production. RCL Foods, a prominent player in the food industry, witnessed a substantial 19% increase in diesel usage between the 2022 and 2023 financial years directly attributed to loadshedding. This surge in diesel consumption has led to higher operational costs, which retailers have passed on to consumers.

Tiger Brands, another major player, highlighted in its 2023 Annual Report the staggering impact of loadshedding costs, amounting to a hefty R126 million. This financial strain notably affected its bakery business, particularly in the production of staple items like bread. Similarly, Libstar, another significant food manufacturer, reported that the expenditure on diesel in the first six months of 2023 surpassed the total expenditure for the entire 2022 financial year.<sup>93</sup>

The South African Institute of Chartered Accountants compiled data on diesel costs incurred by leading retailers during their 2023 financial year due to loadshedding. The Shoprite Group incurred costs amounting to R1.3bn, the Spar Group faced R1bn in costs, Pick n Pay spent R522 million and Woolworth Foods incurred R300 million.<sup>94</sup>

Notably, Shoprite, Africa's largest retailer, emerged with the highest diesel expense among its peers. This observation underscores the significant financial burden that loadshedding imposes on retailers, especially those with extensive operational footprints. Given the scale of these expenses, retailers cannot absorb them entirely. Consequently, the costs are passed on to consumers in some form or another. Such a scenario manifests through price adjustments across various products and services offered by these retailers.

However, as noted earlier, South Africa has not experienced the extreme levels of loadshedding seen in 2023. In 2024, loadshedding was suspended for more than nine months, and the first half of 2025 has seen only minimal interruptions.

Although this is mostly due to improved management of the coal fleet and fewer equipment breakdowns, other factors also play an important role. The overall weak state of the economy has reduced the demand for electricity.<sup>95</sup> Additionally, the rising cost of electricity has further suppressed demand, as both businesses and households have been cutting back on electricity usage to manage their expenses.<sup>96</sup>

Another, perhaps more obvious factor is the growing urgency among South Africans to become at least partly self-sufficient in their energy needs.<sup>97</sup> This includes the widespread installation of rooftop solar panels and switching to gas for cooking, solar-powered hot water geysers, and investing in energy-efficient appliances. All these measures have collectively reduced the demand for electricity from the national grid.

However, it is very important to recognise that many of the trends outlined above portend Eskom's descent into a "death spiral".<sup>98</sup> The decline in sales volumes Eskom experiences as electricity prices increase and reliance on the grid decreases forces the utility to raise prices even further to cover its fixed costs and compensate the decline in revenue from lower sales volumes.

To keep the lights on and extend the run of the loadshedding-free period, electricity infrastructure investments must be made a priority. The current improvement in Eskom's capacity to generate electricity should not give rise to complacency. Instead, it is important to acknowledge the birth of the electricity market as a catalyst for the restructuring of the electricity sector in South Africa.

## Where to from here?

The government should take decisive action to provide South Africans with affordable, reliable electricity.<sup>99</sup> The first step is to remove bureaucratic regulations that impede the expansion of generation and increase the cost of producing electricity through either Eskom or independent power producers.

The government must use an unbiased approach to energy sources that selects the most practical and suitable options based on specific needs and circumstances. Renewable sources like solar and wind can be deployed quickly and in smaller, decentralised batches. However, to work at scale they require costly investments in grid expansion and electricity storage, as well as grid backup. Similarly, nuclear power is promising but currently too expensive and time-consuming to implement. Small modular reactors could be a future option but are still about a decade away.

For this reason, the current focus should be on using the existing coal fleet capacity, supplemented with natural gas. If the plants are properly maintained and operated, they can produce large quantities of dispatchable power at a low cost.

## Case Studies

Multiple developing countries offer proof that struggling and unsuccessful government-run distribution companies (DISCOMs) can be turned around through the right mix of regulatory reform and private sector participation.

Uganda's experience is a case in point. Before the concession in 2005, the Uganda Electricity Board was struggling to deal with power outages, losing 4kWh for every 10kWh of power produced.<sup>100</sup> After unbundling and granting a 20-year concession to Umeme Ltd in 2005, distribution efficiency increased by 33 percentage points, from 50% to 83%, and losses dropped from 38% to 18%.<sup>101</sup> Moreover, access to electricity through grid connections expanded more than fivefold (294,000 in 2005 to more than 1.6 million in 2022). Umeme went from being subsidy-dependent to one of Uganda's largest tax contributors by 2021.<sup>102</sup>



Delhi's power reform took a similar route. Faced with catastrophic Aggregate Technical & Commercial (AT&C) losses over 50%, the city replaced its public utility with three private distributors (BSES Rajdhani, BSES Yamuna, and Tata Power Delhi Distribution) in 2002.<sup>103</sup> Within almost two decades, losses were slashed to well below 10%. Ownership and operations were concessioned with low risk to the government.

In Karachi, the privatisation of K-Electric in 2005 led to a 23 percentage-point drop in transmission and distribution losses. Private capital funded over 1,000 MW in new generation, doubling the utility's transmission capacity and virtually eliminating blackouts in industrial zones. Smart billing and electronic payments improved collections, while the company scaled prepaid solutions even in high-theft areas. K-Electric's CEO has argued that the national power debt would be twice as high had the utility not been privatised.

These examples share common features: unbundling, cost recovery, loss reduction, and incentives that align public oversight with operational autonomy. However, most important perhaps: clarity of intent. South Africa's electricity reforms must do the same.

## Recommendations

After over a decade of economic stagnation, the South African government must focus on supplying the economy with sufficient affordable electricity to support economic growth. This is also imperative to support democratic consolidation in the medium term, which is in jeopardy if the economy does not grow. Rather than getting caught up in debates over specific energy sources and the ideological convictions that support each, priority should be given to quickly cutting costs and guaranteeing uninterrupted, cost-effective electricity. To this end:

- Remove bureaucratic regulations that slow down generation expansion and drive up cost.
- Ramp up private power generation quickly. Allow private producers to sell electricity to the grid.
- Separate Eskom into three parts: generation, transmission and distribution. Privatised generation – the goal is to create competition between Eskom's generation assets and independent power producers. Keep the transmission section state-owned and let it manage the grid to balance national supply and demand, control grid access, and create a level playing field for power producers. Distribution should be handled by a mix of municipal and private entities, depending on the area. This will allow for flexibility to ensure that the most suitable option is chosen based on local circumstances.
- Allow all power producers, whether private or public, the freedom to hire staff and handle procurement independently, free from race targets and political interference. Producing affordable, reliable power must be their primary priority.
- Prioritise payment collection. Expand the use of prepaid electricity meters to allow for consumers to pay in advance and manage their consumption better. Crack down on illegal connections and bypassed meters.
- Seek exemptions from strict green mandates to avoid the high costs involved in transitioning prematurely from coal to renewables.

- Advance the South Africa–Botswana Rail Corridor. As coal production in Mpumalanga declines with end-of-life mines, long-term supply will need to shift toward the Waterberg and Botswana coal fields, both of which have reserves with life-of-mine estimates exceeding 30 years. Realising this corridor early is crucial to secure future coal transport capacity to Eskom power stations and ensure energy security as the supply base moves northward.<sup>104</sup>

Restructuring the electricity sector is by no means a silver bullet. But being able to switch on the light with confidence will at the very least prevent us from sitting in the dark with a ticking timebomb.

## Rail, Road, and Ports

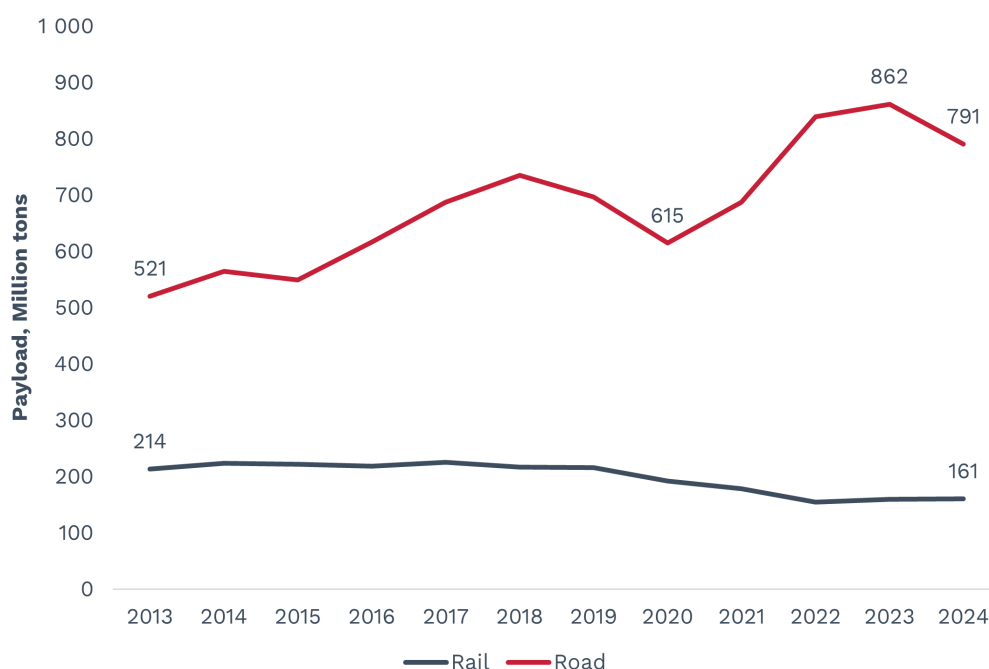
Successful economies depend on the ability to move goods, people and information quickly and efficiently. Transport forms the groundwork for development and is a fundamental component in the equation of economic growth.

### Reality on road and rail

Without effective and reliable transportation and logistics networks, the economy stutters, trade falters, and economic activities can grind to a halt. This risk was evident in the estimated R50bn in potential revenue from ore exports lost in 2022 as a result of Transnet's rail issues.<sup>105</sup> As detailed in SA's *Transport Blues*, published in September 2023 by the Centre For Risk Analysis (CRA), Transnet shipped 226 million tonnes of goods by train in 2017.<sup>106</sup> By 2022, the total had declined to 154 million tonnes, a drop of over 30% in the volume of goods shipped by train over a five-year period.

Although road freight has benefitted massively from Transnet's decline, it comes at the cost of damaged roads, more traffic accidents, and higher CO2 emissions. A freight train requires less than a third of the energy to move a tonne of cargo than a truck does over the same distance.<sup>107</sup> *Transport Blues* found the road-to-rail ratio in the country at 8:1 by tonnage in 2023.<sup>108</sup>

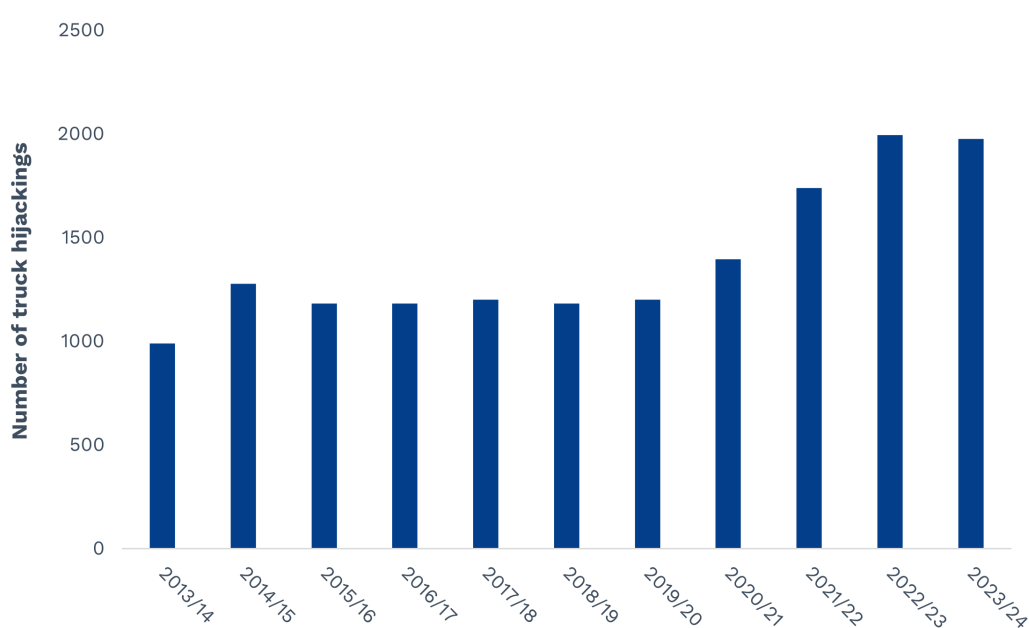
Figure 11: Rail's decline is road's gain, 2013 – 2024



Source: Stats SA, Land Transport (P7162), 2025;<sup>109</sup> Own illustration

More freight being moved on the country's roads has created additional risks and costs related to fuel, equipment breakdowns and maintenance, and the safety of truck drivers, who have been exposed to repeated blockades of the vital N3 corridor between Gauteng and KwaZulu-Natal. All these factors filter into higher operating costs in logistics, influencing the future investment decisions of farmers, miners, manufacturers, and businesses across various supply chains, as well as fuelling inflation. Many of the safety-related risks become clear when examining the steadily increasing trend shown in figure 12.

Figure 12: Number of truck hijackings, 2013/14 – 2023/24



Source: South African Police Force Annual Crime Stats, 2023/24;<sup>110</sup> Own illustration



An additional factor to consider when assessing whether the country's trade infrastructure is geared towards facilitating the easier and cheaper movement of goods, materials, and services, is the fuel price — and especially, fuel levies. Since 2008, the general fuel levy has increased by 81-87% (to June 2025); the Road Accident Fund levy rose by 127%. While international oil prices are not within the government's power to control or dictate, what does fall within the government's ambit is how its policy, legislative, and governance decisions contribute to the strengthening or weakening of the Rand. As Makone Maja, a CRA analyst at the time, wrote in *Transport Blues*: "According to the Central Energy Fund, 80% of the rise in fuel prices in general, and 86% of diesel price increases in particular, are due to crude oil price fluctuations."

## Reality at the ports

South Africa's immediate attractiveness to investors is largely explained by its abundance of natural resources. However, the country's inadequate port infrastructure severely limits the ability to export these commodities, thereby inhibiting the scale and growth of industries. The economy cannot be expected to grow if the mechanisms for trade fall short – effective trade relies heavily on the efficiency of port operations and the ability to manage the complex trade requirements.<sup>111</sup>

Figure 13 makes a compelling case that South African ports are performing poorly, both in managing the complex trade environment and in operating efficiently. Of the 405 total international ports and facilities ranked on the World Bank and S&P Global's *2023 Container Port Performance Index (CPPI)*, the Port of Gqeberha (Port Elizabeth) ranked 391<sup>st</sup>, Durban 398<sup>th</sup> and Cape Town 405<sup>th</sup> – taking the dismal last place.

Figure 13: Container Port Performance Index (CPPI)				
Container Port Performance Index (CPPI)				
Year	Cape Town	Durban	Porth Elizabeth	Walvis Bay
2020 (351 ports ranked) <sup>112</sup>	347	351	348	336
2021 (370 ports ranked) <sup>113</sup>	365	364	312	328
2022 (348 ports ranked) <sup>114</sup>	334	341	291	293
2023 (405 ports ranked) <sup>115</sup>	405	398	391	380

Source: World Bank CPPI, 2020 – 2023; Own illustration

South Africa's neighbours performed better, with Mozambique's Maputo ranked 317<sup>th</sup> and Beira ranked 347<sup>th</sup>. Namibia's Walvis Bay managed 380<sup>th</sup> position.

The top two ports on the CPPI, which is “based on available empirical objective data pertaining exclusively to time expended in a vessel stay in a port”, were China's Yangshan Port, followed by the Port of Salalah in Oman.

In the 2021 edition of the CPPI, which ranked 370 facilities, Cape Town was 365<sup>th</sup> and Durban 364<sup>th</sup>, with Gqeberha the highest in South Africa at 312<sup>th</sup>. That the country's ports continued to perform so poorly two years later, without shifting much in terms of improving efficiency, indicates that not much substance is yet being seen, despite the talk of reform.

However, the South African Association of Freight Forwarders (SAAFF) argues that while vessel dwell time are indeed high, the World Bank's ranking was overly punitive. According to SAAFF the index fails to account for differences in shipping pressure and cargo-handling rates. For example, the Port of Maputo (317<sup>th</sup>) had only 87 ships visit in 2023, and the Port of Sudan (388<sup>th</sup>) only 26, with none of the vessels of a capacity greater than 5,000 Twenty-foot Equivalent Units (TEU).<sup>116</sup> Cape Town and Durban had 196 and 499 visits respectively, by vessels with a capacity of 8,501 TEU to 13,500 TEU. This is a valid argument – direct comparison would be unfair.<sup>117</sup>

However, more importantly, regardless of whether the ranking was overly harsh, it highlights that the country is falling far short of its capacity. In May 2023, the Western Cape government published its final report, prepared by Econogistics, on transporter congestion within the Port of Cape Town's logistics chain. The report concluded that “the single biggest constraint of the supply chain is the status of the RTGs [rubber tyred gantry cranes] and other operating equipment. Only 4 of the 23 RTGs are fully operational.”<sup>118</sup>

As of March 2024, daily operations had improved somewhat (following massive disruptions at the Cape Town and Durban ports towards the end of 2023). But the ports are nowhere near where they ought to be operationally.

The report identified several easy-to-fix issues. For example, new truck drivers at the Transnet Port Terminal sometimes do not know where to drop off containers, which causes traffic jams. Operators do not make use of written handover documents at shift changes, which cause obvious inefficiencies, and the Transnet National Ports Authority (TNPA) does not have access to the list of truckers with appointments, so they let trucks into the port haphazardly.

These issues are not unique to the Port of Cape Town. Similar problems are observed at various other ports. It is therefore not surprising that, according to Fruit SA, an industry association, claims of bad quality produce have doubled to 37% of fruit exports over seven years.<sup>119</sup> The main cause of this has been delays in moving South African fruit through and out of the ports to global markets.

The mining sector has been perhaps hardest hit. Provisional corporate tax collections from mining companies contracted by 28% during 2024/25.<sup>120</sup> While lower international demand for commodities has no doubt played a role, South Africa has done remarkably well to score own goal after own goal, as inefficient railways and ports make it more difficult to move raw materials and commodities out of the country.

These ongoing delays at the ports also substantially weaken South Africa's trade position. On average, each additional day a product is delayed before shipping reduces trade by at least 1%.<sup>121</sup> The impact is more pronounced for time-sensitive agricultural goods, where each additional day of delay reduces a country's relative exports of such products by 7% on average.

As a point of reference, vessel dwell times at the Port of Durban averaged 67.4 to 83.2 hours in 2023. By May 2025, this had improved to 65.7 hours, but compared to a global average of 40.5 hours, dwell times are still far too high.<sup>122</sup> Dwell time figures are a major commercial instrument used to attract and generate revenues.

Extended dwell times exacerbate congestion and lead to more idle time. Additionally, high occupancy rates reduce efficiency because increased storage density and stacking heights cause delivery delays. As dwell times lengthen, the productivity of rehandling significantly declines, especially because containers at the bottom of stacks are often scheduled for delivery first. This challenge is compounded in scenarios involving perishable goods, such as fresh meat, where regulations require veterinary inspections. Measuring the cost of congestion is notably complex.

From December 2023, companies that used South Africa's ports to move their goods and commodities out of and into the country were forced to contend with additional costs, as both the Mediterranean Shipping Company (MSC) and Maersk announced that they would charge a fee for congested vessels.<sup>123</sup>

MSC stated:<sup>124</sup>

Due to congestion in the South African ports generating difficult conditions to operate, MSC will [as of 3 December 2023] apply a CGS [congestion surcharge] for cargo to all South African ports to maintain our services provided."

In terms of concrete amounts, this means an estimated R3,850 per shipping container due to congestion. The continued delays at the country's ports manifest negative effects time after time, increasing businesses' operating costs, raising the costs of goods and services, and limiting South Africa's international trade appeal.

Lower export volumes depress government revenue, compromising the scope for spending and creating added pressure, for example, on public sector wage negotiations and social welfare programmes.

Congestion at the ports, coupled with the inordinately long time taken to resolve at least some of the relevant pain points, impacts negatively across various supply and value chains throughout the economy.

The Minerals Council estimated that R150bn worth of exports were lost in 2022. It arrived at the figure by comparing the actual shipments transported to what could have been transported had the rail lines and ports been operating at full capacity.



Unless these inefficiencies are addressed, costs will remain higher than they should be, in turn reducing South Africa's competitiveness. All the revenue lost due to port issues could have been invested back into various sectors — with agriculture arguably losing out the most in terms of lost revenue, and fewer job opportunities created.

## Where to from here?

Reducing trading time by just one day has the same effect as physically moving trading partners 85 kilometres closer.<sup>125</sup> Improving operational efficiency can thus be just as valuable as building additional infrastructure. Given its low trade efficiency, South Africa should focus on accelerating processing times, rather than just adding more rail, road and port infrastructure.

The initial step in restoring the transportation infrastructure (rail, road, and ports) involves identifying the appropriate provider. It is generally more effective to rely on public entities for the provision of so-called “public goods”. These are goods and services that are non-rivalrous – if one person uses the good, it doesn't reduce how much others can use it – and non-excludable – it's difficult or impossible to stop people from using the good even if they don't pay for it. Such goods are made available to all members of a society, are typically managed by governments and funded through taxes. Examples include an urban road, national defence, a park or law enforcement. However, there is often disagreement over what should be a public good and what should be a private good, which is used only by the people who can pay for it.

Private actors face inherent limitations in supplying public goods. Given that there is incentive for potential users to understate their demand, and still benefit from others paying for the service – so-called free riders – it becomes difficult to determine accurate equilibrium market prices. As a result of this limitation, private providers tend to either over- or undersupply public goods.

## Case studies

There are several compelling South African and international examples of successful partnerships between the state and private sector in the transport sector.

The N4 highway, stretching 567km from Pretoria to Maputo, was concessioned to Trans African Concessions (TRAC) in 1997 for a 30-year term. This followed a period of deterioration during the civil war in Mozambique and the apartheid era in South Africa. The Maputo Corridor is widely considered to be one of South Africa's most successful PPPs, with the partnership delivering maintenance and regular upgrades to maintain safety standards. The project also unlocked the revival of Maputo Port, once dormant, by ensuring reliable access. In 2003, the Maputo Port Development Company (MPDC) was established to operate the Maputo Port as a PPP, which in 2023, was extended by 25-years.<sup>126</sup> However, possibly one of the most important lessons from the Maputo Corridor is that coordination can take place effectively between private and public entities, at least for shorter routes (less than 1,000km).

The Nacala corridor demonstrates a second important feature of successful PPPs, namely, that large-scale capital can be raised for infrastructure and rolling stock without sacrificing operational efficiency or public oversight. The 912km corridor was developed through a partnership between two private partners, Vale and Mitsui, and Mozambique's national rail operator, Portos e Caminhos de Ferro de Moçambique (CFM), to support high export volumes. Operations were handed over through long-term concession agreements, allowing new operators to run the system while CFM stayed involved to protect public oversight. The way the deal was structured made it possible to bring in a mix of investors, build technical capacity, and give funders the confidence they needed. It also supported a decarbonisation strategy and brought freight owners on board as direct investors.<sup>127</sup>

## Recommendations

Coming to South Africa's rail infrastructure, ideally Transnet should be responsible for managing and improving it. This is because port authorities and container terminal operators generally have an incentive to improve efficiency to attract more cargo while many private actors involved in ports have contrary incentives. For instance, customs brokers, owners of container depots, and shippers may not want to reduce dwell times because they benefit financially from using the ports as a storage facility. Delays primarily burden the consumer, not the operators, and reducing dwell times could actually increase costs for these private actors by requiring additional resources to increase efficiency. Therefore, rather than minimising costs for the consumer, they tend to focus on maximising profits through storage fees and customs brokerage charges. Understanding this dynamic might help explain why cargo dwell times are often not being addressed.

However, Transnet is plagued by corruption and inefficiency, which makes it unlikely that it will be able to resolve the shortages in the short term. This is likely to disincentivise private sector participation because it fundamentally undermines any serious attempt at a return on investment.

For this reason, a build-own-transfer public-private partnership agreement should be implemented. Under this approach, private companies build the needed infrastructure, they secure the necessary financing and assume the financial risk associated with construction. This includes all planning, procurement and hiring of contractors. The goal is to complete the project on schedule and within budget. By involving the private sector in this manner, the public sector can reduce construction delays and cost overruns while the private partner is not burdened with concerns over long-term returns on investment beyond the construction phase. The private company owns the infrastructure only during the construction phase and for a predefined operational period, if applicable – its ownership is temporary and part of a transfer agreement. Once completed, the infrastructure is handed over to the state at a predetermined price.

However, private entities are aware that maximising long-term profits hinges on moving more cargo efficiently, rather than relying solely on temporary gains from storage fees. Therefore, an *affermage* agreement also has potential. Under this arrangement the private operator is responsible for operating and maintaining the utility but not for financing the investment.

In cases where the TNPA, for example, needs to improve port efficiency without relinquishing control over its assets, this lease agreement model allows them to retain ownership while outsourcing day-to-day operations to the private sector.

To get South Africa's transportation network back on track, the following must be done:

- Establish a specialised railway police unit to protect rail infrastructure from theft and vandalism. Align regulations for the creation and capacitation of the police force in compliance with the Police Act.
- Set up consultation networks between key users of rail, road and port infrastructure to establish specific areas of the infrastructure that will benefit most from repairs, and which should be prioritised.
- Explore PPP opportunities that best suit local needs and priorities. The shortage of RTGs and long wait times for spare parts offer a valuable opportunity for the private sector to accelerate procurement. These PPPs may take the form of:
  - Concessions, where specific parts of the transport network are managed, repaired, or upgraded by a private operator under a time-bound agreement.
  - Joint public-private Special Purpose Vehicles (SPVs), where independent legal entities are formed to oversee specific projects.
- Open a transparent process to grant ownership of specific sections of the transportation networks to interested parties who will then carry out repairs and/or expansions and/or management, e.g. on a concession model. Establish a time frame and terms for the agreement, such as a 15-year period after which the government has the option to reassume ownership.<sup>128</sup> (The success of these recommendations depends on the transparency of the tender process.)
- Improve communication networks between stakeholders and operators. Better communication and transparency can help mitigate the impact of unplanned events such as severe weather. Other aspects of communication, including handwritten handover documents between shifts and readily available lists of delivery/collection schedules, will further improve dwell times.
- Set up regular meetings with trucker associations, freight forwarders and industry representatives that focus on improving container and truck management. This will ensure that issues are continuously identified and quickly resolved.
- Digitalise (and standardise) all management of containers between the port and packing houses. This will help track containers and limit traffic bottlenecks.

The government is already taking steps to implement some of these recommendations. On 6 September 2023, the then Minister of Home Affairs, Aaron Motsoaledi, announced a Request for Proposals for the redevelopment of six priority land ports of entry: Beitbridge, Lebombo, Maseru Bridge, Kopfontein, Ficksburg, and Oshoek. Potential bidders conducted site visits in late 2023 to assess the infrastructure and to establish how to improve the movement of people and goods through these ports. At the time of writing, the deadline for bid submissions was extended to July 2024 with no new announcements regarding the awarding of contracts or groundbreaking.<sup>129</sup>

The six Priority Ports of Entry project, if implemented, will involve full infrastructure development, carried out in phases, including building and upgrading facilities, and providing services to support the operations of the Border Management Authority and affiliated organisations.<sup>130</sup> This PPP initiative will ensure projects are affordable and that they provide value for money.

Additionally, the National Logistics Crisis Committee, established in June 2023 in response to the ongoing poor performance of the ports, has made progress in reducing average queue length at border posts. The queue length at the Lebombo border post in Mpumalanga decreased from 16km in October and November 2023, to 7km in February 2024 and 3km in April 2024, to an average 2km to 2.5km since mid-March 2025.<sup>131</sup>

A more capable and trade-friendly infrastructure network benefits all South Africans by creating a positive cycle of growth. It means that people can reliably get to work, trucks and trains can run without delays, exports increase as port efficiency improves, and industries can grow. Every South African, from workers to businesses and government, can then reap the reward of economic growth.

## Conclusion

The importance of infrastructure cannot be overstated. South Africa aspires to higher levels of economic growth, job creation, and quality of life for all its people. Getting the basics right is the first step to achieving that.

What are these basics? When it comes to infrastructure, the required outcomes are easy enough to describe. Turning on a tap and having clean water; flicking a switch and knowing the lights will come on; driving on well-maintained roads; transporting goods on rail or road and finding both options available; encountering quick and seamless import and export processes; or simply sitting at a fully charged laptop, writing about the water, electricity, rail and road, and port reforms South Africa needs. These things are not particularly remarkable, and it is only when they fail that they become the centre of attention.

That South Africa's infrastructure stock has declined is clear to see. It affects businesses across the board, especially those that are smaller and lacking the resources to "state-proof" themselves as larger corporates might be able to do. When the avenues available for the movement of goods and people become more expensive, the economic growth potential of the country is inhibited. Over time, the average quality of life declines.

To resolve these issues and rehabilitate the economy, we urge that the following recommendations be adopted and set in motion:

### Water infrastructure:

- Open transparent PPP procurement systems;
- Improve municipal asset management;
- Implement a targeted skills development program;
- Give local water management teams greater autonomy;
- Streamline communication channels and data capturing mechanisms;



- Prioritise water loss and Non-Revenue Water management;
- And prioritise investment in water infrastructure in rural areas.

### **Electricity infrastructure:**

- Remove bureaucratic regulations that slow down generation expansion and drive up costs;
- Ramp up private power generation;
- Separate Eskom into generation, transmission and distribution entities;
- Remove race-based procurement and hiring policies;
- Prioritise payment collection;
- And secure exemptions from costly green mandates.

### **Ports, rail and road infrastructure:**

- Establish a specialised railway police unit;
- Set up consultation networks;
- Open transparent PPP procurement systems;
- Improve communication networks between stakeholders and operators;
- Set up regular meetings that focus on improving container and truck management;
- And digitalise and standardise all management and logistics.

However, none of the infrastructure challenges outlined in this paper can be fully resolved without also reforming the policies that sit behind every leaky pipe and stalled project. The deterioration of South Africa's water systems, and of infrastructure more broadly, is first the outcome of political decisions. Preferential procurement rules, affirmative action targets applied without regard for competence, cadre deployment, and widespread corruption have all undermined institutional capacity. These policy choices over the past 30 years have also reinforced the hostility to private sector involvement.

Fixing South Africa's water, electricity, rail, road, and port infrastructure must not be treated as merely a technical task that requires more money and expertise. It will require changing the rules that govern how decisions are made, who makes them, and on what grounds. Without that, no amount of capital or technical support will be enough.

If the GNU truly intends to strengthen social cohesion – and with it, raise the standards of living for all South Africans – it must place economic growth at the centre of its agenda. That means making deliberate policy choices that put South Africa's infrastructure first. By following some of the recommendations listed above, South Africa's infrastructure networks can be rehabilitated. The entire country will shift onto a higher growth track, with incalculable benefits for the people of South Africa and the broader region – it is time to build the future, not just talk about it.

## Endnotes

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[www.irr.org.za](http://www.irr.org.za)

[info@irr.org.za](mailto:info@irr.org.za)

(011) 482 7221

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