



# **Growth Through Inclusion in South Africa**

## **Chapter 2: State Capacity as a Constraint to Growth**

A Report by The Growth Lab  
at Harvard University

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## About the Growth Lab

The Growth Lab is a research program at Harvard University. With its multidisciplinary team of roughly 50 staff, fellows, and faculty led by Professor Ricardo Hausmann, the Growth Lab pushes the frontiers of economic growth and development policy research. The Growth Lab advances academic research on the nature of economic growth and conducts place-based engagements that aim to understand context-specific growth processes, help address key constraints, and identify promising growth opportunities. Through its research and teaching activities, the Growth Lab has become a global thought leader offering breakthrough ideas, methods, and tools that help practitioners, policymakers, and scholars understand how to accelerate economic growth and expand opportunity across the world. Consistent with the mission of the Harvard Kennedy School of Government, in which the program is housed, the Growth Lab works to expand capabilities for improved economic policymaking such that more people and societies can enjoy higher levels of wellbeing through stronger, more sustainable, and more inclusive economic growth processes.

Growth Lab applied projects utilize a variety of tools from economics and other disciplines with a focus on understanding place-specific growth challenges and enabling learning-by-doing to address these challenges locally. Key frameworks developed at the Growth Lab and applied within projects include Growth Diagnostics and Economic Complexity. Growth Diagnostics is a methodology that identifies the most binding constraints to better growth outcomes, which informs and allows policymakers to take highly impactful actions. Economic Complexity is a growing field of research that leverages network science and machine learning to understand what economic activities a given country or region could expand into next, based on what it currently does. Growth Lab applied projects aim not only to understand constraints and opportunities in specific places, but also to empower local stakeholders in real time and *in situ* to address constraints and seize economic opportunities through training, capacity building, and the development of practical, place-based tools. All applied Growth Lab projects aim to generate publicly available research of relevance to the local community as well as frameworks, tools, teaching resources and learning experiences that strengthen the HKS community.

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## 2 State Capacity as a Constraint to Growth

### 2.1 Executive Summary

**Economic growth in South Africa is constrained by the insufficient availability of critical public goods and services essential for production.** As briefly discussed in Chapter 1 of this report, the provision of electricity, transport infrastructure (including freight rail, ports, roads, and passenger rail), water and sanitation, and security have deteriorated substantially over the last generation. The deterioration of utilities alone explains upwards of 40% of the country's growth underperformance since the global financial crisis (Hausmann *et al.*, 2022). The most immediate of these challenges is electricity; projected load-shedding is severe and lowers current growth forecasts by more than 2 percentage points, according to the South African Reserve Bank. Simultaneously, freight and logistics challenges have acute impacts on export sectors. Rail networks have shut down entirely, and port delays have become endemic. Despite favorable external conditions, exports of minerals, metals, and agricultural products are weakening as the cost of getting products out of the country rises. This indicates that the loss of public goods and services has undermined South Africa's historic areas of comparative advantage. The electricity systems failings have undermined South Africa's comparative advantage in cheap and reliable electricity. Meanwhile, many population centers of South Africa are either currently facing or vulnerable to severe water supply crises, as has most recently been experienced in Nelson Mandela Bay Municipality. Vulnerabilities of water and sanitation systems are growing as long-term weaknesses in maintenance and system management meet increasing patterns of drought due to global climate change.

**Many public goods and services that were previously provided effectively have experienced substantial deterioration.** South Africa's electricity system, rail infrastructure, and ports were once exemplary on the continent. State-owned entities like Eskom and Transnet were well-run and efficient, and ports like the Port of Durban were among the busiest globally. However, over time, there has been a widespread collapse in state capacity, leading to system failures and breakdowns in these industries and systems. Parastatals have experienced a major decline in effectiveness, rendering them unable to fulfill basic mandates. At the same time, municipalities across the country have seen public services decline and increasing levels of financial distress. As infrastructure has deteriorated, aged, and been subjected to sabotage

(through both theft and more systemic influences), new investments have not been mobilized effectively, leaving supply gaps across network systems. As the capacity to supply public goods has broken down, so too has the ability for network industries to sustain themselves through service fees, which has led to insolvency across the system. SOEs, including Eskom, Transnet, and PRASA, are in dire financial situations, necessitating ongoing fiscal support and bailouts from a fiscally constrained national government.

**This chapter will argue that the collapse in state capacity within national network industries can be traced to recurring issues of gridlock, ideology, overburdening of public organizations, and political patronage.** Gridlock within the legislative process and leadership of government has prevented critical decisions from being made in time to address system breakdowns. This has happened repeatedly in both electricity and rail. Ideology has prevented the full capabilities of society from contributing to address supply needs, for example, by limiting private, provincial, and municipal power generation or devolution of the management of urban passenger rail to capable city governments. Things have been made worse by a mistaken belief that preferential procurement rules could be imposed on complex organizations, such as the network industries, at little cost. Rather, these rules have overburdened critical public organizations by adding financial costs, reducing effectiveness, and expanding space for patronage systems to take hold. Political patronage has been a widespread problem, as well documented by South Africa's Judicial Commission of Inquiry into Allegations of State Capture, Corruption and Fraud in the Public Sector including Organs of State, better known as the Zondo Commission. While it can be easy to place the blame of state collapse on corruption and patronage, this would overlook the direct ways that gridlock, ideology, and overburdening have contributed to struggling and failing public systems. Overall, these causes have resulted in a continued loss of technical capacity and competent management across public organizations, making capacity loss harder to overcome.

**Collapsing state capacity at the local level can also be traced to issues of "premature load bearing" alongside the breakdown of national systems.** South Africa has a fiscal system that is unusual in the degree of expenditures that take place at the local government level, especially in contrast to its much more limited decentralization of the powers to tax and borrow. South African municipalities were given significant local powers in the distribution of electricity, water and sanitation management, and road development over the decade following

apartheid. This was done in an effort to address regional inequalities. However, many of these responsibilities were inconsistent with local capabilities, causing service delivery to be strained. For example, the maintenance of water systems required more experienced engineers than many municipality governments could mobilize. Additionally, a large share of local revenues is dependent on the collection of fees from water and electricity delivery, which has broken down. This has led to an issue of circular debt. Municipalities have failed to collect tariffs from households for electricity and water, resulting in their inability to pay Eskom and state-owned water boards, further impacting infrastructure maintenance and investment.

**The subsequent sections of this chapter delve into the decline in state capacity, its causes, and its consequences for South Africa.** First, we describe the overall collapse in state capacity across various service systems and levels of government, which has slowed South Africa's growth and undermined inclusion. The following section examines the electricity sector crisis, which has had the most widespread impact on growth. We unpack the technical challenges of the system and critically assess the reform pathway to rebuild a reliable and low-cost electricity system. We further identify the deeper underlying causes of failed policies and strategies, namely gridlock, ideology, overburdening of public entities, and patronage, which affect public goods provision far beyond electricity. We then explore the challenge of premature load bearing through rapid decentralization that has contributed to state capacity collapse at the municipal level. This problem is essential for understanding issues of circular debt and reimagining the role that municipalities and provinces can play in rebuilding public capabilities. This is especially important for spatial inclusion across the country.

**Addressing the collapse of state capacity requires more than just identifying technical fixes and long-term reforms – it requires grappling with the deeper policy and political drivers that have caused public goods to deteriorate with little implementation of known solutions.** While many of the technical fixes and long-term reforms are well-known and even outlined in proposed legislation, the political process for implementation has often been incompatible with necessary actions. Take, for example, the electricity system. South Africa's electricity system lacks sufficient generation, transmission, and storage capacity, while its existing coal-fired plants are aging and increasingly unreliable. South Africa urgently needs substantial investment in renewable generation, grid infrastructure, and storage. This must come from sources beyond Eskom, with increased participation from private firms with the



knowhow and balance sheets to execute investment. To facilitate such participation, the government must establish a well-functioning market with transparent rules and non-discriminatory treatment of participants. These principles have been long-known and documented in government white papers. Yet, these actions have not been taken for many years and legislation has not been passed at the time of writing, leading to perpetual crisis management. Current emergency actions will likewise remain insufficient in the absence of long-term market clarity and non-discriminatory treatment. But with such steps, new sources of generation, transmission capacity, and innovations in grid storage would enable both the emergency response to the crisis and power a sustained economic recovery.

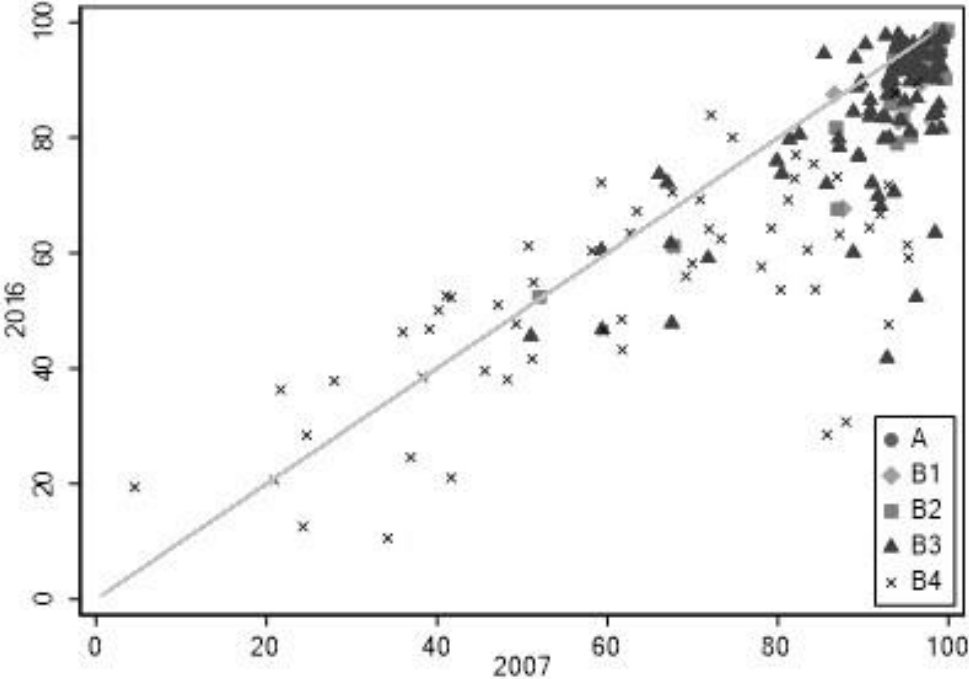
**This chapter closes with a strategic direction for strengthening state capacity.** We can view actions to strengthen state capacity as covering several dimensions. This includes actions to *unburden capacity* by further relaxing preferential procurement rules to allow public entities to deliver on their core functions more effectively. Unburdening municipal governments must include reducing problematic responsibilities where local capacities are poorly suited to deliver in most municipalities, particularly in electricity and water distribution. The government must seek to *build up and protect capacity* through civil service reform to replace the reliance on cadre deployment over time. In the process of building capacity, this could include more centralization of challenging government capabilities alongside “capability banks” or other public tools that position national and regional entities as providers of technical services to municipalities for project planning and execution. Importantly, South Africa has much to gain by *leveraging existing capacity* by establishing markets with long-term clarity that can crowd in new capacity and strategic procurement of services by SOEs. This is likely to be a faster and more effective way to recover capacity in key public goods than through privatizing state assets.

## **2.2 Patterns of Collapsing State Capacity**

**Over the last 15 years, South Africa has seen a broad-based collapse across critical public goods and services.** There has been a deterioration in the provision of electricity, freight rail, ports, roads, water, and passenger rail. Figure 2.1 shows a particularly glaring example of collapse. Whereas piped water access is expected to grow over time in any developing economy not facing conflict or widespread natural disasters, South Africa has seen a

widespread decline in access. At the time of writing, the provision of services across many areas appears to be getting worse despite clear government efforts, as prioritized Operation Vulindlela from the wide-ranging Economic Reconstruction and Recovery Plan that followed COVID-19. In the first half of 2023, total load-shedding in South Africa was more than the entirety of 2022, which had previously been the worst year of load-shedding on record (Business Tech, 2023). Freight rail volumes are 30% lower than their peak in 2015, and since 2014, the percentage of freight transported by rail has declined from 30% to 20% of total payload (News24, 2021). This has meant that more freight has needed to travel by road, which has put additional pressure on the road system. The ports of Durban and Cape Town, South Africa’s two largest ports, which saw port throughput in South Africa decline prior to COVID-19, now have some of the lowest performance scores of all ports in the world (World Bank, 2023). Similarly, passenger rail has seen a steep decline in ridership and an increase in delays.

**FIGURE 2.1: PERCENTAGE OF HHs WITH ACCESS TO PIPED WATER 2007 vs. 2016**

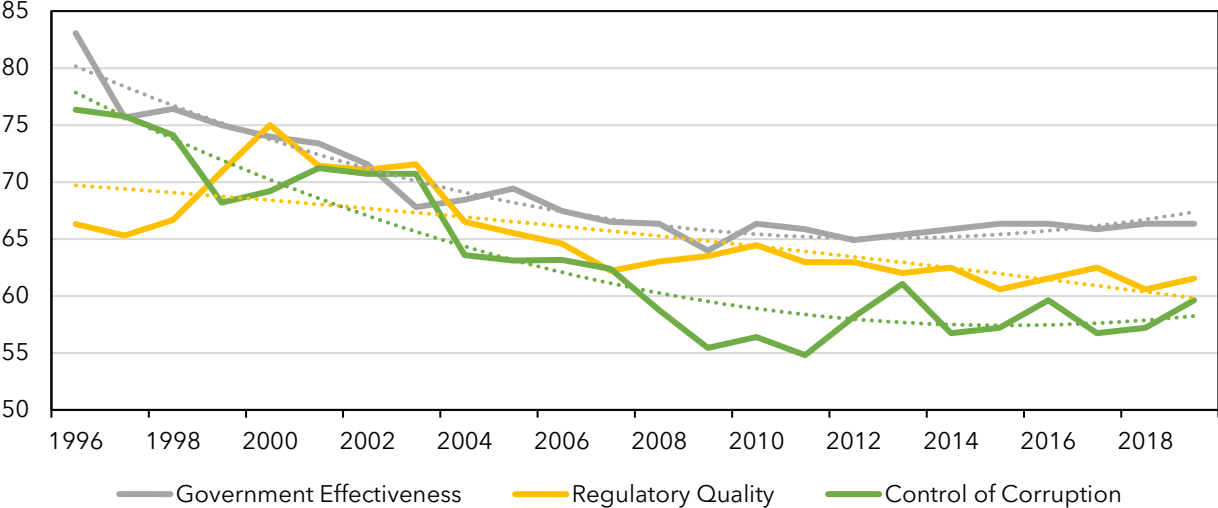


Source: Own elaboration based on South Africa Community Surveys.

**The simultaneous collapse of these public services is indicative of a general collapse in state capacity.** One system showing a decline in service delivery might suggest a specific problem in that sector, but the deterioration in public service provision across many areas

associated with SOEs and municipal governments suggests deeper causes at play. This is also reflected in a general decline in South Africa’s position in the Worldwide Governance Indicators compiled by the World Bank (Figure 2.2). South Africa’s global ranking in government effectiveness and control of corruption declined steadily in the late 1990s and the first decade of the 2000s. This decline clearly preceded the Zuma administration of 2009-18 and widely reported issues of state capture that occurred during that period.

**FIGURE 2.2: SOUTH AFRICA’S PERCENTILE RANK IN SELECT GOVERNANCE INDICATORS**

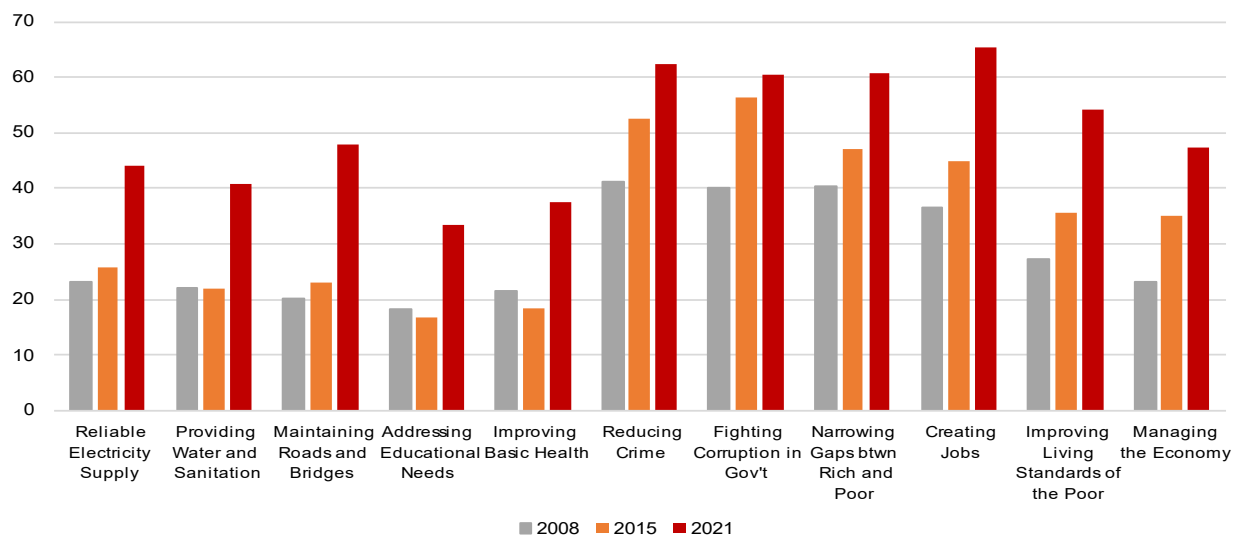


Source: Own elaboration based on World Governance Indicators, World Bank.

**Public perception surveys indicate a sharp decline in service provision.** The Afrobarometer survey, which has been repeated in two-to-three-year waves since 2000, reflects a continuous decline in public perceptions of many services (Figure 2.3). This includes a large increase in the share of respondents who selected “very badly” in response to questions on government performance in providing reliable electricity (from 23% in 2008 to 44% in 2021), providing water and sanitation services (from 22% in 2008 to 41% in 2021), and maintaining roads and bridges (from 20% in 2008 to 48% in 2021). This is likewise true for fighting corruption and a wide range of economic performance questions, from “managing the economy” to “improving the living standards of the poor” to “creating jobs” and “narrowing income gaps.” Since surveys in 2021 capture the impacts of COVID-19, Afrobarometer surveys across countries tend to show poorer performance across all these areas. However, South

Africa shows a distinct collapse of performance across many public services after 2015 that is well above and beyond the norm across African countries.

**FIGURE 2.3: SHARE OF RESPONDENTS INDICATING GOVERNMENT HANDLING AS “VERY BADLY”**



Source: Own elaboration based on Afrobarometer Surveys.

**The collapse in state capacity has been a major drag on overall economic performance.**

In early 2023, the SARB estimated that load-shedding is costing the South African economy nearly USD 51 million a day and has reduced its forecast for growth by two percentage points due to the intensity of power cuts. Some estimates suggest that the impact of the logistics challenges might have lowered growth by a similar amount or more (The Economist, 2023). Hausmann *et al.* (2022) find that South Africa’s slow growth since the Global Financial Crisis is not explained by external factors affecting terms of trade or macroeconomic stresses but rather by a decline in total factor productivity (TFP) resulting from a supply shock in South Africa’s network industries. If left unaddressed, these breakdowns will continue to constrain economic growth. Even during favorable external conditions, such as the commodity boom in 2021, South Africa's ability to benefit has been hampered by these supply-side bottlenecks. Consequently, demand-side policies, such as monetary and fiscal measures, are ineffective in reviving growth because they would only exacerbate supply constraints.

**The primary channel through which the collapse of state capability has undermined growth is through the deterioration of core functions of SOEs.**

Many public services in decline center on SOEs, including Eskom for electricity, Transnet for logistics, PRASA for

passenger rail, SANRAL for roads, and water boards in the case of water – that have seen a decline in operational efficiency and a loss of technical capacity and talent. While underlying issues of SOE mismanagement, financial distress, and outright corruption are all intertwined and difficult to unpack, the resulting low productivity and underinvestment in infrastructure maintenance and expansion are clear to see. This has resulted in declining public services in terms of measurable performance and public perceptions. Yet, the lack of adequate investment does not mean that SOE spending has been low. The sector received bailouts and recapitalizations totaling USD 14 billion or 6 percentage points of GDP in the 2009-2020 period, and in addition, borrowed USD 35 billion (8% of GDP) (Hausmann *et al.*, 2022; Research and Markets, 2021). In 2023, the South African government took on an additional USD 14 billion of Eskom's total USD, while SANRAL and Transnet have received additional support through the last medium-term budget. These bailouts have weakened the government's ability to put its debt on a sustainable path.<sup>1</sup>

**With these larger patterns in mind, the next section unpacks the electricity crisis and Eskom's role in revealing larger patterns of state failure.** The case reveals that necessary investments in generation, transmission, and storage were delayed, and then hampered by fundamental disagreements within government leadership as to the vision for the sector, especially regarding allowing the private sector a role in electricity generation. As the system weakened, decisions were taken with increasingly short-sighted timeframes and expectations. As a consequence, facilities were not taken offline for regular maintenance in order to temporality limit load-shedding. But this made the problem progressively worse through declining plant availability factors, as power plants experienced persistent breakdowns that forced them to be taken offline. Large investments in new generation had serious design flaws, experienced extreme cost overruns, and faced delays, intensifying the generation shortfall and Eskom's massive financial burden (Hosken, 2019). In this context, Eskom was not allowed to leverage private generation due to highly restrictive limits on private electricity generation, which limited investment in supply. This has left the system more reliant on Eskom, a company with deteriorating capabilities, a weak balance sheet, and an inability to repair and expand the system. Similar patterns underlie the decline of logistics networks. Transnet is no longer able to maintain its rail network, including by protecting it from sabotage and cable theft, while it

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<sup>1</sup> Based on authors' Debt Sustainability Analysis.

also does not have the rail stock to run trains. Ports have seen deteriorating productivity and a backlog of maintenance and investments needed to be able to process the volumes they used to process. Similarly, passenger rail has been left to deteriorate as PRASA has also faced deteriorating productivity and underinvestment while wages and other expenditures increased rapidly (Stent, 2022).

## 2.3 The Electricity Crisis and Broader Lessons

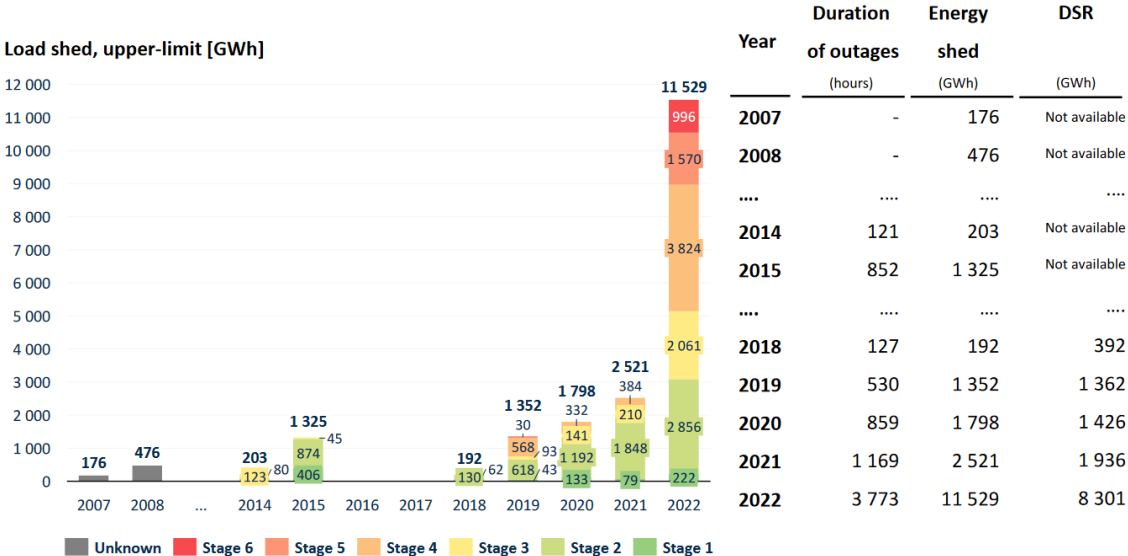
### 2.3.1 Current State of the Electricity Crisis

**South Africa is facing an enormous crisis in electricity provision.** In the early part of 2023, the Government of South Africa declared a National State of Disaster due to the ongoing electricity crisis. At the time, South Africa was facing load-shedding (i.e., rolling blackouts) with some areas losing power for nearly 10 hours (stage 6 load-shedding). This year has seen an acceleration in the long-term dynamic of the rationing of electricity that started in 2007 (Figure 2.4) (Pierce and Le Roux, 2022). This state of national disaster, as an official measure, was later revoked due to legal issues, but the problems in South Africa's electricity system remain as dire now at the time of writing as they were in the earlier part of the year. Load-shedding for the first three months of 2023 alone was greater than the total amount of load-shedding for the years 2018-2021 combined, and South Africa saw daily power cuts without a break for more than three months (Daily Investor, 2023b).

**South Africa's traditional sources of comparative advantage in mining, metals, and capital-intensive manufacturing developed in a context of low-cost and reliable electricity.** South Africa has historically had access to cheap coal and historically, it took advantage of this resource not just by exporting its coal, but also creating an electricity system that could translate that cheap coal into cheap electricity. This allowed South Africa to develop a comparative advantage in energy-intensive export sectors like mining, metals, and manufacturing sectors like automobiles. Figure 2.5 shows how dependent South Africa's exports are on electricity relative to the export baskets of other countries. The boxes represent the middle 50% of countries for each year in the electricity intensity of their exports. From this figure, we can see that South Africa has historically had an export basket that was highly intensive in electricity as an input – always among countries in the top 25% of electricity intensity of exports. But the electricity crisis both in terms of prices and reliability has destroyed

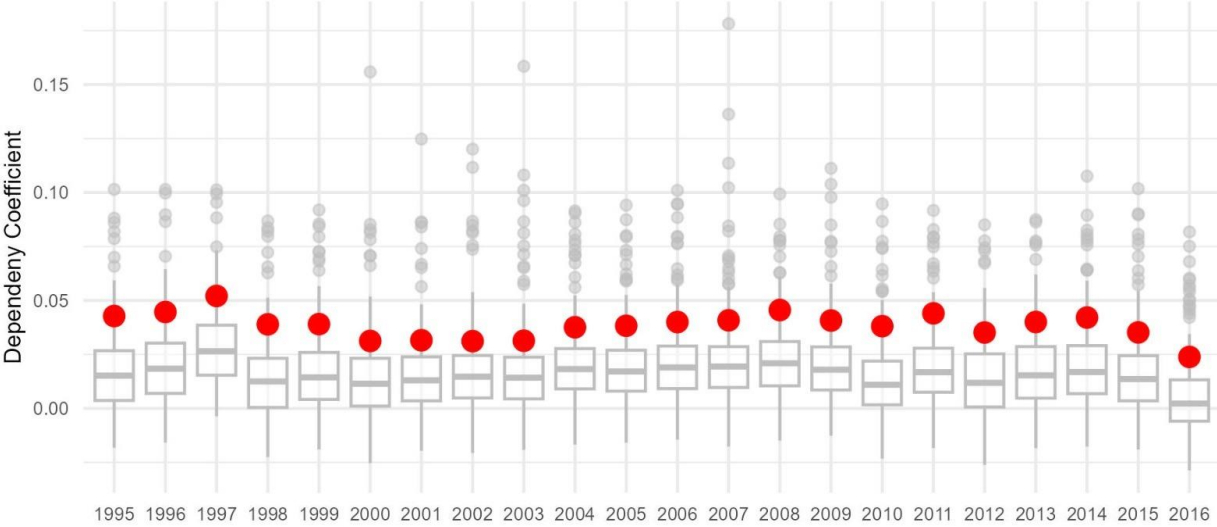
the foundations of South Africa’s historical comparative advantage. Additionally, all countries with high electricity intensity are facing a global change in demand, which we can begin to see in the final years of this figure and will be discussed at length in Chapter 4 of this report.

**FIGURE 2.4: LOAD-SHEDDING IN SOUTH AFRICA (2007 TO 2022)**



Source: Pierce & Le Roux, CSIR (2022).

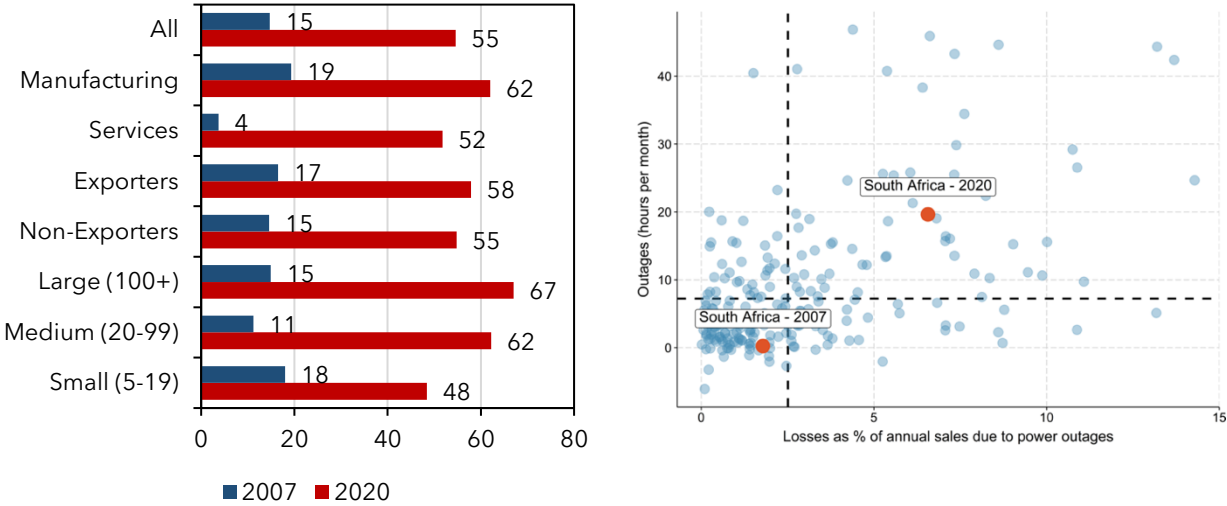
**FIGURE 2.5: ELECTRICITY DEPENDENCE OF SOUTH AFRICA’S EXPORTS**



Note: Red dots highlight South Africa.  
 Source: Own elaboration based on UNCTAD, US BEA Input-Output Tables, Atlas of Economic Complexity.

**South Africa’s collapse in electricity provision has been the most immediate binding constraint on South Africa’s growth.** In fact, the electricity crisis showed clear signals of being the binding constraint on economic growth well before the rapid acceleration of load-shedding and declaration of the state of disaster - revoked soon after - in 2023. The relatively high price of electricity price and extreme unreliability have created a large strain on firms across sectors and especially in manufacturing (Fortunato, 2022). Electricity tariffs in South Africa have skyrocketed since 2007, rising by a factor of roughly 6.5 from 2007 to 2022 as general inflation has only raised prices by a factor of just 1.3 (Moolman, 2022). This was in part a consequence of tariffs not being cost reflective prior 2007. Yet, this large increase has not cleared the market, necessitating that the government ration electricity demand through load-shedding. Electricity has become the number one obstacle for all firms of all types in South Africa as businesses have faced a large increase in outages and the cost of outages, putting South Africa out of line with international norms (Figure 2.6). As further analyzed by Fortunato (2022), there has been a proportional increase in generator and off-grid renewable energy use as businesses strive to bypass the challenges in the electricity sector. The same report finds that it is precisely the industries that are most intensive in electricity use that have seen the largest shocks to their growth.

**FIGURE 2.6: SHARE OF SOUTH AFRICAN BUSINESSES REPORTING ELECTRICITY AS THEIR BIGGEST OBSTACLE (LEFT) AND OUTAGES VS. COST OF OUTAGES FOR ALL COUNTRIES (RIGHT)**



Source: Fortunato (2022) using World Bank Enterprise Surveys.



**South Africa currently finds itself in a permanent “emergency mode” due to unreliability and constant breakdowns of its existing plants and an absence of spare generation capacity.** Emergency maintenance lowers capacity, requiring load-shedding to make sure there is not a system-wide blackout. Other emergency responses include using very expensive diesel generation and further delaying planned maintenance or decommissioning, which increases the likelihood of more breakdowns in the future. As the supply shortfall intensifies, additional emergency supply measures are considered, including procuring energy imports through “powerships”. There are limits to how far “emergency mode” can go to solve the problem, and the escalation of load-shedding in 2023 is one indication that such limits have already been reached. Recently – in 2020/21 – the crisis finally convinced the government to allow for greater private sector participation in generation. This is an important step for moving past emergency mode, but it does not bring new generation online immediately and comes with power purchase agreements at elevated costs to compensate private generators for the risks of investing in a sector without clear rules and with a weak counterparty. The government has also removed a requirement for independent power producers of embedded generation to have a license and has eliminated the caps on capacity that previously existed. REIPPP has also been re-opened for new bids. This program has seen some success in attracting investment interest, but projects have faced difficulties in moving forward. In the last round, only around 1,000 MW out of a call for 5,600 MW could be allocated because of insufficient grid capacity (Daily Investor, 2023a).

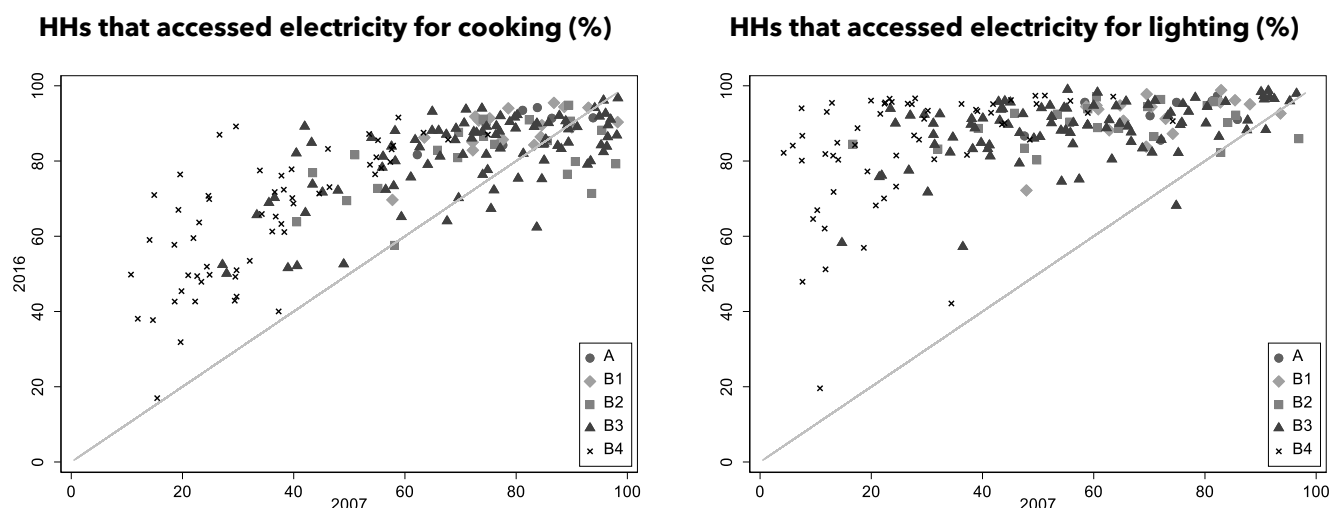
**Eskom now faces a situation where it cannot avoid persistent load-shedding as low electricity availability factors (EAFs), unplanned maintenance and breakdowns, theft, non-payment, and shaky financials persist alongside transmission and storage challenges for bringing new generation online.** Eskom’s overall EAF in 2022 was only 59% compared to a target of 65%, and this EAF has worsened each year since 2017 (when it stood at 78%). Just in the last 6 months, Eskom has had major issues with nine of its powerplants which has left nearly 4,700MW offline (five stages of load-shedding) for extended periods of time (Daily Investor, 2023c). So long as these problems continue, Eskom will be unable to use its current fleet to service South Africa’s electricity needs.

### 2.3.2 Causes of the Electricity Crisis

**There is broad consensus that the proximate cause of this dynamic is an electricity system that lacks the generation, transmission, and storage capacity to meet energy demand.** In

1998, the Department of Minerals and Energy commissioned a white paper on the power sector in South Africa. This paper warned that though Eskom was operating with excess capacity throughout the 1990s, this excess capacity would soon run out by 2007 if there were no additional investments in generation (Department of Minerals and Energy, 1998). In addition, the government embarked on a successful plan to electrify all households by the year 2012, especially in previously underserved areas (Figure 2.7) (Bekker *et al.*, 2008). Despite this plan to increase demand further, no new investments in generation were carried out, and as predicted, the reserve margin did indeed run out by 2007, causing the first load-shedding to occur.

**FIGURE 2.7: CHANGE IN HOUSEHOLD ACCESS TO ELECTRICITY BETWEEN 2007 AND 2016**



Notes: Metros (type A) and local municipalities (types B1-B4 which reflect different levels of socioeconomic development). HHs stands for households.

Source: Own elaboration based on Community Surveys.

**Once it was clear that demand would outstrip supply in 2007, South Africa made three strategic errors on the way forward. The first error was doubling down both on coal and on Eskom to increase generation capacity.** At the time the plants were announced, coal was still the cheaper source of additional capacity, but costs for solar and wind were declining. By the time the Medupi units came partially online in 2015, the cost advantage of coal was no longer clear, and by now it has now disappeared. Regardless of cost competitiveness

questions, bad technology and design choices, and well-documented issues of corruption meant that the Medupi and Kusile plants were delayed and faced large cost overruns. The two are still not fully operational. Today's alternative generation choices look very different, but South Africa continues to wait for the two plants to come fully online. While rapid reductions in the cost of solar, wind, and other technologies were not predicted in 2007, the choice to go with very few and very large new plants and exclusively through Eskom can be viewed as an error, even without the benefit of hindsight. This was compounded by the next two issues.

**Second, while South Africa waited for new capacity to come on through these two new power plants, Eskom increased the energy utilization factor (EUF) of existing plants.** This decision implied operating the plants close to their limits (Oberholzer *et al.*, 2022). This reliance also meant delaying or skipping planned maintenance to increase plant availability in order to avoid even worse load-shedding. This might have made sense if the additional new capacity from the Medupi and Kusile plants were to come online without delays, but this was not the case. Instead, delaying maintenance and overrunning the plants created systemic problems by 2011/2012. As the System Status and Outlook notes, it was around this time that the EAF of Eskom's plants started to fall behind peers, with the identified reason being that maintenance and breakdowns became unavoidable for such an old fleet that had been worked so much beyond capacity. These problems may have been reduced if more forceful demand management policies rather than rationing had been adopted at the time, e.g., by allowing electricity tariffs to reflect actual scarcity, especially for industrial consumers.

**Third, South Africa stalled and then actively prevented participation of the private sector in generation and transmission.** There were multiple attempts at allowing more participation of the private sector – including proposals to privatize some generation through the introduction of feed-in tariffs in 2009, and renewable energy bids in 2011 – but these attempts were stalled and aborted at the time in favor of the strategy focused on the construction of two large coal-fired power plants. Had South Africa allowed more private sector participation, the electricity crisis might have been resolved long ago. The case of Chile is informative of what an alternative path might have looked like in South Africa (see Box 2.1). Chile faced its own electricity crisis in 2007, around the same time South Africa began to first experience load-shedding. However, through a combination of quick action on long-term reforms together with effective short-term emergency management, Chile allowed the system to adjust quickly

through strong private sector investment in generation, transmission, and distribution. The result was that Chile was able to avoid load-shedding and resolve its electricity issue in less than 5 years.

### **Box 2.1: Managing an Energy Crisis and Making Long-Term Reforms: The Case of Chile**

Chile was a pioneer in the liberalization of its electricity sector in the early 80s. Thus, by the 2000s, it had competitive market for electricity generation. In this market, power companies and large customers could freely negotiate bilateral supply contracts and there was an exchange market for generators to trade their instant energy imbalances. In 1995, Chile signed the Gas Integration Protocol with Argentina. As a result, the private sector built seven pipelines uniting both countries, while electricity generators and gas distribution companies negotiated long-term contracts with Argentinian natural gas producers. As additional power plants were built and connected to the grid, the share of gas in the generation mix grew continuously through 2004, when they reached 36% of electricity generation (see Figure below).

Unfortunately, due to domestic economic difficulties and dubious policy choices, Argentina froze natural gas prices, leading to a precipitous decline in gas production. In this context, Argentina defaulted on their long-term gas contracts with Chilean generators. At the same time, Chile faced additional negative shocks to its electricity supply, including a historic dry season that reduced hydropower generation capacity and earthquake in the north of the country that took several plants offline for a period.

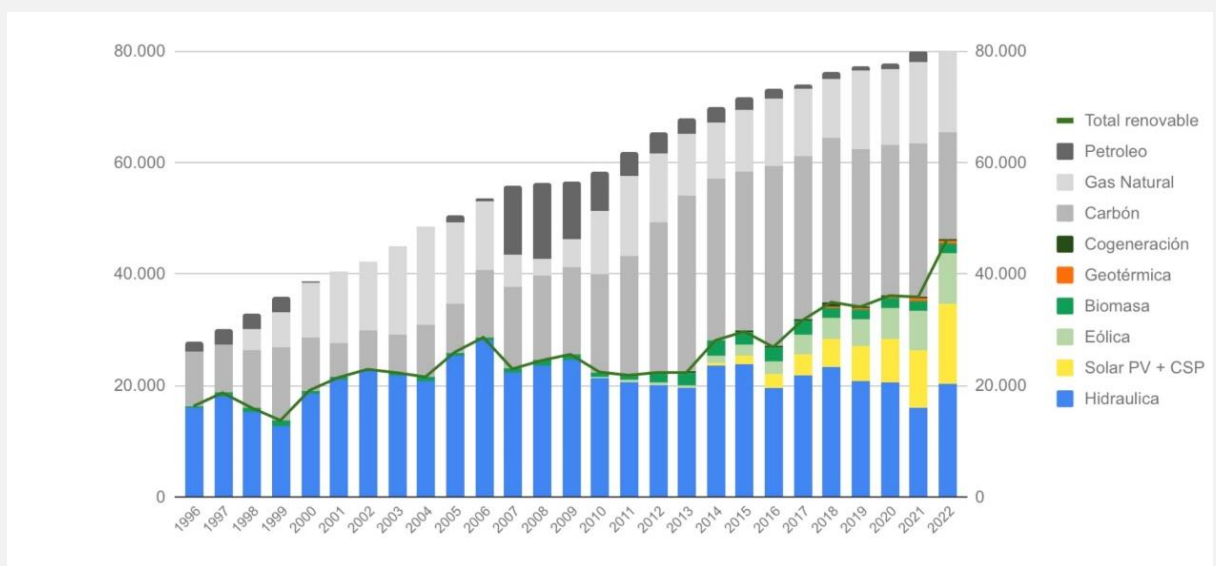
To address the collapse in the supply of Argentinian natural gas, which affected 36% of electricity generation, the government plan involved a combination of medium term measures to encourage private investments in regasification plants to allow the importation of liquified natural gas (LNG), and in alternative energies, while adopting a short term plan to let prices reflect the actual scarcity, which encouraged plants to shift back to liquid fuels and coal, while high prices encouraged industrial consumers to curtail their demand. The system adjusted without the need for load-shedding. An initial move to oil to fill the gap was quickly reversed once LNG arrived. Later, the private sector moved quickly to solar and wind. In sum, the emergency response used prices to encourage short-term demand shifts and long-term supply response, while the market institutions were strengthened to allow new energy sources to compete on equal footing with each other. The system adjusted without load shedding and without blackouts.

In short, South Africa and Chile faced similar deficits in generation capacity at the same time, but Chile was able to resolve these challenges permanently in less than 5 years while avoiding blackouts, South Africa has faced severe loadshedding and continues to see the crisis worsen after more than 15 years.

**Box 2.1: Managing an Energy Crisis and Making Long-Term Reforms: The Case of Chile (cont.)**

There are a few lessons for South Africa. First, the participation of the private sector was crucial to flexibly respond to the crisis. Second, using prices rather than rationing during the emergency phase encourages a faster private sector response both on the demand and the supply side. Third, structural reforms that allow the market to function more effectively can accelerate the supply response and lower the long-term costs of the system. Finally, the emergency itself can create a consensus for substantial reforms that can overcome the narrow interests that oppose change.

**Chile’s Electricity Generation by Source, 1996-2022**



Source: CNE.

**South Africa’s errors in planning and system operations were exacerbated by corruption, a loss of talent at Eskom, declining productivity in coal mining, cost overruns, and municipal non-payment. All these gutted the capability of Eskom.** The company lost critical talent and technical expertise in the lead-up to and during the crisis (News24Wire, 2022). It did not help that the crisis coincided with the height of a period of state capture, where Eskom was hard hit by corrupt contracts and mismanagement. Among the most prominent examples of such were the contracts for building Medupi and Kusile, which not only were delayed in their construction but had excessive cost overruns and design flaws. These two projects alone generated USD 20 billion in overruns and delays by 2019 (Smit, 2022). At the same time,

despite large increases in electricity tariffs, revenues did not fully cover the ballooning costs of Eskom, widening its losses.

**The deeper causes of the crisis can be traced to political gridlock, ideological choices, overburdening through preferential procurement rules, and political patronage.** Political gridlock has prevented prompt action, even in the context of a catastrophic situation with large social and political costs. Ideology justified excluding other parts of society from contributing to a solution, at immense cost to the economy and society. Additionally, the use of procurement power of SOEs for additional goals beyond the delivery of cheap and reliable electricity has raised costs and undermined productive capacity. For example, Eskom has been affected by preferential procurement requirements that have required it to source expensive and often low-quality coal from mines far away from where its plants are located. Deriving from a constitutional mandate, preferential procurement as structured by the Preferential Procurement Framework of 2000 has led to numerous inefficiencies (National Treasury, 2015). In fact, the impact of these policies became so problematic that the government eventually had to roll them back as it became clear that procurement of critical equipment for maintenance of infrastructure would not be possible under these stricter guidelines (Boonzaaier, 2022). At the same time, Eskom has been one of the government entities most affected by cadre deployment and then state capture. It is a long-standing policy of the ANC to place party members in influential roles across government and crucially parastatals. Academic research on the subject suggests that this policy laid the groundwork for state capture (Swanepoel, 2021). In addition, the Zondo Commission's findings said that the ANC's cadre deployment process can be abused to facilitate corruption and possibly state capture. In fact, they found substantial evidence as indicative that multiple appointments were made to key positions in order to facilitate state capture (Judicial Commission of Inquiry into State Capture, 2022).

### **2.3.3 Addressing the Electricity Crisis**

**A long-term solution to the electricity crisis must accomplish a broader set of goals; a narrow goal of ending load-shedding is not enough.** A great deal of media and political attention has been focused on load-shedding and it harms the economy. There is no doubt that the extent of load-shedding is causing massive harm to the economy. But Growth Lab research shows that electricity was a constraint for the South African economy even prior to the

current situation of extreme load-shedding. Even as prices of electricity rose with less load-shedding (or firms had to rely on expensive generators and diesel), there were many negative impacts since South Africa's traditional source of comparative advantage was its reliance on cheap electricity. Ending load-shedding would be major a relief to South African society, but ending load-shedding is not enough for South Africa to overcome the constraint on electricity.

**A larger set of goals must be achieved for South Africa to regain a comparative advantage in energy-intensive production and exports to the global economy.**

An overemphasis on the narrow goal of eliminating load-shedding is risky because the current emergency approaches to end load-shedding are expensive, both to users of electricity and to the South African government, and unsustainable. The South African government has needed to backstop the entire system through its financial support of Eskom and municipalities. This is not sustainable in the long run. There will ultimately be tradeoffs between price and access. While South Africa has made great strides in electricity access, according to World Development Indicators, some 10% of the population still lacks any access, and many places do not have full access still. Finally, South Africa must develop an electricity system that not only delivers reliable and cheap electricity today but also that is positioned to give South Africa a comparative advantage in the future. For this reason, rebuilding the system cannot be isolated from the realities of global green transition (see Box 2.2 and Chapter 4). Taken together, we can understand the goal of addressing the electricity crisis not just as one goal of ending load-shedding but rather as a set of goals listed below:

1. Load-shedding ends (i.e., the market fully clears).
2. Tariffs to consumers are low and fair.
3. Every part of the system is fiscally/financially sustainable.
4. Access to electricity is expanded to all sections of society.
5. Renewable energy strategy is incorporated to position South Africa for the future.

**It is important to evaluate both the current approach and alternatives on their ability to accomplish all these objectives over the long run.** It is possible to make progress on one goal but in a way that undermines one or more other goals. For example, in theory, South Africa could end load-shedding and make the entire system financially sustainable by allowing

prices to rise enough to clear the market. This would reduce demand on the system so that load-shedding ends and would allow Eskom to recoup costs, but at such high prices businesses and economic activity would need to be severely curtailed and it would be the poor that would especially lose access. Similarly, the current approach may end or reduce load-shedding through emergency measures and private generation through IPPs while increasing some renewables on the system. But such a system would not lead to lower prices, a more efficient grid, or financial sustainability for all actors. At the end of the day, either energy consumers or the government will be liable for the costs of expensive diesel, “powership” contracts, and sovereign guarantees to REIPPP participants.

**At the same time truly solving the electricity crisis requires addressing both the more proximate causes of system failure and the deeper causes of dysfunction.** The proximate solutions that address all goals hinge on creating long-term clarity of market fundamentals to crowd in broader participation and investment in generation as well as transmission and storage. Private investment comes with knowhow, efficiencies, and balance sheets that Eskom lacks, but the state must set clear and reliable rules of the game to benefit from private capabilities. This will require creating a functioning market based on a set of broad principles, which we list below. At the time of writing, Eskom is expanding its purchase of power from private generators, but Eskom and South African society overall must pay a premium to these generators to compensate them for the risk of selling to a failing system with unclear rules. In addition to generation, transmission and energy storage infrastructure have become especially important given the rise of cost-competitive renewable generation sources. Storage is essential because wind and solar are not dispatchable: they only generate power when the wind blows and the sun shines. Storage allows the system to use them on demand. The transmission buildout is needed because wind and solar resources are concentrated in parts of the country that are not currently connected to the grid. But history shows that addressing these proximate causes will not be possible without also tackling deeper issues that have caused the crisis to begin with and that have hampered effective solutions for over 15 years. Thus, actions today must confront the challenge of a government with divided interests and ideologically-driven policies that have proven counterproductive, and with an endemic use of SOEs for political patronage.



**To establish an electricity market that will power South Africa in the long term while also allowing for a stronger emergency response, clear rules must be based on four principles.** First, the market must enable much greater participation of society not only in generation, but also in transmission, storage, and distribution. Second, it must allow for efficient distribution markets that are not too small to benefit from economies of scale. Third, there must be clear rules for all market participants that eliminate conflicts of interest, especially for the system operator, and prevent discriminatory treatment of market participants. Fourth, final prices must reflect the marginal cost of production, which must include dynamic intra-day pricing. Taken together, if a system achieves these principles, it will be positioned to provide reliable electricity across the country at low costs and with the ability to adjust over time, including in the context of the global energy transition.

### **Box 2.2: Electricity in a Decarbonizing World**

South Africa faces its electricity crisis in a context where the world economy is beginning to decarbonize. Thanks to technological advancements, renewable energy costs have fallen substantially and continue to do so, and this has made it possible for developed countries to demand faster decarbonization globally. This creates pressure for developing countries to decarbonize faster, even in cases where countries have significant supply gaps.

This complicates the task of solving the electricity crisis in South Africa but also creates opportunities. South Africa needs coal generation as part of its electricity system to overcome the crisis, but the role of coal will undoubtedly change in the future. South Africa has significant renewable potential in wind and solar, as well as opportunities for battery and pumped hydro storage. South Africa needs to leverage all capabilities. This underscores the importance of a competitive, functioning market, where market players can freely trade with one another and make investments with no discrimination.

Renewable sources of solar and wind are intermittent and fluctuate based on weather and time of day. As a result, a system based on renewables will need large investments in battery and other storage as well as transmission to make energy dispatchable. South Africa's solar is concentrated in the Northern Cape where needed grid infrastructure is lacking, and wind potential is high offshore. A system based on renewables will require massive investments in not just generation but also transmission and storage.

South Africa's path forward may be better enabled by international support via the Just Energy Transition (JET) framework. Rather than a focus on accelerating the removal of coal and other fossil fuel generation, international support could more forcefully help to finance and build the transmission and storage infrastructure in South Africa. This would better respond to the crisis and enable a fuller transition to a decarbonized system over time.

**A new Electricity Regulation Amendment Bill, drafted and approved by the Cabinet in March 2023 and recently tabled in Parliament, attempts to address the proximate causes of the electricity crisis, but there remain unresolved issues that continue to undermine market clarity.** The bill aims to unbundle Eskom into separate generation, transmission, and distribution entities, which would then allow for fluid trading of electricity with private sector participation. The unbundling of Eskom has begun, and a new entity TSO (Transmission System Operator) has been established. Generation licenses have already been made less onerous to acquire through deregulation, and the new bill attempts to create a market for private generation to be sold to the TSO as well as private buyers through PPAs and through a trading platform. The unbundling of Eskom into separate entities is crucial for creating a level playing field for all players, especially in generation and distribution where they are envisioned to play a much stronger role. The National Energy Regulator of South Africa (NERSA) will have an expanded role in determining pricing, investments in the grid, and regulating this market. However, several areas lack clarity, adversely impacting long-term decisions of potential entrants into all areas of the electricity business, including transmission and storage.

- **First, the bill does not clarify key dimensions of the future marketplace.** For example, it has not decided whether South Africa would have a centrally mandated pool, like is the case in Chile, where all private players are required to operate within a common framework of rules, or if the market will be voluntary like the one in some states in the United States. It leaves potential lack of clarity and consistency in the roles of NERSA and TSO, as these entities currently have many functions which are handled by separate entities in other countries. Since electricity investments are capital intensive, with costs being sunk upfront and justified based on expectations of positive cash flows over a long period, this creates the need for clarity now about the rules of the game in the relatively distant future. If current reforms are not clear enough about that future, this creates risks that will be reflected in the cost of capital and the price of electricity today.
- **Second, regardless of the market structure, there remains high potential for government to change the rules of the game in ways that harm private actors.** Governments have incentives to promise high profits to get the investment going but once in place, they will have incentives to renege on those promises to *de facto* lower the cost of electricity to voters (e.g., either with artificially lower tariffs or by not collecting payment).

One way in which this risk shows up is as counterparty risk for generation investments that sell to Eskom. This risk increases the cost of capital and makes electricity more expensive. These risks can be reduced if generators are free to sell their output in the free market and the rules of the market are well understood. Uncertainty about the future will mean lower investment and higher electricity costs today. That is why it is important to solve these issues now, rather than to leave questions unanswered until the emergency has been resolved.

- **Third, the bill may not adequately address what role municipalities can and should play in the system going forward.** Currently, municipalities are distributors for a significant part of the electricity market, but they have been plagued by non-payment and poor service. When municipalities have attempted to secure their own electricity through PPAs, these decisions have been effectively overridden by load-shedding. With the expected growth of private investment, contractual relationships between such companies, municipalities, and Eskom will need to work within a clear and predictable system. Otherwise, the result will again be underinvestment by the private sector and higher prices to compensate for risk.
- **There is no reason for transmission and storage to be excluded from private investment.** Transmission lines can be contracted out to the private sector in exchange for service fees that the TSO would have to collect from market participants to compensate investors. This is technically trivial. More complex is the issue of storage in a world of renewable energy. Storage can make renewable energy dispatchable, but this requires a significant difference in price between mid-day, when the sun shines, and peak demand, to justify the investment. Moreover, it is not clear what technologies will dominate the storage market going forward. Some competing technologies are grid-scale batteries (of various types), pump storage in hydro dams, molten salts, and green hydrogen, inter alia. The pricing system needs to be flexible enough to allow investors to explore different storage needs: from minute to minute, from day to night, from windy days to calm days, and from summer to winter. Moreover, storage can save on transmission lines: while traditionally these lines are designed for peak power, they remain underutilized most of the day. It is more efficient to transmit during the day and store the energy for peak time. This increases the capacity of the existing transmission system.

**Market-related issues with the new bill aside, there may not be a clear enough commitment to the process of reform and to the unbundling of Eskom to overcome prevailing issues of gridlock, ideology, overburdening, and political patronage.** The lack of reforms to date, as well as the slow pace with which the crisis has been addressed, reflect that there is no clear consensus within the government on the direction of reform. Ideological differences and constituencies result in a problem where the President's own cabinet is not necessarily aligned on the direction of reform. In recent public statements, Cabinet members have stated that the unbundling of Eskom is not necessarily a major priority of the government (Tandwa, 2023). This dampens private willingness to invest in the sector, lengthening the crisis. To crowd in generation and grid capacity, the government needs to credibly signal that the priority of this crisis supersedes business-as-usual politics.

**There are several ways that government can signal credible commitment and enable proximate solutions to the crisis to take hold.** A first meaningful step would be a clear change in the public orientation of the Presidency to prioritize reforms that would establish the long-term market. This could include making the passage of the Electricity Regulation Amendment Act its essential priority – ideally while also addressing the issues discussed above within the bill. Another meaningful action would be implementing proposals advocated by experts, such as appointing an Eskom “Unbundling Czar” (Eberhard, 2023). Importantly, it is not effective to continue to place additional restrictions on private sector participation during an emergency. There have already been steps to remove red tape for new renewable energy projects, and the executive has moved with various waivers to expedite the regulatory process (The Presidency Republic of South Africa, 2023). But this focus could be stronger. The suggested Omnibus Bill to amend various regulations and laws seems to have stalled. The local content requirements for solar modules have reportedly been lowered from 100% to 30% this year. But in such a crisis, the rationale for even keeping them at any such level is unclear. Local content and black economic empowerment-related requirements for procurement and private energy projects raise costs at a time when every effort to get projects operating is necessary. These steps would not replace the need for emergency management but would help indicate to market participants that now marks the end of 15 years of treating the crisis through only emergency measures.

**In the short to medium-term, action must focus on two things: (1) relieving the most pressing constraints on additional private generation, and (2) removing any obstacles that make such generation more expensive or difficult.** An outright ban on private generation had been the obvious constraint in the past. But with this relaxed, the last bid window showed that the most immediate constraint for greater private renewable generation is not the willingness of generation companies to participate (at a cost that justifies risk), but rather transmission and storage since awarded bids cannot secure grid access. Thus, transmission investment is complementary to additional generation. A redesign of the bid window process should take geography and capacity of the grid as well as project proposals on transmission and storage into greater account when awarding bids. In addition, the system must quickly move to allow for contracting out extra transmission and storage on a competitive basis. For this to happen, it may be required to move further on the unbundling of at least the transmission entity of Eskom. Since transmission is pressing in the short run to allow generation, this unbundling process should be prioritized above other unbundling decisions and processes of the future that may be more contentious.

**The continued struggle to improve the EAF of existing plants suggests new avenues for their operation, such as rental contracts with incentives for efficiency, may be needed.**

Improvements in the operation of existing plants remain essential for the system to provide reliable baseload power and will remain the engine of the electricity system for years to come. South Africa simply cannot build a reliable and cheap electricity system on renewable energy sources alone with existing technologies. Rather, dispatchable renewable sources and conventional baseload power are complements in the system. This makes it problematic that performance continues to decline despite a range of emergency measures. One option that has not been utilized yet is to rent existing power plants to private operators. This would not need to be done across all plants. Doing this in select cases may improve the performance of select plants and would also increase competition across plants. If renting proves effective in initial cases, it could be used for more plants. Rental contracts would require careful design and should incorporate high incentives for efficiency, but these would have to achieve a balance that does not make the contracts so risky that private operators are unwilling to enter.

**South Africa has high potential to activate more renewable generation at lower costs.** As will be discussed in more detail in Chapter 4, South Africa has significant natural advantages

for solar and wind generation. Along with the market development actions discussed above, there are a few policy improvements that could go a long way to directly enabling this potential. First, there is space to streamline approvals of renewable generation and storage projects to reduce unnecessary transaction costs and delays across the board. Second, South Africa is strategically positioned to promote private green industrial zones powered by renewable energy. Such zones would have multiple benefits. They would make for attractive places for energy-intensive industries whose customers demand a lower carbon footprint to locate. They would also encourage the rapid entry of renewable generation at low cost because of the dedicated demand they would provide. Since renewable generation would need to be developed in excess capacity to account for variability, these zones could become net exporters of electricity to the grid and accelerate the increase in overall electricity supply. Third, South Africa may have a unique opportunity to leverage the hydropower capability of the Lesotho highlands as a source of pumped storage. This would be a complement to the rest of the system. Pumped storage hydropower operates like a battery by allowing for variable renewable power to pump water into reservoirs when there is excess generation, which is then dispatched to generate hydropower when needed.

### **2.3.4 Broader Lessons for Addressing Declining State Capability**

**There are several commonalities and lessons from the case of electricity with other SOEs that have seen a collapse in capacity.** In many instances, the proximate causes of collapsing services are an undersupply of public goods and services that could have been provided by more open access to state-owned infrastructure. Numerous SOEs face issues of poor management, patronage networks, and inefficient procurement. Together these issues lead to financial problems that constrain investment and proper maintenance of infrastructure. This situation causes service levels to decline. In the cases of electricity, freight rail, ports, roads, and passenger rail, the emerging solution requires crowding in other actors in society with the balance sheets and capabilities to help fill supply gaps. As discussed in South Africa, this is not a matter of privatizing SOEs but rather of mobilizing other actors and granting them access to the relevant market.

**Thus, there are technical reforms that South Africa will need to undertake to allow for greater participation and investment from the rest of society in many network industries.**

Just as electricity requires a functioning market for the expansion of generation, transmission,

and storage, addressing the freight rail crisis requires the ability of the private sector to invest in rail stock and play a stronger role in security, maintenance, and operations. Similarly, for ports, investment will likely need to come from more private participation in the aspects of port services that are causing backlogs. In passenger rail, there is a need to implement a stated policy to devolve functions to capable municipalities. But like in electricity, many of these solutions are, in fact, known or already written in pending legislation. The challenge tends to be in a lack of consensus across different political actors to confront the narrow interests that keep critical network industries in crisis.

**The deeper causes of collapsing state capacity in electricity and beyond center on gridlock, ideology, overburdening, and political patronage.** Ideological differences on the role of the state and suspicion towards alternative growth models have impeded progress and created political gridlock on necessary actions. Despite the limited financial and managerial capabilities of Eskom, South Africa was egregiously slow in allowing private firms, metro governments, and households to invest in much-needed energy generation, transmission, and storage. The government's historic reluctance to devolve the management of the urban passenger rail system to capable and willing metros, despite PRASA's failures, is another example. Meanwhile, preferential procurement rules have created a burden on tendering that has *de facto* increased costs, limited options, and ultimately reduced service quality. Finally, political patronage rather than effectiveness is often an explicit goal of appointments to SOEs. Specifically, the policy of cadre deployment within SOEs is a longstanding practice to place party members in influential roles. There are clear interactions between these deep issues of gridlock, ideology, overburdening, and patronage. For example, the preferential procurement system has exacerbated patronage opportunities, and this patronage is reflected in contract opacity and failed investments.

**Ultimately, politics needs to be the solution to gridlock, ideology, overburdening, and political patronage.** In a democratic system, citizens are empowered to change the system when it becomes ineffective. Power is contestable and political patronage is constrained by the need to attend to the needs of an electoral majority. This often is enough to constrain abuse and prompt action. It has not been so in South Africa yet, maybe because of the political dominance of the ANC. But as this dominance wanes, prioritizing state capacity and overcoming narrow interests becomes essential for political survival. Moreover, as the public's

priorities shift towards a greater emphasis on government effectiveness, many political players will have strong electoral incentives to offer a platform that overcomes the interacting causes of gridlock, ideology, overburdening, and political patronage.

**There is no path to growth and inclusion in South Africa without rebuilding and expanding the capacity of the state.** Up to this point, this chapter has focused on network industries and the respective national SOEs. However, state capacity has also been unraveling at the local level, which has resulted in a pattern of extreme financial distress affecting hundreds of municipalities. Local governments collectively owed nearly USD 5 billion at the end of 2022, of which USD 3 billion was owed to Eskom alone. Clearly, the financial distress of municipalities is linked to the electricity crisis, but patterns of municipal service delivery suggest additional challenges beyond fiscal management. We next discuss the deeper challenges of municipal service delivery in the next subsection, including critical failures in fiscal decentralization and how weakening municipal balance sheets linked to national systems have further undermined local public capabilities. This raises important questions about the role that local public capabilities can play in including more South Africans in the productive economy – a topic that will continue in the following chapter. This chapter then closes with recommendations for restoring and strengthening state capacity.

## **2.4 Municipal Capacity**

### **2.4.1 Symptoms of the Crisis of Municipalities**

**There is a widespread view that South Africa’s municipal governments are in crisis.** The most recent Consolidated General Report on Local Government Audit Outcomes (MFMA 2021-22) of the Auditor General of South Africa states that only 38 of 257 municipalities received clean audits reflecting “sound financial and performance management disciplines” and that they “perform their functions in accordance with applicable legislation.” The report finds that the financial health of municipalities has been deteriorating in recent years. The MFMA 2021-22 report finds 70 municipalities in a “concerning financial position,” with at least three such municipalities from each province and many of these municipalities showing financial distress year after year. But the underlying causes of financial distress are more widespread. The Auditor General’s report discusses systemic issues in revenue collection, where municipalities do not collect what they are owed, including significant losses in water



and electricity distribution. The MFMA 2021-22 report estimates that municipalities in total will only recover 34% of revenues they should collect according to their rates and taxes. While failures in revenue collection are likely the most immediate cause of financial distress, the report also notes widespread problems in spending related to poor payment practices, unfair or uncompetitive procurement practices, under-delivery of services procured, and outright fraud.

**While the financial distress of many municipalities is important, ultimately, the problem is poor service delivery.** The performance shortfall is most evident in water delivery (Figure 2.1), a highly decentralized service in South Africa, as discussed below. Observers regularly point to shortages in water engineers and skilled professionals across municipalities, and this problem has been persistent for a long time.<sup>2</sup> In water systems and beyond, the Auditor-General's report documents patterns and examples of inadequate planning, services that are not delivered, and reporting systems that reflect an inability to monitor the delivery of core services. In the building of infrastructure, projects are plagued by endemic delays, cost overruns, and – arguably most problematic – poor build quality. Moreover, there are glaring deficiencies in resources spent on infrastructure maintenance. The 2021-22 report finds that 39% of all municipalities spend 1% or less of the value of their infrastructure on repair and maintenance, well below acceptable norms.

**There is widespread variation in local service delivery and financial performance.** Though the issues underlying the municipal capability crisis are systemic, some municipalities do manage to deliver core functions and remain fiscally sound. While very few municipalities have expanded reliable water access, some have sustained high levels of access. For example, eThekweni Municipality maintained a level of piped water access close to 90% over the period when many municipalities saw declining access. This reflects a sufficient level of state capacity to deliver the service. The MFMA 2021-22 Auditor General's report notes that eThekweni and Cape Town are the only two metros that mobilized higher levels of spending on maintenance of infrastructure assets overall, at 8-9% of the value of the infrastructure. Figure 2.8 shows a high variance in public service delivery across municipalities in many areas based on the share of households that report each service quality as "poor". The largest differences occurred in

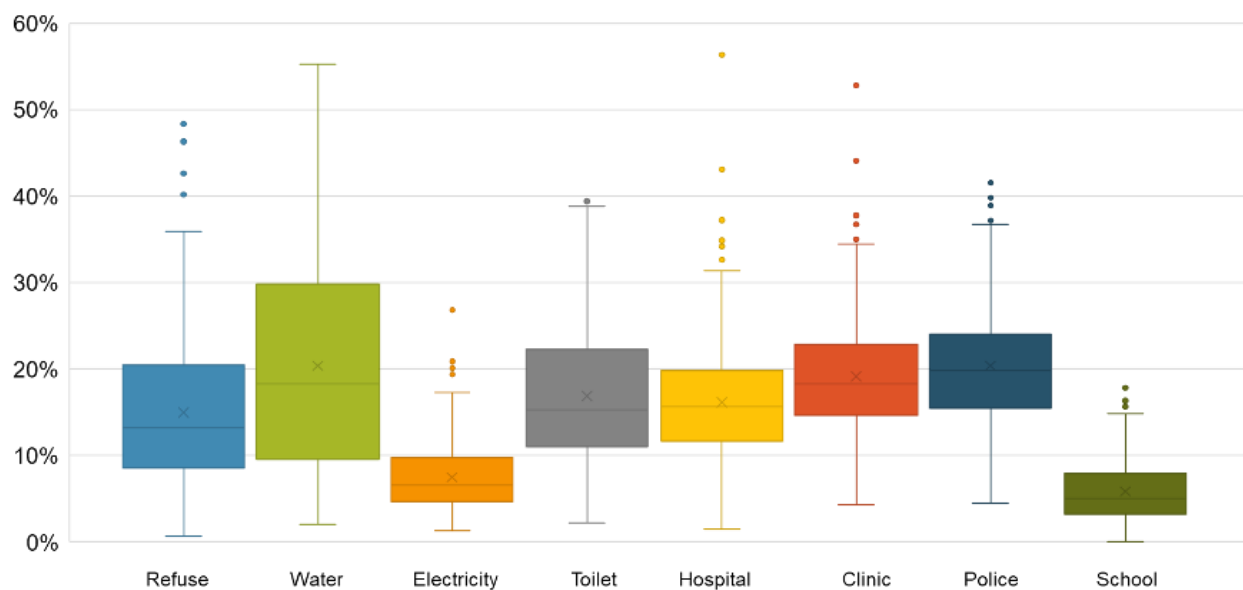
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<sup>2</sup> See, for example, "Navigating the water crisis: where do we need the skills?" reported by Stats SA in based on 2014 data (<https://www.statssa.gov.za/?p=5787>).

water, with very high variance in sanitation, healthcare services, policing, and refuse removal. Lower variances occur in electricity and education, which are services that have somewhat higher national uniformity.

**This variation in local performance suggests that at least some drivers of the collapse of state capability have locally determined causes and are not due to the collapse of national systems alone.** We argue that these patterns reflect a clear problem of “premature load bearing” of municipal governments – that is, putting too much responsibility on local governments when they do not have sufficient capacity to deliver, to begin with. In this sense, the decentralization process that transferred spending responsibilities to new municipal governments led to many of them failing to deliver on core mandates immediately after they were devolved those responsibilities. However, the more capable municipalities could cope with the assigned responsibilities, succeeding while the median municipality failed.

**FIGURE 2.8: SHARE OF HHs WHO RATE QUALITY AS POOR ACROSS MUNICIPALITIES (2016)**



Source: Own elaboration based on the 2016 Community Survey and StatsSA.

### 2.4.2 Failed Decentralization Due to Premature Load Bearing

**During the late 1990s, South Africa significantly changed the responsibilities of local governance by enacting the Municipal Systems Act and the Municipal Structures Act, effectively creating new local governments.** The new system was motivated by the

necessity to rectify the historical imbalances in spatial economic development. The White Paper on Local Government (DPLG, 1998) assigned local governments a key role in economic development, with the primary goal of municipalities being to work with their constituencies in finding “sustainable ways to meet their social, economic, and material needs and improve the quality of their lives” (DPLG, 1998). This resulted in “developmental local governments” that would embrace multiple functions and responsibilities (Palmer *et al.*, 2017). Through substantial decentralization, especially in spending responsibilities, local governments assumed critical roles in areas that determine the economic and spatial development of places.

**The design of a post-apartheid local government system resulted in the creation of numerous district and local municipalities, which had to be built from the ground up.**

Primary responsibilities of district municipalities included: the design of Integrated Development Plans (IDPs), which serve as a foundation for a region's spatial development through infrastructure design, service coverage reach, and land use planning; support functions to local municipalities for service delivery and capacity building; and disaster management. Meanwhile, local municipalities were given responsibilities for a wide range of functions. This included primary responsibilities in public service delivery, including water and sanitation, electricity distribution, waste management, and road construction and maintenance. Local municipalities took on roles in management of municipal finance, including selected areas of revenue collection, budgeting, financial management, and procurement. They also were given powers in land use management and urban planning, including zoning regulations and the issuance of building permits. Finally, local municipalities also were made responsible for the enforcement of regulations and implementation of key processes such as local elections.

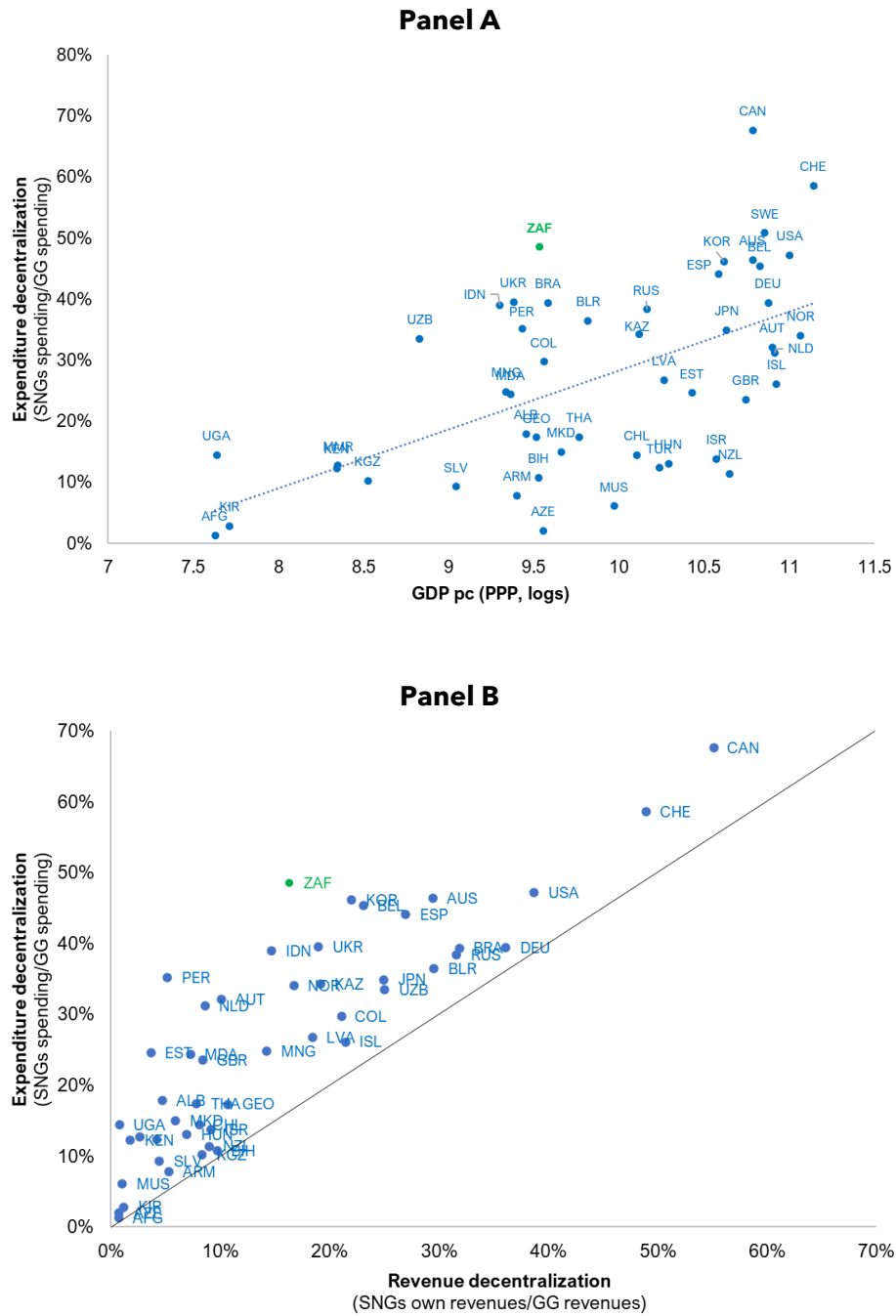
**The new system led to very high decentralization of public spending by international standards.**

South Africa's subnational governments execute over half of the general government spending, which is very high for a middle-income country and more in line with much wealthier countries like Canada, Switzerland, and the United States (Figure 2.9, Panel A). South Africa is also exceptional in how high expenditure decentralization is in comparison to revenue decentralization (Figure 2.9, Panel B). It is normal for spending to be more decentralized than revenues, but the difference is especially large for South Africa, which necessitates large transfers from the central government. This is reflected in Figure 2.10.

Whereas provinces are overwhelmingly funded through transfers from the national government, municipalities receive over half their revenues, on average, from the collection of fees and other non-tax revenues. A large portion of these fees are from electricity and water tariffs, which are collected locally. However, these fees do not become sources of discretionary local spending. The municipalities must pay the providers of electricity (Eskom) and water (usually water boards). Municipalities often charge an extra fee, which is meant for local use, but this system at present is not delivering reliable local revenues as there are widespread challenges in bill collection and resulting municipal debts.

**The abrupt transition to this peculiar decentralization system layered on too many responsibilities too soon for many municipal governments.** The “too much, too soon” phenomenon has been called “premature load bearing” (Andrews *et al.*, 2017). This is an apt description of what happened in South Africa: by giving newly created local governments the same or similar responsibilities that metros had, responsibilities overwhelmed capacity. These responsibilities were designed to address the fundamental problem of spatial inequality. However, the reform had the opposite effect due to the absence of the necessary organizational capabilities and specialized staff to execute these responsibilities across more than 200 local governments. Increasingly, the collapse in network industries at the national level has interacted with the challenge of local government capacity as lower revenue collection from electricity and water bills – including evasion of bill payment – undermined substantial revenue sources for municipalities. Figure 2.11 summarizes the composition of expenditures, on average, for the three distinct categories of municipalities in South Africa: metros (of which there are 8), district municipalities (of which there are 44), and local municipalities (of which there are 205). Having assumed responsibility for the distribution of electricity and water, metros and local municipalities became heavily reliant on residents’ water and electricity bills as sources of revenue to pay for operational spending and investment.

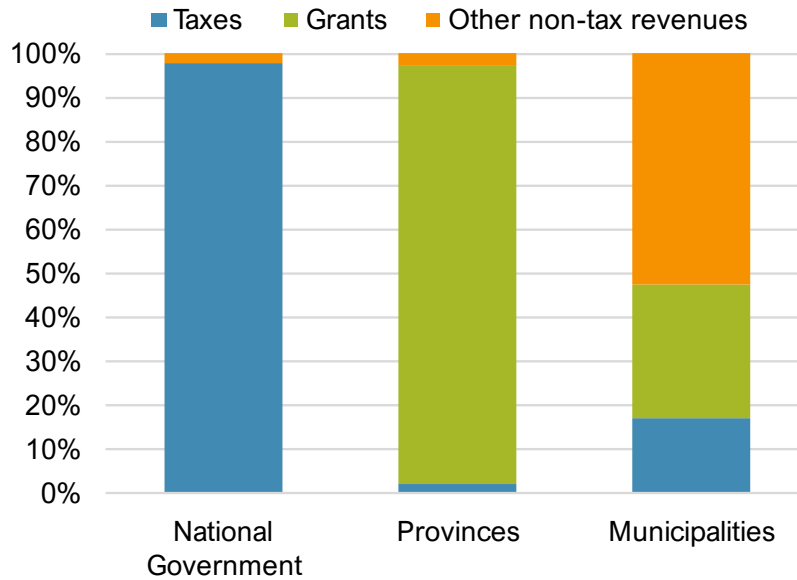
**FIGURE 2.9: EXPENDITURE DECENTRALIZATION VS. NATIONAL INCOME LEVELS**



Notes: Data for 2017. SNGs = Subnational Governments, including provincial and local municipalities. GG = General Government, including SNGs and central government.

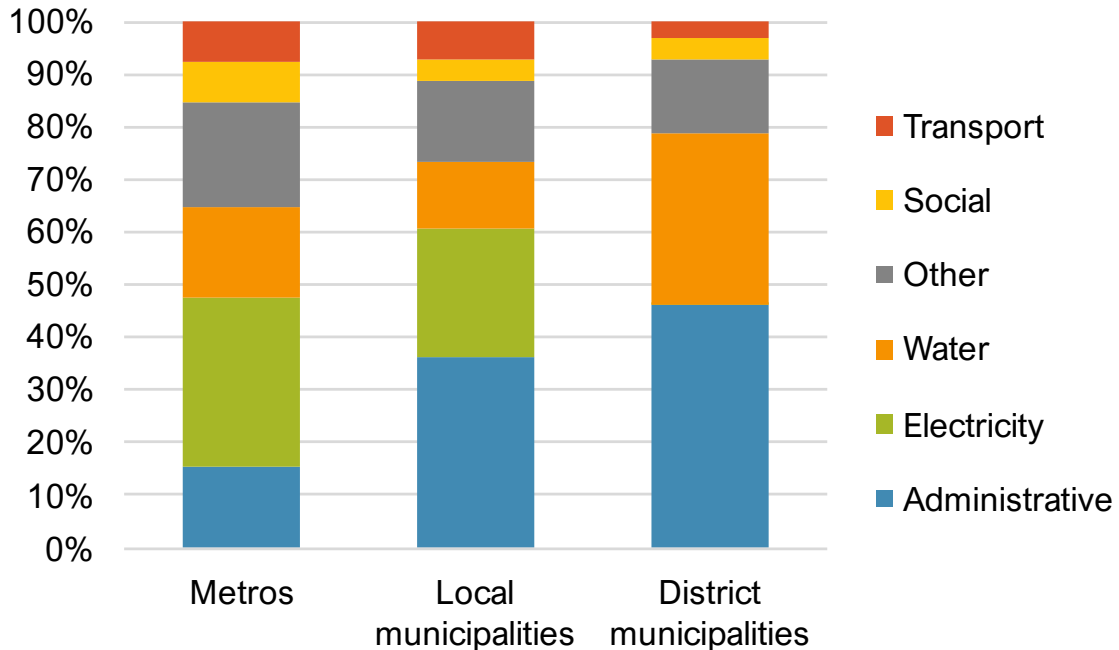
Source: Own elaboration based on IMF Fiscal Decentralization Database 2020.

**FIGURE 2.10: REVENUE COMPOSITION BY LEVEL OF GOVERNMENT**



Notes: Data for 2019. Grants comprise current and capital transfers from foreign governments, international organizations, and other general government units. Other non-tax revenues include sales of goods and services (user charges), fines, penalties, and forfeits, and property income (interest and dividends).  
 Source: Own elaboration based on SARB.

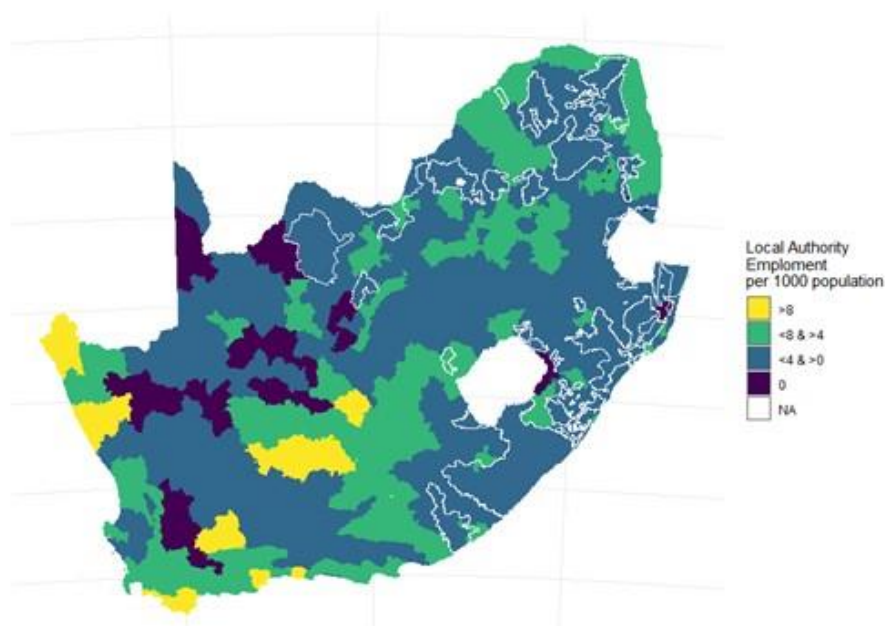
**FIGURE 2.11: EXPENDITURE COMPOSITION BY FUNCTION FOR MUNICIPALITIES**



Notes: Data for 2019. Grants comprise current and capital transfers from foreign governments, international organizations, and other general government units. Other non-tax revenues include sales of goods and services (user charges), fines, penalties, forfeits, and property income (interest and dividends).  
 Source: Own elaboration based on SARB.

**Although the metros already had capable governments at the time of decentralization, many secondary cities, small towns, and rural areas had yet to develop local state capacity.** Figure 2.12 shows employment in local authorities per 1,000 people in 2001, soon after the creation of local governments. The size of the government gives a blunt indication of the heterogeneity in the starting points of the different types of places. Metros and secondary cities already had between 8 and 4 local government employees per 1,000 people, while many rural areas had less than 4 local government employees. Approximately 35% of local municipalities had less than one employee per 1,000 people. Several areas of the Northern Cape had yet to establish local authorities, which may partially explain why the Northern Cape has a very high prevalence of local municipalities in financial distress today. In many cases, the first term of office of the newly created municipalities was almost entirely dedicated to understanding and setting up the complex institutional mechanisms that were recently put in place (Pieterse and van Donk, 2008).

**FIGURE 2.12: EMPLOYMENT LEVELS IN LOCAL MUNICIPALITIES**



Source: Own elaboration based on the South African Census of 2001 and StatsSA.

**As one tool for overcoming the challenge of local state capability, municipalities often outsource roles to private providers.** An example of this is the distribution of electricity. Although the municipalities are Eskom’s largest customers and are mandated to distribute electricity in their jurisdictions, most of them outsource the operations and management to the

private sector. According to data from Stats SA, this tendency fluctuates from a minimum of almost half of the municipalities in the Western Cape to a maximum of 80% in the Eastern Cape.

### **2.4.3 Preferential Procurement Policy**

**In addition to challenges in delivering core functions due to premature load bearing, municipalities have also been subject to additional demands through procurement policy.** Preferential procurement in South Africa traces to a constitutional requirement and is structured according to the Preferential Procurement Policy Framework Act (PPPFA) of 2000. The purpose of resulting preferential procurement rules is to enable socio-economic transformation by giving preference to previously disadvantaged groups, SMMEs, and local production. This was a response to the pre-1994 public tendering system, which favored large and predominantly White companies such that “it was almost impossible for newly established businesses to enter the public tendering system” (SALGA, 2020; Ministry of Finance and Ministry of Public Works, 1997). However, many critical issues were documented with PPPFA in a Public Sector Supply Chain Management Review by the National Treasury in 2015, which outlined paths forward based on system and process improvements to address severe fragmentation of rules. Yet, those proposed changes were not enacted to replace the existing framework, neither at the time of the study or when later introduced through a new Public Procurement Bill. This remains a bill rather than a law at the time of writing.

**Compliance with preferential procurement requirements has led to increased administrative costs for both the public sector and contractors.** Implementation of the PPPFA has been problematic for public supply chain management (National Treasury, 2015). This has been particularly concerning for impact on the value for money in infrastructure development carried out by local governments. For the public sector, added costs can involve more extensive tendering processes, evaluation criteria, and compliance monitoring, all of which require time, resources, and expertise, which are scarce for local governments. Perhaps more importantly, a more limited pool of contractors can drive up prices for goods and services – particularly in smaller local markets. On the suppliers’ side, compliance with PPPFA adds a layer of complexity to the process of applying for contracts with the public sector, which adds barriers to entry. The increase in costs can also be due to the lack of specific technical skills that are not available within local or designated providers, which in turn need to hire other



subcontractors or consultants at an additional cost. This affects the quality of the pool of bidders and impacts project timelines, quality, and overall value for money.

**Scattered evidence indicates that the cost of PPPFA compliance is notably high both in direct costs and in more systemic effects.** Migro (2011) documents procurement costs in different government departments of the North West Province in 2006-2007. He shows that the premium paid for PPPFA compliance in this period was 27% in the transport department, 28% in agriculture, 9% in education, 28% in public works, and 62% in sports, arts & culture (Migro, 2011). In this case, not only was the cost of compliance very high on average (31%), but the very high variation in the premium paid across departments suggests large differences in the resulting market power of qualifying contractors in different municipalities and different activities. In 2020, the South African Local Government Association (SALGA) identified a series of challenges for public procurement in a study conducted after 24 years of enacting the first procurement regulations. They collected information from officers directly involved in supply chain management and procurement compliance in local governments. The research highlighted widespread issues: high prevalence of fronting (i.e., misrepresentation by companies to qualify); compliance challenges for smaller businesses; lack of understanding of rules and laws; supply chain delays; inadequate screening; limited rotation of companies; escalating corruption and weak oversight; limited transparency; political pressure on supply chain management officials; and a rise of “tenderpreneurs”.

**The PPPFA essentially functions as a direct tax on tenders, while also undermining the effectiveness of local procurement.** When PPPFA raises costs for contractors, these additional expenses are passed on to the local population, including by crowding out other potential uses of public spending. But widespread qualitative observations and formal reports (e.g., the MFMA 2021-2022 Auditor General’s report) point to an arguably worse problem than higher prices, which is a substantial loss of quality and even outright failures to deliver what is procured. This is highly problematic in infrastructure procurement. For example, when shoddy construction causes a bridge to fail, communities pay the consequence.

**A key question is whether the benefits of PPPFA are worth the costs.** Importantly, given decades of experience, this is not a theoretical question but rather a practical one that can be answered based on quantitative evidence. According to the 2020 study on public procurement by the SALGA, the PPPFA did not foster a more competitive environment for government

procurement as intended. Instead, it has made securing public contracts more challenging for new businesses. In 2023, the IMF published an issue paper on the topic and noted that improved procurement practices as proposed by the Treasury's review could amount to up to "20 percent of the cost of goods and services procured (3 percent of GDP or 12.7 billion US dollars)". By distorting the market for inputs, the system has increased costs, worsened the effectiveness of public spending, and expanded space for systems of patronage. Furthermore, the rise of 'tenderpreneurs' and fronting practices suggests that the most successful bidders are not necessarily the most productive suppliers nor the intended beneficiaries of the policy. There is strong evidence that the costs of the system are high, and the benefits are not just low, but negative.

#### **2.4.4 Municipal Finances and the Spiral of Circular Debt**

**Although service delivery failures at the local level are driven by premature load bearing, exacerbated by preferential procurement rules, financial problems interact to create vicious cycles.** While the Municipal Structures Act, followed by the PPPFA, are almost 25 years old, service delivery has been deteriorating at an accelerated pace over the last decade. This is due to additional dynamics associated with poor finance, which causes growing financial distress and a pattern of circular debt. Understanding this cycle of debt is essential to developing an effective plan of action to strengthen state capacity at the national and local levels, while also addressing the compounding debts in the system.

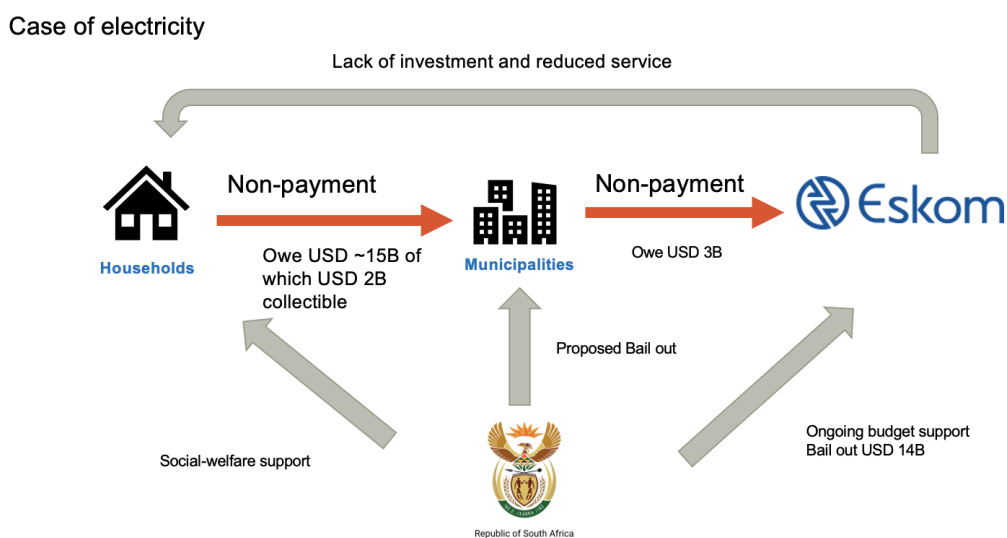
**The electricity crisis has created a chain of debts across government.** Municipalities purchase electricity in bulk at wholesale prices from Eskom and then sell it to the end user with a markup which ranges, according to NERSA, between 20-150%. This already highlights the inefficiency of many distribution systems. Even in normal times, many municipalities have severe deficiencies in bill collection, due to gaps in metering, billing systems, and staffing. But the electricity crisis has put additional strains on the system as load-shedding means reduced sales as well as increased consumer dissatisfaction and lowered willingness to pay.<sup>3</sup> While collections have been strained, Eskom's wholesale prices are increasing as the SOE tries to

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<sup>3</sup> Further, consumers are actively working to circumvent high tariffs and outages: wealthier residential and commercial consumers are moving to generating their own energy through viable off-grid technologies. Yet, these consumers still rely on the grid at times and for transmission.

recover its own financial standing. In practice, municipalities are not being paid by households and businesses, who are in arrears to local municipalities, and municipalities are not paying Eskom. This chain of debt further undermines Eskom's finances and increases the need for national bailouts to unburden Eskom's balance sheet. In the process, municipal capabilities are further weakened. Figure 2.13 shows this problem as well as how fiscal support from the Treasury is used as a response to financial distress across the system.

**FIGURE 2.13: PROBLEM OF CIRCULAR DEBT AND ELECTRICITY SYSTEM FAILURE**



Source: Authors' elaboration.

## 2.5 How to Strengthen State Capacity

**If South Africa is to return to growth, it must arrest the collapse of state capacity and start a process of rebuilding capacity.** The economy cannot grow and include more people without a capable state and the provision of essential public goods. Strengthening state capacity comes from a conscious and consistent effort to address both the proximate and deeper causes of failures in SOEs, network industries, and national government institutions as well as through response actions to address longer-term problems of premature load bearing of local governments. Recovering municipal capacity will require a rethink of decentralization and procurement. Instead of helping to address spatial inequalities, the current system has exacerbated them. Given the problem of circular debt, large fiscal resources are already being devoted to addressing the solvency crisis, but these resources can be better targeted and better supported through strategies that treat causes rather than symptoms of state collapse.

Strengthening state capacity will be a challenge but the upside is that recovering core functions in the most binding areas – especially reliable electricity in the current moment – will have immediate positive impacts on growth.

**Rebuilding state capacity is a big task, but informed by the findings of this chapter, the path to strengthening state capacity can be achieved through actions along three dimensions.**

First, it is essential to *unburden capacity* by relaxing secondary and tertiary goals that are layered onto the functioning of public entities, at both the national and local levels. Addressing the imbalance of responsibilities and capabilities on most local governments (premature load bearing) in distribution markets is also critical for developing functional electricity markets and a more sustainable fiscal system. Second, South Africa must *build up and protect capacity*. It is not sufficient to only unburden government entities; the process of building and protecting public capabilities. Civil service reforms from other countries show that it is possible to gradually transition from systems of cadre deployment to merit-based employment and building of a civil service system that attracts and retains talent increasingly over time. This is essential for ensuring that the collapse of state capabilities does not re-emerge. At the same time, South Africa can re-organize public service delivery in areas where capabilities are spread too thin by centralizing units and deploying them to municipalities in the form of a “capability bank”. Third, South Africa can much better *leverage existing capacity* by involving the capabilities of society in the response to struggling systems, especially across network industries.

***Unburdening Capacity***

**The state faces major burdens in preferential procurement rules that undermine core functionality in the pursuit of black economic empowerment and localization aims.** These overly broad systems should be revisited as there are more effective ways to include previously disadvantaged groups in all parts of the economy and to promote local production, including SMMEs. The evidence suggests that preferential procurement – through its costs on state performance – may be doing much more harm than good for the intended beneficiaries. Instead, procurement should be strategically used to support early-stage industries with potential to compete in international markets (see Chapter 4 for examples). In the context of collapsing state capacity, any secondary and tertiary goals should be set aside urgently to unburden public entities to serve their core functions. Thus, we recommend continuing to

expand the relaxation of preferential procurement requirements on all SOE procurement, including and especially within the procurement of electricity system investment in generation, transmission, storage, and distribution. This is a necessary condition for South Africa to better achieve its ultimate goals of empowerment and inclusion, though more direct and effective measures will be needed (see Chapter 2 for findings on spatial exclusion).

**Given the fundamental challenges of premature load bearing, South Africa's current and peculiar type of decentralization will need to change.**

There needs to be a move to a system that allows for variance in municipal-level expenditure responsibilities based on their underlying capabilities. For municipalities that currently deliver public services effectively, especially metros, and which have maintained fiscal solvency, no change may be needed, but for most municipalities, there needs to be a change in decentralization to centralize the roles that have put municipalities under strain. The clearest areas for change are the municipal government's current roles in managing the distribution of electricity and water. Electricity distribution is an area that has become such a strain on local governments that it has impacted their abilities to serve other functions. At the same time, addressing the failing national electricity system through an electricity market will be aided by distribution markets that are larger than the typical municipality to achieve better economies of scale. Municipalities often already outsource as much of their electricity functions as they can and, distribution companies internationally often have significantly better capabilities for bill collection and technology adoption.

**This change can come with benefits to municipalities and must occur within a process to address the financial crisis of local governments.**

Municipalities may be unwilling to release any responsibilities to higher levels of government voluntarily, but changes must be initiated within the unfortunate context of municipality financial distress. If municipalities cannot show a viable path to service delivery and fiscal stability with current capabilities, national policy can enforce a change. This change can also be accompanied by benefits to municipal governments. Change in this system would affect municipality revenues but would also impact their expenditures, with the net impact likely varying greatly across municipalities. Many of the most financially distressed communities may benefit. This re-organization could be accompanied by new tools for municipalities to finance their operations, while also being careful not to burden municipalities with taxing responsibilities prematurely. Currently,

property taxes play a relatively small role in municipal finances, and this may be an area to scale up through voluntary application since these play a much stronger role in other countries.

### ***Building Up and Protecting Capacity***

**Building up and protecting capacity entails moving away from cadre deployment and replacing this with a different organizing principal.** An example would be broader civil service reform that changes the appointment of civil servants especially for more technical positions into a more merit-based system rather than one that is overly influenced by politics. Such changes do not happen overnight; they can and should instead be built and expanded gradually. Eventually achieving a system of merit-based appointments for operational and higher-level bureaucratic roles is an important milestone for a country's development. Take the example of the United States which transitioned from a "spoils system" of the federal bureaucracy to an initial merit-based system for just 10% of the federal workforce after the passage of the 1883 Pendleton Act. Today, merit-based appointments and exams are the norm in U.S. federal employment.<sup>4</sup>

**While civil service reform should start at the national level, the principal can be expanded to enable more capable decentralization over time.** Given South Africa's challenges of spatial exclusion and its history of premature load bearing across municipalities, systems of civil service rotation across the country should be explored. By recruiting talent nationally and deploying individuals in multi-year appointments across geographies, South Africa may be able to better bridge gaps in capabilities across municipal governments over time. For example, the experience of India in developing a prestigious civil service system – e.g., its Central and State Engineering Service – is illustrative of what such a system can look like, even in a country with very high ethnic diversity and significant development challenges. Simply hiring locally can reinforce capability gaps between wealthier municipalities and historically disadvantaged communities. This approach helps to break this cycle. This approach could be a longer-term strategy whereas "capability banks" can be utilized much more quickly.

**Some capabilities could be more effective if centralized to meet local needs through new administrative structures.** In the relationship between the municipal, provincial, and national governments, it can be useful to trial a model where local governments can "contract" or

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<sup>4</sup>See <https://www.archives.gov/milestone-documents/pendleton-act>.

“procure” services from higher levels of government when needed. Rather than maintaining a local staff with all the relevant expertise for water system planning or major road development contracting or a range of other functions that are technically complicated and require specialized skills, municipal governments could simply hire support from dedicated teams that are based in the province or national level. Such a model can more efficiently use scarce human capabilities. Such a system could create strong incentives for effectiveness, especially if multiple teams within the government system compete for service contracts with local governments. This concept can be thought of as a “capability bank” that municipal governments can draw upon, especially for planning and project execution roles. Under this structure, historically disadvantaged places could be given advantaged access to the capability bank through fiscal mechanisms and national outreach to local governments based on needs.

### ***Leveraging Existing Capacity***

**At the heart of a strategy of growth through inclusion is a recognition that South African society has far more capabilities than are currently leveraged.** This is true when it comes to network industries as private companies have shown the willingness and ability to provide needed investment and service delivery roles. By including more of these capabilities in the response to the collapse of state capability, the economy will in turn be able to include more individuals, regions, ideas, and assets in the South African economy of the future. Leveraging this capacity is not, generally speaking, a matter of privatizing state companies and assets, which is time-consuming and fraught with risks to manage. Much can be leveraged through opening access to existing infrastructure through more open markets. This approach was discussed at length in the case of the electricity crisis earlier in this chapter, but the opportunities are also clear in other areas where state capability has weakened and supply gaps have deepened – including roads, ports, passenger and freight rail, water, sanitation, and likely more. To leverage the capacity of South African society in this way, the government must overcome gridlock, ideology, and patronage that has delayed and prevented the establishment of relevant markets in the past. Overcoming the politics as usual to leverage capacity is the single most important step that government can take to reverse South Africa’s economic struggles and jumpstart growth. It would mark the beginning of the end of a period of emergency management by enabling long-term solutions.

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