INFRASTRUCTURE

Maintenance will keep the lights burning bright
The DBSA is dedicated to improving the quality of life of people through infrastructure development. That's why we are proud to have played a key role in South Africa's groundbreaking Renewable Energy Independent Power Producers Procurement Programme (REIPP) through project finance and programme support, making sure that more households across the country have access to electricity.
OVERVIEW

SA's infrastructure: the highs and lows

The country is faced with a mixed bag of challenges and opportunities

- Every citizen has a direct interest in the condition of the country's infrastructure, from its roads, transport system, clinics, hospitals, schools, water, sanitation and waste management, to its telecommunications and energy requirements. Without sufficient infrastructure the ability of the economy to function is seriously jeopardised.

However, as an expensive asset, once developed it requires ongoing investment in maintenance to ensure it is functional for as long as possible.

Government is the single largest developer of infrastructure projects in SA, with the bulk of its investment going to the transport and energy sectors, though critical water shortages are making water resource investments a priority in many provinces. SA spends about R300bn annually on infrastructure which is planned, delivered and managed primarily by the state in the form of state owned enterprises (SOEs), provincial or municipal entities.

By their very nature infrastructure projects open themselves up to fraud and corruption, given that they involve enormous sums of money and typically have long lead times. This propensity for corruption is made worse because most state-owned infrastructure delivery organisations are poorly equipped with the requisite engineering, technical and planning skills typically required to enable an efficient infrastructure project.

The World Economic Forum ranks the quality of SA’s overall infrastructure in 72nd position out of 137 countries – roughly in the middle of their ranking. SAICE (The SA Institute of Civil Engineering) is less complimentary.

Its 2017 Infrastructure Report Card for SA awarded the country’s public infrastructure an overall grade of D-. A “D” rating would indicate that overall, the country’s infrastructure is at risk of failure, is not coping with demand and is poorly maintained. The report – while mindful of the efforts that have been made in the past 20 years to provide infrastructure to the country’s poorest citizens – focuses attention on insufficient engineering capacity within the public sector.

This was borne out by the latest consolidated municipal audit, released last month, which reported that local government – with only a few exceptions – is overspending and underperforming. The audit, according to auditor-general Kimi Makwetu, showed an overall deterioration, with accountability continuing to fall and governance a significant issue with billions in irregular expenditure reported. A staggering one in three municipal councils are dysfunctional, meaning that they might not be able to continue operating, while 11 are under administration.

The inability of local councils to manage their finances has a ripple effect on other utilities. Debt-ridden municipal councils are unable to pay Eskom – Eskom is owed close to R14bn – and water utilities, with the result that the utilities themselves fall deeper into debt.

The most significant backlogs in infrastructure delivery are in water, housing, transport and energy. However, other sectors also face backlogs.

Little investment is being made in educational infrastructure as the department of education focuses its attention on ensuring improved outcomes. Many provinces, says Jonathan Cawood, capital projects & infrastructure leader for PwC Africa, suffer not only from shortages and lack of fitness for purpose of schools, but also challenging locations in relation to demographic and geographic shifts as people migrate from rural and peri-urban
special report infrastructure

areas to cities and towns. “There are huge legacy challenges in addressing these problems – and no quick and easy solutions,” he says.

The country’s poor rate of infrastructure delivery is well documented: projects frequently miss their completion dates and run over budget. More than half of all projects don’t have future maintenance plans after completion, which affects the assets’ life cycle.

Inadequate contract management at appointment stage, coupled with a burdensome regulatory framework for the broader supply chain management process and project overruns in the public sector have resulted in a reduction of available funding to maintain existing infrastructure as well as develop new infrastructure.

This failure to maintain the country’s infrastructure assets, says Johann Els, head of economic research at Old Mutual Investment Group, is costing the country by eroding the capital base. “SA will have to start spending more on infrastructure if we want to see higher and better-quality economic growth,” he says.

A large part of infrastructure investment in SA is done by SOEs. Despite the fact that the finances of most SOEs are in a precarious position, Els believes foreign investors have sufficient faith in public enterprises minister Pravin Gordhan and his efforts at rooting out corruption and turning these entities around to give them sufficient time to sort out their problems.

Poor technical & planning skills

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“How do we find new opportunities?”

“Together.”

By putting together the best team of experts, we are able to offer you the best solutions for your business. Together, we can do anything, from finding opportunities for clean energy, to unlocking Africa’s potential.

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The country's limited economic growth has affected its ability to fund construction projects, resulting in slow growth

The construction industry has been having a tough time over the past few years as the number of projects has fallen, leading to weak growth in activity, worsened by government's tendency to delay projects into smaller parcels to support emerging SMMEs.

The majority of construction projects in Africa — between 57% and 90% — are owned by government entities, indicating the importance of their role in providing critical infrastructure. SA's lack of economic growth has resulted in a revenue shortfall, which means there are only limited funds available for infrastructural development. The result is that many proposed infrastructure projects have been delayed.

These factors have all contributed to significantly slow down activity in the construction sector. The construction sector experienced negative growth in 2017 of 0.3% according to GDP data released by Stats SA, with confidence plummeting to a 17-year low.

The reality is that there are just not enough projects to go around. According to figures released by the SA Reserve Bank, a total of R257bn was spent on construction infrastructure in 2017. This figure includes investment in residential and nonresidential buildings and construction works.

One of the few government sectors to be issuing contracts is Sanral (SA National Roads Agency) through its proposed new tender procurement requirements which demand 51% black enterprise for prospective bidders — of concern to listed companies as well as international construction firms, many of whom battle to meet this criterion.

The slowdown in the construction sector in part has been blamed on government's inability to plan, manage or execute infrastructure projects correctly. Nashen Pillay, president of Consulting Engineers SA (CESA), says government's investment in infrastructure is not being spent effectively, largely as a result of poor planning and a procurement system which recognises only the lowest cost rather than overall value-added.

As government can back on infrastructure spending, competent, long-term planning is even more critical, he says.

Private sector investment in the industrial and residential building sector has been similarly limited for the past few years, exerting further pressure on the construction sector, which has placed a number of companies on a precarious financial footing.

As a result of the Voluntary Rebuilding Programme, which saw listed construction firms agreed to after an investigation into cartel conduct, a number of merger deals have been proposed, which they agree that 40% or more of their construction businesses are sold to black construction companies.

To this end, Bavucks formed an alliance with Bosco Construction and Enza Construction; Stefanetti Shockes, TN Mobilco Construction and Arocon; and Wilson Barry Holmes-Occum (WBHO) formed an alliance with Edelman Construction, Fikile Construction and Muthoni and Construction. One of the better positioned construction firms is WBHO, which has adapted its business model to operate sustainably in both its local and international markets.

R140bn was spent on construction projects in the past few years, exerting pressure on the construction sector, which has placed a number of companies on a precarious financial footing.

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Companies that are doing well have retained construction expertise and meet the basic requirements of project management.

One of the reasons for the slowdown in the construction sector, says Van Heerden, is work from Sanral stalled for a period. “Consulting engineers were quiet for a few years. Work is now picking up again, the construction industry will only experience increased activity in a year or two’s time,” he says. The construction industry, which has been under pressure as a result of tough trading conditions, though there could be an upswing from renewable energy projects.

An absence of building standards in the informal housing market; however, is encouraging the import of cheap steel. Low-standard thin gauged steel is not manufactured in SA.

Cement sales declined by 4% in 2017, with new entrants to the market adding increased competition. “Demand for cement is well below our capacity,” says PPC. Cement SA key account manager Rajoil Harpersohn.

Adding to the sector's challenges is increased debt, primarily from customers who have outstanding payments from public sector projects, he says, adding that it is the private sector which is keeping the cement sector alive.

While it appears to be a particularly gloomy picture for the local construction industry, Adilin CEO Andries van Heerden says the sector is not as badly off as it appears. Adilin, a supplier of construction materials, industrial minerals and commodities, manages the Adilin construction index, a composite index of the level of activity within the building and construction sector.

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Statistics SA, with confidence plummeting to a 17-year low, reports that local value-added decreased by 0.3% in 2017, primarily as a result of its loss-making construction division. It posted revenue of R140bn, with its gross debt of R300bn.

To be successful in the construction business, a company must have a proven track record of delivering projects on time, on budget and to specific criteria. Construction activity typically presides over economic growth — and as a country we urgently need to grow our economy in order to create jobs. However, we need to think very carefully about how we ensure growth.
The country’s second-largest SOE has been plagued by scandal. His resignation came as a number of the parastatal’s previous board members tendered their resignations, including the organisation’s chair and a number of non-executive directors.

Public enterprises minister Pravin Gordhan subsequently removed those who had not resigned and appointed an interim board at Transnet’s board. The company has since announced that it is working on one such investigation, and investigating all suspicious contracts it has entered into, including those with links to Gupta companies and those with links to the Gupta family.

Investment in Transnet’s freight rail network is key to this. Transnet, which controls the freight rail use of the infrastructure, is handled by the Gautrain Management Company, a company in which the government has a majority stake, and which is managed by the Gautrain Management Company, a company in which the government has a majority stake.

Transnet’s capital expenditure programme aims to also invest in other strategically important projects such as oil refining and chemical production, and to improve the country’s transport infrastructure. In February Cape Town International Airport got the green light for a R1bn project to expand the airport’s new terminal, which is not in good condition, particularly the primary runway and the main terminal.

Another potential project is the realignment of the runway at Cape Town International Airport. The runway runs parallel to the main terminal building and needs to be realigned to allow for the expansion of the new terminal building.

The realigned runway will be handled by the Gautrain Management Company, and the new terminal building will be handled by the Gautrain Management Company, which is responsible for the expansion project.

Other potential projects include the construction of a new rail link between the Northern Cape and the Western Cape, and the construction of a new railway line to link the Cape Town International Airport and the Port of Durban to the Port of Tyne.

The company has also announced that it is working on a number of other projects, including the expansion of the Port of Durban, and the construction of a new rail link between the Northern Cape and the Western Cape.

In April Transnet’s chief financial officer Garry Matjila resigned after being implicated in a kickback scandal. His resignation came as a number of the parastatal’s previous board members tendered their resignations, including the organisation’s chair and a number of non-executive directors.

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special report dbsa

Making a bigger developmental impact

The bank is now no longer just giving loans, but gets actively involved in supporting projects that it funds

The Development Bank of Southern Africa (DBSA) has significantly changed its focus and growth strategy in the past five years in a bid to increase its developmental impact. The bank was traditionally renowned for the loans it provided to municipalities to enable large infrastructure projects. In the past five years it has added project preparation and project implementation support to its services offering, thus ensuring a more holistic end-to-end solution and ultimately extending the bank’s infrastructure value chain. According to DBSA CEO Patrick Dlamini, the new growth strategy is in response to changing client needs, increased demands to grow its developmental impact and the persistent challenging economic conditions. “The bank has adopted a new operating model incorporating three front line divisions: coverage, transactional and project preparation,” says Dlamini. All the new front line divisions fall under the investment portfolio headed by chief investment officer Paul Currie.

As a development finance institution (DFI), the DBSA originates, prepares, leads and finances infrastructure projects. “Our mandate is to promote economic and social development by mobilising financial and other resources from both public and private investors nationally and internationally to enable sustainable infrastructure development projects both in SA and on the African continent,” says Dlamini. Unlike a commercial bank which would focus on a commercial rate of return, the DBSA’s priority is to generate a development impact return. It therefore works on a cost recovery model with the emphasis on sustainability, and developmental impact.

As such, its mission is to advance its infrastructure development/impact both in SA and on the rest of the continent – but particularly in the SADC region – by expanding access to development finance while at the same time integrating and implementing sustainable infrastructure development. The DBSA’s revised strategy is in line with global trends, which have seen DFIs around the world reviewing their purpose and mission in an effort to increase their developmental impact. A key part of this strategy is to create opportunities for public-private partnerships and to leverage their own balance sheet by assuming institutional risk. “There is significant private capital in the developed world looking to invest in sustainable development projects,” says Dlamini. “Our goal is to leverage this private capital using the bank’s balance sheet to be more infrastructure projects bankable.” Despite the fact that the DBSA’s balance sheet is only R80bn, the bank has set itself a target of catalysing R100bn of infrastructure projects a year by 2020. According to Currie, the bank will leverage its risk capital to attract private capital in the process ensuring that both credit and operational risks are distributed according to institutional appetite.

By offering end-to-end solutions across the infrastructure delivery value chain, the DBSA plans, prepares, finances, builds and, in some instances, even maintains and improves existing infrastructure. Its end-to-end value chain, developing a greater level of co-ordination and making more effective use of both our balance sheet and resources that the DBSA is able to expand its development impact and drive infrastructure delivery in an effective, efficient and timely manner,” says Dlamini. “Essentially, the internal realignment the bank went through in 2017 aims to get the business away from the previously silo-based approach which led to inefficiencies.”

Municipalities and local government structures remain the bank’s core business. These entities are responsible for much of SA’s infrastructure delivery and are being increasingly constrained due to their dependence on grant funding. Their challenges are worsened by a lack of capacity and capability, and poor fiscal management. “We’re cognisant of the fact that cities have the potential to drive growth and create jobs,” says Currie. “Our job is to support them, to plan, finance and roll out infrastructure support to that growth.” The bank offers planning expertise to undercapitalised and underresourced municipalities and also plays an advisory role in infrastructure planning. Its project preparation division phase prepares projects for bankability, while its transactional division offers a variety of financing instruments. The DBSA is also responsible for implementing or building actual infrastructure through its infrastructure delivery division (IDD). Maintenance and improvement is a key element of infrastructure delivery, and here too the DBSA plays a part by supporting the maintenance or improvement of key infrastructure projects on behalf of both national and provincial government departments as well as municipalities. According to Currie, 70% of transactions outside SA involved other financial institutions. However, the bank never really maximised the potential of formalising the management of these relation ships. The new operating model has addressed this. “We see the DBSA’s role as complementary in both government and the private sector, addressing the trust deficit between the public and private sector, catalysing any investment and ensuring that projects get value for money.”

The DBSA has made an effort to move responsibly up the risk curve and provide higher levels of financing. “It’s about lifting the gap between where private sector financial services can operate and what is required to get a specific programme or project over the line,” says Currie. The DBSA is in the process of setting up a climate finance facility together with local and international partners to provide the private sector with first loss capital to cover innovation risk in climate-enhancing investments aligned to the UN Sustainable Development Goals. The facility is broadly modelled on a US-based Green Bank. Typically a state-sponsored, specialised financial entity which works with the private sector to increase investments in clean energy markets. “Our climate finance facility has the potential to be a significant shifter and we expect significant uptake of it once it’s in place in the third quarter of 2018,” says Currie. Though its focus will start off largely in SA, we won’t be restricted to SA.”

The climate finance facility is a part of broader push by the bank to create platforms which allow the private sector to invest in infrastructure projects with a greater degree of comfort. Another focus is supporting the provision of 300,000 student beds over the next 10 years in an effort to counter the country’s student accommodation shortfall, as well as opportunities in the non-urban broadband space.

INVESTMENT

Focus on unlocking value in each project

Leveraging balance sheet and expertise to aid development

The Development Bank of Southern Africa (DBSA) will achieve its goals by playing what it calls a “catalyst” role. The bank’s strategy of unlocking and catalysing infrastructure investment is based on a concept paper titled ‘From Billions to Trillions: Transforming Development Finance’, which was authored in 2015 by a number of prominent development banks. The paper points out that in order to meet the global sustainable development goals (SDGs), a paradigm shift is required in terms of how development finance is used to unlock the resources needed to achieve the SDGs. For the DBSA, this translates to leveraging both its balance sheet and its expertise to stimulate infrastructure development, given that the country’s infrastructure needs significantly outweigh the bank’s lending capacity.

“Everything we do at the DBSA is part of our strategy to lock up this R100bn worth of investment in infrastructure, primarily in SA but also on the African continent,” says Mohan Vlok-Meerman, group executive for the client coverage division. “We are very cognisant of the fact that, at best, we can only unlock around R20bn to R25bn based on our balance sheet – which means the balance needs to be achieved through co-financing in private and development finance investors.”

The client coverage division is responsible for the bank’s deal origination efforts, bringing together the DBSA’s full suite of infrastructure planning, project preparation, financing and implementation services to private investors, state-owned entities and African sovereigns. The division provides the bank...
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Special Report DBSA

Early-stage funding unlocks opportunities

Key driver to transition projects from inception to implementation

The Development Bank of Southern Africa’s (DBSA) corporate strategy is anchored on its ability to provide integrated infrastructure development solutions to its clients. One of the bank’s competitive advantages is its ability to take early-stage risk through providing project preparation funding and expertise. A key lever for developing bankable projects with the ability to attract long-term capital or financial allocation in the case of projects undertaken by underresourced municipalities, with a link to international capital and concessional finance, while locally it is responsible for providing access to transactional opportunities and enhancing opportunities — all efforts is geared to the size of the pie.

Client coverage — essentially a division focused on new business development — is a newly created division within the bank that acts as a bridge between the DBSA’s three product divisions and clients and investment partners. “Our strategy at the DBSA is to bring infrastructure solutions to our core client segments and not just be a lender.”

The division services a number of client sectors within SA and the broader continent, including larger and smaller municipalities and public and private-sector clients in the energy, transport and logistics, water and sanitation, information and communication technology, health and education sectors.

The DBSA’s mandate has recently been expanded outside the SADC region, and so projects have been initiated in a number of countries in East and West Africa.

“Essentially, our expertise at dual origination and client coverage lies in relationship building as well as a thorough knowledge of the needs of our clients, along with the capabilities of the DBSA. Our job is to have an intimate understanding of the issues and to offer solutions through the DBSA’s product suite as well as external expertise from strategic partners, such as international development finance institutions,” says Veenakamdan.

One of the DBSA’s strengths is its strategic partnerships with development finance institutions around the world, including the World Bank Group, the African Development Bank, the French development agency, the German development bank, the Japanese International Co-operation Agency and various UN development agencies (such as UNAIDS, UNCTAD and Power Africa).

“Relationships at the SADC level are also crucial if we are to provide the right structure to enable economic growth,” says Veenakamdan. “For example, we’re involved in a number of transboundary projects on the African continent, including the North-South Corridor, the Southern Africa Power Pool and the Luswishi corridor in Zambia.”

He is particularly proud of the DBSA’s catalytic role in supporting SAs renewable energy programme, including the funding of R8bn which has unlocked over R200bn of investment and nearly 60,000 MW of renewable energy, 90% of which was from the private sector including around R80bn in foreign direct investment.

Through the division, the DBSA also offers clients access to a number of third party concessional funds that it either manages or to which it is accredited. These include the Infrastructure Investment Programme for SA (IIPSA), SADC Project Preparation Development Facility (PPDF), Green Climate Fund, the Global Environment Facility, the Global Climate Fund and the UN Sustainable Development Goals.

As the accredited institution for the Global Climate Fund and the Global Environment Facility, the DBSA — through project preparation is able to mobilise concessional capital to drive investments in climate friendly projects in support of SA’s commitment to the Paris Climate Accord and the UN Sustainable Development Goals. Lastly, the division is also actively involved in projects that support the regional integration of the SADC region. Through partnerships with facilities such as the IIPSA, PPDF and IIPSA, project preparation has secured funding for various cross-border projects in the energy and transport sectors. Some of the key initiatives include the North-South Corridor rail rehabilitation and upgrading project, the Mozambique-Zimbabwe Saxo transmission line and the Angola Namibia interconnector project, among others.

PROJECT PREPARATION

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Disciplines to achieve the specialist in different
This division is made up of procurement project implementation capabilities through its infrastructure delivery division (IDD).

IDD is the infrastructure delivery arm of the DBSA and has been tasked with accelerating planned infrastructure development, supporting project development, advancing the green economy, and ensuring the delivery of value for money infrastructure. It works with stakeholders to improve both the speed and quality of infrastructure delivery. Close to R20bn was spent on projects implemented since the division’s inception over the past five years.

“We complement the bank’s overarching goal of creating a healthy balance sheet across all projects,” says Mohmed Bhabha, acting group executive of the IDD.

The division’s primary clients are municipalities, provincial government departments and national government departments. Essentially, we help those entities spend their budgets in a more efficient way,” says Bhabha. “When it comes to construction, for instance, procurement is a specialised and even risky business requiring specialist skills. We offer them expertise.”

In keeping with the DBSA’s mandate, IDD offers its services in delivering infrastructure assets for the health, educational, housing, water, sanitation and roads sectors.

Employing a multidisciplinary team which includes procurement specialists, engineers, project managers, quantity surveyors, planners, legal and contract managers, occupational health and safety officers, development facilitators, and contractors, the division provides a rapid procurement process to allow for projects to be initiated and executed quickly and efficiently.

The team deals with a variety of infrastructure projects including the construction and refurbishment of clinics, hospitals and schools as well as emergency repairs at these facilities. It is also involved in the maintenance and rehabilitation of roads, municipal infrastructure and refurbishing industrial parks.

One of the flagship programmes supported by the IDD is the bank of basic education’s AUSIL programme, in which at least 117 schools have been constructed since 2002, benefiting over 48,000 learners.

During the 2007-2008 financial year, the division supported the KwaZulu Natal department of education and the Limpopo department of education with refurbishing at least 101 schools damaged schools. Over the five-year period (2013 to 2018), IDD refurbished and did emergency repairs to 359 clinics, hospitals and doctors’ consulting rooms on behalf of the national department of health and the Limpopo department of health.

The majority of the division’s human settlement projects took place in the Eastern Cape, where a rural housing programme for the Eastern Cape department of human settlements was under way, with IDD completing 1,400 units, while a similar project in the City of Ekurhulela has delivered 112 housing units.

Working with the department of trade & industry together with the Industrial Parks Management, the IDD refurbished commercial industrial parks to improve security and the state of the parks to attract tenants and make them more commercially viable.

In support of regional integration, the division supports the SADC Water & Sanitation Fund, implementing a German Development Bank KFW-funded project, the Kazungula Water Supply Project, in Zambia and the Loma-Bashu-Namacha Cross-Border Water Supply Project in Mozambique.

Unlike a commercial bank, the IDD’s client footprint lies where the development index is the lowest and its assertion risk is far less.

Alongside the delivery of infrastructure, the division supports government’s empowerment initiatives. The division maintains a list of accredited suppliers, which are preferred with their capabilities balanced with their black economic empowerment credentials. During the 2017-2018 financial year, projects implemented by the division created 8,412 employment opportunities for 776 SMMEs and subcontractors benefiting.

In contributing to sustainability of service delivery, the division has in the past year changed its focus from new builds to prioritise rehabilitation and maintenance of existing infrastructure. At present, more than half its projects are focused on maintenance and rehabilitation.

Mohamed Bhabha: Helping to keep a healthy balance sheet in each project

MD and chair of Sappia (SA Photovoltaic Industry Association) says it’s essential that these finalised plans are based on choices that put SA on track with the global energy transition. “The clear technology investment roadmap it provides is essential to instil certainty over a multicentury time horizon, and is particularly important for growing job-creating prospects in SA’s renewable energy manufacturing sector,” she says.
Financial Mail Infrastructure Report Guest Column

**Special Report: Infrastructure**

**Infrastructure Development with the South African Landscape**

The Renewable Energy Independent Power Producer Programme (REIPPPP), currently in its fourth round has been heralded as a mechanism to create the private sector in collaborating with government to deliver against the country’s infrastructure requirements. Without taking away from other proven regulatory mechanisms such as Public Private Partnerships (PPPs), which have facilitated infrastructure development across all three spheres of government, the systematic approach that the REIPPPP followed, provides medium to long-term clarity on government policy and its requirements to attract skills and capital from the private sector to develop the power sector in South Africa.

The graph below reflects below the historical contribution of PPPs since the Public Finance Management Act was enacted in 1999 as a percentage of public sector infrastructure spending, relative to the ZAR52bn invested by the private sector for government to procure just over 60GW of energy through REIPPPP to date, since 2011.

**SNAPSHOT OF PPPS VS REIPPPP INVESTMENTS IN SOUTH AFRICA TO DATE**

<table>
<thead>
<tr>
<th>PPP Projects</th>
<th>2012</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>REIPPPP Projects</td>
<td>112</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
</tbody>
</table>

*Source – National Treasury 2018 Budget*

Other sectors beyond the power sector which require significant investment, both from a maintenance and development perspective, include health care, housing, water and sanitation and transport.

The challenges faced in attracting capital into these sectors, which often service a social need, span the country’s socioeconomic conditions (the basis of an infrastructure development plan), the skills base required to activate the same development plan and affordability the trade-offs between the immediate needs of the country and how these lead into productivity and job creation over the long term, to contribute towards a positive and inclusive Gross Domestic Product (GDP) trajectory.

GDP statistics recently released for the first quarter of 2018 (reflecting the largest quarter-on-quarter decline since 2009 of 2.2%) further drive the point home that our manufacturing and industry sectors continue to face pressure, heightened by their reliance on physical infrastructure. From a business confidence and continuity perspective, influenced by financial markets where macro-economic statistics drive investment appetite, this brings to light the challenges we face in delivering against: 1) Government’s long standing annual average of circa ZAR300bn spent on public sector infrastructure, and 2) the President’s recent announcement to raise US$100bn over the next five years to boost the South African economy.

**SOLAR UPTAKE**

Of the eight largest wind energy projects in SA, four are in the Eastern Cape. Three are in the Northern Cape, and one in the Western Cape. Combined they have the capacity to produce more than 6GW of power.

There’s been significant interest in solar energy from local municipalities, including the City of Africa and Clearwater Mall in Johannesburg, as well as businesses such as Vodacom in Cape Town. In addition, there’s been significant uptake of solar power among wine farms in the Western Cape. Kimberley, Upington and De Aar in the Northern Cape, Vryburg in the North West and Lephalale in the Limpopo region.

The benefits of growing the renewable energy sector are clear: REIPPPP has already attracted more than R20bn in investment in projects in rounds 3.5 and 4 by the end of 2015 will soon achieve financial closure, with construction due to start by the end of the year or early 2016.

**Job creation**

According to the department of energy, more than 26000 jobs has been created by the renewable energy sector by the end of 2016. The preferred bidders in round 4 have committed to the creation of a further 15000 jobs.

It’s not just direct jobs that will be positively affected. Once the 27 projects have achieved financial closure, ancillary sectors such as construction and equipment supply companies will benefit. The projects themselves will require additional resources including legal skills, technical advisors, electrical and mechanical engineers, artisans to install plants and environmental consultants to conduct environmental impact assessments. Martin expects the first orders could be placed as early as the end of June.

Much of the future of the sector, says Chown, will be in the hands of government and its long term vision. “Any industry that operates in a developmental economy environment needs policy consistency and a progressive rollout plan if the benefits of the industry are to be reaped,” he says. “Renewable energy has the potential for policy consistency, a strong, credible, proven procurement regime: a credible, working, paying finance sector; and a skilled, technically competent workforce. These elements are all there in part – but they need to be scaled up.”

What’s now required, he says, is a meeting of the minds on SA’s energy future, what it looks like, and how the country will get there in a manner that is inclusive and builds sustainable livelihoods.

There is little doubt that renewable energy makes sense for SA, given its plentiful wind and solar power resources, along with clear evidence that costs are competitive.

“Price will ultimately make the choice of consumers – and in fact, entire economies – lean much more strongly towards the uptake of cheaper, cleaner, more decentralised, smarter energy and technology choices,” says Chown.

**Declining GDP**

In an environment where, relative to our emerging market peers and the rest of the global economy, we are faced with a declining GDP trend, investor appetite to deliver against both our local currency and foreign currency requirements to boost GDP has very strong competing alternatives. These can only be delivered on in a business unusual environment, where both the public and private sector actively collaborate. A reverse in the declining trend of private investment (which contributes 40% of total investment of circa ZAR16bn) will need to emerge. If the plan to boost the economy and increase the ratio of investment to GDP from the current 19.5%, to the 2030 National Development Plan target of 30% is to materialise.

Relief will be required by the public sector to facilitate this through more programmes and policy certainty, which looks well for PPPs and private sector participation in infrastructure projects.

From a financial/Investor perspective, assuming other factors are dealt with through a conducive regulatory and policy perspective for business continuity, affordability from both end user and investor perspectives is often the key decision factor in considering participation. It also impacts the risk appetite of the private sector to invest in a project over a set investment horizon or lifecycle of a project and/or infrastructure asset. From an end user perspective, to the extent that the key enabler of a project is government, tariff setting and regulation becomes critical to the affordability and commercial viability of a project.

The infrastructure sector is broad and has varying degrees of complexity due to the scale and cost of projects. It furthermore requires multiple parties to deliver a single project, broadly aligned with a highly regulated environment in which these projects are to be developed and operated. This requires careful consideration of cost benefit analysis from investing in one project over another, or even one investment class against another. South Africa’s financial sector has proven that though well planned and sustainable infrastructure investment programmes, adequate liquidity can be raised to invest in projects, as was seen with circa 75% of the investment in REIPPPP being underwritten domestically.

If anything, this proves that the country’s demand for sustainable renewable energy can be met through private sector partnerships with government, with room for expansion into other infrastructure sectors.

Mphokole Makasa is a Transactor in the Infrastructure Finance Division of Rand Merchant Bank.
Population growth, particularly in urban areas, has placed increased pressure on the country’s water resources, aggravated by drought and uneven distribution. Droughts in the Western and Eastern Cape, coupled with critical water shortages, have highlighted the need for better management of the country’s water resources as well as a more comprehensive approach to water consumption.

Responsibility for the country’s water resources rests with the department of water & sanitation (DWS). Water supply and sanitation services are the responsibility of municipalities that are designated as water service authorities.

The Saice 2017 Infrastructure Report Card for SA gives the country a D- grading for its bulk water resources (implying at risk of failure) due to insufficient maintenance. Sanitation, including waste water, receives a C (satisfactory for now) in major urban areas but an alarming F (fail for purpose) in all other areas.

The report highlights the fact that current water usage already exceeds the reliable yield of existing water infrastructure and the marginal cost of future expansions is rising rapidly. As a consequence, SA needs more investment in water infrastructure and a more comprehensive approach to water consumption.

As a water scarce country, the reality is that unless water resources are properly managed with sufficient long-term planning strategies in place, shortages will become increasingly common. A number of main initiatives which have failed to implement proper long-term planning have been found – their cost, that alternative initiatives in the form of desalination, aquifer exploitation and groundwa- ter pose their own challenges, pro-

In the early 1990s SA was land-
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tion, Nomvula Mokonyane, began to undo this system, losing her department’s expertise to implement the necessary planning, says Mike Muller, apartheid professor at Wits University and chair of the Western Cape Water Authority. “There is little doubt that after years of mismanagement, the DWS in a shameful and lost most of its expertise to the point that there is little forward planning taking place,” says Andrew Johnstone, MD of independent water and environmental consultancy, GCL.

The failure of many water infrastructure projects is due largely to incompetence which is unfortunately because the country used to be renowned for its huge infrastructure projects such as the Lesotho Highlands Water Project. However, it is not clear if the projects that are being built are the ones that were envisaged in the planning stage.

While the Lesotho Highlands Water Project was supposed to be providing water to the Transkei and the eastern Cape, it is now providing water to the Transkei and the eastern Cape. The project was given a boost in 2016 when the Transkei and the eastern Cape and municipalities, there is a lack of management and proper planning.

Despite intermittent headlines claiming that acid mine drainage is a major problem in the country, there is a lack of management and proper planning.

The Organisation Undoing Tax Abuse (OUTA) has estimated that 30% of waste-water systems are currently not functioning. In 2015, OUTA estimated that 30% of waste-water systems are currently not functioning. In 2015, OUTA estimated that 30% of waste-water systems are currently not functioning. In 2015, OUTA estimated that 30% of waste-water systems are currently not functioning.

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SA needs to do more to bridge the huge digital gap and lower the country's data costs, which are among the highest in Africa

- SA's telecommunications and ICT sectors are regarded as among the most advanced in Africa. In recent years the country has shifted its focus from fixed-line networks to mobile networks. Mobile penetration is high at over 155%, though expectations are that this growth will slow down significantly as the mobile market reaches saturation.

- Internet penetration sits at 73%. Fixed line penetration, however, lags at 5.2%, and this figure looks set to dip even further. Telkom, a state-owned company and the country's largest provider of fixed phone lines, has had a major decline in its traditional voice services. In the past year its fixed lines declined by 2.9 m fixed lines to 2.7 m lines. In a bid to bolster its revenue stream, the company has started to push more aggressively into the mobile and fibre broadband space.

- Government owns 40.5% of Telkom. After announcing in 2017 that it was considering selling a portion of its share in Telkom, that proposal appeared to be off the table by mid-2018.

- The country's connectivity infrastructure has grown significantly over the past decade, with one of the most significant drivers being the influx of undersea cables that connect SA with the rest of the world. In the past few years a number of high-speed undersea cables have been developed, pushing both SA and the African continent into greater – and more affordable – connectivity.

- There has been a similar push to roll out a fibre network, particularly in urban areas. SA now has an estimated 280,000 km of fibre installed, with 77% forming part of the backbone network, says Naka Govan-Vassen, ICT senior industry analyst at Frost & Sullivan.

- The gap in high-capacity infrastructure is greater in rural areas and former homelands than in the cities, though there are some urban areas with high population densities that remain underserved.

- However, the most significant gap in the national broadband infrastructure is in the access network – the so-called last mile infrastructure,” she says. Despite this, there are opportunities for investment in ICT infrastructure. She says that many of the country’s rural areas still lack sufficient connectivity and as a result, mobile operators are battling to deliver 4G as a result of congested data networks. However, until the necessary spectrum is allocated, this situation won't be resolved.

- Earlier this year government announced that bringing data prices down would be a priority for 2018. President Cyril Ramaphosa has also revealed that 4G mobile services, network operators are battling to deliver 4G as a result of congested data networks. However, until the necessary spectrum is allocated, this situation won't be resolved. The thinking behind this move is to increase competition and lower mobile communication prices. Research consultancy Frost & Sullivan said that the most significant driver of mobile broadband costs is the price of data services. These will primarily be consumer protection regulations aimed at promoting transparency and preventing unfair business practices.

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Skills capacity issues affecting infrastructure

More needs to be done to recruit and retain skilled engineers for the entire life cycle of projects

While the engineering profession has long lamented the critical shortage of available engineering skills, industry association, Consulting Engineers SA (Cesa) says there just aren’t sufficient engineering jobs to go around. Most of Cesa’s member companies are in the process of cutting back on staff counts, says Cesa CEO Chris Campbell. “The irony is that as much as SA has a huge backlog in terms of infrastructure delivery, with the slowdown in government investment in infrastructure, there just aren’t sufficient projects to go round and not enough positions for consulting engineers,” he says.

“Procurement officials need to stop thinking of procurement as purely a cost-based exercise and instead of focusing on the basis of lowest possible cost rather than on appropriate and relevant experience, expertise and capacity.

“An average consulting engineering service costs about 2%-3% of the total cost of the asset over its 20-year life cycle,” says Campbell. “However, if the consulting engineer has the appropriate experience, they should be able to add considerable value in terms of project life cycle value, mitigating risk measures, long-term maintenance measures and overall specifications.”

Government procurement, instead of focusing on properly planned projects, tries to squeeze engineering consulting fees — even though that portion of the project accounts for only 2%-3% of the overall project life cycle cost — rather than focusing on ensuring value for money in the remaining 97% of the project life cycle cost.

Procurement within the public sector is a tick box exercise only, says Campbell, with those responsible for this critical area more fixated on compliance rather than ensuring they get value for money.

Infrastructure procurement should be a very different game from procuring stationery. Without the appropriate expertise projects end up being compromised, with the result that infrastructure delivery is once again jeopardised.

“Procurement officials need to be re-educated in terms of how to procure for infrastructure projects, and only competent service providers with the requisite skills and expertise should be allowed to tender for these kinds of projects, as opposed to the current system, which is purely cost-based,” he says. “This results in work going to companies without even a semblance of the most basic skills required,” says Campbell.

Though public sector employment figures have risen dramatically in the past few years, this has not been accompanied by an increase in engineering capacity. Even when engineering skills are employed in the public sector they’re often not retained for long as a result of a lack of clear and flexible career paths.

“The ideal scenario would be a well capacitated public sector that understands its role in terms of infrastructure procurement and delivery as well as its assets,” says Campbell.
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