

# South African Government Infrastructure Sector Interventions

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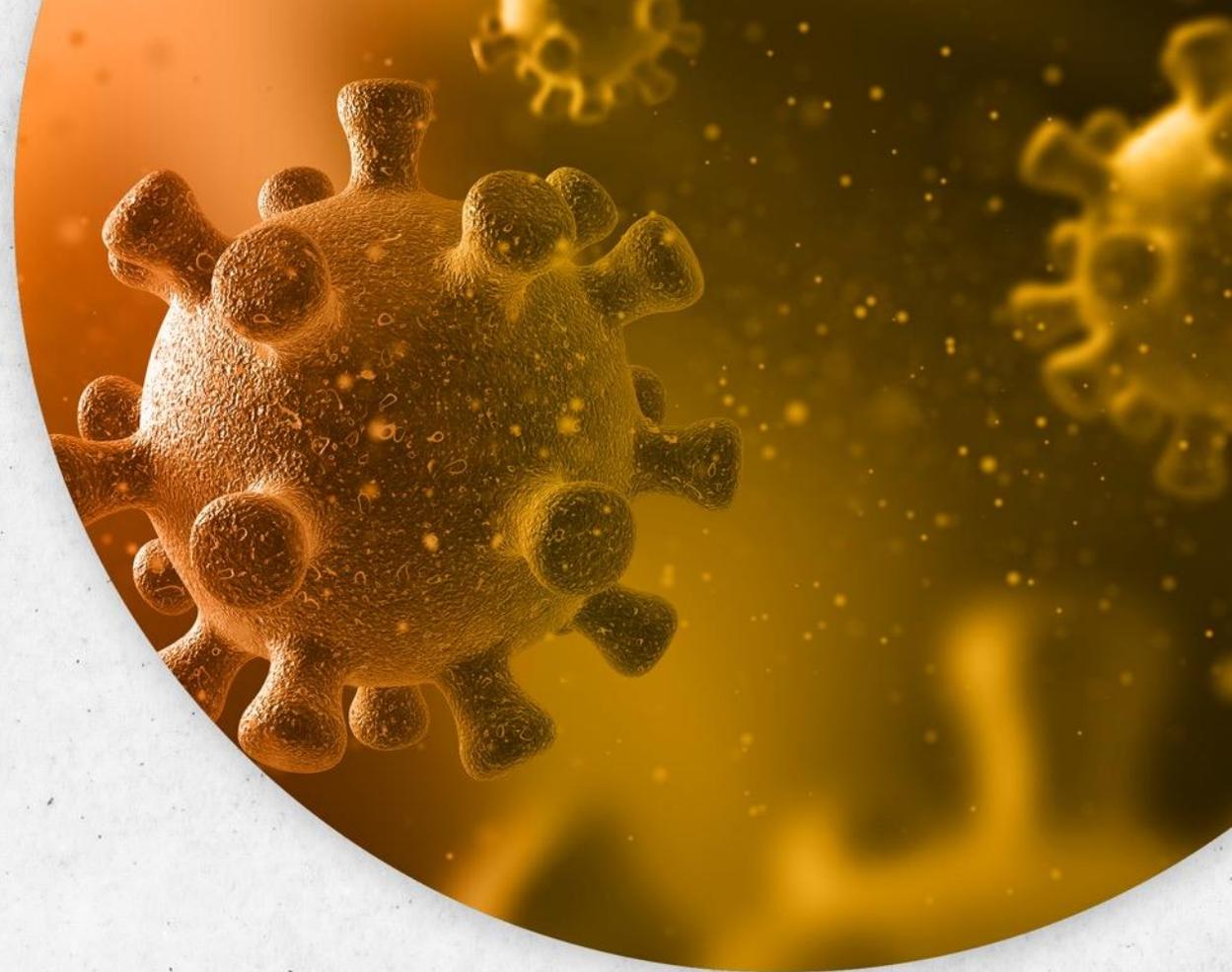
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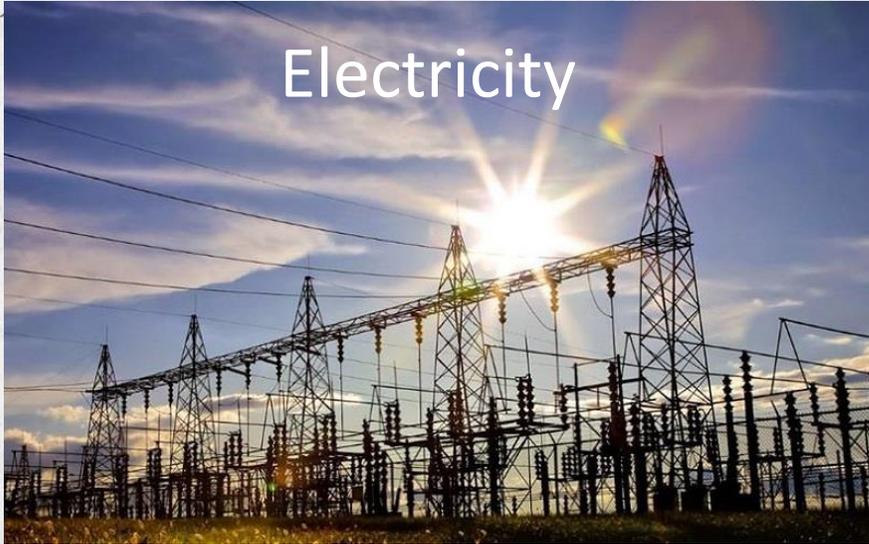
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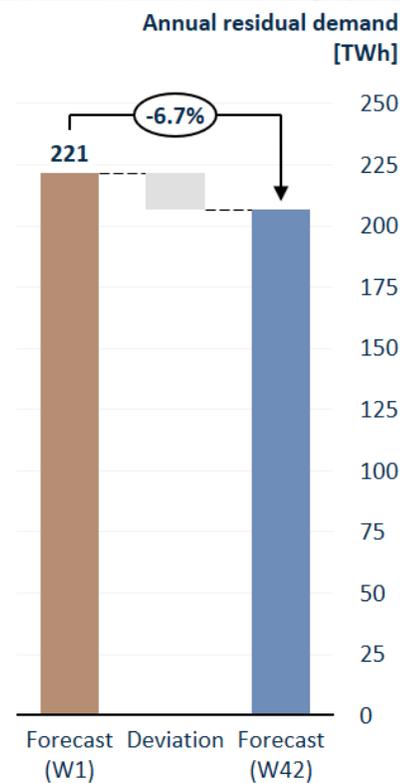
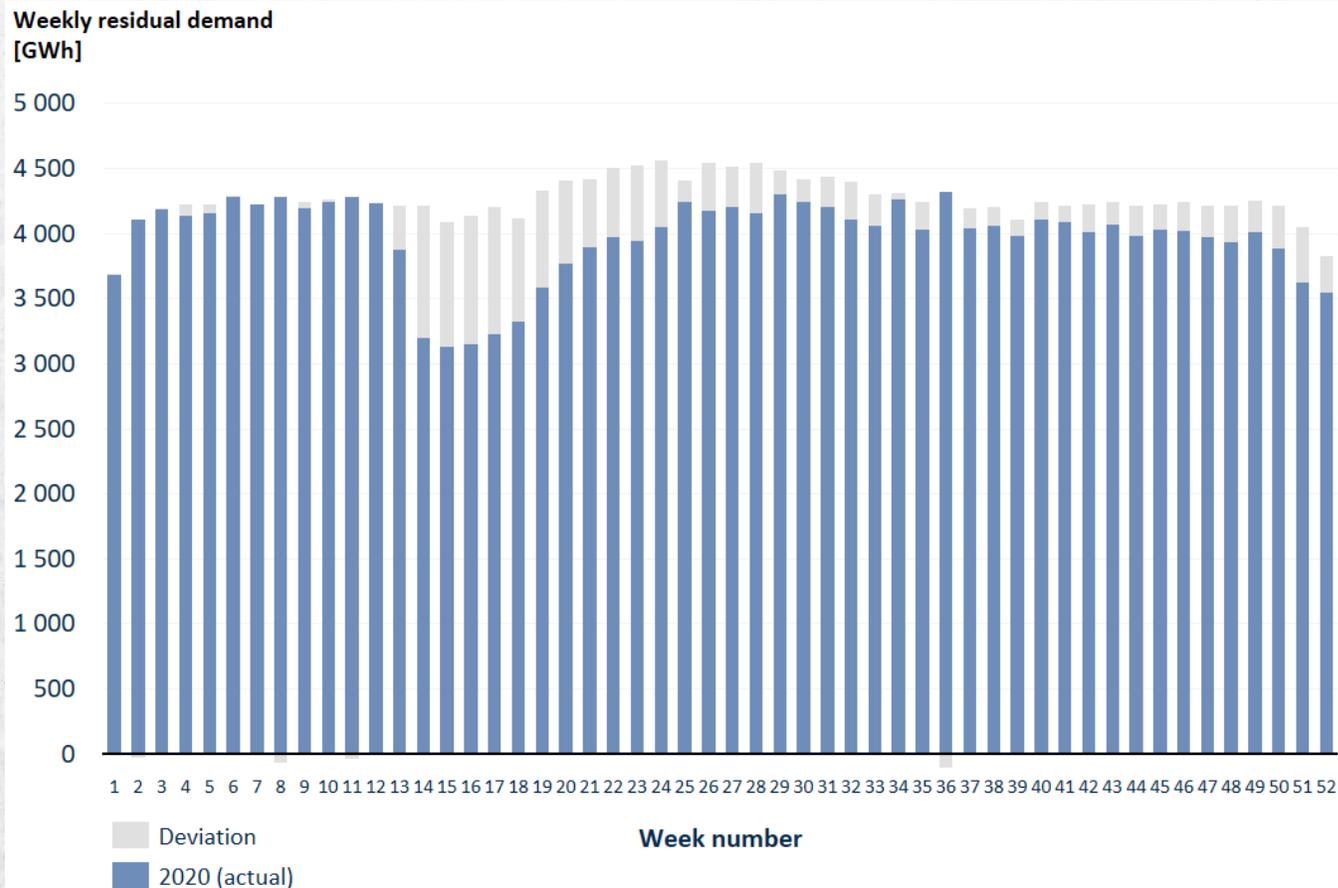


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# Review of four infrastructure sectors



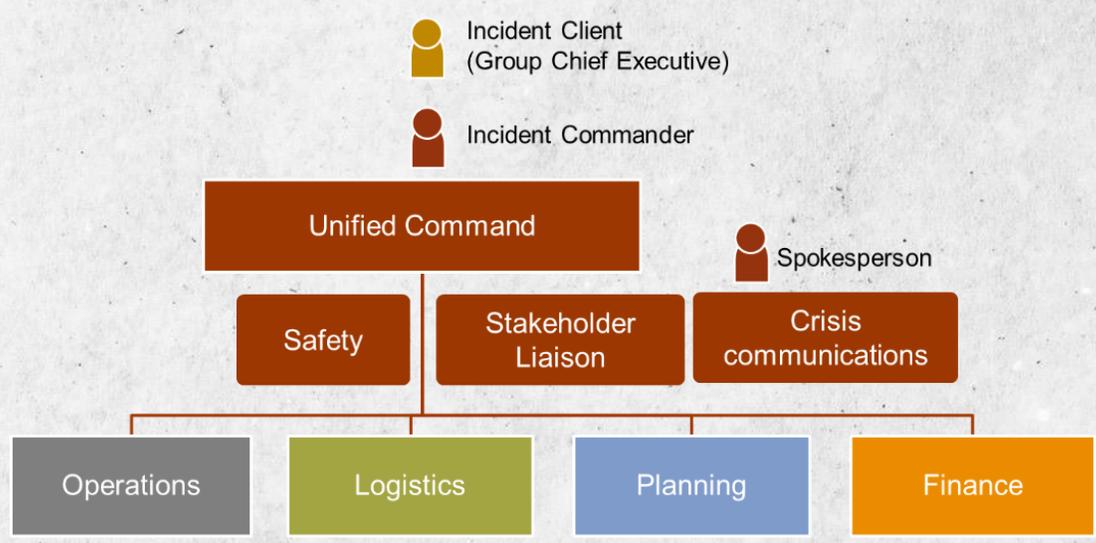
# Electricity demand dropped substantially with the lockdown



- Peak residual demand dropped by up to 11.0 GW during level 5 (average 5,7 GW), by 8,7 GW during level 4 (average 3,3 GW), and 7,3 GW during level 3 (average 0,9 GW).
- During the 5 weeks of L5 lockdown, a 23-26% reduction in weekly energy demand occurred
- For 2020 demand to contract by 13 TWh (-6.7% year-on year).

- As the economy began re-opening notably in L3, the return of electrical demand was near immediate
- The reduced energy demand resulting from the COVID-19 pandemic allowed for the execution of additional short-term maintenance to address emergent issues in the Eskom generation fleet. The resumption of demand combined with a low energy availability factor, meant that Eskom experienced significantly higher open cycle gas turbine usage and was forced to implement periods of load-shedding in July, August and September.

# Eskom activated emergency structures and managed the impacts



- Eskom’s annually-updated Disaster Management Plan identifies 11 national disaster priorities. A Pandemic is one of these, and an authorized disaster response plan was in place. In terms of this plan, Eskom’s full emergency structure was activated
- Emergency Response Command Centre (ERCC) activated and coordinated tactical responses with the Tactical Command Centres (TCC’s). These structures are regularly exercised and were activated across the organisation by 6 March
- In terms of Eskom’s pandemic planning and standard operating procedures, the organisation’s COVID-19 response was informed by Eskom’s Chief Medical Officer and its Human Resources Tactical Command Centre

- The Group Chief Executive led Eskom’s internal and external communications throughout the pandemic. Extensive internal communications included safety messaging, standard operating procedures, and morale-building through news features on employees at the frontline
- Communication with international counterparts was instrumental in decision making. Eskom utilised its international network to help manage the response to COVID-19 as included a particular focus on System Operations given the related risks to National Control
- Assessment of Eskom’s responses showed the organization was resilient, and (largely) lived up to its value of Zero Harm. Very good processes, procedures and controls were instituted rapidly at the start of the pandemic, in many cases even before the national lockdown was initiated. Strong leadership was evident at multiple levels of the organization. The Trade Unions worked constructively with Eskom during the COVID-19 lockdown

# Water and sanitation problems predated the pandemic

- Water and sanitation infrastructures are crucial for public health. Especially so during a pandemic for which hygiene plays a critical role in minimizing the spread diseases. Provision of safe drinking water and proper sanitation infrastructure is essential for protecting public health.
- Responsibility for water and sanitation is spread across the National Department, water boards, and municipalities authorities.
- 88,2% of South African households had access to water in 2019 but provincial coverage varies from 98,5% in the Western Cape to 70% in Limpopo. National coverage has declined slightly from 90,1% in 2014 to 88,2% in 2019.
- 82,1% of South African households had safe sanitation in 2019. Coverage rates vary widely between most urbanized provinces (above 90%) to least urbanized provinces (around 63%).
- The South African Institution of Civil Engineering (SAICE) infrastructure report card for 2017 found that bulk water resource infrastructure is not coping with the increased demand and is poorly maintained. In major urban areas supply is satisfactory but needs investment. In peri-urban and rural areas the water supply infrastructure continues to be at risk. Sanitation infrastructure in major urban areas is satisfactory, in other areas it is unfit for purpose having already failed or is on the verge of failure.
- Challenges facing the country in providing adequate water and sanitation infrastructure to its citizens are:
  - \* Aging bulk infrastructure
  - \* High wastage (leaks) creating large non revenue water losses
  - \* Skills gaps in management and operations at points across water value chain
  - \* Declining water quality increasing treatment costs
  - \* Inadequate operation and maintenance funding
  - \* Lack of buy-in from users and recovery of user fees

# Emergency supplies provided to water stressed communities

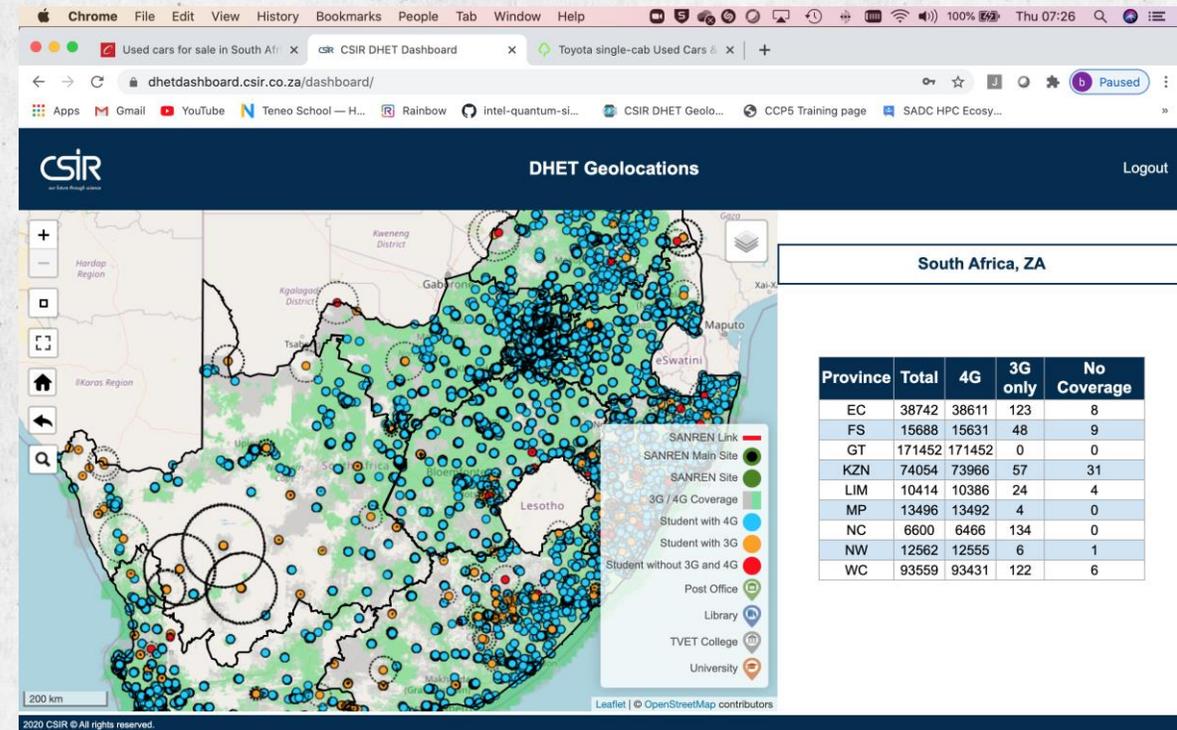
- COGTA decided to use the District Development Model (DDM) as a framework for implementing Covid-19 measures
- DWS provided R306.5 million across all provinces for installation of tanks, the hiring of water tankers, sanitisers, hand soaps, and PPE.
- An additional R20-billion allocation to fund emergency water and sanitation provision during the state of national disaster has enabled the delivery of nearly 17 000 water storage tanks, over 1 200 water tankers, soaps, hand sanitizers as well as ablution facilities to targeted communities.
- In rural areas a total of 18 875 tanks were allocated. By 30 September 2020 91% of had been installed nationally. Isolated reports of villages not receiving Water, Hygiene and Sanitation (WASH) disaster relief facilities were recorded.
- School infrastructure backlogs from Apartheid left many schools unprepared for the pandemic. DBE spent R600million for a three month hire of water tanks for 1,428 schools without running water and mobile toilets for 3,157 schools with pit toilets or inadequate toilet infrastructure in Limpopo and Eastern Cape. These are temporary solutions to historical problems. Large reductions to the education conditional grants has put 1,938 school infrastructure projects on hold, meaning temporary interventions have come at the expense of long-term, permanent improvements to schools.
- The COVID-19 pandemic is causing severe stress to water and sanitation infrastructure due to reduced revenue for utilities and deferment of capital projects as municipalities prioritize often expensive short-term measures to keep communities supplied with water. Municipalities were responsible for the bulk of crises response implementation putting pressure on their finances and personnel. A public finance crisis could occur, endangering the provision of basic services. Municipalities need more support from national and provincial government.
- Sustainable water and sanitation infrastructure requires steps to solve problems across the entire value chain that are necessary to both support economic activity and to raise South Africa's resilience to deal with future pandemics.

# ICT Infrastructure

- In view of need for social distancing, ICT played a critical role in e-health, online education, ecommerce and entertainment. Hence there was demand for ICT services
- Due to travel restrictions and lockdown in other countries, especially where South Africa source the ICT components, the roll-out of infrastructure was impacted and led to delays in most ICT projects
- Projects such as SAConnect, which aims at reaching 90% of the South African population through fibre-to-home, was also further delayed. This delay further exposed the disparity of resources within the country, limiting compliance for social distancing
- Populations which are in areas with poor coverage of broadband cannot benefit from distance learning, access to ecommerce nor health care information
- Most citizens resorted to working from home, and thus increased demand on broadband and also introducing vulnerabilities in cybersecurity due to new working environments
- South African ICT sector responded to these high demand in broadband by reducing data costs by most of the mobile operators and also doubling the capacity of broadband access without any additional costs
- Zero-rating of educational sites to allow students access to content for on-line learning
- ICASA assigned emergency temporary spectrum to local telecommunication industry in April 2020 to ease the pressures on networks due to increased demand on data usage and made regulatory concessions
- South African ICT industry task team was formed by members of ICT industry who contributed their time for free and looked at various ways that could assist the government to ease the impact of ICT resources and services due to pandemic

# Measures taken by government for ICT

- National command center used ICT for decision-making and provided regular status of the spread of virus, testing and deaths in the country through the CMORE platform provided by CSIR
- Contact tracing and tracking initiatives were implemented by government and mobile operators to use the aggregated data to monitor areas where social distancing is not followed
- Alert services through the Bluetooth functionality within mobile phones has been created to assist the citizens where they could have contact with infected person. This is voluntary service to protect citizen privacy. In other countries it was mandatory and had positive results
- The Department of High Education commissioned a survey through the CSIR to geolocate students and understand the broadband coverage in the country.
- The study revealed that most students depend on mobile data for accessing learning materials and there is poor coverage of 3G/4G in most areas.
- Alternative access points such as post-offices and national libraries were also geolocated to determine if these will be accessible to students.
- NSFAS would provide learning devices to students in need to enable on-line learning. This was delayed by procurement processes.



- A proposal by ICT industry to consider using the spare capacity of fibre from SOEs to allocate to health and education sector
- Prioritise licensing of spectrum in under-serviced areas and link this will provision of services to health and education sector
- Expand eduroam capabilities to beyond campuses to ease the access of students to broadband

# Transport and Construction

- Transnet SOC implemented its business continuity response process in January 2020 through a Covid-19 Command Centre and rolling out health and wellness protocols for employees. The pandemic's impact on the company's infrastructure saw disruptions to planned maintenance activities in the initial stages of the lockdown and an increase in criminal activities causing operational disruptions.
- The initial impact of the COVID-19 pandemic on the global construction sector, South Africa included, was supply chain disruption and a diversion of maintenance budgets towards COVID-19 social relief measures.
- Going into the pandemic South Africa's construction industry had in distress for several years due to falling fixed investment, margin compression, criminal activities and rising input costs.
- All construction activity save for emergency repairs and maintenance of essential services infrastructure were put on hold under level 5 lockdown. Q2 2020 construction activity declined by a seasonally adjusted and annualised rate of 76,6%. Over the first half of 2020 the construction sector contracted by 14,2%.
- Pandemic restrictions that cut vehicle movements especially impacted transport infrastructure projects financed through public-private partnerships i.e. national road concessions and SANRAL.
- From 1 June 2020 onwards construction activity resumed activities, aided by an industry body Construction Covid-19 Rapid Response Task Team which has turned attention to economic recovery under the slogan 'build back up and better'.

# Infrastructure investment for economic recovery

- Government policy and the National Development Plan identify infrastructure investment as a core component of economic recovery plans and strategies to create employment and social and economic assets for an inclusive economy.
- Along with a reconfigured Department of Public Works and Infrastructure the body Infrastructure South Africa was established in 2020 for the purposes of improving project selection, coordination, funding and monitoring.
- The first set of 62 out of 276 projects vetted through the Sustainable Infrastructure Development System methodology were gazetted on 24 July 2020 as Strategic Integrated Projects.
- The implementation of these SIPs forms part of the Economic Reconstruction and Recovery Plan introduced by President Cyril Ramaphosa on 15 October 2020.
- Government had committed R100 bn over 10 years to an Infrastructure Fund that will mobilise additional private sector funding via various channels to leverage funds from the fiscus via private sector funding, development finance institutions and blended financing with concessional and environmental or climate related conditional funding.
- An important role for Infrastructure South Africa is to clear administrative blockages and give impetus to structural reforms.
- For the transport infrastructure sector attention is upon the accelerated implementation of projects in SIP 21 (Transport), SIP 25 (Rural Bridges Welisizwe Programme), SIP 26 (Rural Roads Upgrade Programme), and SIP 27 (Upgrading and Repair of Township Roads in Municipalities Programme).

# Preliminary lessons learned

## **ENERGY**

- Permitting system shown to need streamlining. Essential workers could have been allowed to use own access cards to start with and permits for higher levels of lockdown should be value for lower levels without needing to be reissued.

## **WATER, SANITATION AND BASIC MUNICIPAL SERVICES**

- Critical issues for subnational governments in future include managing the impacts on public finance; maintaining services and infrastructure; developing new (especially digital) infrastructure; supporting vulnerable households and communities; supporting the economic recovery (and especially small businesses); and reconfiguring governance based on the lessons of the pandemic.  
pandemic-type crisis

## **ICT AND TELECOMMUNICATIONS INFRASTRUCTURE**

- Recommendations to close gaps in coverage include a proposal by the ICT industry to use the spare fibre capacity of state-owned enterprises for the health and education sector; to prioritise licensing of spectrum in underserved areas and link this with the provision of services to these sectors; and to expand eduroam capabilities beyond campuses to help students access broadband facilities.

## **TRANSPORT INFRASTRUCTURE AND CONSTRUCTION**

- Develop more agility to operate during an abrupt pandemic-type crisis. Mandatory protocols under the Occupational Health and Safety Act are needed that should involve delegated authority to representative industry associations to develop sector-specific mitigation measures for continued, risk-controlled operations for consideration and approval by a national advisory panel.

Thank you



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