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# 2020 Infrastructure Snapshot

KPMG

09 November 2015



*Infrastructure spending is considered to be one of the major catalysts of economic growth, development and economic activity. It can be regarded as a mechanism of generating employment opportunities for millions of unskilled, semi-skilled and skilled workers.*

### **Current SA outlook**

- Negative sentiments
- Low GDP
- Load shedding curtailing economic growth
- Infrastructure spending backlog- R850bn planned infrastructure spend over the next 3 years, R4trn required over the next 15 years
- Lack of good governance
- Labour strikes
- Water restrictions

### However, all is not lost...

- South Africa maintains its investment grade rating
- The Country is making strides in achievement of National Development Goals
- Significant infrastructure investment to date and planned in key sectors such as Transport, Power, Water and ICT
- PICC monitors 44% state infrastructure projects on a quarterly basis, focusing on the 18 SIPs, resulting in significant infrastructure spend and job creation

***Progress is being made, which will paint a different picture in the near future.***

# Why invest in infrastructure?

## Why is investment in infrastructure important ?

Promotes positive **economic growth**

**Boost aggregated demand** through expenditure during construction

Serves as an **enabler for poverty reduction** and employment creation

Enables developing countries to achieve **suitable growth and development**

### How the sector has performed

Construction had the **fastest GDP growth by sector between 2000-2014**

12.5\* %

The sector accounted for the **fastest growth in operating surplus (profit) growth between 2000-2014**

14.2\* %

In **2000** construction works accounted for **13%** of total investment in the domestic economy. In **2014** the sector accounted for **30%**

30 %

### Where investment is coming from?

Investment growth 2000-2014



Private sector led investment

Steady public infrastructure investment

**Private Infrastructure**

**21.90%**

**Public Infrastructure**

**18.00%**

Increased private sector investment is due to improved business confidence.

Accelerated infrastructure investment guarantees a higher long run growth trajectory for the economy.

\* Compounded annual growth rate

# Infrastructure sector growth enablers and risks

## Enablers

**Strong private sector investment and moderate public sector CAPEX** projects will promote future growth in the sector



**Lowest industry risk profile in Africa**

**57.5** in 2015, highlights sector stability



**BMI South Africa infrastructure Industry Reward**

**45** in 2015, guarantees return on investment

**Increased competitiveness ranking for infrastructure from**

**66** in 2013/14 to **60** in 2014/14, highlights the sectors compatibility.



## Risks

Growth in domestic sector faces **labour challenges**



**Labour unrest**



**Acute skills shortage** could negatively affect sector outlook.

**Subdued industry growth in line with slow domestic growth**

**3.9%**

between 2015-2020

**Industry concentration**

**5** players account for

**75%** of industry

output. Major players have previously been charged with collusion.

**Domestic electricity supply deficit** negatively impacts **short term sector outlook.**

**Inefficiencies in spending and project delays** negatively impacts **on sector outlook.**



# The South African construction industry

## Most developed construction market in Africa

### Competitiveness index: Infrastructure

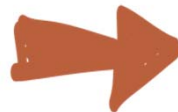
From **66** in 2013/14 to **60** in 2014/15 out of **144** countries.



**Growth** in SA's construction industry faces **challenges** due to ongoing **strikes**, **power shortages** and **macroeconomic pressure**



However they still continue to **contribute to GDP growth** and **employment**



## Construction sector capital investment

The compound amount of **19.0bn** in **investment** in 2000 increased to **R230.8bn** in 2014.

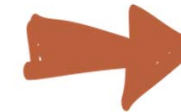


Construction industry **growth** year-on-year **increased** from **2.7%** in 2014 to **3.4%** in 2015.



**R150bn**

Construction sector employment increased from **1 199 000** as at January 2014 to **1 322 000** as at January 2015.



## Construction sector profits

The compound amount of **10.9bn** in **profits** in 2000 increased to **R79.9bn** in 2014.



Infrastructure industry year-on-year **growth declined** from **4.7%** in 2014 to **4.5%** in 2015.

**R75bn**



**Construction industry** as a % of increased from **3.6% of** GDP in 2013 to **3.9%** in 2014.

**Infrastructure industry** as a % of GDP remained at **1.9%** for both 2014 and 2015.



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## **Sector Status and Developments**





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# Transport





## Gautrain

### Status Quo

- State of the art rapid rail network in the Country providing a safer, reliable, faster and greener transportation solution in Gauteng.
- First phase linking OR Tambo International Airport and Sandton completed in time for the 2010 Soccer World Cup. Second phase connecting Tshwane to Johannesburg operational in June 2012
- Exceptional Growth with passenger demand numbers exceeding expectations
- 114,000 jobs created in the development period, 1,800 direct and sustained jobs created in the operating period
- Up to the end of 2014: +/- R20bn provincial contribution to GDP, increased Government revenue of R5bn and R2bn of income received by lower income households
- Additional rolling stock procurement and network extension feasibility study in progress.

### Five years ahead

- **+/-R3bn invested in additional rolling stock (estimated at 48 coaches) to meet demand requirements. Additional trains will phased in over three years from 2019**
- **2 to 3 new expansion routes will be in significant progress as a result of the approved feasibility study in 2016. Extension procurement expected to begin late 2016, construction in 2020**
- **Every R1 new investment into the Economy by Gautrain adds 73 cents to the Gauteng Economy and 18 cents to Government revenue**
- **Expansion of Gautrain results in 5 jobs per R1m spent during construction and significant poverty alleviation impacts with 17% of additional household income flowing to lower income households**
- **Growing public transport option**

### Status Quo

- R123bn investment in +/- 7 000 passenger trains- first new trains since early 1980's
- 10 year train assembly contract + 19 year maintenance contract (probably times 2)
- Skills and technology transfer, ten South African engineers participating in an 18-month training programme
- Major stations, depots and related infrastructure upgrades underway

### Five years ahead

- **+/- 1600 vehicles/trains delivered, approximately 30 per month from mid 2016**
- **All trains to be assembled in a local factory in Dunnottar, constructed by Gibela Rail Transportation Company**
- **Minimum Local content of 65%**
- **+/- 65 000 direct, indirect and induced jobs to be created over the full programme of which ca. 21 000 is skilled**
- **Approximately R1.8bn earmarked for skills development; development of rail sector enterprises and community programmes.**
- **Safe, reliable and quicker public transport significantly reduces traffic congestion on Highways**

## Transnet

## Freight Rail

### Status Quo

- Transnet increased its seven-year capital investment programme by 7% to R333,6 billion, for investments in rail, ports and pipeline infrastructure
- 1,064 locomotives acquisition programme – contracts awarded to four major international manufacturers (CNR, CSR, GE and Bombardier)
- Transaction value of R50bn, 92% of funding secured
- Strict local content requirements – minimum 40% per contract, winning Bidders exceeded this at 55-60%
- Shareholding in local manufacturing entities include women, workers and a community trust
- 994 locomotives to be produced locally at Transnet's Koedoespoort and Durban facilities
- 95 electric locomotives have been delivered in March 2015 and are in operation. This delivery saw skills upliftment of 190 people, trained in China and lead to 260 people being employed in the assembly

### Five years ahead

- **All locomotives to be delivered by 2018**
- **Creation of 30 000 jobs and export capability for locomotives**
- **Reliable service, meeting of key goal to shift freight vehicles off the road**
- **Lower road maintenance owing to a reduction in heavy vehicle road usage**
- **By 2018/2019 more than 350.3 million tons of cargo per year will be railed**
- **Positive impact on overall GDP**

### Transnet

### Pipeline

#### Pipeline

- Multi products pipeline transporting refined products from Durban to Johannesburg is expected to be completed in March 2018. The new 555km pipeline, will replace the 49-year-old Durban to Johannesburg pipeline
- The pipeline will be able to transport 93 and 95-grade unleaded petrol, low-sulphur diesel and ultra-low-sulphur diesel, as well as jet fuel and will have a 70 year design life
- Due to cost escalations, total project cost is estimated at R25,3bn
- Replacement of the older pipeline and ensuring security of fuel supply to inland areas
- Employment of more than 12 000 people during construction with more than 2 100 people coming from nine magisterial districts
- Local employees made up 80% of the workforce, trained in transportable skills

#### Five years ahead

- **Fuel tankers reduced by some 60% in current terms**
- **Reduced road congestion, carbon emissions and maintenance costs**

### Status Quo

- World Class International Airports
- Approximately R5.2bn spend on infrastructure expansion brought forward to accommodate the 2010 Soccer World Cup
- Significant employment by the three major airports
- Majority of investment to be spent on upgrading domestic and international terminals of Cape Town International airport
- Expansion to be completed over the next three years

### Five years ahead

- **R7.7bn additional investment completed in upgrading of airports**
- **Tourism is a significant contributor to job creation with airport infrastructure being a pre-requisite to growing tourism. South Africa continues to significantly grow its tourism numbers**
- **Estimated 1 job created for every 12 tourists; +/- 1 100 jobs created following the establishment of a new scheduled international route**
- **Promotes regional and global integration**



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# Power





The South African energy landscape is undergoing very dynamic changes as a result of the many challenges which Eskom is being faced with.

Both Government and the private sector are consistently looking for ways to reduce the energy constraints through demand side management and new generation. The Integrated Resource Plan ("IRP") 2010 outlines the country's energy path and the energy mix looking forward to 2030.

## Current Challenges

- Ageing infrastructure
- Lack of maintenance
- Delayed new build
- Servicing more communities
- Load Shedding – significant negative impact on the economy
- Lack of quality feedstock

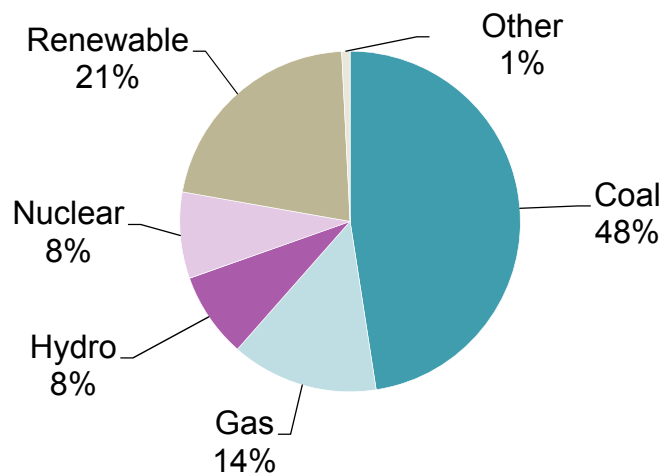
The IRP envisions an additional 41GW of new electricity generating capacity (excluding replacement of decommissioning plants) taking South Africa's electricity generation capacity to 81GW by 2030

Some of the key objectives of the IRP include:

- Diversifying the coal driven power mix
- Increasing generation through domestic and regional IPPs
- Incorporating multiple energy sources such as renewables and nuclear power

In the short term coal will remain key in the generation mix; but both Eskom and IPPs will focus on utilizing alternate energy sources going forward

**Installed capacity (2030) per IRP – 81GW (planned)**



- ZAR213bn to strengthen and develop transmission network between 2016 and 2025
- Eskom expects to have 53,600MW on the grid by 2025, compared with nearly 45,000MW currently
- 1,500MW solar park in the country's Northern Cape Province
- The ZAR3.5bn Dedisa Peaking Power project (335MW) in the Coega industrial development zone has started operating. The sister plant, Avon (685MW) located north of Durban is expected to come on line in April 2016

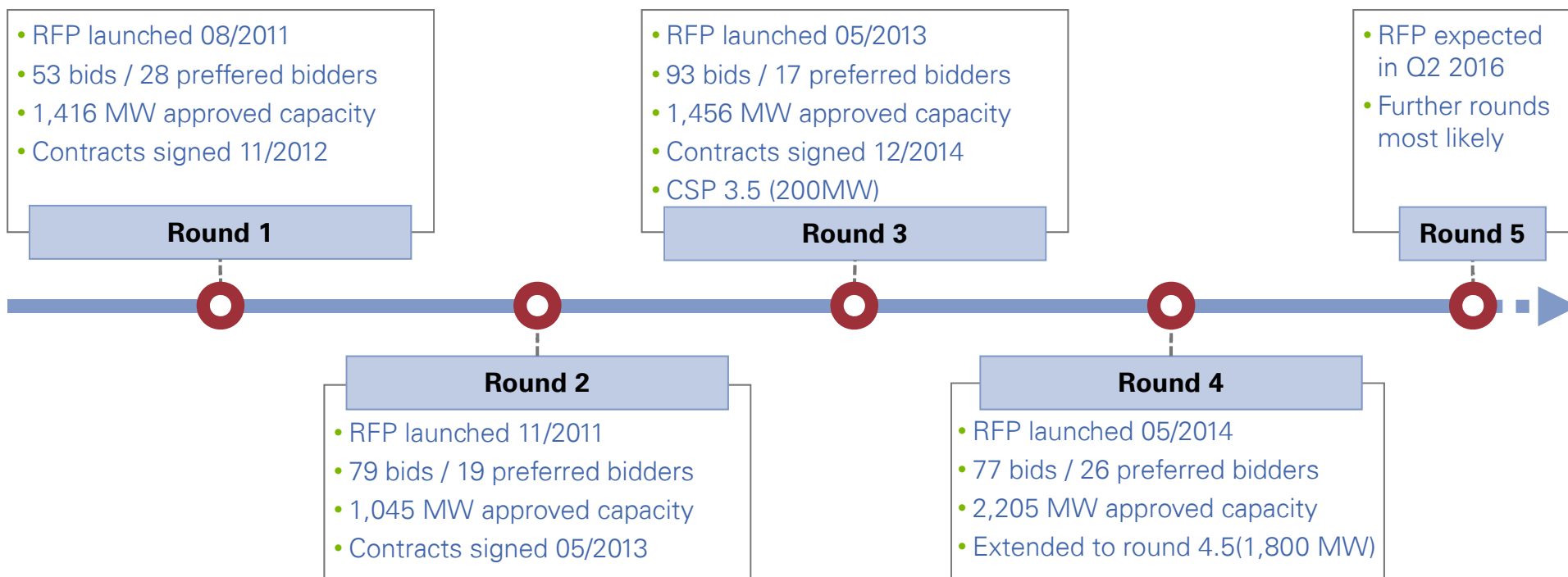


- Localisation of supply chain
- Creating industry hubs around project sites
- Community involvement
- Local ownership
- Skills transfer

## DoE IPP Procurement Programme

In order to meet the IRP's envisaged 2030 energy mix the DoE, through its IPP Office has since 2011 run numerous IPP procurement programs such as:

- **Small Projects IPP Procurement Programme (SP-IPPPP)** was launched by the IPP Office to procure **100MW** and open up the Renewable IPP market to SME's who would otherwise not be able to participate in the programs. This Programme is geared towards socio-economic and environmentally sustainable growth, to start and stimulate the renewable industry in South Africa. The DBSA is in a process of creating a fund to assist bidders who wish to participate in this SP-IPPPP. The project sizes are limited to between 1MW – 5MW
- **Cogeneration IPP Procurement Programme (Cogen-IPPPP)** has been designed to procure the target of **1800 MW** of energy generation capacity from Cogeneration Facilities. The IPP office sees cogeneration as the simultaneous generation of energy output and possible co-production of useful thermal energy
- **Renewable Energy IPP Procurement Programme (RE-IPPPP)** has run successfully since 2011 with more than 37 of the 92 awarded projects already connected to the grid. More than **6000MW** have already been procured in this program. An additional 6300MW may be determined for this programme
- **Coal Baseload IPP Procurement Programme (CB-IPPPP)** intends to procure **2500MW** (likely to be **3500MW**), and issued it's first Request for Proposal in December 2014 and bid submission was set for November 2015
- **Gas IPP Procurement Programme (Gas-IPPPP)** is in development and the IPP office intends to issue a Request for Information to the market which will inform them on the structuring of the procurement process. Initial determination of **3126 MW**.



## Achievements to date

- Globally acclaimed process
- Significant investor confidence in SA
- Has reached significant cost efficiency

92

Projects Awarded

6327

**MW** Procured through REIPPPP

19050

Job years created

1827

MW generated into the grid

192.6

Billion Rand Committed investments

21.7

Billion Rand spent to date on local content

53.2

Billion Rand Foreign investments & financiers





## Power sector in 5 years time (2020)

- Sustainable IPP programme achieved in excess of: **10 GW** for renewables almost 100% in operation
- **3.5GW** for Coal baseload with the first **2GW** in operation
- **2.5GW** for Gas power with half in operation
- Medupi fully operational and Kusile approximately 30% in operation
- No more loadshedding
- Well balanced IRP and installed energy mix
- Up-skilling of local work force
- **Localised** supply chain



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# Water



## Investment in the Sector

- Lesotho Highlands Development Agency and TCTA are developing the funding strategy and project implementation steps for phase 2 of the Lesotho Highlands Water Project. In 2012, a R25bn guarantee was approved by MOF for this Project. Initial implementation contracts are expected to be awarded by the end of 2015 with project completion by 2020
- Regional bulk infrastructure grant of R15.1bn to fund 60 large and 148 small projects over the MTEF period. This grant will also fund 76 Regional bulk water schemes to be completed by 2018
- Approximately R25bn to be invested in water resources projects (i.e. dams, canals, pipelines). Project completion dates range from 2015- 2022
- +/- 8 500 sustainable jobs estimated to be created from water resource projects currently underway. Some current water resource projects have been detailed below:

Project Name	Project Cost (ZAR Billion)	Project Description	Estimated number of jobs to be created
Mzimvubu Water Project <b>2014 - 2020</b>	<b>Total: 12.45</b> Spend over the next three years 15/16: 0.264 16/17: 0.43 17/18: 0.42	<p>The Mzimvubu Water Project aims to develop a conjunctive scheme comprising two multi-purpose dams and associated bulk water distribution infrastructure for domestic and irrigation water supply as well as hydropower generation.</p> <p>The project is intended to stimulate socio-economic development in the area and the Eastern Cape Province as a whole.</p> <p>Funding options to bridge the funding deficit are currently being explored.</p>	<p>During Construction: 5500</p> <p>During operation: 3700</p>

## Investment in the Sector

Current water resource projects:

Project Name	Project Cost (ZAR Billion)	Project Description	Estimated number of jobs to be created
Olifants-Doorn River Water Resources Project: Raising of Clanwilliam dam  <b>2015-2018</b>	2.7	Raising of existing full supply level by 13 metres to provide additional water to supply full existing allocation, establish emerging farmers and to address dam safety aspects.	560

Project Name	Project Cost (ZAR Billion)	Project Description	Estimated number of jobs to be created
Mokolo and Crocodile Water Augmentation Project – Phase 1  <b>2009-2018</b>	1.9	Water augmentation project to supply raw water demands in the Waterberg area to Eskom, Exxaro and Lephalale Municipality for the expected domestic growth. This project will use the Mokolo dam as the source, and it will deliver 30 million cubic metres of water at completion.	683



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ICT





## Investment in the Sector

- Limpopo broadband feasibility study in progress and expected to be completed in the second quarter of 2016. Total capacity in the Northern Ring to be boosted by 200% to 480 gigabytes per second
- Project expected to create between 17 000 to 45 000 additional sustainable job opportunities
- Facilitate the attraction of national and multi national companies supporting local entrepreneurs
- A number of fibre optic cable developments are underway:

Operator	Details
Link Africa, Frogfoot Networks	Constantia Fibre Initiative (CFI) announced that fibre connections would be made available to all 3,500 households in Constantia, Cape Town in 2015. Link Africa and Frogfoot Networks will set up the network in Constantia Valley. The operators aim to complete the deployment by 25 December 2015.
Vox Telecom's	Vox Telecom's shareholders reserved their decision to sell the company, and will instead invest in a five-year fibre optic strategy. Vox will deploy its fibre network in key districts of Johannesburg, Durban and Cape Town, and later to Bloemfontein, Port Elizabeth and Polokwane. Vox plans to work with open access players such as Vumatel and Dark Fibre Africa (DFA) to deploy its network.
Vodacom	Vodacom awarded Alcatel-Lucent a contract to deploy a gigabit passive optical networking solution reaching 150,000 homes and 150,000 businesses across Johannesburg, Pretoria, Cape Town and Durban by 2018. Vodacom had earlier stated it planned to spend ZAR400 -500 million on fibre roll outs.



## Investment in the Sector

- Nationwide Internet access as at 2013 showed a low connectivity of **33.7%**. Private sector investment for urban and corporate networks coupled with government funds for township and rural access, government entities, schools and health facilities will assist in achieving the goal of **90%** affordable (2.5% or less of monthly income) coverage by 2020
- Telkom is planning to pass **one million households** with its fibre-optic infrastructure within the next three years
- Phase 1 of the digital development plan connecting schools and government institutions in in construction phase. Project cost is budgeted at R6.7bn
- A Business case is being developed for the Gauteng ICT Park to attract both Foreign and Domestic Investment to a dedicated industrial park through provision of world class economic infrastructure and facilities
- Broadband roll-outs in most major centres in SA.



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# Reaping the benefits



# Impact of infrastructure projects on the economy

## Example 1

**Infrastructure investment to date of approximately R186 bn**

Excluding capital borrowing costs



Medupi power plant



Kusile power plant



Ingula pumped storage

### Impact on the economy and community as a whole

#### 1 Direct employment created (construction phase only)

25 800 approx.

As at 31 March 2015 through the capacity expansion programme at the Medupi, Kusile and Ingula new build sites and Power Delivery Projects.

#### 2 Local procurement

At least

50%

Which supports South African industries and greater economic development

#### 3 Enablers to economic growth :

- Sufficient energy supply to cater for growing population and accelerated economic growth
- Security of energy supply expands industry's planning horizon and inspires investor confidence
- Promote greater rates of electrification in previously underserved areas, thereby promoting a more equitable society.

## Example 2

**Gautrain infrastructure investment R35 bn**

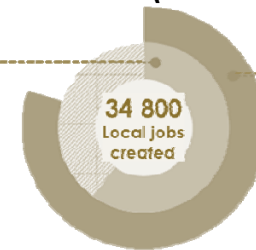


### Impact on the economy and community as a whole

#### 1 Direct employment created (construction phase only)

12.7%

Comprises of women and people with disabilities



72.2%

Comprises of youth, skilled and management individuals

#### 2 Local procurement

64%

Which supports South African industries and greater economic development

#### 3 Enablers to economic growth:

- Gauteng residence reach their destinations faster and more conveniently through an integrated and reliable transport system
- Time saving through less congested roads
- Facilitates the creation of economic hubs and thereby produce increased urbanization and rising property values
- Attract greater investment due to greater connectivity in major business hubs

Source: GMA

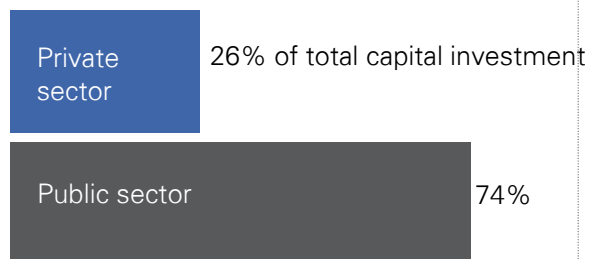
# Major infrastructure projects 2015 - 2020

## Investment into infrastructure

Significant projected capital investment into construction projects over the period 2015-2020

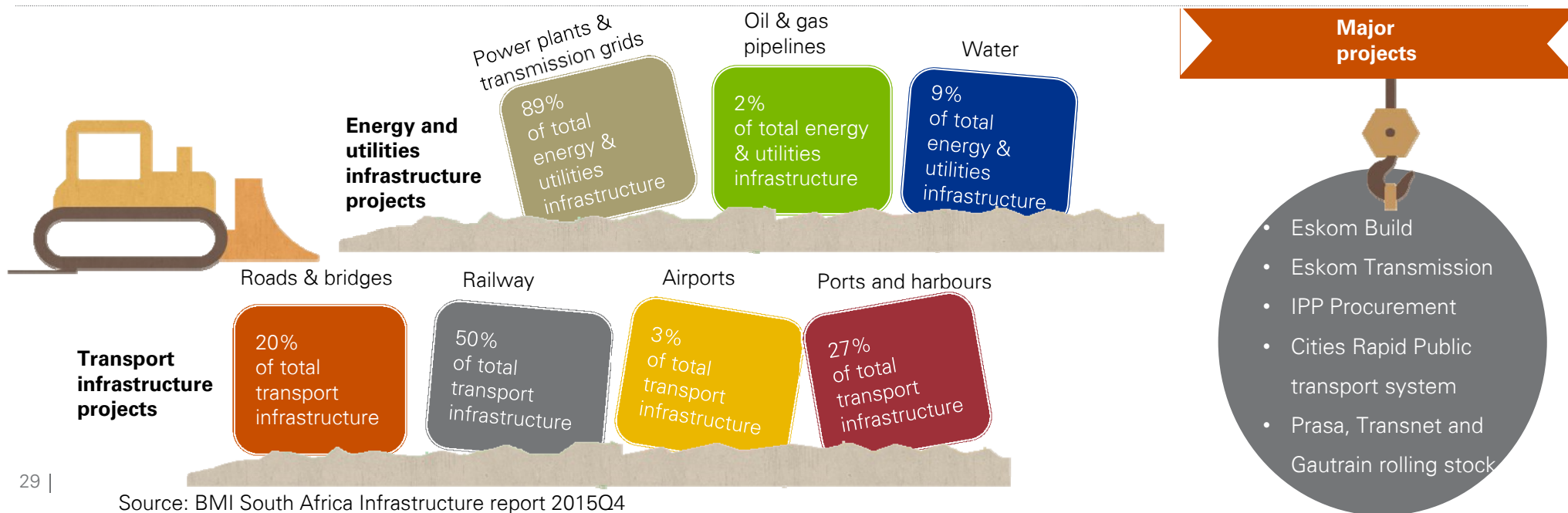
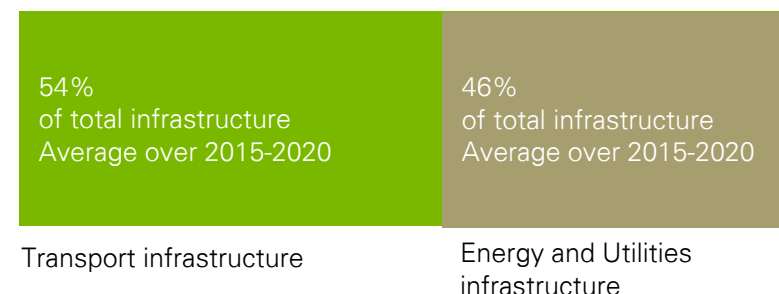


## Type of investment



Railways

## Key areas of investment



## Final reflections... by 2020

- Substantially replaced metro train fleet with 65% local content
- Gautrain fleet increased with new routes under construction
- Transnet locomotive acquisition completed
- The 3 commodity corridor SIPs (iron ore, manganese & coal) significantly underway
- In excess of 25GW additional Power introduced
- No more load shedding and a well balanced energy mix
- Communication networks of advanced quality
- **Significant plans for Social Infrastructure i.e. Education, Health, Housing established and being implemented**
- **SA Growing at a sustainable 5% p.a.**

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**Thank you**