

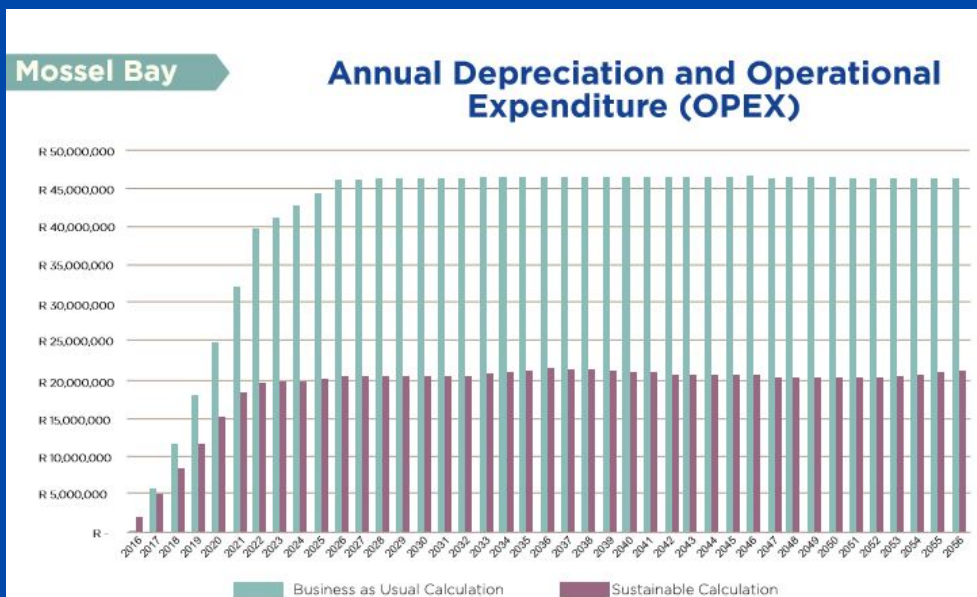


**Western Cape
Government**
Environmental Affairs and
Development Planning

SUB-NATIONAL GREEN BONDS

Innovation finance for
Sustainability

14 June 2018



How much?

Western Cape Infrastructure Investment Framework (2013) estimates R600 billion will be required for infrastructure investment in the Western Cape between now and 2040

Policy context

- **Tightening fiscal environment - reducing local government grants, including the municipal infrastructure grant, the integrated national electrification programme grant, the urban settlements development grant and the public transport network grant**
- **Push-back on increasing rates made worse by short maturity cycles of conventional municipal debt - residents pay for infrastructure now that will continue to operate decades after it's paid off.**

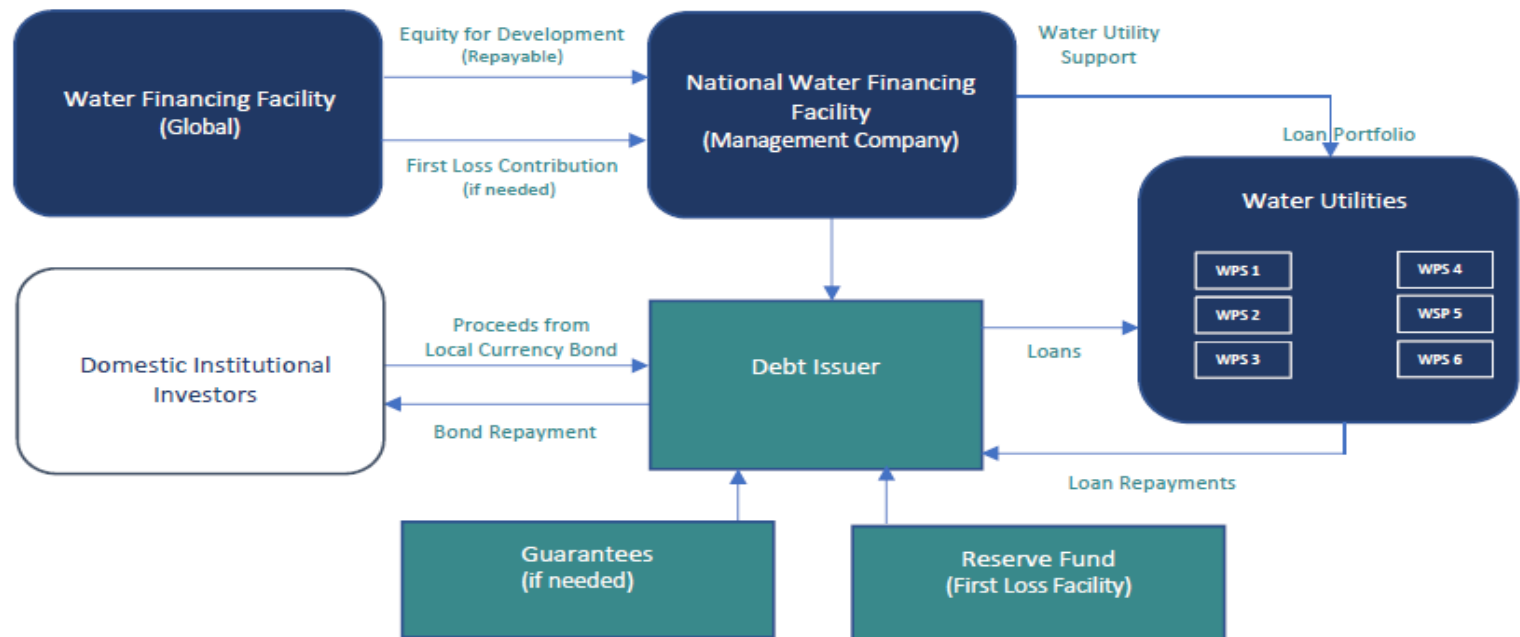
Policy context

Intermediary cities/munics currently do not raise funds in the capital markets through bonds, which means that they are unable to tap into the large pool of funds from institutional investors (pension funds and insurance companies) the same way that the larger metros in South Africa have since 2004

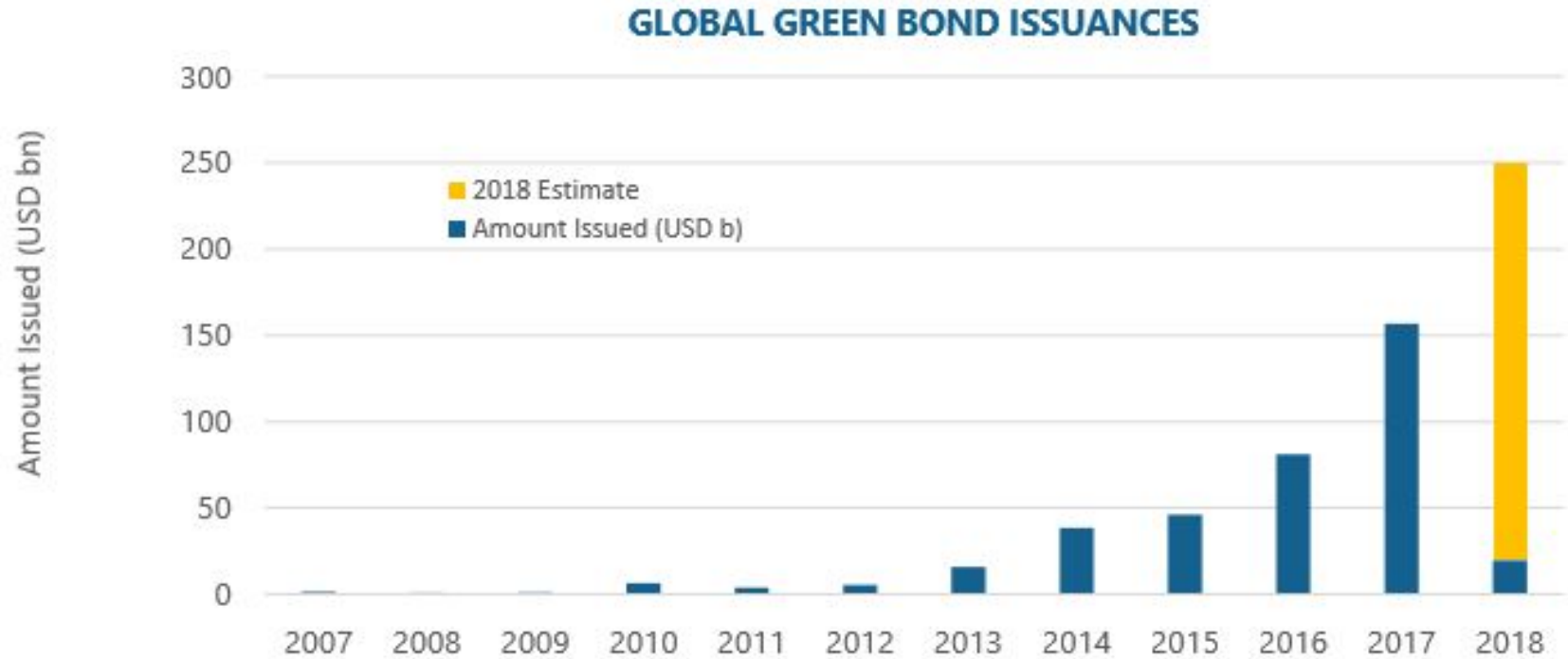
Rock and a hard place

The role of province

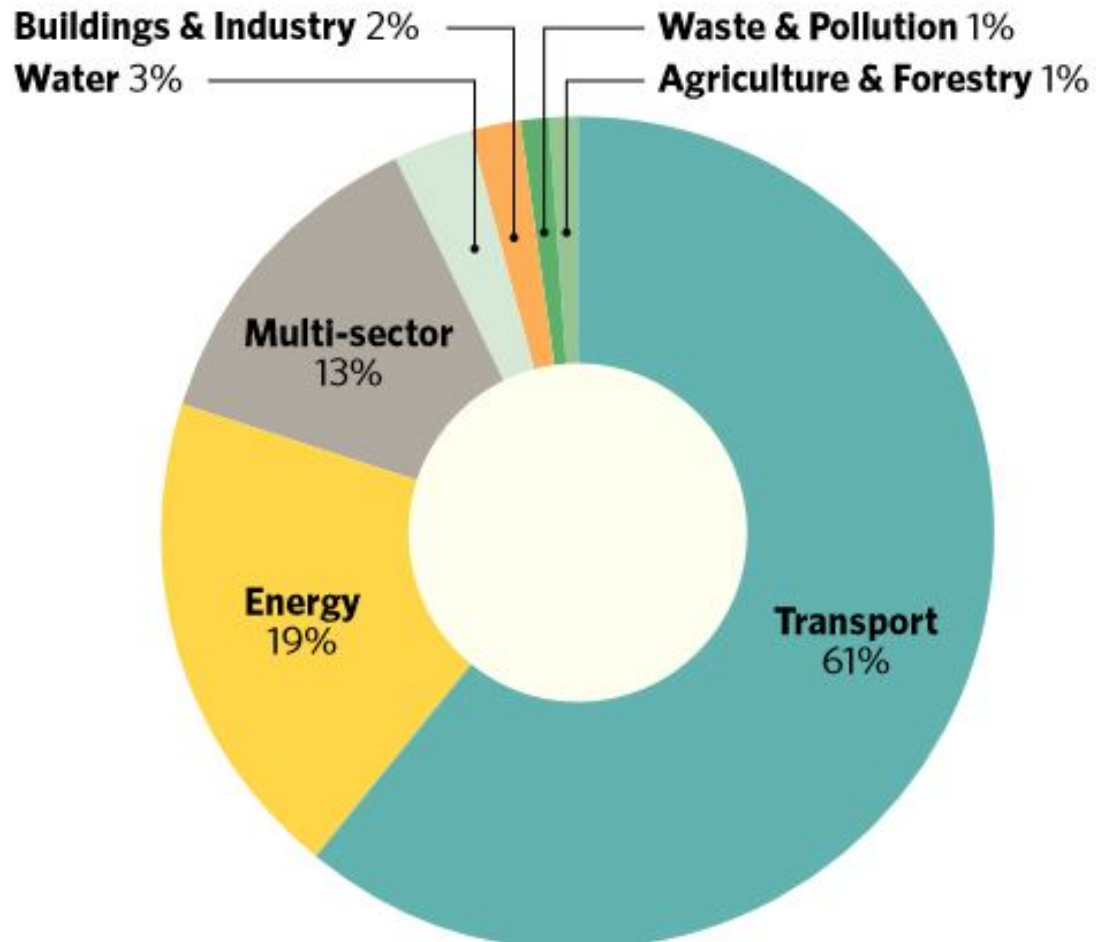
Pooled Loans Structure



The market

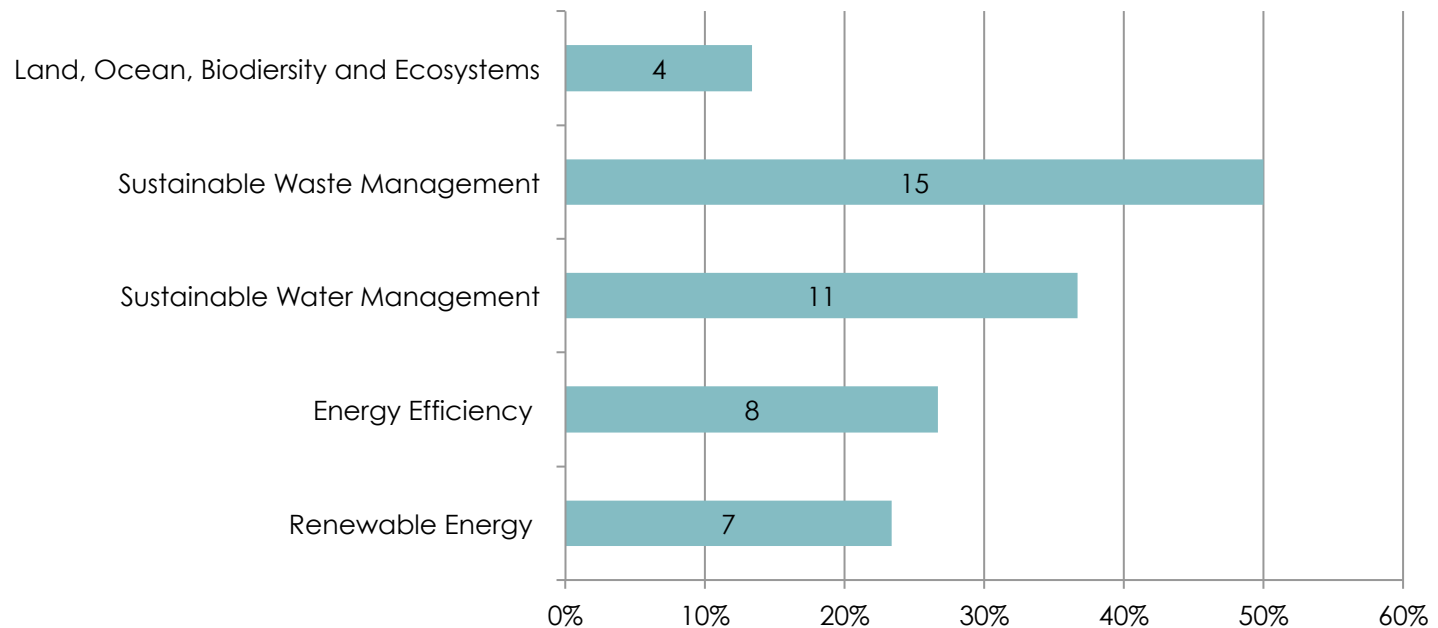


Global green bond composition



The role of province

Five most frequent green project types planned by municipalities in the WC 2015-17



What kinds of projects are we looking to finance with Green Bonds?

The role of province

- **Municipal solid waste**
- **Waste water treatment**
- **Renewable energy**
- **Transport**
- **Bulk water supply**
- **Public sector energy efficiency**
- **Green low-cost housing**

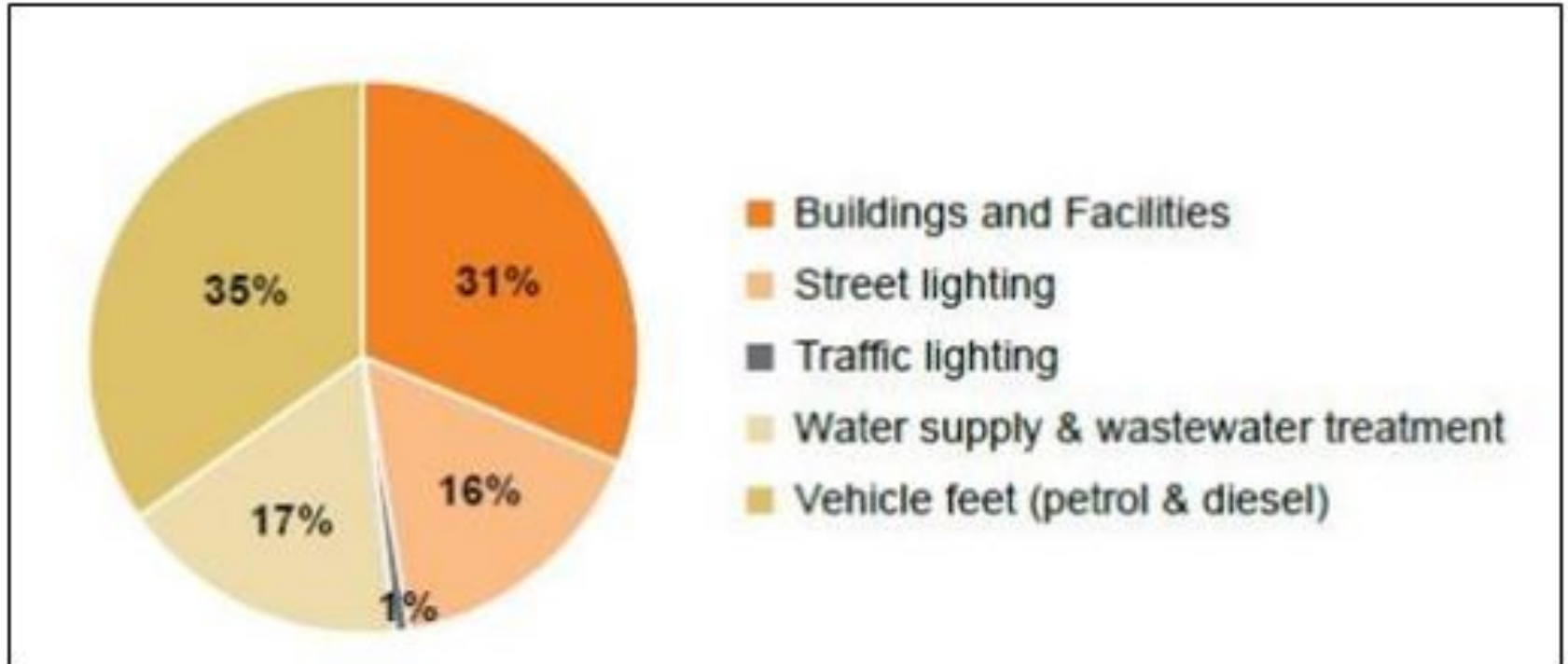
How much?

“The renewable energy and energy efficiency sectors are by far the most advanced in terms of available guidelines and reporting. These are the easiest technologies to assess for environmental impact and easy to justify as receivers of Green Bond proceeds, as a result these also constitute the majority of Green Bond-financed projects today” - The African Local Currency Bond (ALCB) Fund - KfW

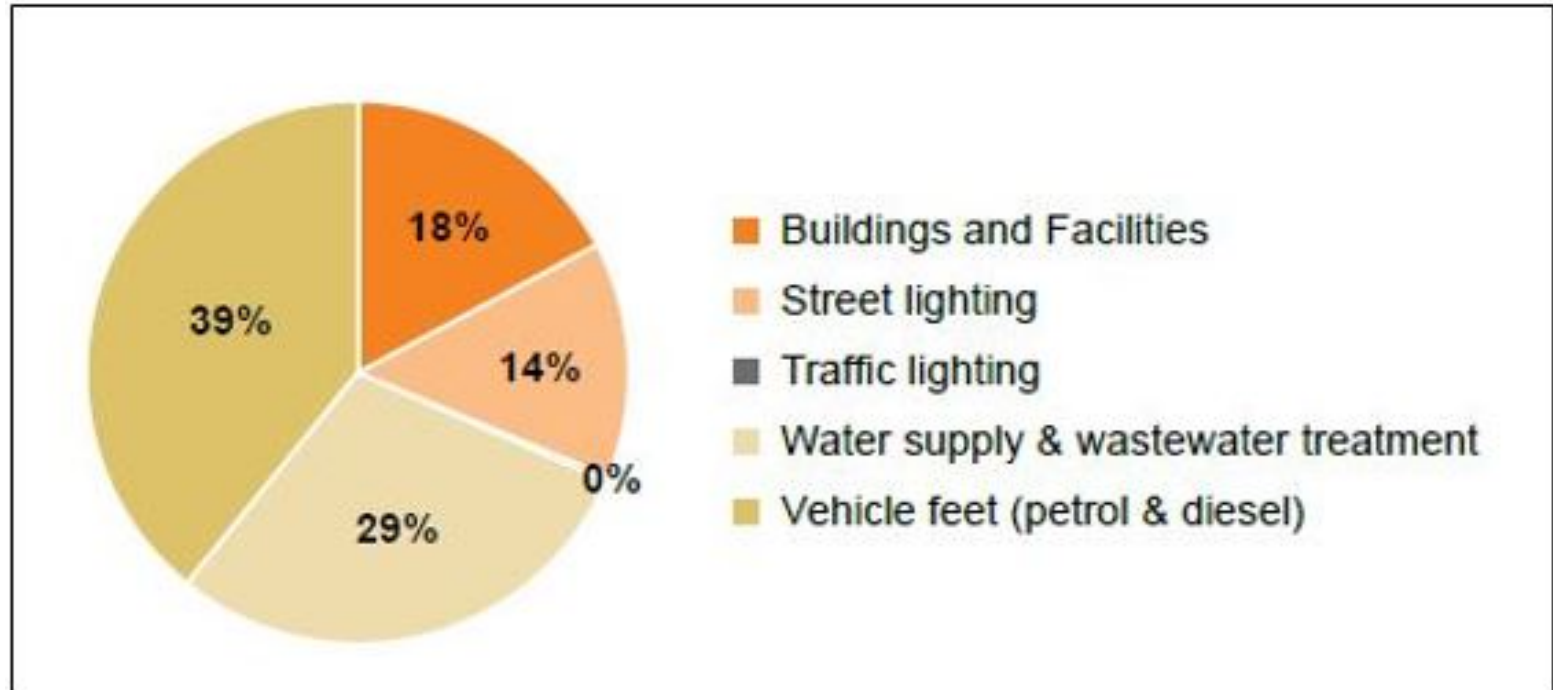
How much?

For the 2018/19 year National DoE, Energy Efficiency Demand Side Management (EEDSM) office received requests for Energy Efficiency funding to the tune of R1,176,196,724 from municipalities but could only accommodate R215,024,000

Public sector energy use profile - South African Cities Network, 2015



Potential savings per sector (% of total energy (GJ) saving potential)



Renewable Energy



Renewable Energy

A 2014 study into the viability of rooftop solar on Western Cape Government roofs in Cape Town reported that:

”In financial terms, the net cost savings would deliver a positive NPV of R 3.1 million over a 25 year project lifetime. This is equivalent to an IRR of 11.9% on Government’s investment or a simple payback of 10.1 years. The solar PV systems would generate electricity at a levelised cost of under cR 91 per kWh in real terms.”

Since that time Eskom rates have continued to climb (and are projected to continue to do so) and Eskom is now buying Independent Power Producer (IPP) PV power at cR 65 per kWh, reflecting growing price efficiency of supply

The Western Cape Government currently has 38MW of rooftop PV and wants to reach 135MW by 2020

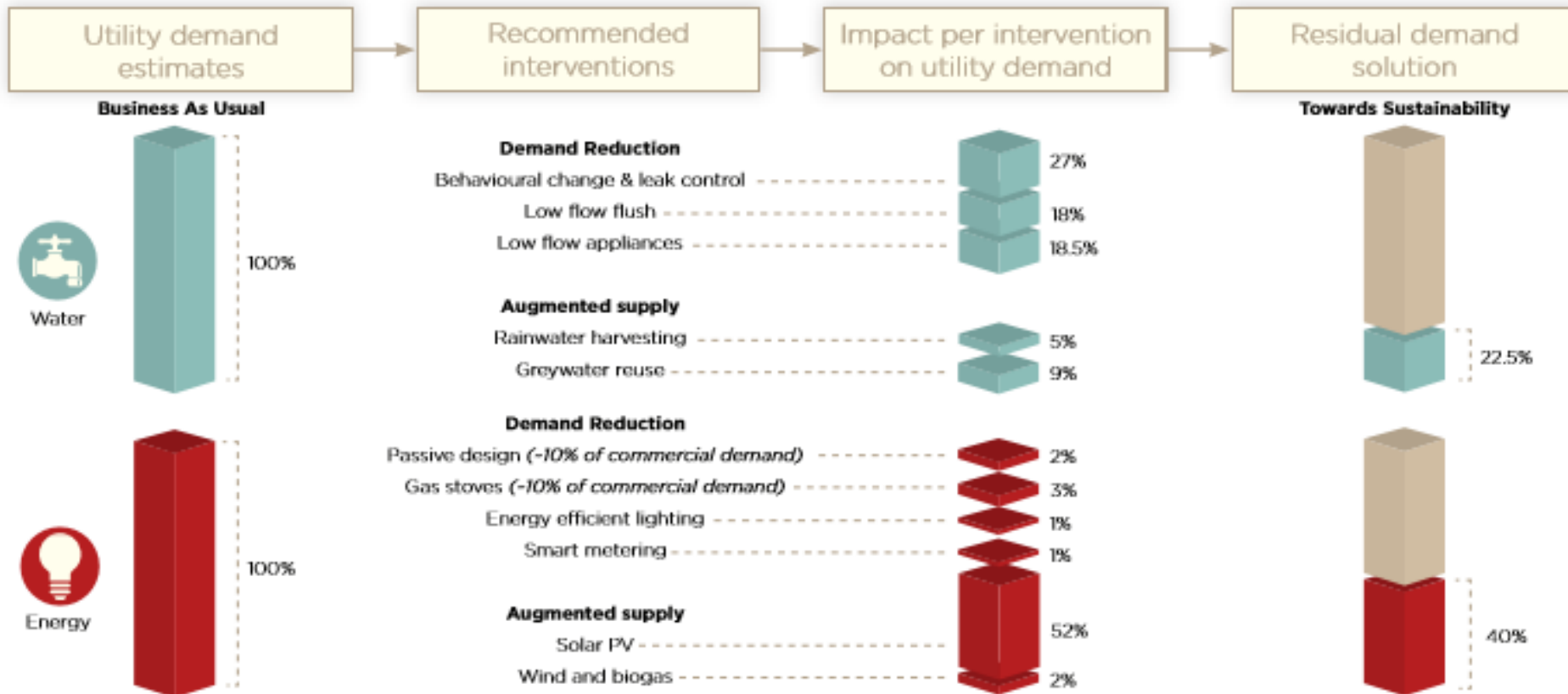
**Bond repayment through long term
OPEX savings..... Total Cost of
Ownership - TCO**

Examples of issues addressed- Housing

Infrastructure Response

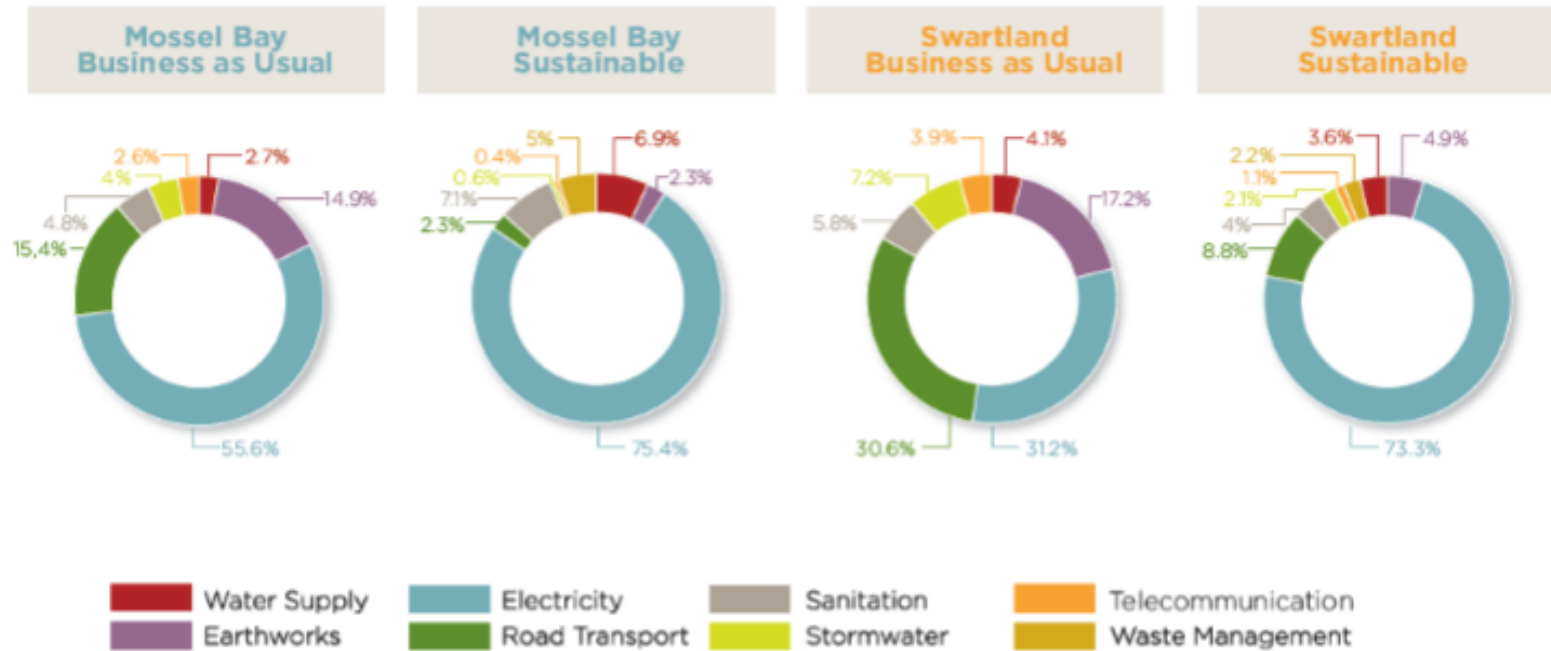
Fundamental design components and methodology

The above diagram reflects on only two of the major infrastructure components which contributes towards the sustainable solutions. Other infrastructure components investigated includes solid waste, sanitation, transport, stormwater and a statement on air quality. Detailed analysis of these can be found in Chapter Four (4) of the report.



Examples of issues addressed- Housing

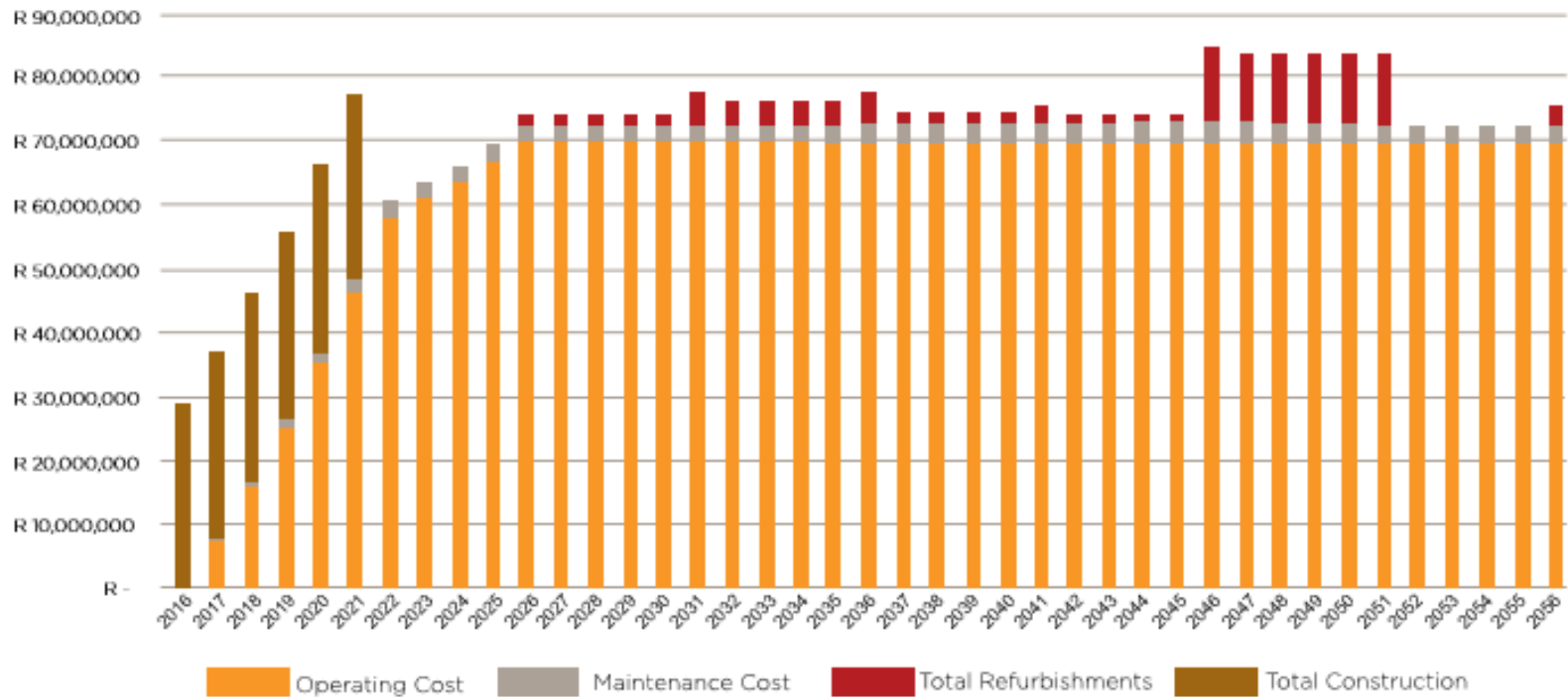
Cost Breakdown of Utilities



Life cycle costing - TCO

Swartland

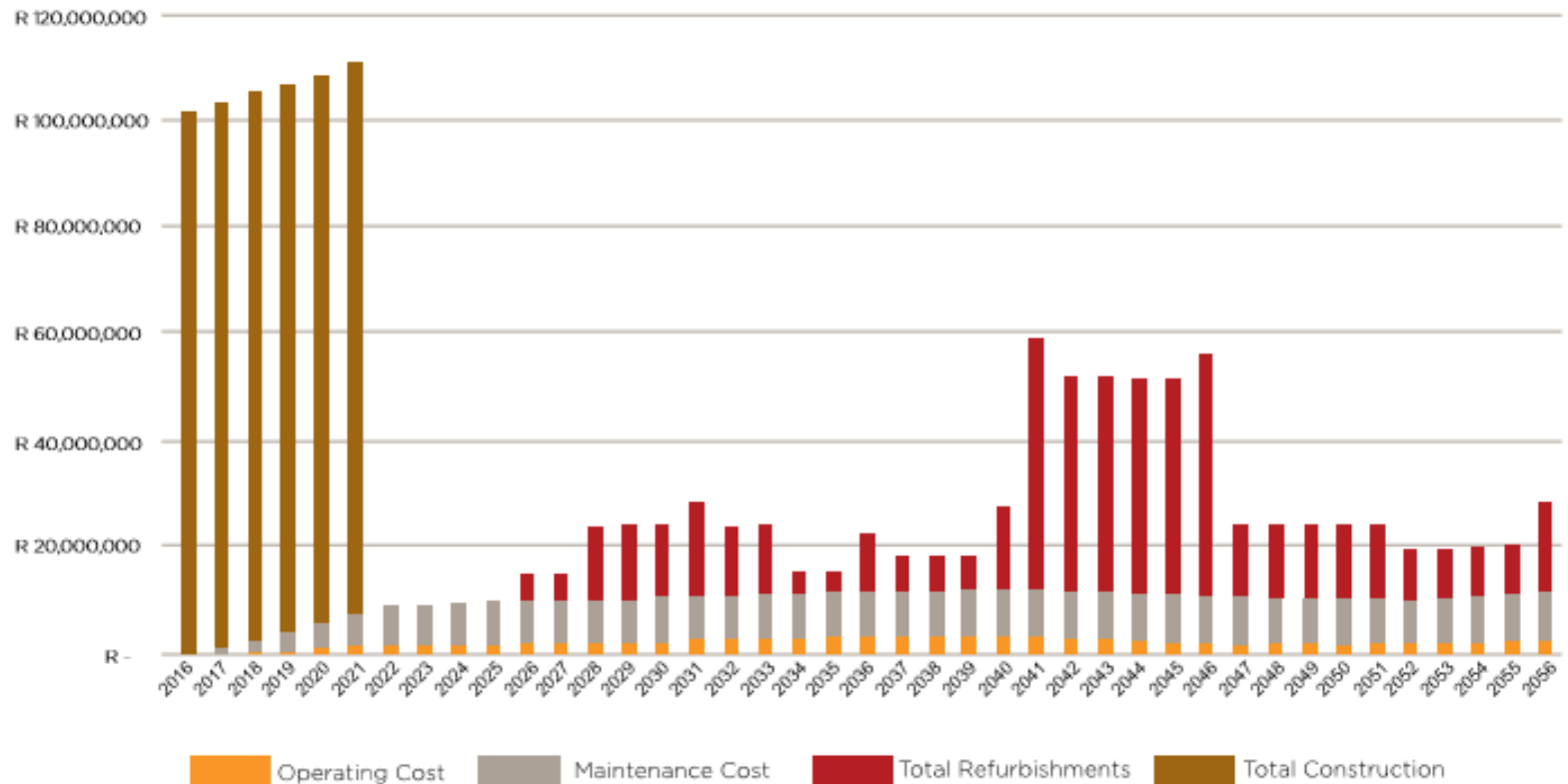
Business as Usual Total Cost



Life-cycle costing - TCO

Swartland

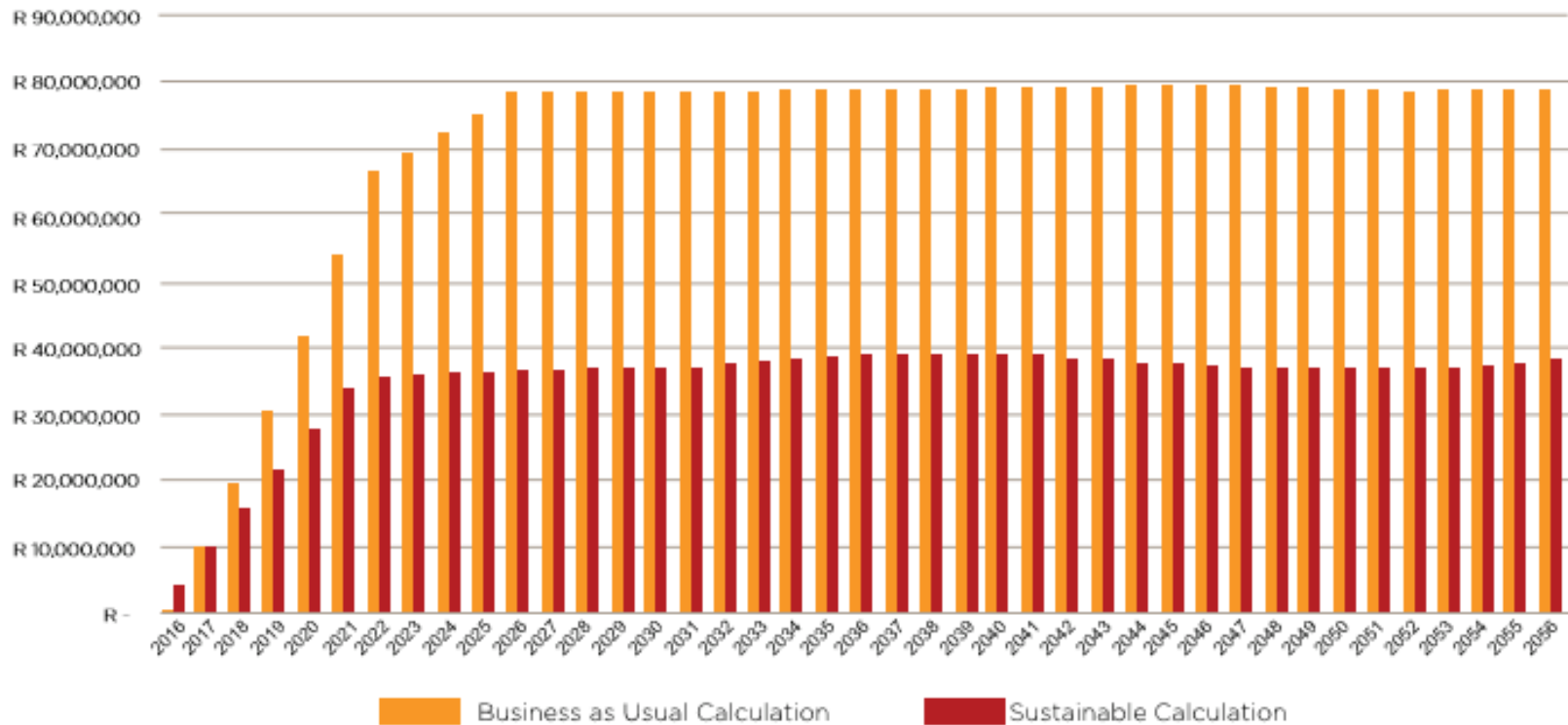
Sustainable Total Cost



Life-cycle costing – TCO

Swartland

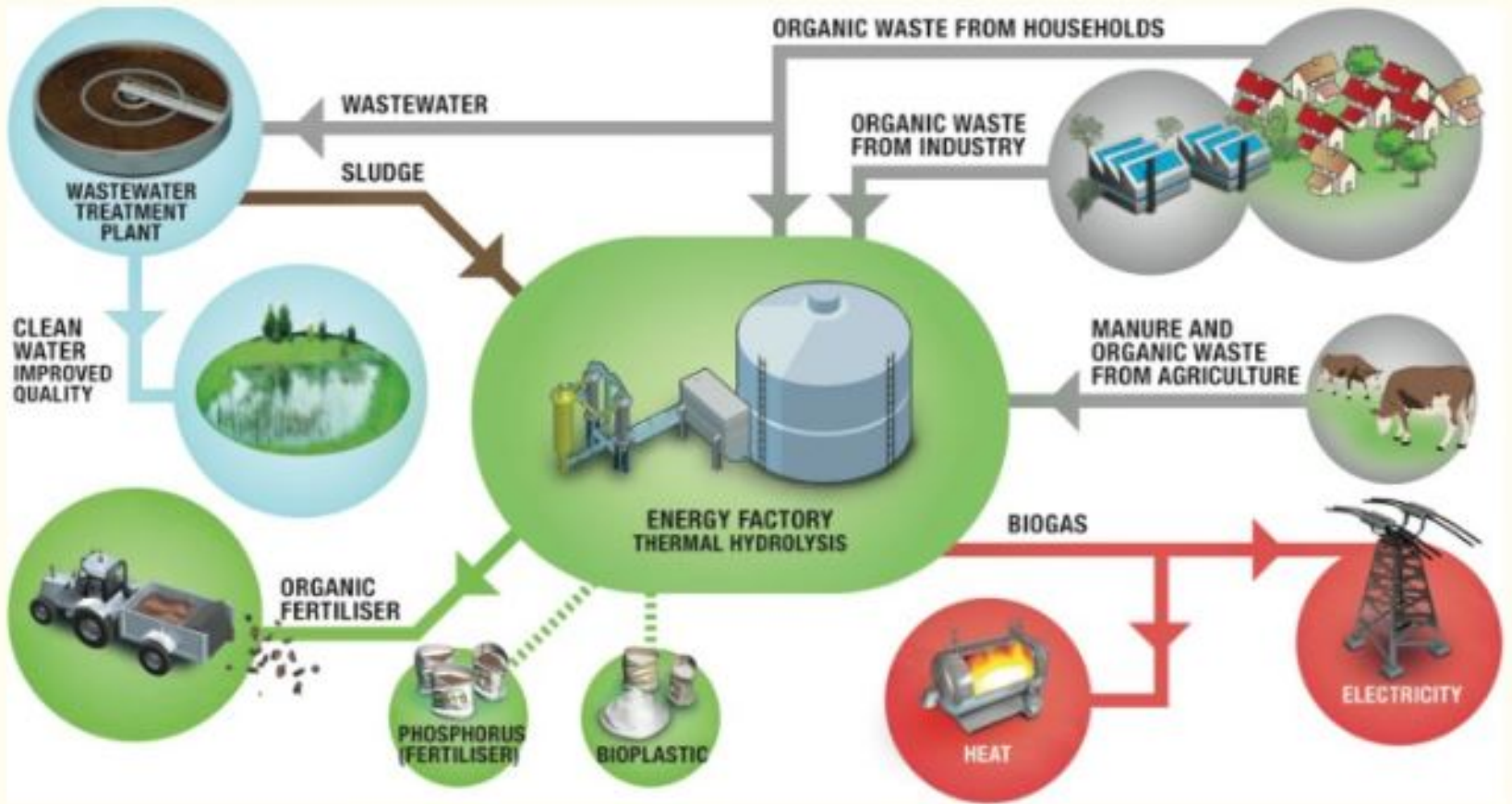
Annual Depreciation and Operational Expenditure (OPEX)



How much?

R1 149 599 172 on Sewage treatment in the 10 biggest municipalities OUTSIDE Cape Town in the next three years alone.

Waste as a resource - sewage

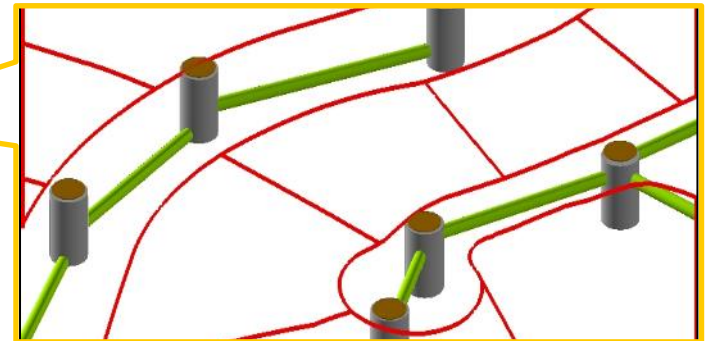
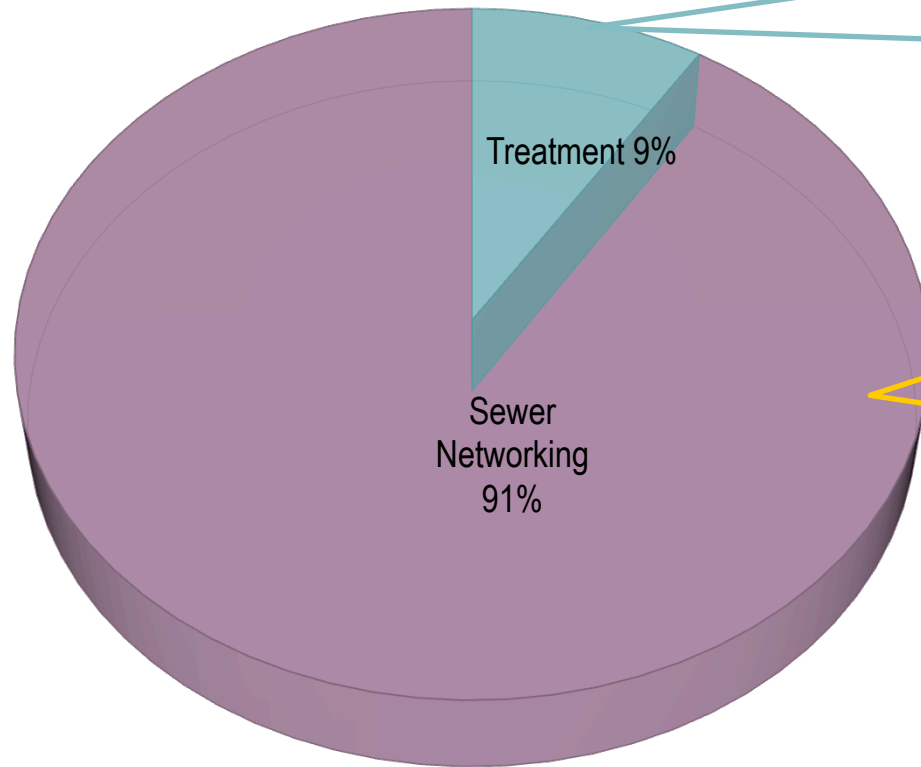


Sewage as a resource

- **Alginate**
- **Phosphorous**
- **Energy**
- **Water**
- **Cellulose**
- **Bioplastics & Acids**
- **Carbon**

Sewage – Sewer Network Costs Greatly Outweigh Treatment Costs

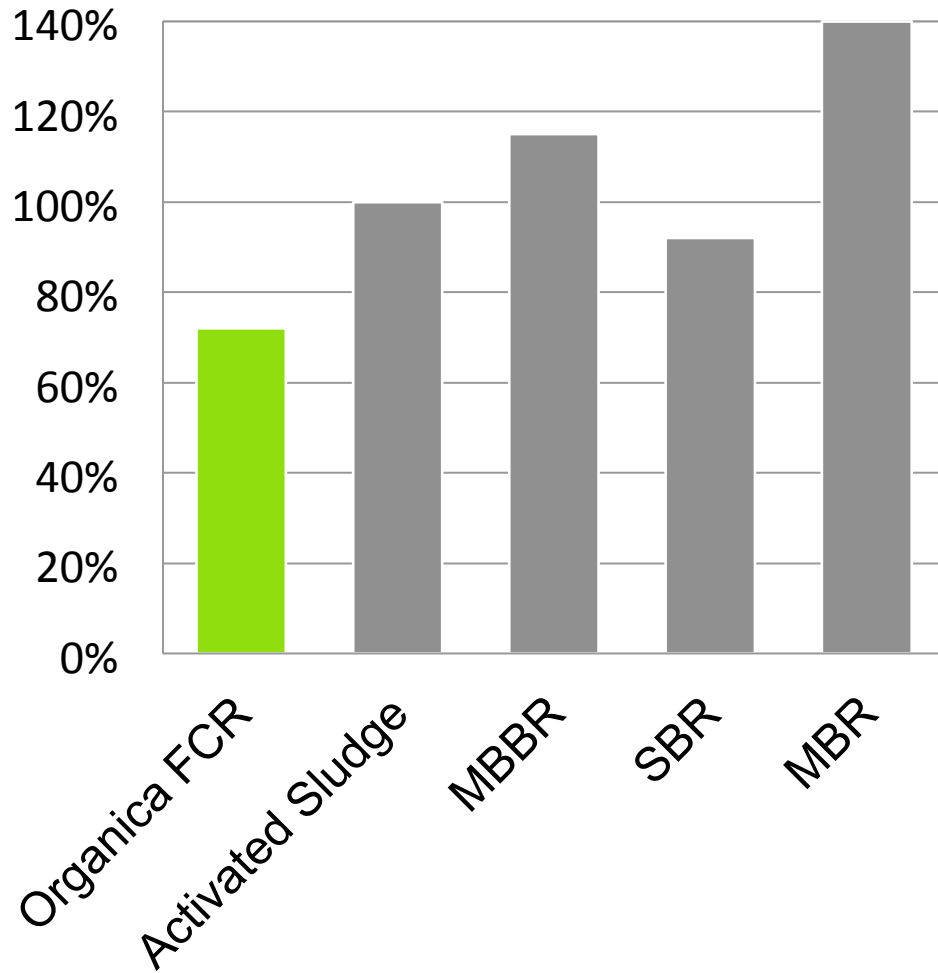
WASTEWATER MANAGEMENT COSTS



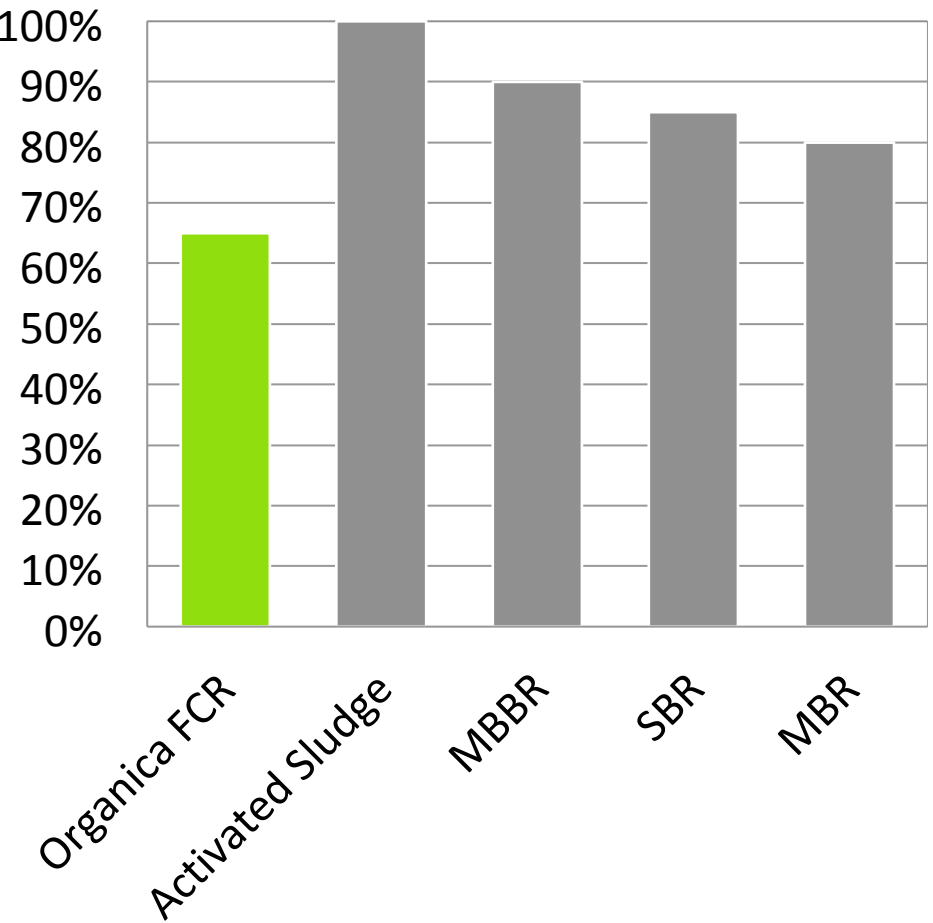
Sources:

- [Median for Publicly Owned Community Water Systems. EPA Community Water System Survey 2006, p. 19](#)
- [EPA Collection Systems O&M Fact Sheet 1999, p. 9](#)
- [Ontario Municipal Benchmarking Initiative \(OMBI\) – 2005 » Wastewater Services](#)
- [www.dailynews.com](#)
- [www.adlerforaustin.com/water](#)
- [www.voiceofsandiego.com](#)

Sewage treatment – operating costs

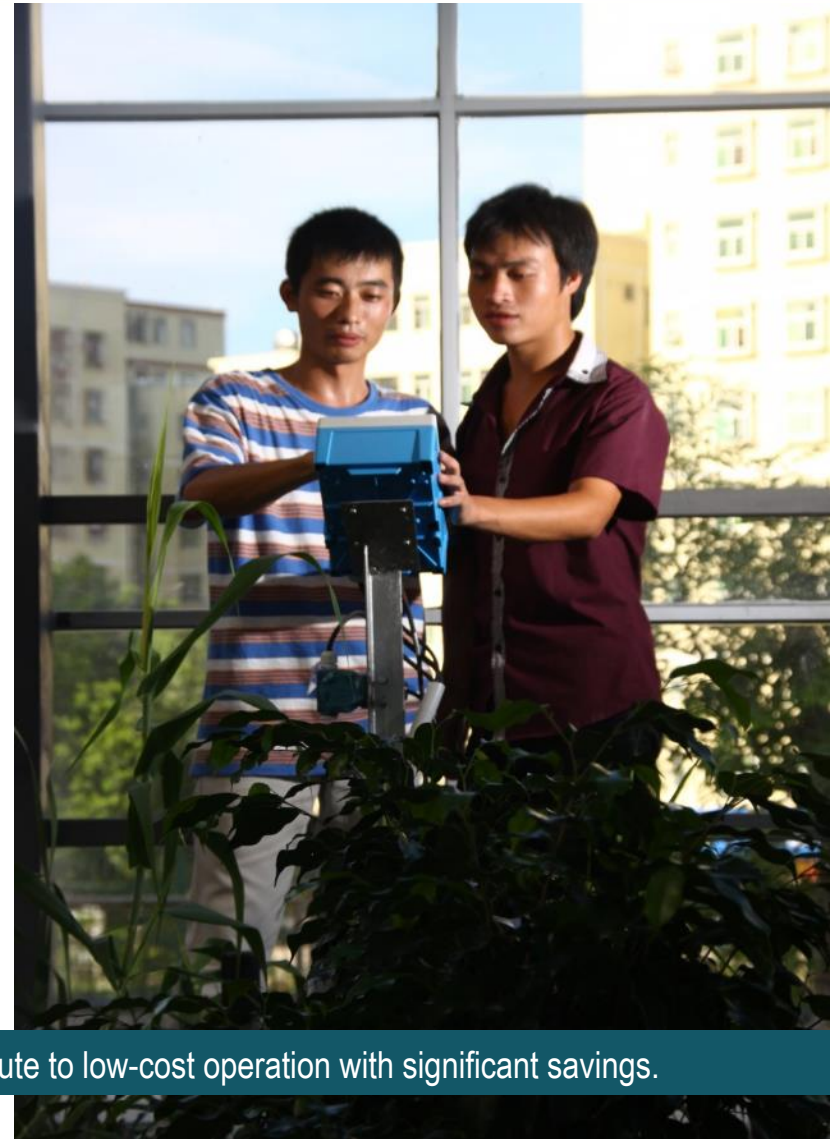
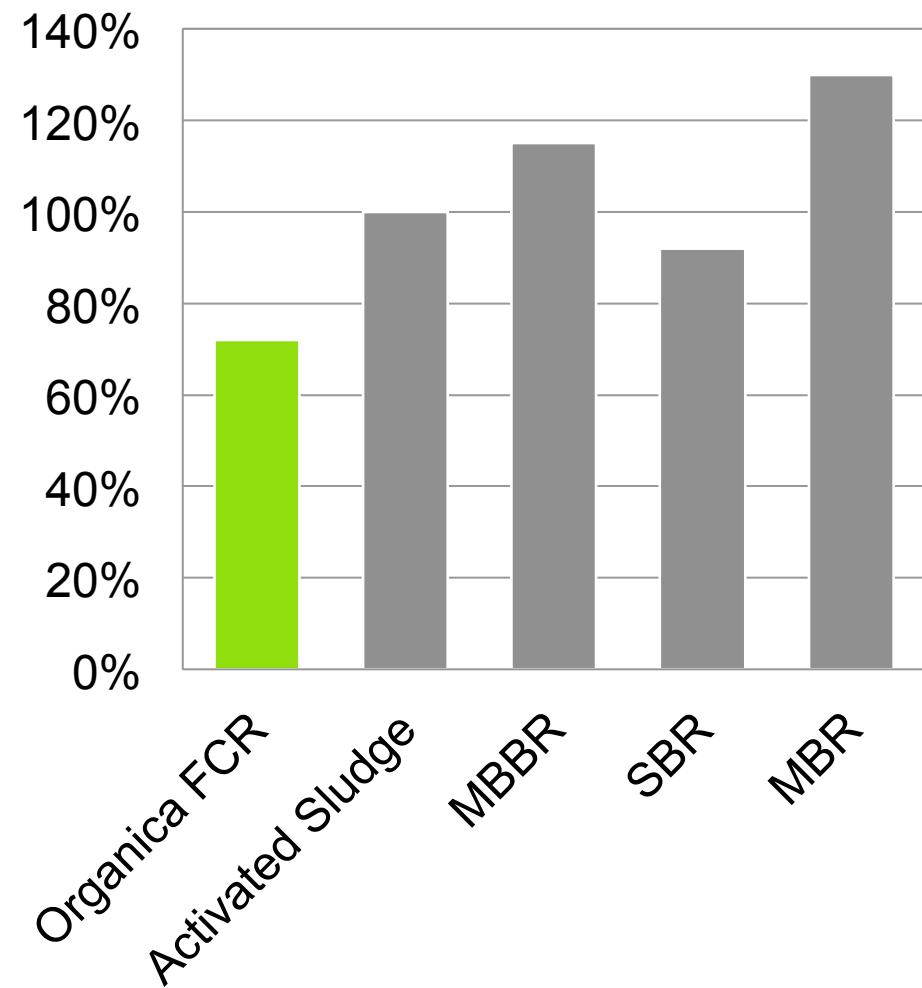


Reduction In Sludge (WAS)



Excess sludge contributes significantly to operational costs. Thanks to the complex ecosystem, sludge production in Organica plants range from appreciably lower to comparable, depending on the specific waste stream and the corresponding technical configuration.

Lower Operating Costs - Energy



Organica plants use less energy; produce less sludge. These factors all contribute to low-cost operation with significant savings.

Reduction In Space Requirement

50 MLD : 12,000 m²

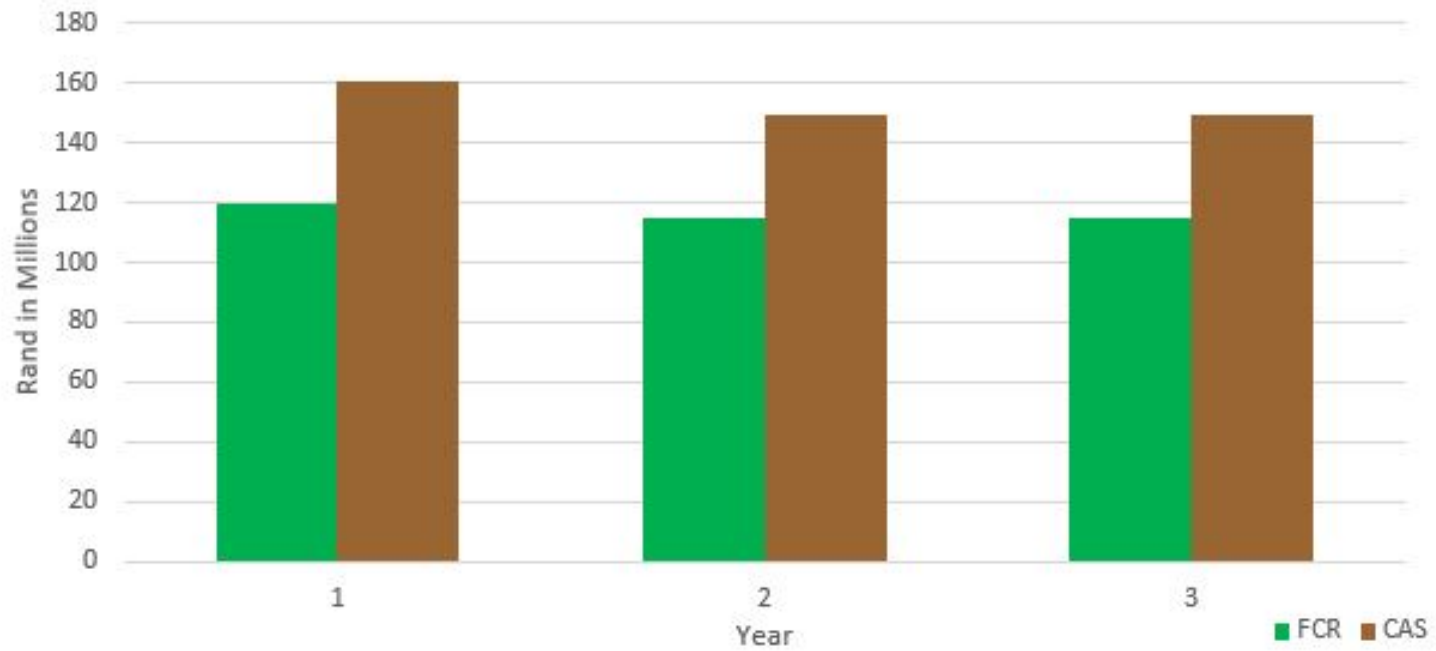


Up to 60% savings in footprint of a traditional plant

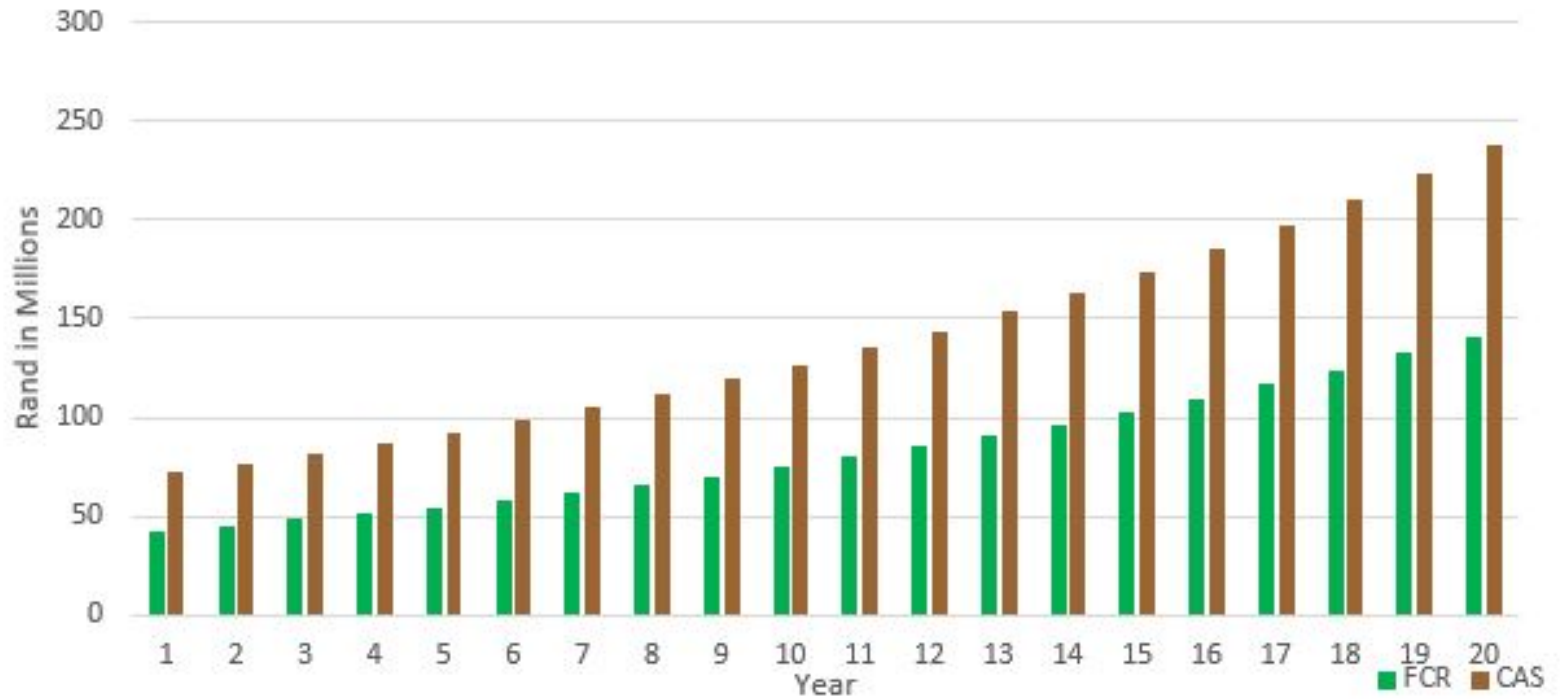
CONVENTIONAL ACTIVATED SLUDGE PLANT



Sewage – FCR vs CAS CAPEX



OPEX – FCR vs CAS



Sub-regional bonds

**2 city based green bonds – CPT & JHB and 1 corporate bond -
Wide scope for further application
in job creating, lifestyle improving,
cost-cutting sectors....**

Bond Issuance Results – City of Cape Town

Bond Details • Bond Value = R1billion (USD 79 million) • Amortised bond (interest + capital repayment) over 10 years

Financial Results • Issued at R186 (treasury 10 year bond) rate + 1.33% = approx 10.17% (similar non-green South African Municipal bond issued a day earlier at +1.75%) • 4x oversubscribed – demonstrating market appetite • Comparable to current cost of capital (from other sources including concessionary loans) @ 9.95%

Costs:

The costs associated with the project included:

- **“Bond Arranging Fee” - 0.04% of bond value (i.e. R400,000 of R1bn bond) ex VAT.**
- **Climate Bond Initiative process fee: - 1/10th of a basis point of the bond value (i.e. R10,000 of R1bn Bond) no VAT**
- **Fees paid to KPMG for providing assurance (pre and post - issuance): USD 20 000 (incl. VAT).**
- **A few minor expenses incurred on the investor roadshow.**

Bond Issuance Results

Non-financial benefits – Publicity/awareness of “Green Credentials”

- **Conversations with new mix of asset managers (26 bidders)**
- **Linked to launch of our Climate Change Policy – “greening” of treasury department – Awareness of Standards to develop future project**

Bond Issuance Results

Growthpoint properties – First corporate green bond in SA – 9 March 2018 – R1,1 Billion (USD 87 million)

Re-finance of two 5-Star and three 4-Star GBCSA approved office buildings. Office & retail buildings with the minimum of a 4-Star Green Star rating, that are part of the Growthpoint THRIVE portfolio, will be eligible for the proceeds from the Green Bond.

Carbon emissions - Total tonnes CO₂e / m²

Energy - Electricity kWh / m²

Water - Water m³ / m²

Waste - Waste tonnes / m²

Private sector Green bonds

The GrowthPoint green bonds were priced at 139 basis points above the three-month Johannesburg interbank average rate (Jibar) for the five-year term, the seven-year term was priced 169 basis points above Jibar and the 10 year was 200 basis points above Jibar.

Evan Robins: -Fund manager at Old Mutual Investment Group: "a good price for this bond and they will pay an attractive interest rate, showing the market will support social responsibility".

Green bonds in the bigger picture

As the reliability of the Mechanism is demonstrated, the mechanism can play a meaningful role in securing long-term FDI inflows that meet not only our provincial infrastructure finance needs, but also assist with the national current account balance.

But despite this.....

“Even in South Africa, issuance is very low given the relative sophistication of the market: despite local and international investor appetite there have been only three non DFI issuances, a local retail bond and two municipal issuances. Where other markets in Africa may be further from being obvious candidates for a corporate Green Bond issuance, South Africa has the potential to grow this sector quickly. Providing anchor investment for Green Bond issuance in Africa, starting with South Africa, is consistent with the ALCB Fund’s mandate to promote capital market innovation and primary issuance. South Africa has the potential to pilot Green Bond transactions for the Continent, with investors such as Stanlib and Sanlam already articulating green investment strategies (and investing in SA Green Bonds).” - The African Local Currency Bond Fund from KfW (German Development bank)

Process:

- 1. Define and validate the mission statement for the green finance facility with key stakeholders in government and civil society.**
- 2. Establish Technical Assistance partnerships – IFC, US-AID, KfW, NBO, World Bank, JSE etc**
- 3. Define the scope and structure of the Mechanism – What it will and will not fund – Begin the development of the Green Bond framework
- Determine expected returns on investment from projects to attract investors**
- 4. Determine the criteria for participation in the mechanism**
- 5. Investigate which of the Province's municipalities are most suitable to join into such a Mechanism at this point in time (bearing in mind that the credit rating of the mechanism is the sum of its parts)**
- 6. Develop a portfolio of planned projects that have potential to be eligible**

Process:

6. Appoint a Financial Services Provider to administer the Mechanism
7. Establish project feasibility and select a project pipeline for funding
8. Develop bid spec in partnership with local government SCM –
DEA&DP has a contracted procurement specialist consulting to it for this purpose until the end of the 2019/2020 financial year.
9. Receive bids and define project timelines and outcomes
10. Appoint bond independent reviewer
11. Conduct market engagement & roadshow
12. Issue the bond
13. Initiate projects
14. Allocate unallocated funds
15. Monitor evaluate and report on the projects
16. Reiterate from step 3

Thank you

Contact Us



**Western Cape
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Environmental Affairs and
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BETTER TOGETHER.

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