



Dwindling foreign investment into Africa underscores the importance of revenue protection

Presenter: Maboe Maphaka

Eskom Group Customer Services

10 July 2014

SARPA CONVENTION 2014



South African
Revenue Protection
Association

- The African investment challenge
- Investment vs Revenue
- Electricity theft – the global picture
- Case study: How Eskom is maximising revenue collection through revenue protection
- Concluding Remarks

- SA's story forms part of the African storyline:



- Africa saw improved economic performance over the past decade
 - Sounder macroeconomic policies
 - Openness to trade and foreign investments
 - Higher education spend
 - Reduced conflict
 - Rapidly rising terms of trade

Looking at Africa /2



- The African storyline:
 - Challenges remain
 - Sustain growth rate -
 - Improve investment climate
 - Reforms in backbone sectors
 - Address inadequate market institutions, low investment and savings rates, shortage of skills
 - Build ties with emerging economies
 - Rising middle class in Africa
 - Raise agricultural productivity

- The African investment challenge:
 - Investors – both public and private – remain cautious of investment in Africa
 - Despite its future growth and development opportunities
 - Due to challenges mentioned
 - ... and continued levels of civil unrest
 - Instability of governments
 - Level of investment required in developing and/or under-developed areas
 - And the risks associated with the above

- Investment through development assistance is also changing face
 - Shifting focus from aid to public-private partnerships (recent EU Summit in Brussels)
 - Still aiming to mobilise up to €30-billion in investment
 - But pursued through blended finance model of EU and private sector funding.
 - to move priority energy, transport, water, information and communications technology, education and health projects from “concept to bankability”.



(Source: Engineering News article : EU's African Infrastructure focus shifts from Aid to Public-Private Partnerships, April 2014)

So, how do we maximise revenue protection and revenue recovery to bolster dwindling or changing investment horizons?

Whilst SA and Africa works on its journey to build itself, to craft a future for its people, ensuring education, food security and access to basic services and rights ...

Leveraging aid and investment ...

We must also work on securing the revenue needed to build and maintain essential infrastructure – especially for water and electricity

two components most needed to grow economies and hence, create jobs

This should be an internal strategic imperative for any country

Electricity theft – threat to revenue

- Growing global threat to energy security and economic growth in developed and developing countries
 - Electricity theft accounts for 1% of all electricity consumed across the globe
 - Countries like India lose up to a third of all electricity generated and 1% of GDP to electricity theft
 - Most associate electricity theft with countries like Brazil, India, (and South Africa), but even the largest, developed countries like the USA are not immune.
 - This crime costs the USA roughly \$6 billion annually
 - In the UK, gas and electricity theft cost £299 million each year.



(Source: The Energy Collective, February 2013)



Electricity is the third most stolen commodity following credit card information and vehicles.

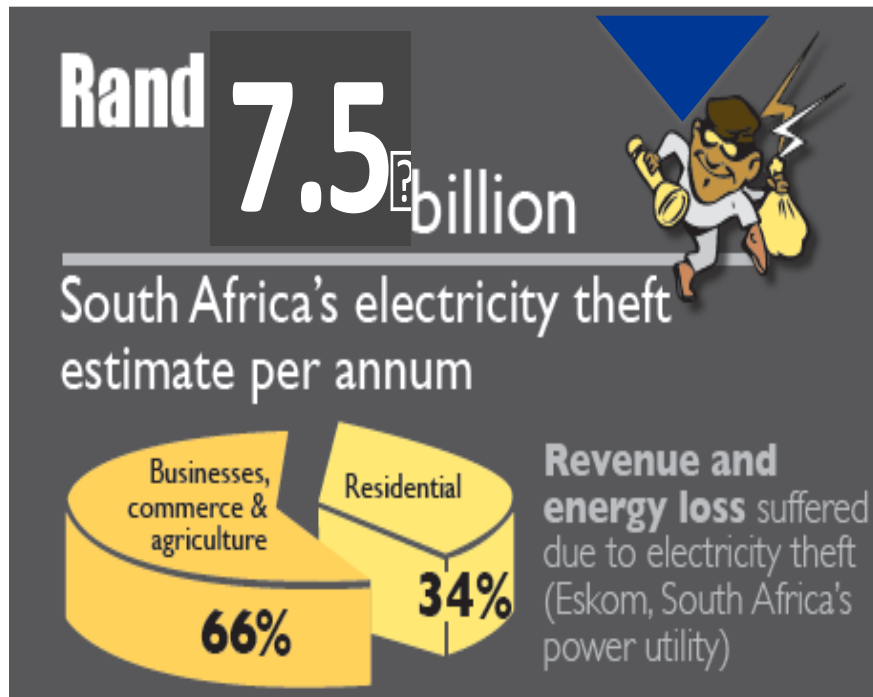
Looking at Sub-Saharan Africa

- SA's story forms part of the African storyline:



- On average, electricity utilities in Sub-Saharan Africa lose 23% of all energy consumed due to operational inefficiencies, at a cost, according to the Agence Française de Développement, of almost \$3.3 billion per year. Compared to a 10% global average, the region can do better.
- Such inefficiencies undermine the future performance of utilities, dissuade investment, and harm the environment.

South Africa's revenue loss challenge



- Eskom's non-technical revenue losses FY 2013 estimated at R4 bn
- Extrapolating from this one can estimate South African Electricity Industry's revenue losses to be not less than **R7.5 bn per annum**

Case study:

How Eskom is maximising revenue through revenue protection and revenue recovery

Overview of Eskom's energy losses

Distribution Total Losses = 7.12%

Technical Losses = 4.49%

Non-technical Losses = 2.63%

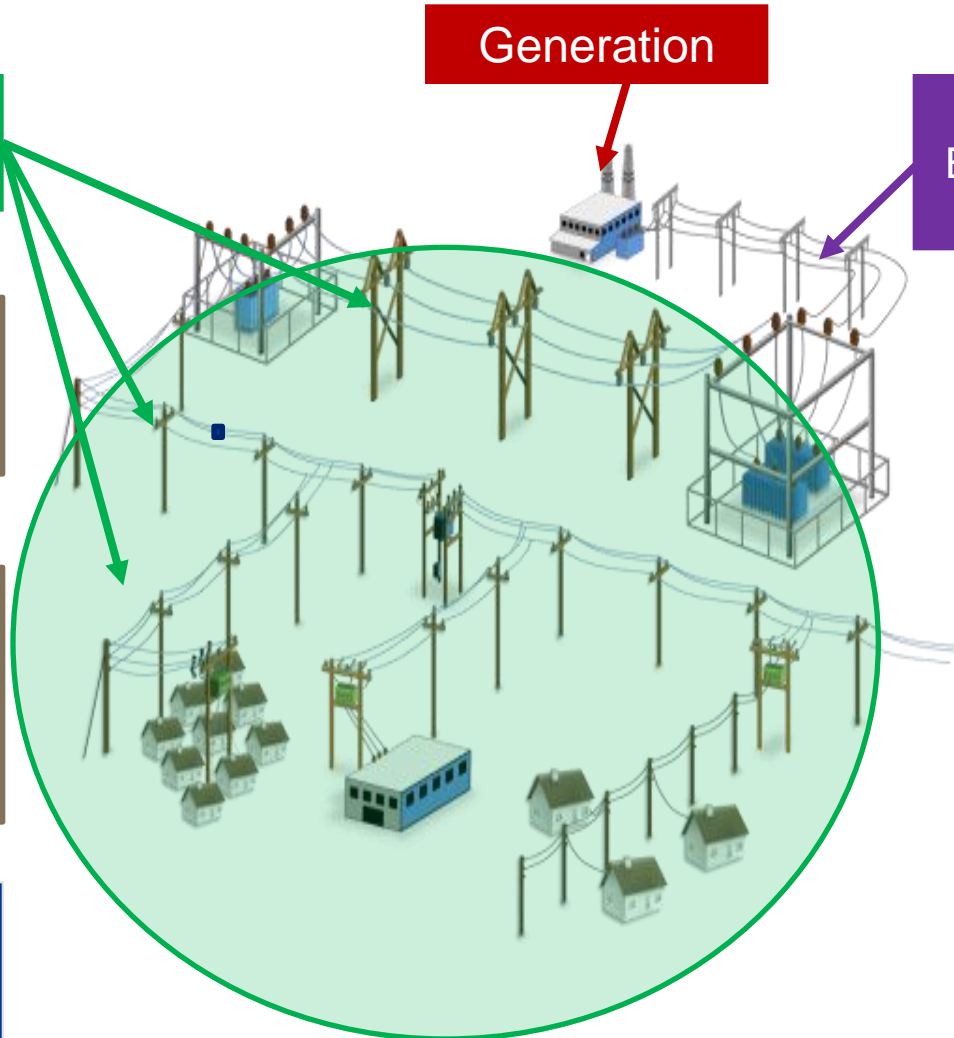
Non-residential losses = 1.72%

Residential losses = 0.9%

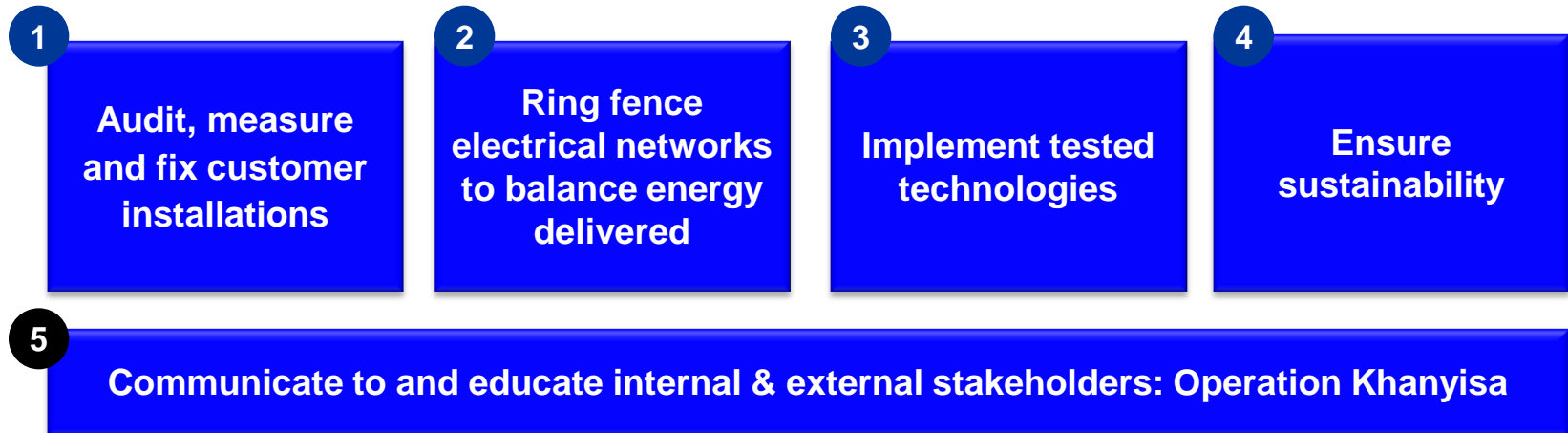
The case study looks at Distribution Energy and Revenue Losses

Generation

Transmission Energy Losses ~ 3%



- In 2006, Eskom established the Energy Losses Management Programme (ELP) to address its energy and revenue losses problem
- The ELP has five work streams:



Strategic Objective	<i>Arrest</i> the upward energy losses trend		<i>Reduce</i> the trend to an acceptable level	Ensure <i>sustainability</i> at an acceptable level
Focus Areas	1 Audit and fix Data & Meter Installations	2 Energy Reconciliation	3 Implement tested Technologies	4 Sustainability
Approach	<ul style="list-style-type: none"> ▪ Prioritise audit area ▪ Audit methodology ▪ Contractor management framework ▪ Revenue recovery methodology ▪ Prosecution case management ▪ Audit performance management 	<ul style="list-style-type: none"> ▪ Prioritise and scale network energy balancing ▪ Energy losses modeling ▪ Audit and clean-up of energy reconciliation data ▪ Customer energy profile deviation studies 	<ul style="list-style-type: none"> ▪ Technology solutions triggered through inputs from Audits & Comms ▪ Pilot & test scalability of identified technologies ▪ Develop business case for technologies tested 	<ul style="list-style-type: none"> ▪ Streamline business and value chain processes ▪ Address organisational structural and human resource deficiencies ▪ Sustainable quality assurance processes ▪ Align relevant KPA's & KPI's

Energy Losses Management Process

Managing the process



Analyse Energy Losses

Total Losses, Sales and Purchases Analysis

Technical Losses Simulation

Feeder Balancing Analysis

Load Profile Analysis

CC&B Anomaly reports Analysis

Tap into Experience

Plan & Execute Audits

Plan & Prioritise Audits

Source & Manage resources to perform audits

Perform Audits & Capture required info

Report on Audit Findings

Resolve Audit Findings

Resolve Illegal Connections

Resolve Meter Tampering

Resolve Illegal (Ghost) Vending

Manage Technical Losses

Resolve Metering Problems

Resolve Data/Process issues

Evaluate Performance

Losses performance reporting

Evaluate ROI for losses management interventions

Determine and implement continuous improvement initiatives

Causes of energy and revenue Losses

Illegal Connections

- Affordability compounded by escalating tariff's
- Electrification demand exceeding supply
- Sense of entitlement, Opportunism

Meter Tampering

- Affordability compounded by escalating tariffs
- Sense of entitlement, Opportunism

Illegal Vending (Ghost CDU's)

- Business opportunity spawning criminal syndicates
- Affordability
- Sense of entitlement, Opportunism

Technical Losses

- Normal energy dissipation in electricity distribution
- Overloaded networks
- Ageing networks

Data/Process Issues (Meter, Customer & CNL)

- Meter information errors (e.g. meter number, meter constant)
- Customer information errors

Metering Problems

- Meters / peripheral metering infrastructure (e.g. CT's) not functioning
- Meter programming errors

Combatting energy and revenue losses

Technical Losses

- Power Factor Correction
- Review of energy losses criteria in project design and planning
- Compensating for Reactive Power

Illegal Connections

- Removal/Regularisation of illegal connections
- Accelerated electrification
- Investment in shielded networks less prone to illegal conns

Meter Tampering

- Disconnections, tamper fines, revenue recovery, payment arrangements
- Subsidising low-income customers
- Split metering / AMI with tamper proof housing of meters

Illegal Vending (Ghost CDU's)

- Supply group code change
- Legal prosecution of electricity theft & syndicates
- Subsidising low-income customers and offering FBE

Data/Process Issues (Meter, Customer & CNL)

- Fixing customer, network and meter data
- Addressing process gaps
- Addressing resourcing gaps

Metering Problems

- Faulty meter replacements as part of maintenance & refurbishment programs
- Field work contractor management (training, certification, promoting ethical behaviour, quality assurance)

- Informed by a behaviour-change communications strategy
- Approaches electricity theft from the viewpoint that crimes like electricity theft abound not just because people steal, but because communities tolerate or condone these criminal acts



The campaign therefore not only deals with criminals, but also mobilises law-abiding South Africans to stand against electricity theft

Successes to date

- National launch in October 2010
- National partnerships established in 2010
- Pilot sites
- Compliance – investigations, Prosecution Manual, First Responders Guide, SAPS Detectives Training Manual & Directive, Reporting Line
- Various expo's: Crime Line, Black Farmers, BOFE, All Fresh, NAMPO, PEWA, AMEU, SARPA, SACCI, AUW, etc
- Summer promotion tollgate campaigns: December 2011 & 2012
- More than 200,000 people reached through focus site engagements. Including door-to-door, stakeholder engagements, and activations
- Building national awareness and understanding with through-the-line campaigns
- **Minister Gigaba tells Parliament in May 2013 that**
²³ **Eskom saves R200m by fighting electricity theft**

- **10 000+ tip-offs**
- **17,200 disconnections**
- **R29m in tamper fines in 2 years**
- **R139,6m recovered from LPU's & SPU's in 2 years**

- **200,000+ people engaged in face-to-face household visits, workshops, community activities & expos**

- **50m South Africans reached through advertising & PR campaigns**

- **60 court cases & convictions**
- **112 arrests**
- **First Racketeering conviction for electricity theft**
- **Electricity theft as incorporeal capable of theft – High Court judgment**

- Energy and Revenue management solutions requires joint efforts in different of areas
 - Technical
 - Commercial
 - Governmental
- Isolated actions will yield limited results, so persistent actions are required with close follow up
- Standard procedures are important
- KPIs are necessary for objective progress measurement
- Senior management involvement is highly critical
- Beware of the enemy within

The Revenue Protection and Recovery business case is so strong that utilities should look at implementing it as a matter of urgency

With the dwindling investment opportunities, African utilities can use Revenue Protection and Recovery to bolster their attractiveness

Technology and systems organizations offering services in this environment should take up the challenge to assist utilities in implementing this business case

THANK YOU

REPORT ELECTRICITY THEFT ANONYMOUSLY TO SMS 32211 (R1/SMS)

operationkhanyisa.co.za
powernews.co.za
info@operationkhanyisa.co.za

|  Ops Khanyisa |  @Op_Khanyisa | 