

Gearing up to meet Africa's  
rising power and water demand



12 – 14 May 2015  
Cape Town, South Africa



**AFRICAN  
UTILITY  
WEEK**

**CLEAN POWER  
AFRICA**



 **Eskom**

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# The triad-factor in preventing electricity theft and energy losses: technology, the law, and society

# Presentation framework

- The scale of electricity theft
- Eskom's business case for energy & revenue loss management
- Understanding the triad-factor
- The results of our efforts

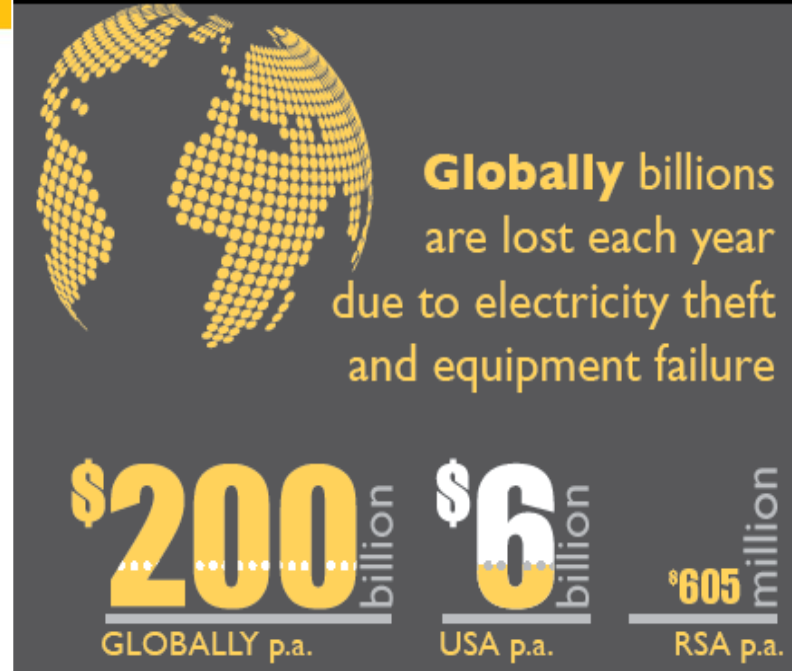
# Scale of electricity theft

# Electricity theft: A global threat

A growing global threat to energy security and economic growth:

- Accounts for 1% of all electricity consumed globally
- India loses up to 33% of all electricity generated and 1% of GDP to electricity theft
- Mostly associated with developing countries like Brazil and India
- But, developed countries like USA & UK not immune:
  - Costs the USA roughly \$6 billion annually
  - UK: gas and electricity theft cost £299 million/year

(Source: The Energy Collective, February 2013)



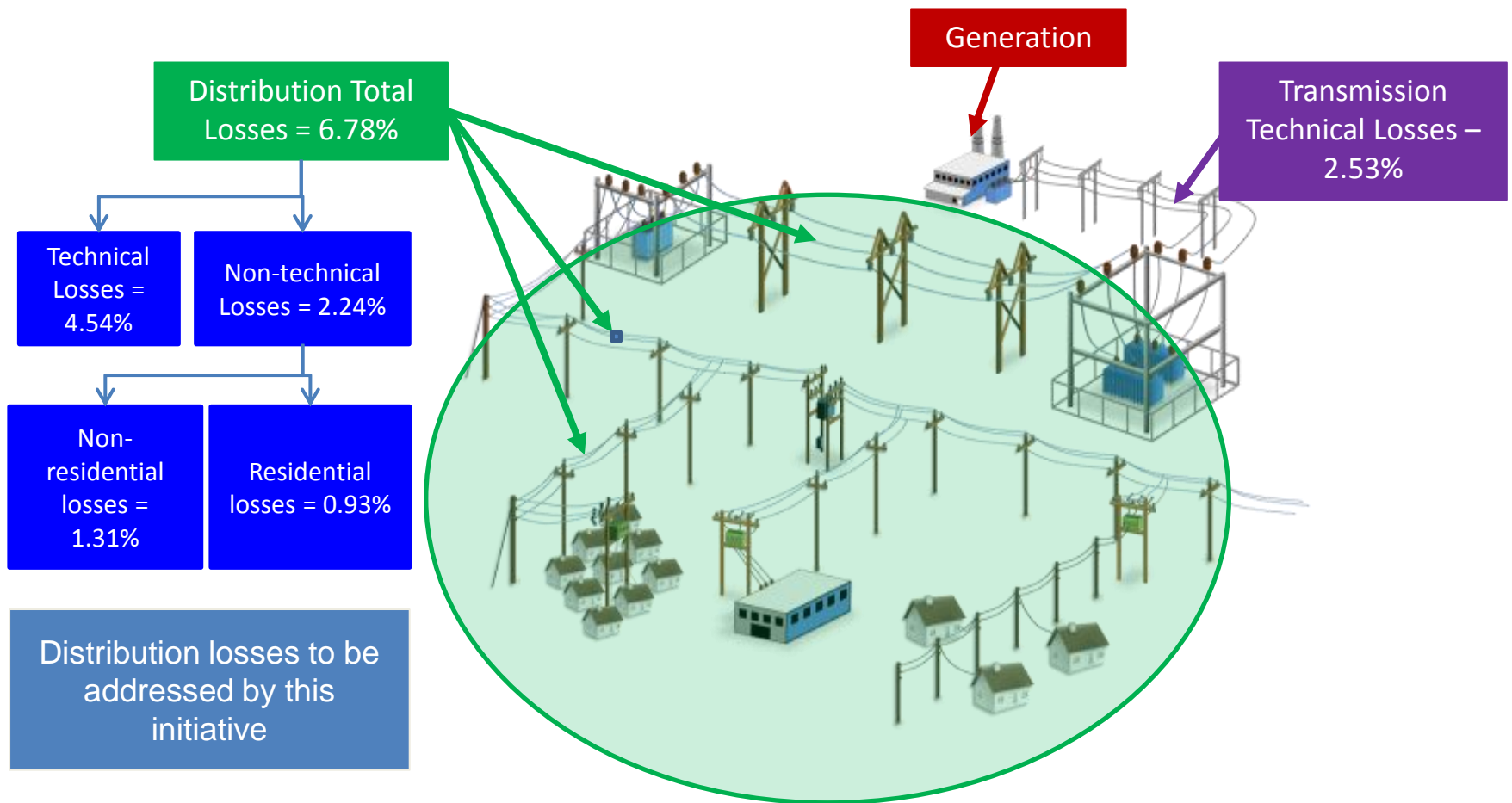
# Features among top 10 crimes globally



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

# The challenge

## Eskom's energy losses



# Understanding Crime & deviant behaviour

## Approach to crime

- Crimes like electricity theft abound not just because people steal, but because communities tolerate or condone it
- Have to not only deal with criminals, but also mobilise law-abiding South Africans
- It is not the fear of being punished that deters, but the fear of being discovered
- However, both factors must be at play to effectively prevent and deal with deviant or criminal behaviour
- Perception management is therefore an important agent of behaviour change

## RESEARCH

A national survey was conducted to determine the level of awareness of, attitudes to and beliefs about electricity theft

**96%** believe that electricity theft is wrong

**74%** recognise electricity theft as a problem

However, only...

**33%** acknowledge electricity theft in their community

**13%** believe consumers are responsible for doing something about it

**16%** believe that they would get caught

**14%** believe that they would get prosecuted



# The Scale

## SA's energy losses

- Eskom's non-technical revenue losses estimated at:
  - **R4.7 bn per year**
- Eskom's % energy losses:
  - FY 2012/14: **7.13%**
  - FY 2014/15: **6.78%**
- Municipal loss estimates are around **R3.4 bn annually**

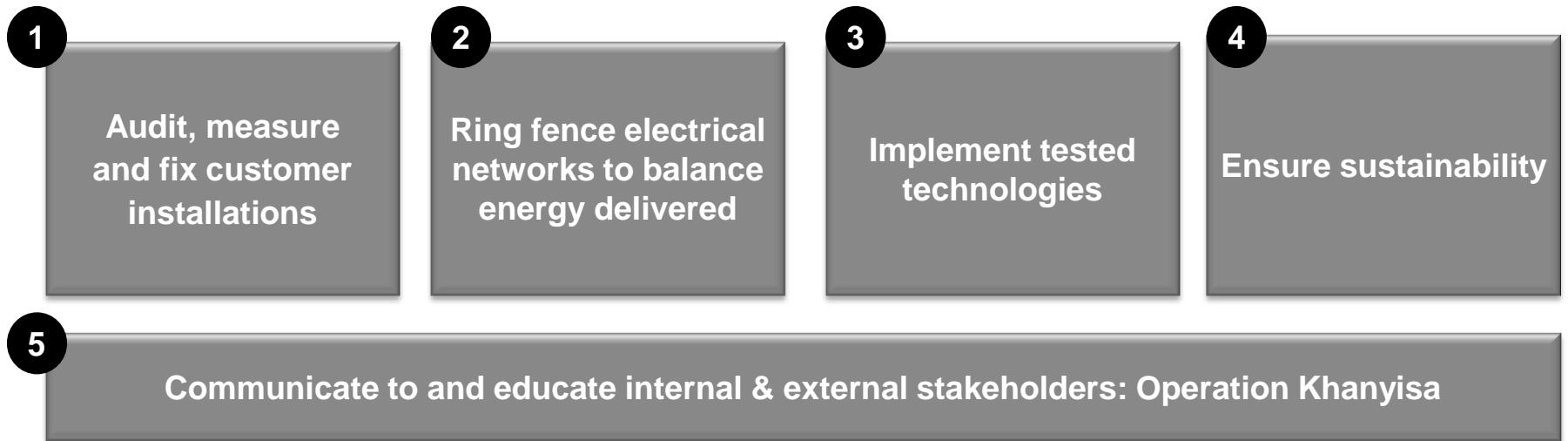
**This means SA loses at least R8.1 billion a year to electricity theft**

# **Eskom's business case for energy and revenue loss management**

# Towards a solution

## Energy and revenue loss management

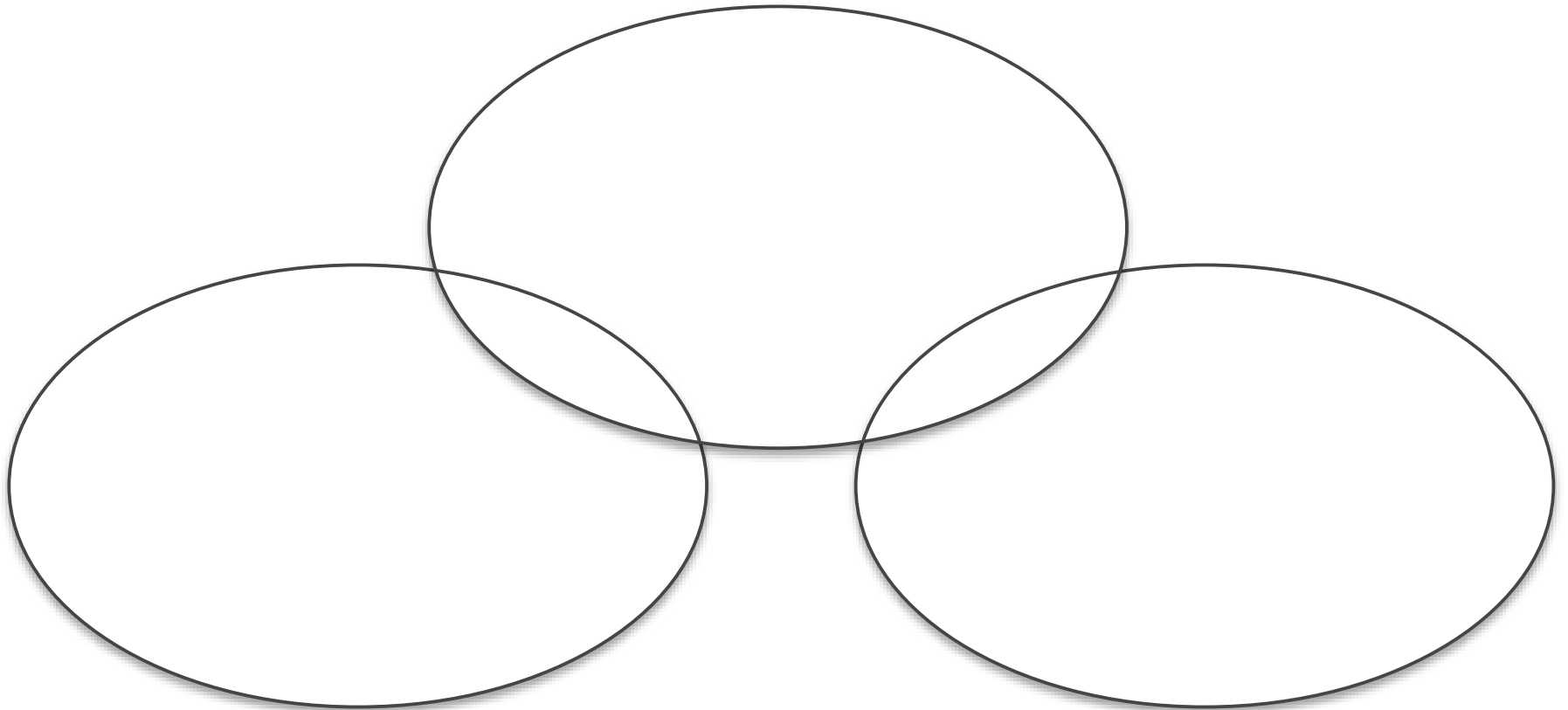
- 2006: Eskom established Energy Losses Management Programme (ELP)
- 5 work streams:



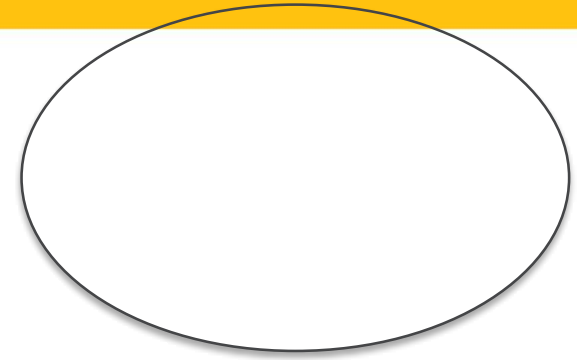
# Understanding the triad-factor

# Fighting electricity theft

## The triad-factor



# Technology

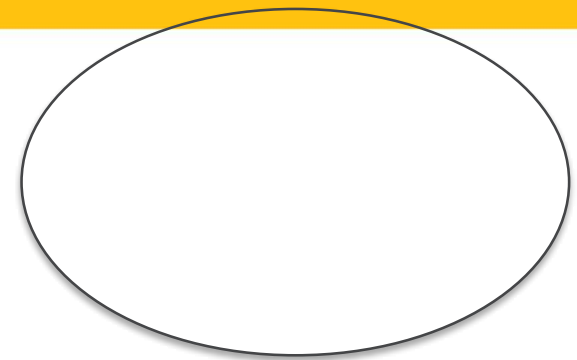


- Utilise technology that makes it difficult for the customer to access the network
- Early warning systems for potential intruders or alarms in cases where network is illegally accessed
- Energy balancing & ring-fencing enable remote audits:
  - Knowing the status of the meter
  - Identifying power theft

# The law

- Effective law enforcement crucial for driving customer compliance
- Partner with Law Enforcement Agencies to improve investigations & prosecutions:
  - Guide to Prosecuting Electricity Theft in South Africa
  - Inputs to the SAPS' Detective Manual
  - Ensure that the Legislative framework is conducive to electricity theft prosecution
- Implement the Law without fear or favour

# Society



- Electricity theft has become a societal norm for many people
- Business & residential communities encourage this crime through silence and passiveness
- Challenge is to break this norm - mobilise all sectors to:
  - Speak out & stand up against this crime
  - Encourage others and practice legal, safe & efficient power use
- Requires societal behaviour change to reach point of preventative sustainability
- All sectors of society must be leveraged to unite
- Society is core factor in prevention & proactive management of energy and revenue losses



# Entrenching compliance

## Operation Khanyisa: Customer Compliance Approach



Combine  
Auditing &  
Investigations

Power of the  
Law:  
Enforcement &  
Engagement

Social  
Mobilisation &  
Customer  
Education

Awareness,  
Publicity &  
Sustainability

- **Rattle the market**

- Audits, high fines, disconnection, reconnection fees
- Threaten arrest & prosecution; final warning & info gathered
- Revenue recovery - residential & business customers

- **Shake up the runners**

- Info from customers expose runners who are arrested and give leads re syndicates

- **Arrest the kingpins**

- Info from customers & investigations lead to arrest & prosecution of kingpins, syndicates & customers

- **Personal engagement with customers**

- Locally recruited & trained agents conduct premise visits
- Education: consequences, energy efficiency, safe power use, legal power use
- Self-regulation: encourage and empower customers & communities to self-regulate for compliance

- **Mobilise partners & stakeholders**

- Train-the-trainer, empowerment & tool kits
- Advocacy & programmes of action

- **Capacity building, visibility, sustainability**

# Realizing Results

# Results /1

- Contribution of almost **R1 billion** to Eskom revenue over 3 – to – 4 years:
  - **R400 million** in lost revenue recovered over 3 – 4 years
  - **R500 million** in energy & revenue losses prevented in 2 years
  - Distribution Losses **reduced** from **7.13%** to **6.82%**
- Over 15,500 tip-offs from communities – from zero base at launch
- A number of **successful electricity theft prosecutions and encouraging sentences** from a base where electricity theft was seen as NOT a crime

# Results /2

## Winning the war against electricity theft

### Reformed Community

From June 2013 | Limpopo



**137 000** customers buying electricity legally

= **R34 million** unlocked in monthly revenue

= **R8 million** tamper fines and reconnection fees issued

= **1 million** illegal prepaid units cleared off meters.

### Revenue Recovered

January 2015 | Nationwide



A man **found guilty** of providing **electricity theft services** to farmers across 3 provinces was sentenced to **7 years** in prison.

**6** farmers implicated, jointly paid **R5 million** to Eskom in fines and revenue recovered.

### Successful Raid

January 2015 | Vereeniging



A woman arrested for **sale of illegal prepaid electricity vouchers**, (ghost vending).

**2** laptop computers, **18** cell phones, **R100 000** in cash and **lists** of electricity meter numbers were seized in the raid. This case is ongoing.

**R7,4**



**million** in fines issued

**R2,8**



**million** revenue loss prevented

**R3,9**



**million** fines and reconnections fees

**7**



**Eskom** employees suspended

**58**



**arrests** ghost vending, illegal connections, tampering/bypassing

**34**



cases opened or on court roll

**1,4**



**million** ghost vending units cleared



**2 286** households disconnected



**106** businesses disconnected

**R8,7**



**million** fraudulent receipts quantified

# Managing perceptions

## **Busting the myth**

- No sector in the country is immune to electricity theft
- It occurs in townships and suburbs, and in business, industry, commerce and agriculture (BICA) sectors
- Employees & contractors in the electricity industry are also involved
- Revenue and energy losses suffered by Eskom in BICA sectors: double that of residential

# Concluding Remarks

Consistent, integrated, effort yield results

Use Technology, The Law and Society to enhance the effectiveness of your Revenue Protection initiatives – this has proven to work

With successes in Revenue Protection initiatives, utilities will have adequate revenues to invest in infrastructure development, electrification projects, or other service initiative delivery – much needed for economic growth

# Thank you

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