



Revenue Losses

How big is the problem?

SARPA convention

11 - 12 July 2013

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How big is the problem?



- Often have a situation of you don't know what you don't know
- 3 years ago studies by RED's work team revealed that some municipalities had a loss of >40% on purchase of electricity
- The Star reported on 13 June 2013 that 7 of 9 municipalities in Gauteng lost R1,3bn in electricity used but not billed and paid for in the 1st 3 months of 2013!
 - City Power R1,076bn = 29.33%
 - Ekurhuleni R120m = 9.39%
 - Midvaal R4.6m = 13.15%
 - Emfuleni R39m = 14.37%
 - Randfontein R3m = 8%
 - Westonaria R1,7m = 14.2%
 - Tshwane R96m = 13.31%

How big is the problem



- This equates to a loss of >R5bn for 2013 in Gauteng alone
- Total estimated losses vary dependant on who is reporting/ estimating them and can be influenced by many factors but I estimate that these losses annually in the industry between R8bn and R12bn if not higher
- The Star also reported water losses for the Gauteng municipalities of 37% or nearly R3bn/ annum

Revenue Loss causes

- Meter failures
- Meter tampers and manipulation
- Meter bypass
- No meters
- Incorrect meter constants (i.e. billed at 1 s/be 40)
- Unbilled customers
- Unknown customers
- Advances on terminated supplies
- Pending starts
- Incorrect meter dial billing (5/6)
- New meters not loaded to account
- New meters not updated
- Inadequate/ incomplete verification/ commissioning
- Customer maintenance CT's shorted
- Cable theft not corrected timeously

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Ways to Identify



- Structured Meter audits
 - Test meter functionality
 - Assess "meter installation state"
 - Meter assessment
 - Meter seals
 - Disc alignment
 - Wiring
 - Drag marks
 - Etc..
- Trend analysis
- Remote Metering
 - Event logs
 - Load per phase
- Reports information
- Informants

Simple strategies to lower risk

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- Effective Energy feeder balancing to ID hotspots
- Lock all meter boxes restrict access
- Utilise "tamper proof" meters internals cannot be accessed from outside
- Consequence of action
- Penalties and Fines
- Recovery of unbilled Revenue
- Criminal process
- Identification of tamper syndicates and appropriate strategies to deal with them
- Pro-active meter management culture shift
- Meter LPU error Exception reports current and voltage (LPU dial in to ID phases out)
- LPU trend and graphical analysis
- Customer profile analysis
- Low consumption reports

Simple strategies to lower risk

- No consumption reports
- Continuous Meter read analysis
- Comparison of actual demand profile to NMD
- Hi-Tech meter seals
- More comprehensive meter read process and actioning of exceptions
- Implementation of meter read and billing quality review process
- Reduction in process delays (log all problems ID and track fix and recovery – escalation)
- Phased meter replacement strategy
- The RIGHT people to do the job

Criminal process important aspects

- Chain of Evidence is critical
- Gathering of evidence
- Documenting state as found including test certificates
- Documenting fix and post fix tests (don't change evidence)
- Photographs
- Account and trend analysis
- Complete pack
- Meter test certificates
- Affidavits
- Understand process delays and impact of criminal cases

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Revenue Recovery



- Consistent application dependant on nature of non-function
- Standard processes for calculation
- Templates
- Customer interaction critical know the facts
- Customer liability
- Prescription
- Negotiated settlements

Revenue Recovery Process



- Identification of audit areas
- Contractor training and audits
 - Loading data onto the trimble (hand held device) or Kocos
 - Contractor audit and meter change
- Download of data and verification of data non-function
- Setting up of the control sheet
- Notification to customer 1st letter
- Tracking fieldwork and progress of each installation and initial customer notification
- No customer and no records
- Lost revenue calculation
- Notification to customer 2nd customer letter, once calculation is finalised
- Customer interaction and possible review of the calculation
- Billing 28 day period
- Closing off the file
- Post billing is a credit management function



- The installations where potential measurement faults and tampering has occurred are identified and examined to enable the measurement of potential lost revenue.
- The calculation is done based on the evidence on hand.
- The following documentation is compiled into a pack and used in order to establish a date at which revenue was beginning to be lost as well as the reason for the loss:
- Checklist
- Audit datastring/audit slip
- MMF
- Account information
- Historical meter reads and new meter reads analysis (trend)
- Premise tree
- Photos



- When analysing the read history, the possibility of a meter cycle must be taken into account and updated to the trend data if necessary
- The customer sign-on date must also be noted and taken into account when determining the calculation start date
- Prescription must also be taken into account. The broad principles of prescription as applied to revenue recovery calculations are as follows:

- Billable period is limited to 3 years from date of identification, if fault is identified or Entity did not take reasonable care. The date of identification is the audit date (provided the meter change date is within a reasonable period thereafter).

- Billable period if tamper identified has no limit.

Customer Interaction

- Always conduct the discussion from a position of strength have all the facts
 - Meter audit record
 - Meter change form
 - Meter test sheet
 - Calculation detail and trend analysis
 - Agreement
- Explain the background and detail of calculation to the customer
- Explain legal liability
- Listen to customers point of view and evaluate if it is reasonable and if the calculation must be changed
- Discuss terms of payment
- Keep minutes of discussions and agreements

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Signs of tamper and fault

- There are certain signs that indicate that an installation has been tampered with:
 - The seals are broken.
 - Dials not advancing
 - The PT links have been opened.
 - The meter disk has been dropped onto the magnets.
 - No or non standard seals on cover.
 - Physical damage to meter including drilling of holes on meter cover.
 - Marks on the upper or lower side of disk.
 - Scratch marks on the PT links.
 - Meter by-passed.
 - Line and load jumpers swopped around.
 - Connection direct off circuit breaker.
 - Secondary cable.
 - Neutral disengaged.

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Some Details of how meters are tampered

- PT links opened
- Intermittent PT link tampers
- Phase wires cut
- Magnets impeding meter function
- Resistors
- Disc raised on magnets
- Disc dropped on magnets
- Holes drilled in meters
- Dial cogs disengaged
- CT's changed ratios
- CT wiring reversed
- Cables connected before CT's
- Line and Load cable swopped
- Metering circuit breakers "tripped"

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Red and white CT's reversed

Red CT reversed

Cables connected before CT not measured

Metering circuit breaker switched off

White phase current wire disconnected

CT tamper

LPU Graphic

Disc dropped

CT's shorted

Tamper disguise

Behind the covers

Tamper disguise

Tamper disguise

Holes drilled

PT link open

PT link missing

"clean" seals

Meter bypass

Serious drag marks on disc

Drag marks under disc

Bridge between line and load

No Meter

Phase wires cut

Phase wires cut

Phase wires cut

CT's changed

Meter tamper – "T" off

Illegal connection

Default Energy Test Report						
Location Information:						
Customer Numb	ber:	LH37*9				
Meter Number:		596274				
Test Detail:						
Pulses:		3				
Meter Constant:		300				
Test Variable:		i/kWh				
Error:		-87.12				
Metes Serial:		CT20556				
Remarks				NONE		
Tested by:				Checked by:		
lame: GGR			Name:			
Date:	2013/05/15 03:11:02 PM			Date:		
Signature:				Signature:		

Crime syndicates

nature reserve. Provincial conservation group CapeNature had acounted five farms covering an area of 12 800ha to create a new reserve called Grand Canyon, it was reported yesterday. The land was bought by the World Wide Fund for Nature SA.

all the wey to Baviaans without changing its spots. CapeNature ecologist Appende Schutte-Wok said. "That is guite a distance. What's so

great about this new land is that it inks protected areas, because in conservation connectivity is crucial." Sana

Transport and Allied Workers' Union (Satawu) said. The strike is a result of a wage negotiation deadlock." Satawa spokesman Vincent Masoga said yesterday.

"We have demanded an 18% wage increase and the

far apart." The Bombela Concession company said the strike would affect the Gautzain bus

service. "Bus passengers are therefore requested to make alternative travel arraitgements to State of the life strength of the state

spokesman Errol Braithweite Stiff. Train services will not be isfloched."

He said the strike could also create increased demand on the Gautrain's pariting facilities. - Sana

Seven charged as electricity theft rockets

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tricity boxes and connectors, identified as belonging to the municipality.

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The investigation was launched after the electricity department noticed huge discrepancles in power usage patterns at homes and businesses. Detective Constable Trevor

Show said. To date, we have confiscated about 80 of these devices that were fitted in prepaid meters.

"We found them fitted in homes, farms, bars, retail stores and even national chain stores.

"Most of the [people who bought them] appear to be middle- to upper-class and include government officials, farmers, lawyets, policemen, doctors and = magistrate."

1000 Many of them would give evidence. In a few cases, people 初 had been conned into buying the device, unaware it was illegal.

Police had established those les. involved had charged about RI 000 a bousehold and R4 500 inia. per business. On average, they made about \$20 000 a day. Police

MAP KEY

spokesman Captain Sandra Janse van Rensburg said men had posed as contractors from the electricity department. They would target homes that they knew were having

problems with electricity spikes and, from there, they would work on referrals from the client." In the guise of municipal con-

tractora, the men would alleged-

RIGHT AND WRONG: A standard electricity box is pictured left and one where an illegal device has been put in is on the right ly offer to help householders and business owners sort out the spike in electricity and at the

same time reduce their issage. "In essence, they bypass the meter resulting in the reading being drastically reduced," Janse van Rensburg said

Police are now appealing to bought such devices to come for- increasing tariffs.

ward in return for immunity. from prosecution.

Janua win Rensburg said anyone caught using the device laced a R2 000 fine under the municipal bylaws for tampering with an electricity noter and possible prosecution if they installed the device knowing it was illegal

Neilson stressed that the rise anyone who unknowingly in electricity then was a factor in

PEFLIGHTS

While a certain annount was allocated to loss control. this "is nowhere near the millions we Are now losing". Neilson added that due to the mcrease in demand and price of electricity, criminals had TREVOR SHAW

scale it is a huge problem," he

ago, the South Gauteng High Court found two men guilty of 78 285 counts of their and two counts of racketeering.

Ndebele stole RS 3-million worth of electricity.

They were given a combined settence of 111 years in Jail. They were charged under the Organised Crime Act.

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DEPARTURES -

changest their tacbcs and methods in stealing power. "It was always a problem but on this In a landmark ruling two years

Andile Mingadi and Martin

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Crime syndicates

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st RS per 160 lives do not apply.

Town, George, Last Lundon, Outtaboom: Port Eluabeth and Litenfings. The desices are con-

INT BY ILLINESS: Roland Schooman is suffering from infections in his ears after sweenning at the Newton Park pool. Here he checks his time after winning the 50m butterity final at the championahip event. In the background is Chad is Clea Pictures: ERIAN WITEDON

Seven men to appear in court as power theft bill hits R180m

Gareth Wilson whong interested a coza.

LAWYERS, policemon, humanespriving eastly reduced hills. men, doctors and even a magistrate are among thrananda of bill mopped by more than 75%. Netson Mandela flag residents Last might, director of elecwho have bought devices that tricity Peter Nellson said in 2007 help areal electricity running the city host \$30-million as a into sufficient of rands from the result of electricity theft. municipably.

The figure had shut up to Some claim they were conced-III f Hamilton thus year. into buying the devices, bot oth-The said the then contributed ers have admitted they bought towards the high cost paul for them knowing they were illegal. electricity by Bay residents. Today access members of a The seven accused - explusymblcate allegeelly proliting sives expert Garrit Crowther 47. from the soun will appear in the electrician Daniel Ehrder, 47, Port Elizabeth Magistrate's Court on frond charges.

SHANE BROWN

Charles White, 41, who has elisetrical experience, Daniel Killian. The need, all from Port Eliza-40. Raymond Rose, 42. Okanae for speeding away from police beth, allegently aold and its Emma 41, and Warren Berni- while allegeddy transporting statled electronic desices in denhinit, 20, were serested at drugs. A search of the vetocle homes and hierinesses in Cape various times over the past six revealed several prepaid elecinduiths.

All except Crowther, who is in: custody to. George for pending #Picture of twice in prepaid has: PE

nected in a building's power drug and whicle thert cases, are supply and decrease the meter out on hall of R1 600. macrings, with communities re-Some have other cases pending squinul them, ranging front In most cases the consumer's

possesson of strugs and perbemore to websche their and hijacking Pulling suspect the group

planned to signand the operation to Gastenir. Last year, the electricity mepartitient - alarmed at the ex-

tent of the thelt - formed a task team to help police identity properties where the diegal destors were unstalled.

Although the investigation began in 2911. It all came togathes in September last year when suspects were arrested

REPORT CONTINUES; P2

rists with Bay fines amnesty

eny, id. salve abjector Bhane Srown said in a report where to the commotive grantdammed. ing nemerity would re-ATTEAT duce the number of nutitanding armst warortfinitie rants and increase the inniay. cleportment's revenue. y that The only drawback .the was that muborlists honst. might in Surure think it

was OK not bu pay whitchi ITs fine their lines in the hope that there would be inality other amounty periods

an De- later. 410 - 10"The amnesty strategy will have limited auccess if it is not integrat--traffic: inflips. ed with (an awarmens) campaign. additional roadblocks and a media

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exect campaign," Britten said.

recommended mitially that only fines of R500 or more be covered by the unitesty, but the councillion, reduced the minimum to R300, saying it would attract a larger post of payers. Three were 51 840 warrants of arrest outstanding at the end of in July February: This equates to about R1.35-million. There are only 12 of

ficers in the metro who can effect. warranks of arrest for outstanding fines. Seven are based in Port Elisabeth and five in Ultrainage.

curity Guitev Rautenbach said: safety and security directorate.

"The backlog for fines is R130-milion at the mument, so this uninesty will give an the muncy we need to rase that backlog." Committee chairman Thembine

kosi Mafana said the amnesity period was linked to mayor Ben-Fibla's 100 days in office. · Councillors elected the men-

bers of a task team to drive the implementation of the metro police-

The beam comprises three ANC and two DA counciliors and one from the minnetty parties. Other brain members are Brown, union representatives, acting third linkscial officer Selwyn Thys. actung labour relations director Hendrick Did spukesman for safety and se- Vicines and two officials from the

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22TH APRIL

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Thank you