



USING DIGITAL PEN & PAPER TECHNOLOGY TO MANAGE DISCONNECTIONS BY :

**ETHEKWINI
MUNICIPALITY**

Nathi Nkwanyana

& Nikhil Bhoola (Xcallibre)

SARPA CONVENTION 2012

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Keys on Writing

Worlds Fastest Forms Processing Solution!



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1. Introduction



- EThekweni Electricity supplies more than 640 000 customers – Area +/- 2 000 square kilometres.
- Electricity (Main Supply) purchased from Eskom at 275 000 Volts.
- Also purchased electricity from Eskom for Tongaat and for the town of Mpumalanga at 11 kV.
- Electricity is transmitted and distributed for use by the full spectrum of customers ranging from the large, sophisticated industrial and commercial sector, to the rural and peri-urban informal community.

1. INTRODUCTION...



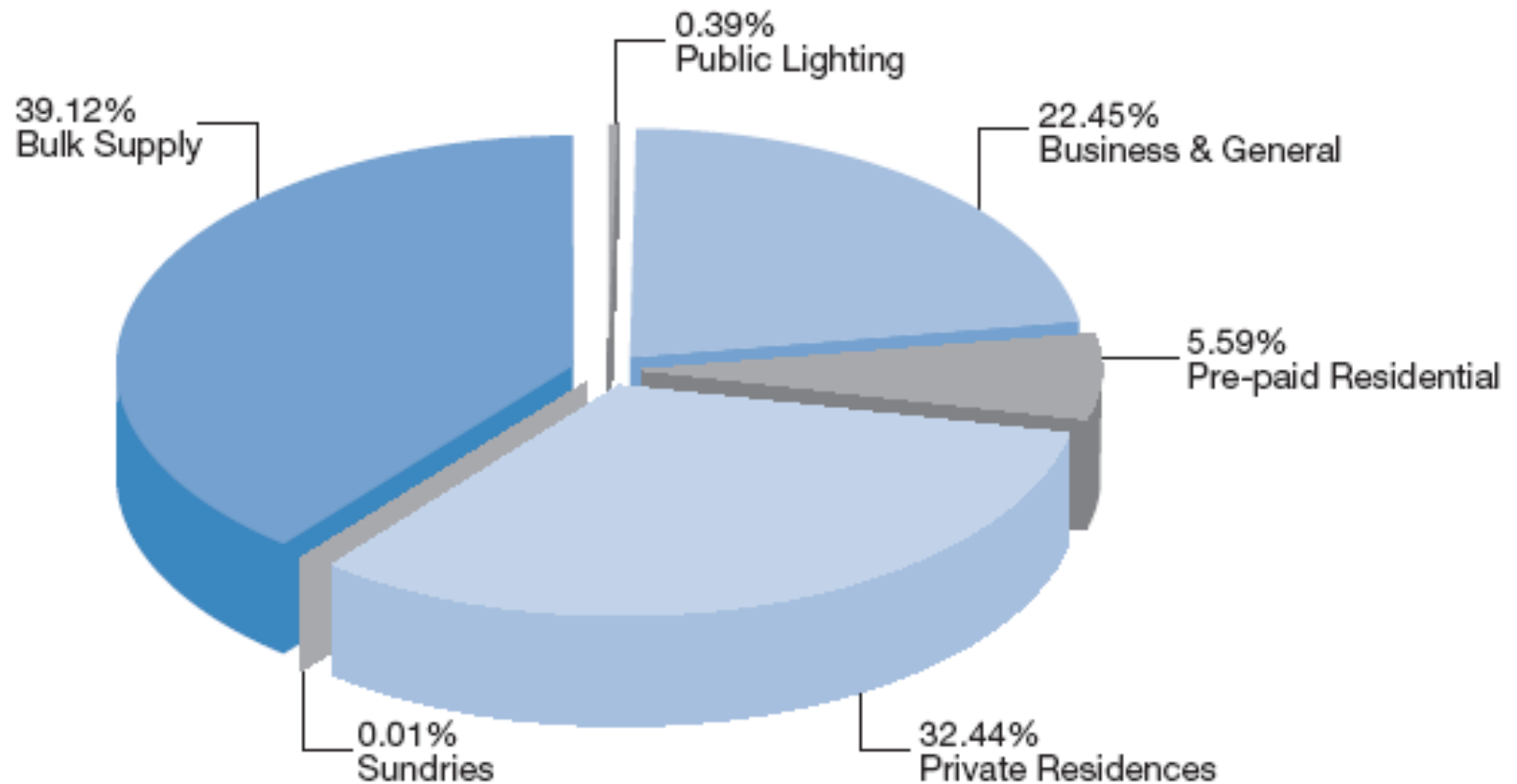
- Maximum Demand – 1 800 MW.
- Turn over – +/- 9 Billion.
- Purchases just over 5% of the total Energy Generated by Eskom

2. Background

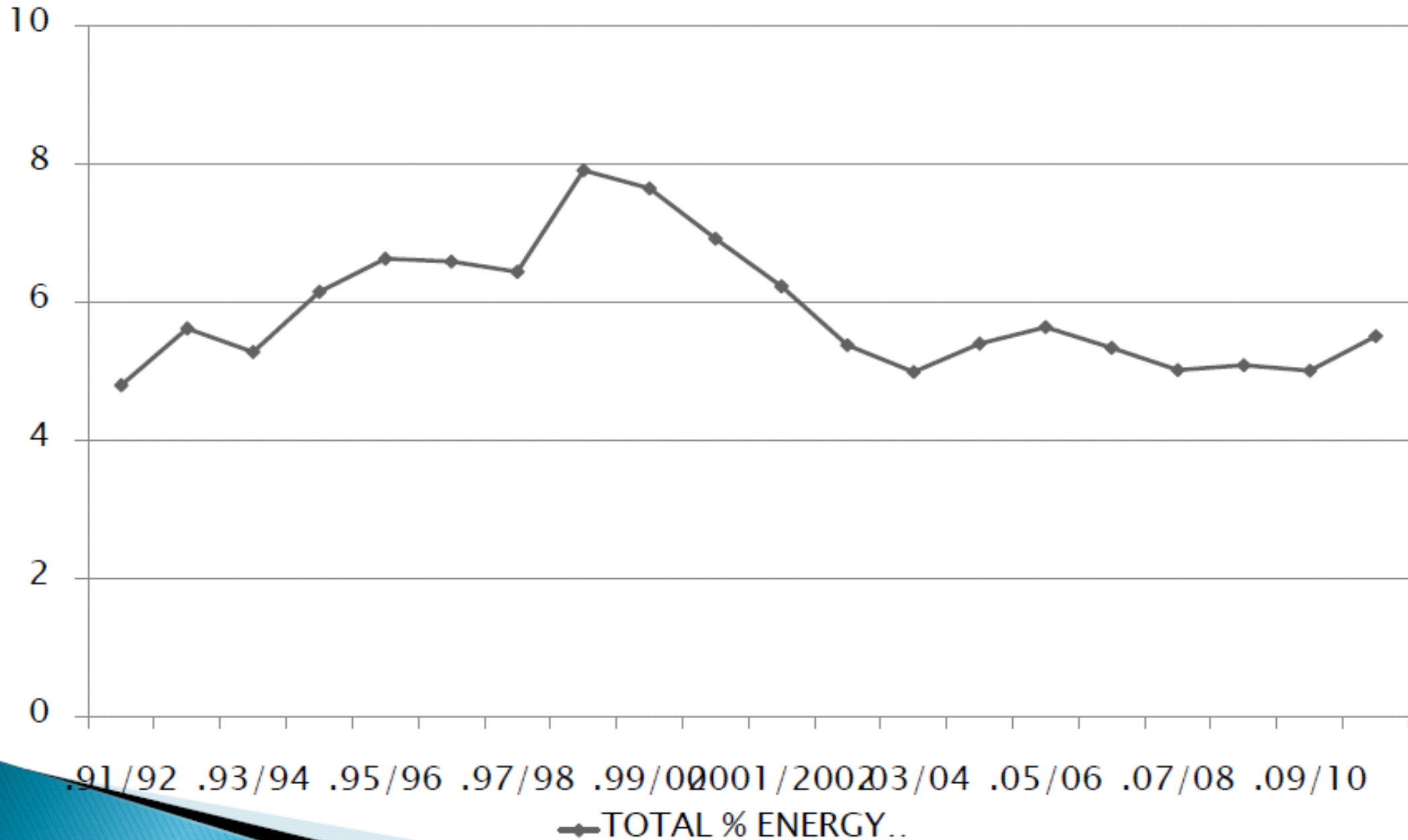


- Consolidated billing.
- Increase in number of disconnections
- Use Electricity & Water as leverage to collect Revenue.

3. Distribution of Revenue From Sales



Total % Energy Losses – 1990/1991 – 2010/2011.

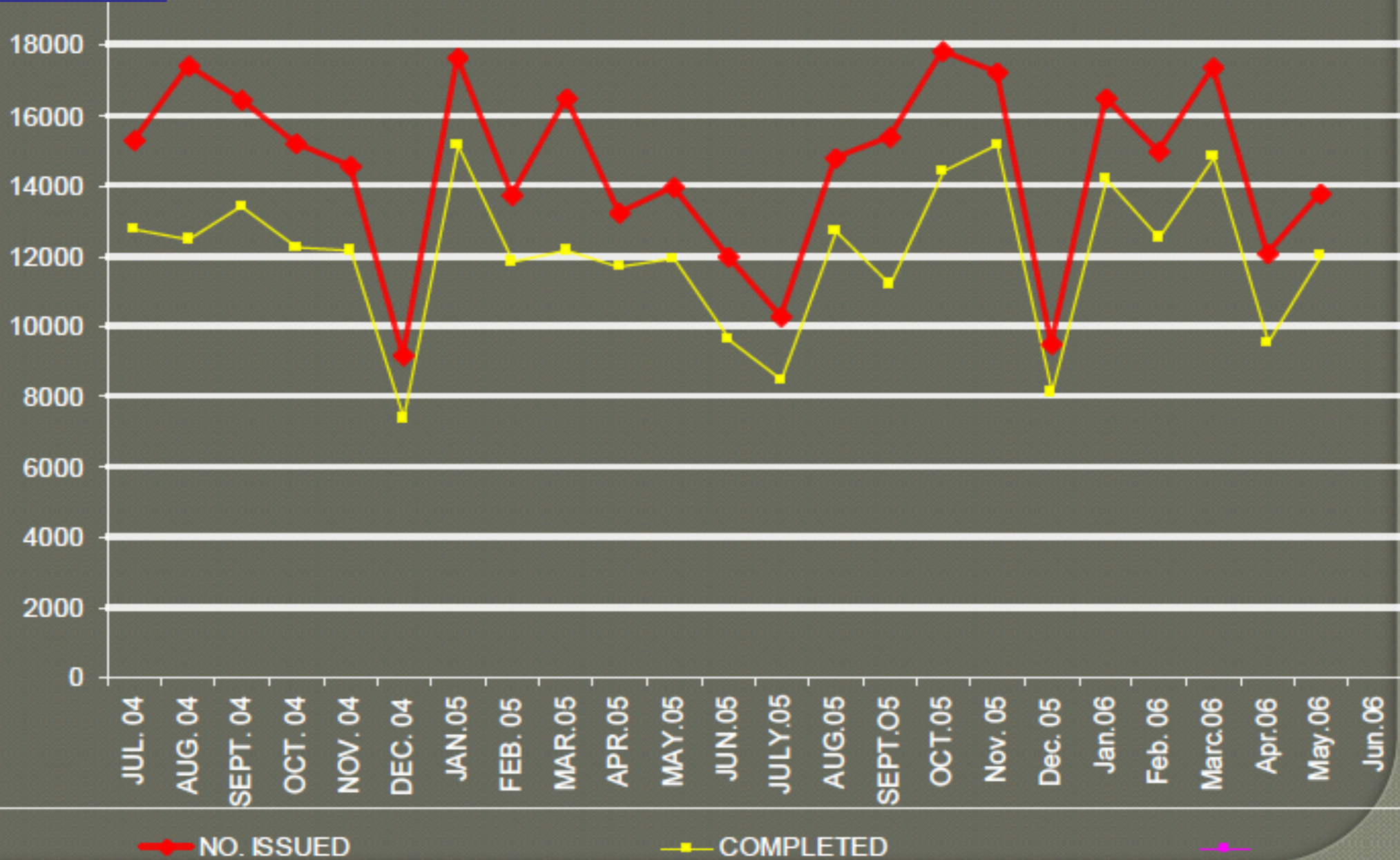


5. Disconnection Stats



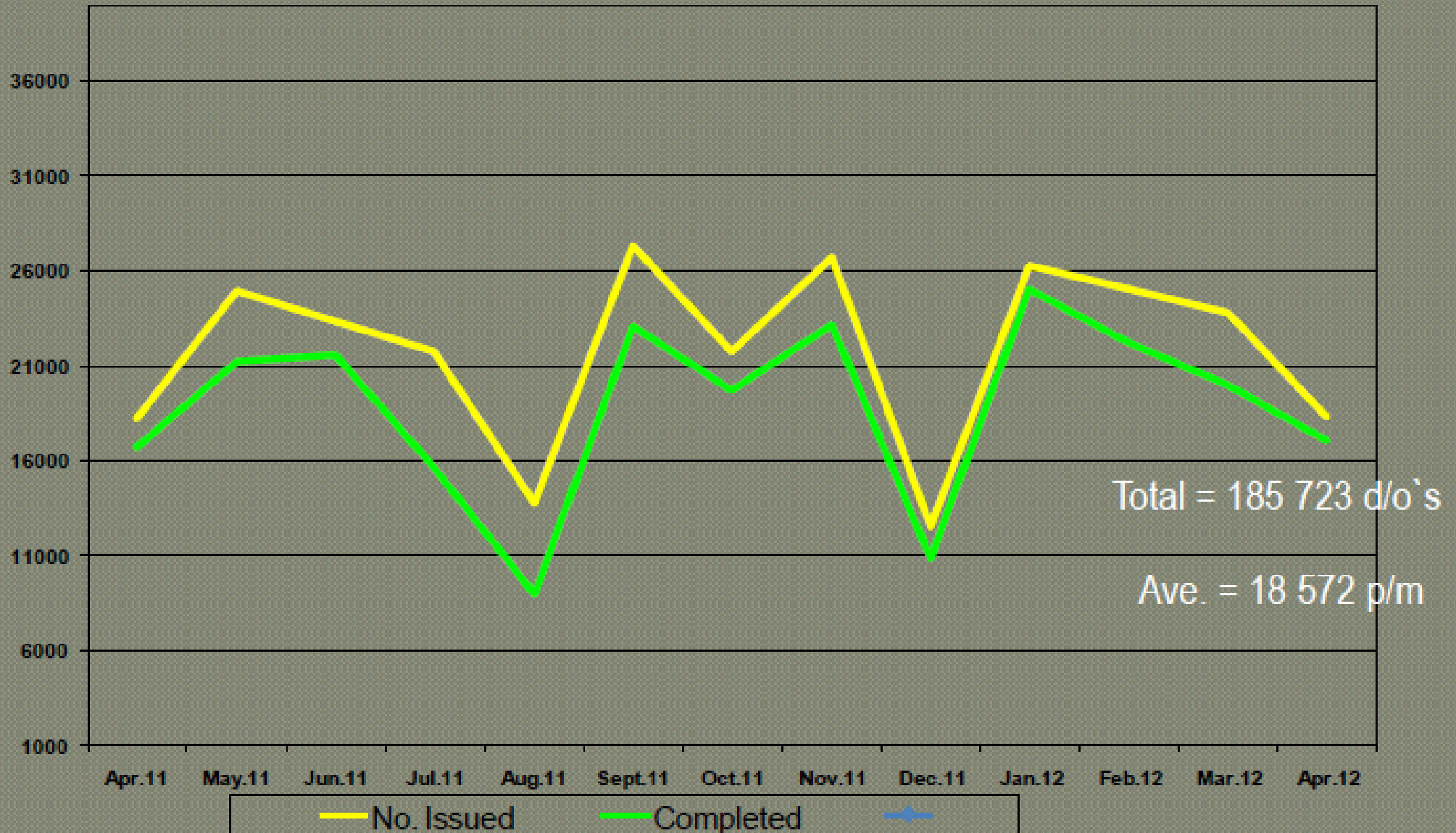
Financial Year	Total No. of Disconnections	Total No. of Reconnections	Monthly Average – DO`s	Recon:Disco n ratio
2005/2006	129 432	93 520	10 786	0.72
2006/2007	123 047	88 486	10 254	0.72
2007/2008	151 717	114 096	12 643	0.75
2008/2009	173 621	129 020	14 468	0.74
2009/2010	207 473	160 428	17 289	0.77
2010/2011	218 861	166 490	18 238	0.76

Disconnection Issued Vs Disconnection Completed - 2004/2005





Disconnection Issued Vs Disconnection Completed – 2011/20012 up to April.



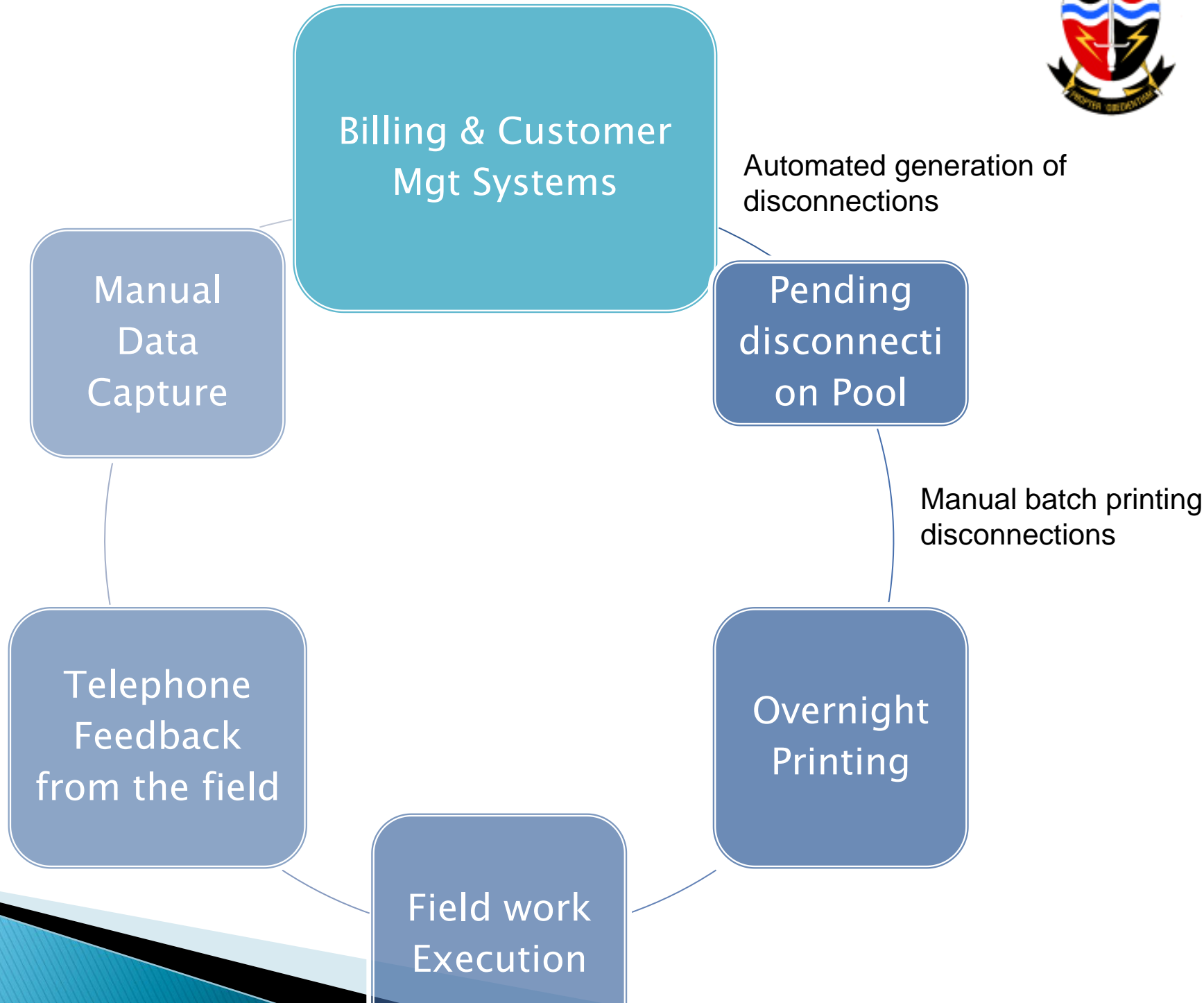
6. Types of Disconnection



There are five basic types of disconnections, the reconnections being the reversal of the disconnection process:

- Normal Disconnections
- Doctored Disconnection.
- Hard Disconnections.
- Remove all Gear (R.A.G.)
- Service Cable Removal Disconnection

7. Disconnection Process



8. Advantages of Digital Pen & Paper Tech.

- ▶ 8.1 We are able to audit contractors to ensure compliance – The Form Viewing / Editing System : GPS Mapping System
- 8.2 Monitor Contractors and/or staff performance– The Form Viewing / Editing System: Filtering and Search Tools
- 8.3 Payments of contractor`s Invoices – Reports.

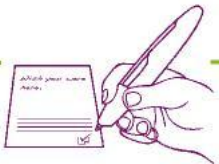


Worlds Fastest Forms Processing Solution!




Ethekwini Electricity
Form Processing using the Digital Pen

9. How it works?



10. The Digital Data Collection Form:



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CONNECT Re-Write

E

D/O Sticker Number

RP

ETHEKWINI MUNICIPALITY
ELECTRICITY DISCONNECTION ORDER

CONSUMER

SERVICE ADDRESS

D/O NUMBER	D/O DATE
ACCOUNT NUMBER	TEAM NUMBER
DEPOT	
SUB AREA	

BILL DATE	ARREARS	CURRENT	RECONNECTION FEE	TOTAL AMOUNT PAYABLE

PLEASE DISCONNECT THE FOLLOWING METERS DUE TO:
DISCONNECTION METHOD:
ACCESS DETAILS:
HSA:
REMARKS CODE
CONTACT PERSON:
NO OF REPRINTS:


METER	K	LOCN	CNECT	DATE	TIME	READING	DETAIL
							METER SEAL INTACT: YES <input type="checkbox"/> NO <input type="checkbox"/>
							SUPPLY DISCONNECTED AT: METER <input type="checkbox"/> POLE <input type="checkbox"/> COU <input type="checkbox"/> OTHER <input type="checkbox"/>
							SITE CALL DUE TO: U.T.E <input type="checkbox"/> U.T.L <input type="checkbox"/> RE <input type="checkbox"/> OTHER <input type="checkbox"/>
							ACCOUNT PAID: YES <input type="checkbox"/> NO <input type="checkbox"/>
							REMARKS:

DECLARATION BY CONSUMER OF PREMISES

I HEREBY ACKNOWLEDGE THAT MY SERVICE HAS BEEN BOOKED AS AN "OFF/ON" & THAT I'M LIABLE TO PAY A RECONNECTION FEE IF MY ACCOUNT IS NOT PAID UP TO DATE

SIGNATURE OF CONSUMER

Send Form



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ETHEKWINI MUNICIPALITY – NOTIFICATION OF DISCONNECTION ELECTRICITY SUPPLY

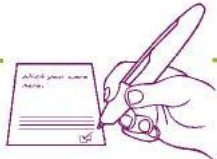
BILL DATE	ARREARS	CURRENT	RECONNECTION FEE	TOTAL AMOUNT PAYABLE

D/O DATE	ACCOUNT NUMBER	D/O NUMBER

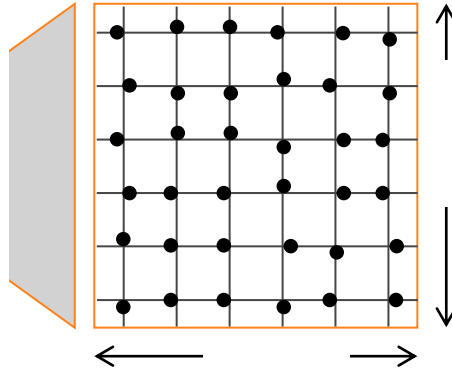
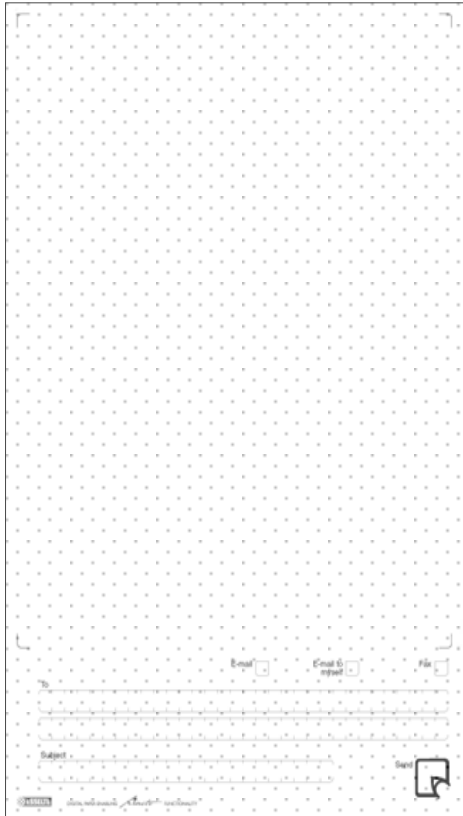
FOR EXECUTIVE DIRECTOR ELECTRICITY

V.1.4 POWERED BY: XCALLIBRE | www.xcallibre.com MEMBERSHIP: *Ames* | ELECTRICITY

Send Form



11. The Paper



- Small dots printed on ordinary paper
- Images and text can be overprinted
- Visually a slight grey tone on the paper
- Non complex printing process - Laser/Litho/Digital
- The pixels have an addressing system from Anoto

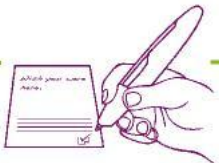
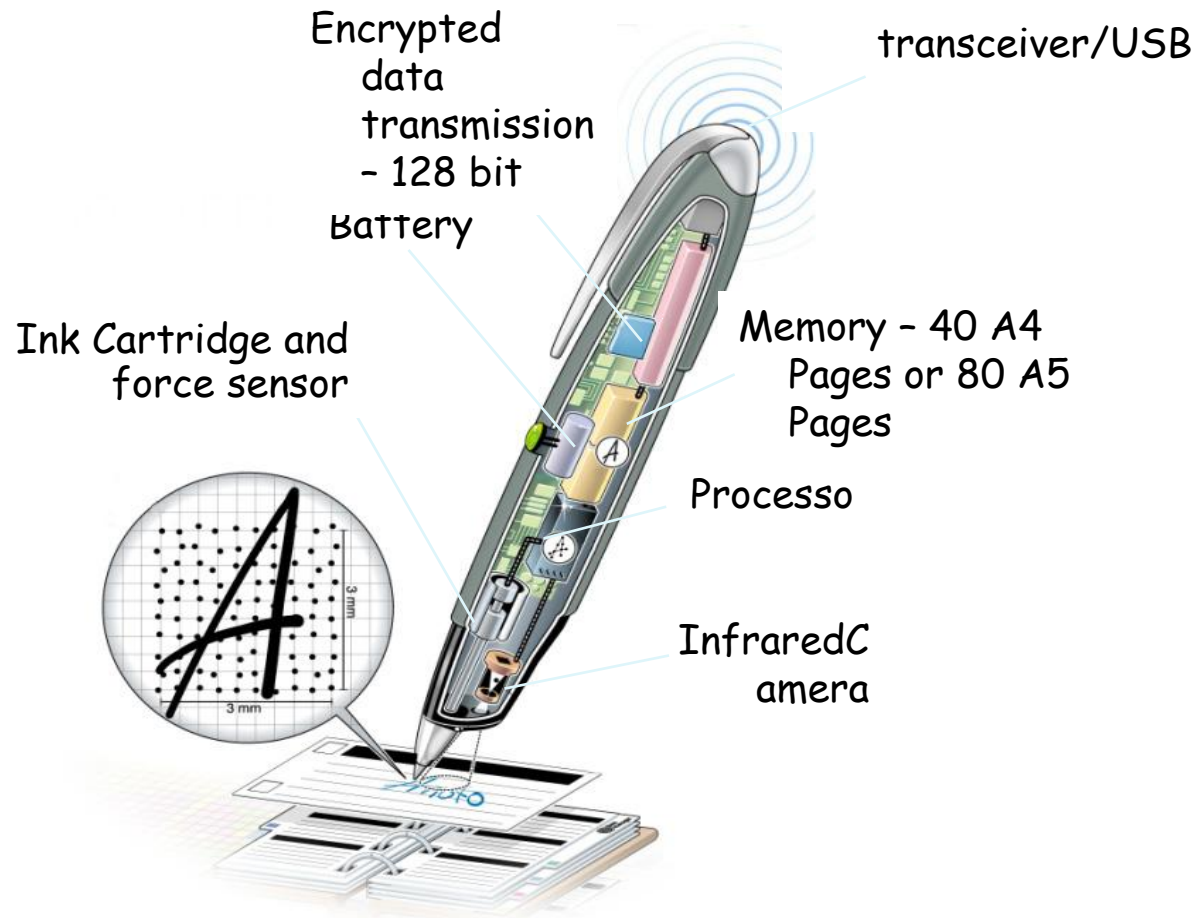


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12. The Pen – Technical Data

- Uses ink
- Functions just like a normal pen
- Contains a digital camera
- Takes pictures of pen strokes only
- Small data files
- Secure data transfer
- Bluetooth or USB



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13. The Form Viewing / Editing System

Xcallibre Digital Pen Form Utility - Windows Internet Explorer

http://app.xcallibre.com/Ethekwini_Electricity_Disconnection_Viewer/default.aspx

File Edit View Favorites Tools Help

Revenue Protection - Conve... Xcallibre Digital Pen Form...

View/Edit Reports Admin Help Logout

Username: admin

FORM EDITOR Update Verify CNeC Delete Export PDF Export GPS: [X=-29.98946, Y=30.89592] Page: 1

FILTERS

Calendar: **July 2012**

<	>	July 2012							<	>
Sun	Mon	Tue	Wed	Thu	Fri	Sat				
24	25	26	27	28	29	30				
1	2	3	4	5	6	7				
8	9	10	11	12	13	14				
15	16	17	18	19	20	21				
22	23	24	25	26	27	28				
29	30	31	1	2	3	4				

FILTER FILTER MODE:

Filter by: <Select a filter> Apply filter Refresh

Depot: <<<Select Depot>>

Contractor: <Select Contractor>

Disconnector's Name: <<Select Name>>

SEARCH SEARCH MODE:

CNECT No: Search

FORMS Status: ● New ● Edited

Date: 2012/07/11. Number of forms: 192

Time	Consumer Name	CNECT	View	Data	Revised	Details	GPS	Photo (s)	
14:55:18	WK SITHOLE	E6886008							
14:51:04	MJ MHLANGULELA	E6885930							

CNECT Re-Write E6885930

D/O Sticker Number 184356

RP E B 1 4 7 0 2

ETHEKWINI MUNICIPALITY ELECTRICITY DISCONNECTION ORDER

CONSUMER

MJ MHLANGULELA

SERVICE ADDRESS

U492 UMLAZI (B)0310676

D/O NUMBER 20120625

ACCOUNT NUMBER 96216080055

TEAM NUMBER 03

DEPOT SOUTHERN

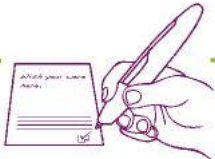
SUB AREA Umlazi (SS)

BILL DATE	ARREARS	CURRENT	RECONNECTION FEE	TOTAL AMOUNT PAYABLE
20120611	363.05		120.00	729.27

PLEASE DISCONNECT THE FOLLOWING METERS DUE TO: ARREARS
DISCONNECTION METHOD: NORMAL
ACCESS DETAILS:
HSA: 1996-08-12 - ACTIONED DISCONNECTION (PREVIOUS D/O)
1994-09-07 - ACTIONED DISCONNECTION (PREVIOUS D/O)
REMARKS CODE
CONTACT PERSON:
NO OF REPRINTS: 00

D/O CREATION DATE: 20120621

METER	K	LOCN	CNECT	DATE	TIME	READING	DETAIL
6108688		F07	F6885930	11-07-12	14H50	37630630	METER SEAL INTACT: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
							SUPPLY DISCONNECTED AT:



13.1 The Form Viewing / Editing System GPS Mapping System

Username: admin

FORM EDITOR Update Verify C/Nec Delete Export PDF Export GPS: (X=-29.98946, Y=30.89592) Page: 1

FILTERS

Calendar: July 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
24	25	26	27	28	29	30
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

FILTER FILTER MODE:

Filter by: <Select a filter> Apply filter Refresh

Depot: <<<Select Depot>>

Contractor: <Select Contractor>

Disconnector's Name: <<Select Name>>

SEARCH SEARCH MODE:

CNECT No: Search

FORMS Status: ● New ● Edited

2D 3D Road Aerial Bird's eye Labels <<

2108 Rd Lovers Ave Igwa Masibambane Ave Mashimane Ave Maurice Gumede Dr Inhlansi Walk Principal Ave 2121 Rd Ntando Ave

150 yds

bing

1996-08-12 - ACTIONED DISCONNECTION (PREVIOUS D/O)
1994-09-07 - ACTIONED DISCONNECTION (PREVIOUS D/O)

REMARKS CODE

CONTACT PERSON:



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13.2 The Form Viewing / Editing System Filtering and Search Tools

FILTERS

Calendar:

July 2012						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
24	25	26	27	28	29	30
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

FILTER FILTER MODE:

Filter by:

Depot:

Contractor :

Disconnecter's Name :

SEARCH SEARCH MODE:

CNECT No:



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13.3 The Form Viewing / Editing System Reports

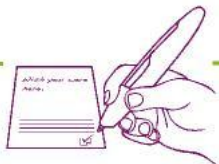
Export

ELECTRICITY DISCONNECTION REPORT

Total Number of all Forms 6589

DATE RANGE : 2012/6/1 0 TO 2012/6/30

Number	Pen ID	Full Name	Number Of Forms Sent	Forms With GPS	Forms Without GPS	Edited Forms
1	AJX-AAC-X47-FK	NULL	12	0	12	6
2	ATD-AAE-8E5-7J	NULL	3	0	3	1
3	ATD-AAE-8E7-7M	NULL	454	0	454	30
4	ATD-AAE-8E9-7P	DUMISANI,DLAMINI	190	0	190	48
5	ATD-AAE-8EC-6S	Khaya,Gumede	315	245	70	73
6	ATD-AAE-8EM-63	NULL	85	15	70	16
7	ATD-AAE-8ET-69	NULL	228	0	228	46
8	ATD-AAE-8EU-7A	NARESH,SINGH	181	163	18	18
9	ATD-AAE-8EZ-7E	NULL	201	121	80	0
10	ATD-AAE-8ME-DM	Bruce,Moodley	27	3	24	0
11	ATD-AAE-8MF-DN	NULL	46	30	16	8
12	ATD-AAE-8MP-DW	SANDILE,KHUMALO	262	123	139	12
13	ATD-AAE-8P6-GC	VUSI,NKOSI	87	26	61	12
14	ATD-AAE-8QA-GG	Robert,Hadebe	234	153	81	7
15	ATD-AAE-8QC-GJ	Brian,Duma	33	32	1	7
16	ATD-AAE-8QE-GM	Thembelani,Dlangisa	199	191	8	3
17	ATD-AAE-8QG-GP	ZAKHELE,SANGWENI	134	0	134	27
18	ATD-AAE-8S5-KB	Ian,Msomi	23	9	14	10
19	ATD-AAE-8SR-JY	Zakhe,Sibiya	162	0	162	16
20	ATD-AAE-8SZ-J7	Sandlie,Dladla	111	93	18	21
21	ATD-AAE-G57-CH	NULL	1	0	1	1
22	ATD-AAF-Q2C-63	NULL	145	0	145	51

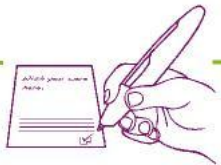


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13.4 The Form Viewing / Editing System Data Transfer

- Data transferred from Municipality billing system to Digital pen System via secure web-service.
- Updated data from Digital Pen system transferred back to billing system using secure web-service once again.
- Transfer occurs daily around midnight



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www.xcallibre.com

www.xcallibre.com

Advantages

- Simple Technology – Pen and Mobile Phone
- Real Time Reporting
- Real Time Monitoring of electricity disconnections
- GPS co-ordinates of property's obtained automatically
- Ability to attach photographs which can be uploaded to the system
- Digital Document Archival
- Reporting and Monitoring of field staff



Clients



ESTÉE LAUDER



Deloitte.



Nokia Siemens
Networks



Electricity
Department



HEALTH
KwaZulu-Natal



DEPARTMENT
of AGRICULTURE
Provincial Government of the Western Cape



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Thank You

Questions?



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