Electricity Company of Ghana’s Approach To Minimizing Non Technical Losses
Andrew Barfour
MINIMISING NON-TECHNICAL (COMMERCIAL) LOSSES: ECG’S APPROACH

INTRODUCTION

Most distribution utilities in developing countries usually lack investment capital. Consequently they are compelled to compromise standards relating to the maintenance of the system.

They are normally state-owned. Because of Government interference in tariff setting they do not generate enough revenue from their sales to meet their current expenditures let alone have excess funds for capital investment.

Many, sub-standard networks, are also constructed without authority by illegal consumers. As a result, system losses are high.

It becomes imperative to reduce system line losses, which are classified into technical and non-technical losses if the distribution authority wishes to operate on a sound, commercial lines.

The reduction of technical losses, require some capital investment.

On the other hand non-technical losses require very little investment.

ECG a state-owned private distribution Company, which suffers high commercial losses like other utilities in developing countries, has instituted measures to deal with commercial losses. This paper highlights the efforts made by the Company to solve problems relating to commercial losses.

SYSTEM LINE LOSSES

The system losses for ECG for the ten year period (1988 – 1997) has ranged between 17% and 21.7% and are quite high compared with the internationally accepted range of 5 to 10%. The losses for the period, has been depicted in the table below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Purchase (Gwh)</th>
<th>Sales (Gwh)</th>
<th>System Losses %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>1321</td>
<td>1097</td>
<td>17.0</td>
</tr>
<tr>
<td>1989</td>
<td>1459</td>
<td>1207</td>
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<tr>
<td>1990</td>
<td>1560</td>
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<td>1991</td>
<td>1755</td>
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<td>20.1</td>
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<tr>
<td>1992</td>
<td>2021</td>
<td>1629</td>
<td>19.4</td>
</tr>
<tr>
<td>1993</td>
<td>2292</td>
<td>1832</td>
<td>20.1</td>
</tr>
<tr>
<td>1994</td>
<td>2463</td>
<td>1985</td>
<td>19.4</td>
</tr>
<tr>
<td>1995</td>
<td>2680</td>
<td>2210</td>
<td>17.5</td>
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<tr>
<td>1997</td>
<td>3384.7</td>
<td>2650.6</td>
<td>21.7</td>
</tr>
</tbody>
</table>

System losses are categorized into Technical and Non-Technical Losses.

**Technical Losses**

Technical losses are inherent properties of passage of electricity through the medium of distribution.

Technical losses can be reduced or managed by
- Enforcing approved/accepted standard of network construction
- Embarking on timely reinforcement and improvement schemes
- Monitoring Mode of Operations

In the developed world, technical losses range between 5 to 10%.

**Non-Technical (Commercial) Losses**

As the name suggests, Non-Technical or Commercial losses are losses that cannot be attributed to technical factors.

In the 70’s the extent of ECG’s commercial losses was difficult to determine however after a study in 1992 by Electricity Supply Board International (ESBI), Ireland on technical losses, it was deduced from the results that non-technical losses constituted about 50% of the system losses.

On this assumption ECG’s non-technical losses have been estimated between 8.5 – 10.5% over the 1988 – 1997 period, a situation, which is not comparable at all to international standard range of 0.5 – 2%.
A recent study by Planned Power Associates (PPA) USA (2000) put the rate of commercial losses at about 14.2% of energy purchases.

Non-Technical losses are usually caused by:

**Energy Theft**

This is an attempt by consumers to steal electricity i.e. use electricity without paying for it or cheat in such a way that only a small portion of their consumption is recorded and billed.

**Illegal Connections** Some consumers get their premises connected to the network but they do not have any account with the Company. Whilst some illegal connections are deliberate, some are as a result of delays and frustrations, suffered by prospective customers when they seek supply to their premises.

The number of illegal connections was quite high from the late 80’s to the mid 90’s. A survey of the system in 1993 showed that about 10% of the customer population, were illegally connected.

**Illegal Reconnections** occur when both metered and un-metered customers arrange to reconnect their premises without authority after they have been disconnected on bill arrears. The practice is quite rampant in the rural areas.

**Meter Tampering** is act of physically adjusting the metering mechanism to slow it down or prevent it from working properly. It is quite prevalent with commercial customers especially 3-phase metered customers.

**Meter-By-pass** is the situation where some customers intentionally tap the mains and connect high consuming appliances like air-conditioners, water heaters, etc. to them by-passing the meter.

According to the PPA study, energy theft contributes to about 5.1% out of non-technical losses.

**Metering Problems**
Faulty Meters - The Company's inability to replace damaged or malfunctioning meters promptly has left a lot of faulty meters in the system. Most of such meters are billed at the Default Value or sometimes at zero unit for a long period, thus contributing to commercial losses. Our records show that as at December, 2000 there were as much as 24,679 faulty meters in the system.

Aged/Obsolete Meters - The Company makes effort to replace such meters when there is a lot of meters in stock. A lot of meters installed in the 50’s and 60’s are still in use leading to high losses. Meter Readers also find it difficult to read such obsolete meters.

Unmetered Premises - The history of the use of un-metered premises began in late 80’s when ECG did not have the resources to import enough meters to meet its own requirements. The added burden of a massive rural electrification project which had been embarked upon by the then Government demanded even more meters. The outcome was that by 1993 the Company had about 15% of its customer population un-metered.

This has reduced over the period to about 2.5% (i.e. 20075) as at December, 2000

2.89% out of the commercial losses are attributed to un-metered premises by the PPA study.

Meter Reading Errors

Meter reading was privatized to secure improved reading, but because some of these Third Parties are not motivating their readers well enough the readers conjure the figures instead of visiting the premises of customers to read the meters. Some readers have difficulty in reading the old non-digital meters resulting in high meter reading errors.

The Customer Billing and Information System (CBIS) at the validation level prompt some of the reading errors. For various reasons including laziness the validators do not use their good judgment to address them before prompting the system to bill.
Once the validators allow the reading errors to pass, the CBIS processes the bill with its errors. Various Reports come out of the CBIS, which should allow staff to undertake checks on the field to correct some of the anomalies. Because they are not attended to the level of commercial losses continues to grow.

PPA's report estimated about 6.1% out of commercial losses as coming from billing and meter reading errors.

**EFFECTS OF HIGH NON-TECHNICAL LOSSES**

The non-technical losses suffered by ECG, have a deleterious effect on the Company as follows:

**Low Profits**

High non-technical losses, result in low sale revenue or high cost of energy purchases. Either case culminates in lower profits. (A case study on the effect of reduction of system losses on ECG’s 1991 operating income indicated 0.5% gain in sales revenue for every 1% reduction in losses i.e. 71.21 million cedis gain equivalent to 1,252 million cedis today equivalent to US$179,000).

**Unexpected High Load Growth**

Most of the non-technical losses can be attributed to theft which leads to unexplained high demand and distort the projected load growth of the Company.
Overloading of Networks

Since these non-technical losses are added burden to the system, they tend to overload the networks earlier than expected.

By 1986 much of the networks of the Company were overloaded.

Poor Customer Satisfaction

The rate at which the utilities i.e. generating and distribution companies can respond to unexpected load growth and overloaded network depends on the availability of investment capital. In most cases this is difficult to obtain.

Since capital is not readily available the system tends to compromise quality of supply to the customer leading to brown-outs, load shedding and sometimes outright black-outs. These create a lot of customer dissatisfaction.

REDUCTION STRATEGIES – ECG’S APPROACH

The Company has used various strategies to reduce system losses. The approaches comprise rehabilitation and reinforcement projects, regularization or removal of illegal connections; privatization of meter reading; farming-out of new service connections, demand side management and a couple of other actions.

Nation-wide Technical Audit of ECG Network

In 1984 a nationwide technical audit was commissioned to ascertain the state of the distribution network.

The results of the technical audit showed that there was a lot of sub-standard networks in the system. This was contributing to high line losses.

Major Rehabilitation Of the Distribution Network

ECG with assistance from the World Bank (IDA credit 1628 for US$28 million) undertook a System Rehabilitation Project (1987-1989). This was followed by a US$125 million Power V Project (1991–94) and the National Electrification Project (NEP) (1996–99) both World Bank
and bilateral assisted projects.

This was partly to address a lot of sub-standard networks, which had been constructed through illegal connections, and which were contributing to the high technical and commercial losses.

Performance Based Management Contract  
(EdF – SAUR)

Under a four-year performance based contract a French Consortium, EdF/SAUR, was engaged to set up systems and procedures relating to Customer Services and to create and manage the Customer Service Department for a period of four years.

The contract specified three performance indicators – reduction of commercial losses by 1% per annum, reduction of debtor-sales ratio, and deployment of the structures and procedures in all the Regions of the Company within the target period.

Under the contract the EdF/SAUR Consortium was to assist ECG to survey and map all customer connections. This action unearthed a lot of illegal connections. It also introduced efficient and effective meter reading system using geographical identification codes.

The system losses significantly dropped in 1995 to 17.5% but started rising thereafter.

Privatize Meter Reading

The Company realized after the EdF survey and mapping that inefficient meter reading was a major contributing factor to system losses. The meters were either being under or over read, while consumption of flat rated customers, were being under estimated. Meter reading was therefore privatized to put some efficiency into the function.

Contract-out New Service Connections

Management also realized that most consumers who resort to illegal connections went through undue delays and experienced frustrations in their efforts to get their premises connected. Management therefore decided in 1995 to contract out the service connection activities to third parties. This action has actually reduced the number illegal connections in the system.
Auditing of Industrial Customers by Consultants

Management in 1999 commissioned a number of Consultants to audit all the metering systems of industrial customers.

A lot of anomalies like, polarity issues, blown fuses or fuses removed from potential circuits, were found by the Consultants. Appropriate actions have been taken to solve these problems.

PPA Study of Non-Technical Losses – 2000

ECG commissioned Messrs PPA to undertake a study of non-technical losses.

PPA study reported a total non-technical losses of 14.2% for 1999.

The table below shows the constituents of the non-technical losses for 1999

<table>
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<tr>
<th>ECG</th>
<th>Illegal Connections</th>
<th>Meter Problems</th>
<th>Billing Problems</th>
<th>Public Lighting</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.13%</td>
<td>2.9%</td>
<td>6.15%</td>
<td>0.01%</td>
<td>14.19%</td>
</tr>
</tbody>
</table>

Clean-Up Regional Data Base

Two main issues were addressed.

(a) 50,000 dummy accounts on the CBIS and which could be active on the field but not captured on the CBIS.

(b) Disconnected customers on the field but who remain on the system and are billed either on default values or zero units over a period.

Improve ECG Services

To reduce commercial losses ECG has had to improve its services especially:

a. Improve Delivery Time for New Supplies
ECG Management addresses this problem by instituting the following guidelines:

1. Applications for supply that involves service connection and meter installation are executed within one week after payment.
2. Applications involving planting a pole, service connection and meter installation are done within two weeks after payment.
3. Applications with 2-4 poles, service connection and meter installation were to be executed within 4 weeks after payment.
4. In all cases the jobs are to be executed by private licensed ECG recognized electrical contractors.

Apart from occasional shortages of service materials or meters and which tend to affect delivery time of new supplies. Managers have adhered to these instructions and reduce the level of illegal connections considerably

b. Improve Accuracy of Meter Reading

Management also realized that though meter reading had been privatized, still the level of inaccurate readings were high. It was therefore decided that Regional Commercial Managers were among others:

1. To ensure strict supervision of meter reading contractors.
2. Billing Process Officers were to ensure reading cycles are vigorously adhered to
3. Appropriate sanctions were to be applied against any Meter Reading Contractor who consistently produce poor readings

Strict adherence to these actions have reduced the meter reading errors and cut non-accesses level from some 7-10% previously to between 1-3% now
c. **Improve Accuracy of the Data Capturing and Validation**

To ensure production of accurate bills the Data Capturing Staff and Validators were retrained.

There has been some improvement but somehow, some of the Validators are not performing as expected.

d. **Improve Accuracy and Timeliness of Billing Process and Delivery**

Some times new customers do not receive bills as expected and for long periods, and if they get bills at all they are estimated.

On the average 10-15% of bills produced tend to be estimated.

To address these problems the Regional Commercial Managers were mandated to among others to:

a. Ensure that new Customer Accounts are processed within 2 weeks of installation of a meter in the premises.

b. Revenue Management Officers are to ensure that billing complaints are reconciled and adjusted within 2 days.

**Improve Metering and Ensure Availability of Meters**

Electricity needs to be measured accurately when buying or selling. Metering issues i.e. policy, accuracy, availability etc. are very vital for the survival of any Distribution Company.

Commercial operations suffer when 10% or more of the customer base of a distribution company like ECG was on flat rate or un-metered.

For the past three years ECG has procured and installed some 200,000 credit Meters and some 19,000 prepayment meters.
Enforce Disconnection Policy

ECG provides its services largely on credit. Disconnection policy demands that where a customer fails to pay his bill within a stipulated credit period he is disconnected.

Most cases the disconnected customers especially the unmetered customers do reconnect themselves illegally. This calls for effective monitoring system, sometimes with assistance from security personnel and which tends to put some fear in such culprits.

Set-Up Loss Control Unit (LCU)

The Loss Control Unit (LCU) were set up in the regional centers as adhoc group to identify staff/public illegal acts that leads to power theft resulting in high non-technical losses.

Their functions among others are:

- Identify and remove illegal connection
- Inspect meters for tampering, willful damage or signs of malfunctioning
- Study CBIS reports for over and under billing for necessary remedial actions.
- Report culprits of energy theft to the security agencies if necessary
- Prepare bills for culprits and ensure payment before regularizing connections to their premises.

The LCUs, which were set up in April 1999 have done remarkably well. Steps are now being taken to make the Unit a permanent feature of the Organization
The table shows a Summary of Activities of the LCU in year 2000.

<table>
<thead>
<tr>
<th>REGION</th>
<th>DIRECT CONN.</th>
<th>METER TAMPERING</th>
<th>METER BY-PASS</th>
<th>OTHERS*</th>
<th>TOTAL</th>
<th>TOTAL ENERGY (Gwh)</th>
<th>TOTAL REVENUE COLLECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accra East</td>
<td>194</td>
<td>75</td>
<td>69</td>
<td>123</td>
<td>461</td>
<td>2.62</td>
<td>753,033,467.00</td>
</tr>
<tr>
<td>Accra West</td>
<td>330</td>
<td>151</td>
<td>290</td>
<td>152</td>
<td>923</td>
<td>2.47</td>
<td>818,908,780.00</td>
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<tr>
<td>Eastern</td>
<td>5</td>
<td>51</td>
<td>81</td>
<td>154</td>
<td>291</td>
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<td>Tema</td>
<td>161</td>
<td>283</td>
<td>203</td>
<td>7</td>
<td>654</td>
<td>1.56</td>
<td>534,482,649.00</td>
</tr>
<tr>
<td>Western</td>
<td>23</td>
<td>199</td>
<td>93</td>
<td>302</td>
<td>617</td>
<td>0.57</td>
<td>280,684,429.00</td>
</tr>
<tr>
<td>Central</td>
<td>26</td>
<td>43</td>
<td>47</td>
<td>242</td>
<td>358</td>
<td>0.32</td>
<td>159,733,275.00</td>
</tr>
<tr>
<td>Volta</td>
<td>9</td>
<td>183</td>
<td>78</td>
<td>73</td>
<td>343</td>
<td>0.72</td>
<td>254,589,316.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>860</td>
<td>1,127</td>
<td>989</td>
<td>1,141</td>
<td>4,117</td>
<td>8.84</td>
<td>3,114,994,887.00</td>
</tr>
</tbody>
</table>

* Others includes:
  a. Unauthorised extensions of supply
  b. Wrong Tariff Classification
  c. Self Reconnections
  d. Zero Readings
  e. Replacement of Faulty Meters

**Improve Public/Staff Education**

To ensure that the public take up their civic responsibility and sympathise with the course of the Company, it is essential for the Company to educate the customers/public on its vision and aspirations and where customers can seek redress on their complaints. In the developed economies most distribution utilities would have Customer Charters, to address such issues.

Seminars and workshops are organized for the frontline staff (Customer Relation Officers, Cashiers, Faults-men etc.) using in-house resource personnel and external consultants.

**Institute Reward and Sanctions**

To motivate staff and the general public to report illegal connections and other identified criminal acts, which increase high non-technical losses ECG has instituted incentive bonus paid to informants whilst keeping their identity in confidence.
For instance to encourage the LCU staff to be honest, fair and transparent in their dealings with customers/public 5% of the revenues they collect on energy theft are paid to its staff.

On the other hand any staff who is caught in an illegal connection or related issues is punished according to the disciplinary procedure applicable.

Customers or the general public who are found liable are made to pay penalties/administrative charges whilst in some very bad cases they are reported to the security agencies for them to be prosecuted in courts.

**Resurveying and Mapping**

Besides the above actions ECG Management initiated a project in June 2000 to re-survey and map all connected customer premises.

The project when completed is intended to address a lot of the meter reading and billing problems and also unearth a few illegal connections, which may still be in the system.

Three (3) out of the eight (8) operational areas of ECG that have been covered.

The table below show results of the three (3) areas covered.

<table>
<thead>
<tr>
<th>RESULTS OF 3 REGIONS RE-SURVEYED IN ECG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer population (before survey)</td>
</tr>
<tr>
<td>Un-captured Customers</td>
</tr>
<tr>
<td>Illegal Connections Detected</td>
</tr>
<tr>
<td>Customers in Un-captured Areas</td>
</tr>
<tr>
<td>Customer Population (after survey)</td>
</tr>
<tr>
<td>Increase in Customer Population (%)</td>
</tr>
</tbody>
</table>
Some of the strategies mentioned in the text have been successfully implemented with clear results being achieved, however a lot need to be done in the monitoring of disconnected accounts, meter reading and billing errors, availability of meters, and customer/public education.

It is not enough to have these strategies documented in a report, the commitment of management and staff to ensure that concrete steps are taken to implement, monitor and evaluate them is equally necessary.
ECG’s Approach to Minimising Non Technical Losses

CONTENTS

- Introduction
- System Line Losses
- Effects of High Non Technical Losses
- Reduction Strategies-ECG’s Approach
- Conclusion
INTRODUCTION

- Most distribution Utilities in developing countries lack:
  - Investment Capital
  - Compromise Standards on Operations and Maintenance
  - Illegal consumers substation Network
  - Imperative to reduce high system losses to acceptable levels
  - Reduction of Technical Losses require some capital investment
  - Non-Technical however require little Investment
  - Paper highlights ECG’s efforts to reduce commercial losses
# SYSTEM LINE LOSSES

## System Line Losses of ECG from 1998-1997

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Purchase Gwh</td>
<td>1321</td>
<td>1459</td>
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<td>Sales Gwh</td>
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<td>1249</td>
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<td>1629</td>
<td>1832</td>
<td>1985</td>
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<tr>
<td>System Losses %</td>
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</table>
SYSTEM LINE LOSSES CONT.

- Types of System Losses
  - a. Technical Losses
  - b. Non-Technical (Commercial Losses)

- Non-Technical Losses
  - Background-ESBI Study - 50%  Recent PPA Study-14.2%

- Causes of Commercial Losses
  - a) Energy Theft-5.1%- Illegal Connection, Illegal Reconnection, Meter Tampering, Meter By-Pass
  - b) Metering Problems-2.89%- Faulty Meters, Aged/Obsolete Meters, Unmetered (Flatrated Premises
  - c) Meter Reading Errors-3.2%
  - d) Billing Errors-2.9%
EFFECTS OF HIGH NON-TECHNICAL LOSSES

- Low Profits
  - 0.5% of sales revenue for 1% reduction (¢1.25 Billion)
- Unexpected High Load Growth Suppresses demand
- Overloading of Networks
- Poor Customer Satisfaction
REDUCTION STRATEGIES ECG’S APPROACH

- Nationwide Technical Audit of ECG Network
- Rehabilitation and Reinforcement Projects
- Performance Based Management Contract (EDF/SAUR) 1994-1998
  - Reduction of Commercial Losses by 1% per annum
- Privatise Meter Reading
- Contract out New Service Connections
- Auditing of Industrial Customers by Consultants
Study of Non-Technical Losses

Total Non-Technical Losses estimated at 14.2% of Purchases for 1999.

**Constituents of Non-Technical Losses-1999**

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Clean Up Database

Improve ECG Services

Delivery time for new supplies

Improve accuracy of meter reading

Improve accuracy of Data Capturing and Validation

Improve Accuracy and Timeliness of Billing Process and Delivery
y Improve Metering and ensure availability of meters

Set metering policy of all category of customers

Provide meters for all new connected customers

200,000 credit meters procured and installed

19,000 prepayment meters procured and installed

y Enforce Disconnection Policy

y Set Up Loss Control Units (LCU)
### Summary of Activities of LCU-2000

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<thead>
<tr>
<th>Region</th>
<th>Dir. Conn</th>
<th>Meter Tampering</th>
<th>Meter by pass</th>
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<td>1,127</td>
<td>989</td>
<td>1,141</td>
<td>4,117</td>
<td>8.94</td>
<td>3,114,984,887.00</td>
</tr>
</tbody>
</table>
- Improve Public/Staff Education
- Institute Reward and Sanctions

Encourage staff/public to report suspected illegalities by rewarding them.

$50,000 per report

LCU staff get 5% of the revenue collected on energy theft

Staff caught are punished according to appropriate disciplinary procedures
Resurveying and Mapping

Results of 3 Regions re-Surveyed in ECG

<table>
<thead>
<tr>
<th></th>
<th>Accra-East</th>
<th>Accra-West</th>
<th>Tema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Population (before survey)</td>
<td>66,795</td>
<td>111,388</td>
<td>58,745</td>
</tr>
<tr>
<td>Un-Captured Customers</td>
<td>1,174</td>
<td>3,053</td>
<td>830</td>
</tr>
<tr>
<td>Illegal Connection Detected</td>
<td>131</td>
<td>124</td>
<td>26</td>
</tr>
<tr>
<td>Customers in Un-Captured Areas</td>
<td>854</td>
<td>7,963</td>
<td>2,286</td>
</tr>
<tr>
<td>Customer Population (after survey)</td>
<td>88,874</td>
<td>122,538</td>
<td>61,866</td>
</tr>
<tr>
<td>Increase in Customer Population (%)</td>
<td>2.4</td>
<td>10.0</td>
<td>5.3</td>
</tr>
</tbody>
</table>
CONCLUSION

- Most substandard network have been removed
- Delays in service connection reduced
- Loss Control Unit performing creditably

Some more efforts need to be put in the following

- Meter reading and billing errors
- Monitoring of disconnected accounts
- Provision of adequate number of meters
- Customer/Public Education
Ing. Andrew Tonto Barf our is the Regional Director of Accra-East area of ECG. He is a Professional Electrical Engineer and Senior Member of Ghana Institution of Engineers (Gh.I.E.) and member of Institute of Electrical and Electronic Engineers (IEEE) USA.

He joined ECG in 1977 after completing his National Service one year after graduating from the then University of Science & Technology, UST, Kumasi.

He rose through the ranks to become a Regional Director, Western Region in 1992. He moved to Ashanti Region as the head for some six years and transferred to Accra in December 1998.

He was in charge of metering issues in the early years of work when he had to combine commercial engineering duties with his normal development, operational and maintenance duties as Regional Engineer in charge of Volta and Western Regions.

He did a case study on the effects of System Losses on ECG’s net income as part of his MBA (Utility Management) programme at the University College of Dublin (UCD), Ireland in 1993.

He has been active in the restructuring of the Company. He was a member of the Distribution Task Force (1996) and a member of ECG’s Change Management Team (CMT) of which he is the Chairman of the Education and Communication Task Force.
ECG as a corporate body was established by Government Decree (NLCD 125) of 20\textsuperscript{th} January 1967 and is required to conduct its affairs on sound commercial lines.

Under the Statutory Corporations (Conversion to Companies) Act 461, 1993, ECG was converted to a Company and placed under the Companies Code Act 179, 1963 with effect from 21\textsuperscript{st} February, 1997. It is a limited liability with the Ghana Government as the sole shareholder.

A Board of Directors appointed by the Government governs the Company. A Managing Director who is supported by eight Heads of Department manages it.

The Company is charged among other things to:

- Generate, transmit, supply and distribute electric power within Ghana at a voltage not exceeding 33,000 volt.
- Purchase electrical energy in bulk from the Volta River Authority (VRA) for distribution.
- Construct, reconstruct, install, assemble, repair, maintain, operate or remove, electrical appliances, fittings and installations as may be deemed necessary.
- Sell, hire or otherwise dispose of electrical appliances and fittings.

In discharging its various duties, the Company also executes programmes of national electrification on behalf of the Government.

In 1987 the Government of Ghana limited ECG’s operations to the southern part of the country whilst VRA was mandated to serve the public in the Northern sector. The Authority does so through the Northern Electricity Department (NED), a new distribution organization, which it formed in 1987 for the purpose.