

# **PUBLIC UTILITIES REGULATORY COMMISSION**



**ANNUAL REPORT 2004**

## ***Mission Statement***

*PURC is committed to the development and delivery of the highest quality of utility services to all consumers, while building a credible regulatory regime that adequately responds to stakeholders' concerns and ensures transparency, reliability and equity in the provision of utility services in the country.*

## ***Vision***

*To become a model institution which ensures the delivery of the highest quality utility services to all consumers at fair prices.*

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## PROFILE OF PURC

The Public Utilities Regulatory Commission was established in 1997 under Act 538 to regulate and oversee the provision of utility services by public utilities to consumers. Public utilities are defined in the Act as bodies engaged in the supply, transmission or distribution of electricity or water for a fee, whether directly or indirectly.

Currently, the Commission regulates electricity and urban water services provided by the Volta River Authority (VRA), the Electricity Company of Ghana (ECG), the Northern Electricity Department (NED) and the Ghana Water Company Limited (GWCL) to their customers. Act 538 however makes provision for the extension of PURC's mandate to cover other utility services through a Legislative Instrument recommended by the Minister with responsibility for a particular sector. Operations of community water systems are excluded from the Commission's purview.

The nine members of the Commission are appointed by the President in consultation with the Council of State. The Commission consists of a Chairman, an Executive Secretary, four persons with knowledge in matters relevant to the functions of the Commission, and representatives of the Trades Union Congress, the Association of Ghana Industries and Domestic Consumers. The Commission is supported by a Secretariat which includes engineering/technical, financial, customer service and other professionals.

The Commission works through Committees, comprised of both Commissioners and Secretariat staff, which deliberate on matters and submit recommendations on all policy issues to the Commission for approval. The Committees are: Administrative, Legal & Consumer Affairs, Finance and Technical & Tariffs.

The mandates of PURC include: approving rates chargeable for provision of utility services, protecting the interests of consumers and providers of utility services, monitoring the compliance of utility companies with standards of performance established by licensing authorities, and promoting fair competition among public utilities. The Commission also receives and resolves complaints related to the provision of utility services.

By virtue of section 4 of Act 538, the Commission is an independent body and is not subject to the direction or control of any person or authority in the performance of its functions. The Commission is however statutorily required to submit audited statements of accounts and reports of its operations yearly to Parliament. In addition, the Commission is enjoined by law, its regulatory policy and good regulatory practice to take reasonable account of representations made to it by consumers before approving any rates.

## THE COMMISSION

Commissioners are by statute appointed for five year terms which may be renewed. The current term commenced in January 2003, with some Commissioners serving a second term. The Commission comprises:

Mr. Kwame Pianim – Chairman of the Commission. Mr. Pianim is an Economist and Investment Consultant. He was at one time the Chief Executive of the Ghana Cocoa Marketing Board, and is currently a member of the National Petroleum Board. He is also the Chief Executive of New World Investments Limited.



Mr. Stephen N. Adu - Member and Executive Secretary. Mr. Adu is a Financial Consultant. He was the Acting General Manager and Financial Controller of Ghana Leasing Company Ltd, and worked briefly with Price Waterhouse as an Associate Consultant. Mr. Adu has been the Chief Executive of the Commission since its inception in 1997.



Mr. Mohamed Amin Adam – Member. Mr. Adam is an Economist and Financial Manger of the Financial Monitoring Directorate of the Ministry of Energy. He is a member of the Board of the National Service Scheme and the Residency Board of the University of Cape Coast.



Mr. Alex Bonney - Member. Chairman of the Trades Union Congress (TUC) appointed to represent that organization as one of the **two** key institutional representatives on the Commission. Mr. Bonney is by profession an Accountant. He has served on the Commission since September 2001.

Dr. Mrs. Mary Chinery Hesse – Member. Dr. Mrs. Chinery Hesse graduated in the disciplines of Sociology, economics and Development Studies and was at one time a Principal Secretary of the Ministry of Finance. She worked with the United Nations and was appointed the first woman Deputy Director General of the International Labour Organization, first African woman Resident Co-ordinator of the UN System and Resident Representative of UNDP in New York, Sierra Leone, Seychelles and other countries.



Mr. Andrew Lawson – Member. Mr. Lawson is the representative of the Association of Ghana Industries of which he is the Executive Director. He is an Engineer and ex Integration Manager of British American Tobacco Company Ltd (BAT). He is currently also a member of the Board of Directors of BAT and of Mechanical Lloyd Company Ltd.



Nana Kobena Nketsia V – Member. Nana is the Omanhene of Essikado in the Western Region. He is also a lecturer at the University of Cape Coast. He currently serves as the Chairman of the Museums Board and Chairman of the Ghana Broadcasting Corporation.

Mr. Kwame Osei – Poku - Member. Mr. Osei-Poku is a Water Consultant and former Deputy Managing Director of the Ghana Water and Sewerage Corporation, now Ghana Water Company Ltd. (GWCL) Mr. Osei-Poku is an Engineer. He is serving his second five-year term on the Commission, having first been appointed in 1997.



Mr. Andrew E. Quayson –Member.  
Commissioner Quayson is an Engineer by profession and is the Chairman of the Energy Foundation. He was formerly the Managing Director of Juapong Textiles Ltd. and Ghana Textiles Printing Co. Ltd, and also the Executive Director of the Association of Ghana Industries. He is also serving a second five-year term.

## HIGHLIGHTS OF 2004

DATE	EVENT
■ February 1, May 1, August 1, November 1 2004	<b>Tariff Reviews</b> <p>Electricity and Water tariffs, reviewed in accordance with PURC Act 538 and the Automatic Adjustment Formula, were published in the Gazette and Newspapers. The reviews were carried out for the quarters February – April 2004, May – July 2004, August – October 2004 and November 2004 - January 2005. While the End-User Tariff paid by consumers did not change during the year, there was a downward adjustment of 5.4% of the Bulk Supply Tariff payable by ECG to VRA.</p>
■ 4-6 February 2004	<b>West African Gas Pipeline Negotiations</b> <p>At a meeting of stakeholders in Akuse, it was agreed that a core group of key public institutions be constituted to review the contractual arrangements for the Pipeline Project and advise Government to secure the most favourable terms. PURC was nominated as a member of this group.</p>
■ March - May 2004	<b>Developments in the Urban Water Project</b> <p>Following Government's notification of its intention to invite private sector participation in the management of the Ghana Water Company, a series of consultations were held between PURC and the Project Management Unit of the Urban Water Project to ensure that PURC regulatory policies and tariff</p>



benchmarks would be incorporated into the bidding documents, so as to secure the greatest benefit for the sector and consumers.

 **14-15 May 2004**  
**3 - 5 December 2004**

#### **Commission Retreats on Regulatory Issues for Water Sector**

The Commission held two intensive retreats to develop policies on the tariff and social aspects of its regulatory functions with respect to water. The objective for developing the policy documents is to provide a transparent source of information to consumers, Government and utility operators about how PURC intends to regulate tariff and social aspects of the water sector, taking pro-poor issues into account.

 **21 –25 June 2004**

#### **International Training Programme on Regulation**

PURC and the National Communications Authority co-hosted a five-day International Training Course at the La Palm Hotel, Accra. The programme was organized under the auspices of the African Forum for Utility Regulation (AFUR) as part of its objective to enhance capacity building in Regulatory Institutions across Africa.

 **4 November 2004**

#### **Customer Service Delivery Workshops**

PURC held a workshop for District Managers and District Commercial Managers of the Electricity Company of Ghana and Ghana Water Company Ltd. for the southern sector of the country in Accra. It was aimed at improving the customer care orientation of utility company staff.

 **17 December 2004**

### **Commissioning of PURC office**

In December 2003, the Commission moved from the Unicorn House on Barnes Road, Accra to a new address - No. 51 Liberation Road, Accra. A ceremony was held on 17 December 2004 to officially commission the refurbished PURC offices. The building was graciously allocated to the Commission by the Ministry of Works & Housing in 2001.

## DRAFT CHAIRMAN'S STATEMENT

*IN 2004* the Commission focused on critical regulatory issues associated with the water sector. Global economic challenges in 2003 resulted in a decline in the amount of capital available for investment in the utility sectors of developing countries. This led Government to explore an alternative to the proposed leasing of the operation, maintenance and management of the urban water system to privately owned corporations.

Whilst retaining its overall objective of introducing private sector participation in the provision of water, Government took the decision in 2004 to pursue this policy through the procurement of a Management Company to operate the water systems of the Ghana Water Company Limited (GWCL).

PURC's view throughout the policy debates has been that there must be an element of competition in the final model selected for the operation of the sector, be it publicly owned or private. With the development of the Management Contract therefore the Commission argued in support of a Roll-out Plan by which management of the urban water systems would be ceded to the private operator not in one go, but in a gradual manner. This we believe would provide an opportunity for the output of the Management Company to be measured against that of systems for the meantime still operated by GWCL.

A number of PURC's contributions have been taken into consideration in the preparation of the current draft contract.

Additionally, the Commission in 2004 took the initiative to review its water rate setting guidelines and to develop water and social regulatory policies. These publications will

be placed in the data room of the Urban Water Project Secretariat and will serve as important operational guidelines for any investor in the sector.

We believe we have made significant strides in consolidating our position as a sufficiently strong and independent institution which will help to ensure maximum benefits for current consumers and the over 40% of the urban population who do not have access to safe and affordable water supply.

*W*ith regards to tariffs, the Commission undertook four reviews of electricity and water tariffs during the year, in accordance with the PURC Automatic Adjustment Formula gazetted in July 2003.

In spite of increases in the world crude oil price, favourable levels of generation from hydro sources and a stable cedi/dollar exchange rate enabled us to make only minimal changes in the Bulk Supply Charge payable by the Electricity Company to the Volta River Authority.

There were no changes in the End-User Tariff during the year.

*P*URC continues to take its consumer education responsibilities very seriously. Statistics from our Consumer Service Bureau show that there was a marked increase in public awareness of the Commission and its functions. We are pleased to report that consequently, a greater number of consumers are finding redress to their utility service complaints through our complaints resolution procedures.

Other modest gains were achieved in training utility company staff to be more customer oriented in their outlook. The Commission plans to secure and allocate more resources for educating consumers on measures being taken to improve quality of service.

As we look forward to 2005, the Commission wishes to acknowledge the Secretariat's commitment to the fulfillment of PURC's mandates despite the fiscal challenges being faced. We are optimistic that more resources will be available next year to carry out all our planned monitoring and quality improvement activities.

## 1. EXECUTIVE SUMMARY

### **Tariffs**

The Commission maintained its policy of implementing the Automatic Adjustment Formula (AAF) mechanism through out the year 2004 to great effect. The AAF which was instituted after the last major tariff review in March 2003 is a mechanism for protecting the tariff set in US dollars against exogenous factors over which the utilities have no control, but which could affect the value of the tariff. The key factors that the AAF seeks to correct from time to time are the changes in the generation mix of hydro and thermal, the world market crude oil prices and the currency exchange rate between the US dollar and the cedi.

Although there were some movements in the above factors at various stages during the year, the Commission managed to maintain reasonable stability in the tariff levels. This was helped by favourable hydro levels which more than compensated for a volatile crude oil price, a great deal of which was on the increase. The US\$ to cedi exchange rate maintained a remarkably constant rate throughout the year.

The Commission's ability to maintain this price stability assisted domestic consumers and major consumers to plan their business activities more effectively.

After 2-3 years of implementing the current tariff regime, the Commission intends to undertake a major review towards the end of 2005.

### **Participation in West African Gas Pipeline Project Meeting (WAGP)**

The West African Gas Pipeline project is gathering momentum towards commencement. It is envisaged that if all goes well the first gas would be delivered at the end of 2006.

The Commission's interest in the project, in view of its potential impact on electricity tariffs is well known. As in previous years, the Commission was invited and key staff participated fully in a number of core group and pre-negotiation meetings. PURC staff provided advice on areas of the project which had implications for cost of electricity generation for Ghana.

### **PURC Draft Policies on Tariff and Social Policy in the Water Sector**

As part of PURC objectives in the water sector, the Commission has been developing its regulatory policies to ensure effective regulation in a sector which is perceptibly fraught with inefficiencies and difficulties in providing potable water for consumers, a large proportion of who, are poor.

During the year, the Commission produced draft documents on Tariffs and Social policies. The Commission has always felt that its social obligations/ responsibilities

particularly towards the poor section of the society must be tackled through its own regulatory policies which would ensure access to potable water at affordable prices for the entirety of the population.

These policy documents were developed with the assistance of the Adam Smith International (ASI) UK – consultants contracted under a DFID- Sponsored Technical Assistance programme for the PURC. ASI also assisted PURC to undertake a five year performance review of GWCL from 1998-2003. The review has produced some revealing results.

### **Participation in PSP in Water Sector**

The intensely debated and much awaited Private Sector Participation in the Water Sector is close to becoming a reality. During the latter part of the year, the Government signed the agreement for the implementation of the Urban Water Project for which the World Bank is contributing the bulk of \$120m as a funding grant. The Commission has been given the opportunity to contribute to the management contract being developed for the 5 year project. The Commission has to a large extent been able to ensure that, although it would not be a signatory to the management contract, a good deal of operational / performance and efficiency standards have been incorporated into the contract to ensure that important regulatory objectives are taken into account in the contract.

### **Quality of Service Measures**

During the year the Commission maintained its programme of holding quarterly meetings with the management of the utility companies. These meetings are designed to provide the opportunity for the Commission to review the utilities' performance and obtain explanations for operational lapses and difficulties. Future programmes for improving the performance of the utility companies and levels of services are also discussed.

In addition, the meetings address the utilities' ability to achieve quality of service targets set which are critical for consumer satisfaction, as well as their financial performance.

As a further step towards increased efficiency and responsiveness to customers, the Commission outlined proposals for instituting guaranteed standards of service and penalties. The scheme will be adopted following an extensive consultation process and is designed to motivate the utilities to improve their quality of service to customers if they are to avoid penalties.

### **Consumer Service Activities**

The Commission's Bureau of Consumer services continued to be busy throughout the year. It intensified its monitoring exercises visiting a good number of districts.

Consumer related advertisements which highlighted consumer issues developed in the latter part of 2003, were screened during the year; the upsurge of complaints and consumer responses received during the year is attributed to the effectiveness of the advertising campaign.

The establishment of the first regional office in the north i.e. in Tamale was postponed to 2005. This should give the secretariat ample time to secure suitable offices to enable operators to commence during the last half of 2005.

### **African Forum for Utility Regulators (AFUR)**

The Commission has maintained its keen involvement in the affairs of the AFUR since the inception of the continental regulatory body in 2001. Since the inaugural meeting in Pretoria, South Africa, the PURC has held an executive position as the representative for Anglophone West Africa.

In the last 3 years the Executive Committee has steered the affairs of the AFUR towards fulfillment of its strategic objectives which are to:

- ◆ Enhance information sharing
- ◆ Facilitate capacity building among members
- ◆ Harmonize regulatory policies and regulation
- ◆ Promote the philosophy of autonomous utility regulation and good governance
- ◆ Support African initiatives, such as NEPAD
- ◆ Promote sound relationships with Governments and other stakeholders
- ◆ Ensure joint mobilization and utilization of donor funding.

In fulfillment of part of AFUR's capacity building objectives, the PURC organized an AFUR training workshop for Anglophone West African members in June 2004.

The workshop which attracted participants from Nigeria, Gambia, Sierra Leone, Cameroon and Ghana enjoyed a high profile status with 2 cabinet ministers – for Energy and Communications attending the opening sessions.

The training programme dealt with key and pertinent topics on regulation which participants found extremely useful.

### **Human Resources**

Since its inception the Commission has maintained a policy of keeping staffing levels lean, and ensuring that key staff are well trained and exposed to relevant and current regulatory mechanisms. To this end, a crop of professionals comprising economists, engineers and others recruited over the period of the Commission's existence have benefited from various courses in regulation and also undertaken study tours to visit regulatory institutions in both developed and developing economies.

In the last few years, the Commission has begun to notice that the level of motivation of this well qualified, experienced and enthusiastic crop of professional staff has begun to be stretched. It has become obvious that the Commission's remuneration package has been surpassed by most of the comparable institutions and has therefore become less and less attractive to current staff. This has resulted in the loss of some well trained staff and made retention of existing high caliber staff difficult.

It has become imperative to take measures to improve significantly the staff conditions of service including the staff remuneration package, if the commission is to succeed in retaining its core staff.

To this end, the Commission has recommended a consultancy to review the Secretariat's Remuneration package and carry out a job evaluation; The consultancy which would be commissioned in 2005 is expected to recommend comparable and appropriate remuneration packages for staff.

### **Resource Centre for Energy Economics and Regulation (RCEER)**

The RCEER initiated by PURC with inter-conceptual support from University of Houston was established in September 2004 with very important collaboration: Energy Foundation Energy Commission, Ministry of Energy, and ISSER. ISSER with its important linkage with the University of Ghana and its impressive faculty of academicians currently hosts the Centre.

#### **1. The Mission**

The Mission of the Resource Centre is to become an independent resource for data, research, policy analysis, training and public education on energy and utility economics, regulation, and energy sector policy and development in Ghana and, ultimately, the greater region of West Africa.

#### **2. The Core Activities**

- ◆ Collect, store, process and disseminate energy and utility sector data and knowledge;
- ◆ Conduct research to support energy and utility sector development and governance;
- ◆ Develop energy and utility economics curriculum for both university and professional audience; and
- ◆ Educate the public on energy economics, policy and socioeconomic development issues by publishing reports and holding educational outreach activities.



As part of its programme for 2005, the centre is planning to publish a Natural Gas Primer as well as a Guide to Electric Power in Ghana, to provide basic information and data on natural gas and electricity to key energy sector operators and to the general public.

## **2. CONSUMER SERVICE ACTIVITIES**

In fulfillment of PURC's mandate to monitor and enforce standards of performance for the provision of utility service, the Commission's Bureau of Consumer Services (BCS) monitored fifty two utility customer service centres and District Offices across the country in 2004.

Awareness of the existence of the Commission and its functions was improved through sustained intensive public awareness programmes in the electronic media as well as forums for personal interaction between the Commission and the general public.

In recognition of the need to improve the customer orientation of the utility companies to make them more effective in dealing with customer service delivery, PURC organized a workshop in Accra for the staff of the utilities.

The number of complaints received during 2004 increased to two hundred and forty, from one hundred and fourteen in 2003. Of these, two hundred and one were successfully mediated and settled. Details of consumer activities undertaken during the year are provided below.

## 2.1 Monitoring of customer service centers and district offices

As part of efforts to ensure a high standard of performance in the provision of utility services, officials of the Commission undertook fact finding missions to monitor the performance of fifty-two various Customer Service Centers (CSCs) and District Offices of the Electricity Company (ECG), Ghana Water Company (GWCL) and the Northern Electrification Department (NED).

The exercise was carried out in all the regions except the Upper West Region. The criteria used for the assessment to effectively measure the standard of customer service delivery at each center are provided opposite:

- Ambience & Comfort for Consumers
- Provision of Suggestion Boxes
- Availability of Schedule of Charges
- Consumer Education
- Use of Complaints and Responses Files
- New Service Connection Policy
- Metering Policy
- Staff Disposition & Attitude towards Consumers
- Response Time to Faults
- Availability of dedicated telephone line
- Promotion of Payment Options

**Table 1. Number of centers monitored and percentages scored**

REGION	UTILITY COMPANY	NUMBER VISITED	% SCORED
Gt. Accra	ECG	6	52
	GWCL	6	51
Eastern	ECG	5	66
	GWCL	4	53
Volta	ECG	5	65
	GWCL	4	52
Western	ECG	6	54
	GWCL	3	48

REGION	UTILITY COMPANY	NUMBER VISITED	% SCORED
Central	ECG	2	58
	GWCL	0	
Ashanti	ECG	1	60
	GWCL	1	36
Brong Ahafo-	NED	3	46
	GWCL	0	
Northern	NED	2	63
	GWCL	1	48
Upper East	NED	2	55
	GWCL	1	45

Below is a summary of findings of the monitoring exercise.

### ■ ECG

A total of twenty five ECG centers in seven regions were visited.

- Most of the centers handle a customer population ranging between 4,000 and 10,000. Some districts in Accra - such as Legon - handle over 10,000 customers.
- Most District Offices and CSCs were quite accessible and fairly well equipped for the job in hand. Seats for customer comfort had also been provided.
- Complaints lodged mainly had to do with over billing, faulty meters, non-crediting of payments and delay in the resolution of customer complaints.
- With the exception of Greater Accra, which had a number of pay points and other revenue collection points, the CSCs and District Offices in other regions in addition to pay points, used bonded cashiers and contract meter readers for the collection of revenue and meter reading.
- Most of the centres visited did not have suggestion boxes. A few that were available had remained closed for a long time reportedly because customers did not patronize the suggestion boxes.
- Although all the centres had vehicles, these were found to be inadequate since two or more departments had to share a vehicle and in some cases, there was only one vehicle for an entire District Office.
- Although all the CSCs & District Offices had educational materials pasted at their premises, it was realized that most of them were pasted when they were notified of the intended visit of PURC. Furthermore, customer educational activities played very little role in their programmes.

### **Recommendations**

PURC would urge that:

- Steps must be put in place to resolve complaints lodged at its offices as quickly as possible to gain customer confidence. A likely cause of the delay is under-manning within the centres.
- More vehicles should be made available to District Offices where these are mostly needed to make the work easier for the staff. Suggestion boxes should also be provided and customers should be educated to use them as a means of putting their grievances and suggestions across. This will help improve upon the services of the company.
- Educational materials should be made available at all times at the offices.
- Customer educational programmes should be given a lot of attention.

### **■ GWCL**

A total of 25 GWCL CSCs and District Offices were visited by officials of the BCS in the 8 regions in the year under review.

- The District offices visited serve between 1,000 and 5000 customers, except Accra West, Accra East and Tema Regions which had customer populations of more than 5,000 and about half of whom are un-metered.
- Although most of the District Offices were accessible to customers they all lack computers and vehicles for efficient and effective service delivery.
- The dominant complaints lodged at most of the districts offices were over billing, burst pipes, payments not reflected on subsequent bills and lack of supply.
- Some customers interviewed complained of delays in complaints resolution by GWCL.
- Although most district offices had seats for customer comfort, the paypoints had none. These paypoints were usually small wooden structures which made it uncomfortable for the revenue assistants who man them.
- None of the district offices visited had educational materials pasted up or suggestion boxes available.
- There was a very low level of activity in the area of customer education.

### **Recommendations**

PURC would urge that:

- GWCL must provide their offices with comfortable furniture for both staff and customers and must also provide them with computers and vehicles.
- GWCL must resolve within the shortest possible time all complaints lodged with it especially on pipe bursts so as to restore customer confidence and avoid unnecessary waste.

### **■ NED**

Seven CSCs and district offices of NED were visited during the year. These were in the three regions of Brong-Ahafo, Northern and Upper East.

### **Observations and Recommendations**

- The centres are equipped with furniture for customer comfort. Computers have also been provided to promote effective and efficient work by staff.

- However, the number of CSCs being operated by NED under its jurisdiction is inadequate. Customers have to travel long distances to pay bills or lodge complaints. NED should open more CSC's in its area of operation.
- It takes NED five weeks for New Service Connections to be done and this may even take longer when materials are not available. This should be reduced to two weeks to conform to acceptable industry practice.
- Complaints lodged at the centre as well as its responses are noted in a book. Billing errors are the dominant complaints lodged at their centers.

## 2.2 Handling of Consumer Complaints

To ensure that consumers are treated fairly and are satisfied with their utility services, PURC's Bureau of Consumer Services receives, investigates and settles disputes between consumers and the utility companies.

A total of two hundred and forty (240) complaints were received against the utilities in the year 2004, under the following categories:

- Quality of Service
- Billing
- Payment
- Disconnection
- Metering

The breakdown of the complaints is as follows:

**Table 2. Complaints for 2004**

Months	Payment	Quality of service	Billing	Disconnection	Metering	Number of complaints	% Total complaints
GWCL	1	67	34	13	2	117	48.7%
ECG	9	23	56	18	14	120	50%
NED	0	0	1	2	0	3	1.3%
<b>TOTAL</b>	<b>10</b>	<b>90</b>	<b>91</b>	<b>33</b>	<b>16</b>	<b>240</b>	<b>100</b>

**Note:**

*Complaints such as frequent power outages, Power fluctuation, lack of information, no water flow and burst pipes relate to quality of service.*

**Data analysis**

As can be seen from the table, billing topped the category of complaints lodged against the utilities with 37.9% followed by Quality of Service with 37.5%, Disconnection with 13.7%, Metering with 6.7% and Payment with 4.2%.

**Table 3. Status of Complaints**

<b>Utility Company</b>	<b>Number of complaints</b>	<b>Number resolved</b>	<b>Number Unsolved</b>
GWCL	117	92	25
ECG	120	109	11
NED	3	0	3
<b>Total</b>	<b>240</b>	<b>201</b>	<b>39</b>

117 complaints were brought against GWCL, 120 against ECG and 3 against NED. 84% of the complaints received were resolved during the year in focus. 79% of complaints brought against GWCL were resolved as compared to 91% of complaints lodged against ECG. None of the complaints lodged against NED were resolved.

A comparison with complaints received in 2003 indicates that there was a significant increase in the number of complaints received by the Commission – a 38% increase against ECG and 65% against GWCL. This the Commission believes is partly due to customer dissatisfaction with the utilities' complaints resolution processes and partly due to increase in consumer awareness of PURC through the intensive advertising campaign that was undertaken by the Commission.

Again, the percentage of complaints resolved by PURC this year was 91% and 79% of all complaints lodged against ECG and GWCL respectively. The comparative figures for 2003 were 33% and 25%. (There were no complaints against NED in 2003).

## **2.3 Public Awareness Activities**

The BCS continued to intensify its educational activities and create more awareness nationwide about the role of the PURC. The public was sensitized on their rights and responsibilities in utility service delivery. This campaign was undertaken through television and radio adverts and programmes. In addition, an innovation geared at getting to the youth to support the sector was introduced with sensitization programmes held at some second cycle educational institutions.

### **2.3.1 Advertising Campaign**

The Public Relations Department in collaboration with the Adam Smith Institute produced three 45-second advertising infomercials on water which was screened on two major TV stations in Ghana.

As required under the PURC Act 538, the department also published the tariffs payable for various periods of the year in the two major national newspapers – the Daily Graphic and the Ghanaian Times.

The opportunity was taken to distribute about a thousand of the Commission's brochures during the monitoring, education and survey programmes that were undertaken during the year.

### **2.3.2 Media Discussion Programmes**

#### **TV**

The Executive Secretary in the year 2004 participated in the Consumer Watch programme on TV3. This is a programme that discusses consumer issues. The Executive Secretary, Director, Bureau of Consumer Services and the Western Regional Officer were hosted on Sky TV, Takoradi. The discussion centred on the following:

- The Role and functions of PURC
- Tariff related issues
- Consumer complaints procedures, among others

#### **Radio**

The Director, BCS, the Public Relation Manager and Regional Officers all featured on various live radio discussion programmes in the Greater Accra Region, Central Region, Western Region and Ashanti region. These include participation in discussion on Peace FM in Accra, Radio Central in the Central Region, Twin City, Radio Max, Sky FM and Luv Fm in Ashanti region.

Issues discussed on the various stations included

- Role and functions of PURC
- Complaint procedures
- Disconnection policy & Termination of Service
- Effects of utility tariffs on industries, among others.

The live programmes also had a phone in segment to offer the general public the opportunity to express their views and ask questions on the issues discussed.

### **2.3.3 Sensitization programme for Second Cycle Institutions**

In the fourth quarter of the year 2004, the Bureau undertook a programme to create awareness of PURC among the youth in the second cycle institutions. This programme was dubbed “Catch them young” and was organized in the three regions as a pilot project. Schools that partook in the programme included Achimota Secondary School and West Africa Secondary School in Accra, Opportunity Industrialization Centre, Sekondi College, Ghana Secondary Technical School among others in Takoradi and Yaa Asantewaa Secondary School and Opoku Ware Secondary School in Kumasi.

The youth were envisaged as worthy ambassadors of the Commission, who, in turn would educate their parents and siblings on their rights and responsibilities as far as the provision of utility service were concerned. Most of the meetings were addressed by the Executive Secretary and the Director of the Bureau, Mami Dufie Ofori. The programme was very successful as a pilot.

The Bureau will continue with its “catch them young” programme for second cycle institutions after the successful piloting.

## **2.4 Training Programme for utility staff**

In furtherance of ensuring high standard of performance from the utilities with regard to customer care and quality of service, a workshop was organized for District Managers and District Commercial Managers of ECG and GWCL from the southern sector of the country in Accra. The workshop was well patronized with over 100 staff of the utilities attending. The theme for the workshop was “Delivering Quality Customer Service”.

The Bureau will also organize a workshop programme for District Managers and District Commercial Managers of ECG, GWCL and NED of the Northern sector of the country in Kumasi in February 2005.

## **2.5 Conclusion**

- There was an increase in the number of complaints lodged with the Commission which was due to the awareness created by the Commission.
- There was a general improvement at the customer service centres and District Offices visited as compared to 2003.
- The public awareness programme embarked upon by the bureau was very successful. This manifested itself in the number of complaints received by the bureau during the campaign period.
- Compared with 2003, more Customer Service Centres were visited in the year under review.



- More public awareness programme will be embarked upon to educate consumers on PURC regulations.

The Bureau plans to visit more District Offices and CSCs in 2005 especially in the Regions where the Commission has no offices and districts outside the Regional Capitals. As compared to previous years, the Bureau was able to undertake a greater number of activities in 2004. Most of the planned programmes for the year were implemented.

However the lack of funds prevented the Bureau from undertaking more awareness programmes in the print and electronic media especially radio.

### **3. PERFORMANCE AND QUALITY OF SERVICE OF GHANA WATER COMPANY (GWCL)**

#### **3.1 INTRODUCTION**

This report covers the performance of GWCL activities for the year ended 2004. Due to the inability of GWCL to submit its 4<sup>th</sup> quarter report on schedule, the 4<sup>th</sup> quarter figures were estimated based on the performance of the first the three quarters.

During the review period, most of the performance indicators did not meet the targets set by PURC. For example, Non Revenue Water (NRW) for the year under review was 52% compared to PURC target of 45%. Water sales during the period under review amounted to 92.11 Mm<sup>3</sup> which is 44.2% of water produced. The persistent low metering ratio continued to affect the high NRW that the company experienced. The average metering ratio during the review period stood at 46.7%.

The major constraints to the performance of the company's operations especially in terms of water production, supply and sales are highlighted below:

1. Frequent power interruptions
2. In-operative boreholes in some parts of the Upper East and Upper West regions.
3. Rehabilitation works on some treatment plants (Inchaban and Koforidua) and road construction works at Western Rural and Nkawkaw and Akim Oda roads disrupted supply to areas covered by the civil works.
4. Frequent pipe bursts due to old and aging pipelines.

The following measures have been undertaken by GWCL to enhance its performance.

1. A nationwide consumer survey to assess the actual customer strength and the level of working meters. This exercise is currently ongoing.
2. Procurement and installation of more consumer meters to improve metering ratio.
3. Involvement of private sector in arrears collection to enhance revenue collection rate
4. Increased public relations activities to create more awareness generally and inform the public on the ₵200,000.00 incentive for reporting illegal connection
5. Intensify disciplinary action against errant workers
6. Assess the performance of the various monitoring teams both at regional levels and the head office.

With regards to GWCL's financial performance, gross revenue improved steadily. This resulted in an increase in gross revenue by 16.7%. Even though the company made a loss of 58 billion Cedis during the review period, this represented an 81% improvement over the previous year's loss of 355 billion Cedis. This is due to the impact of the 10% increase in water tariff in October of 2003.

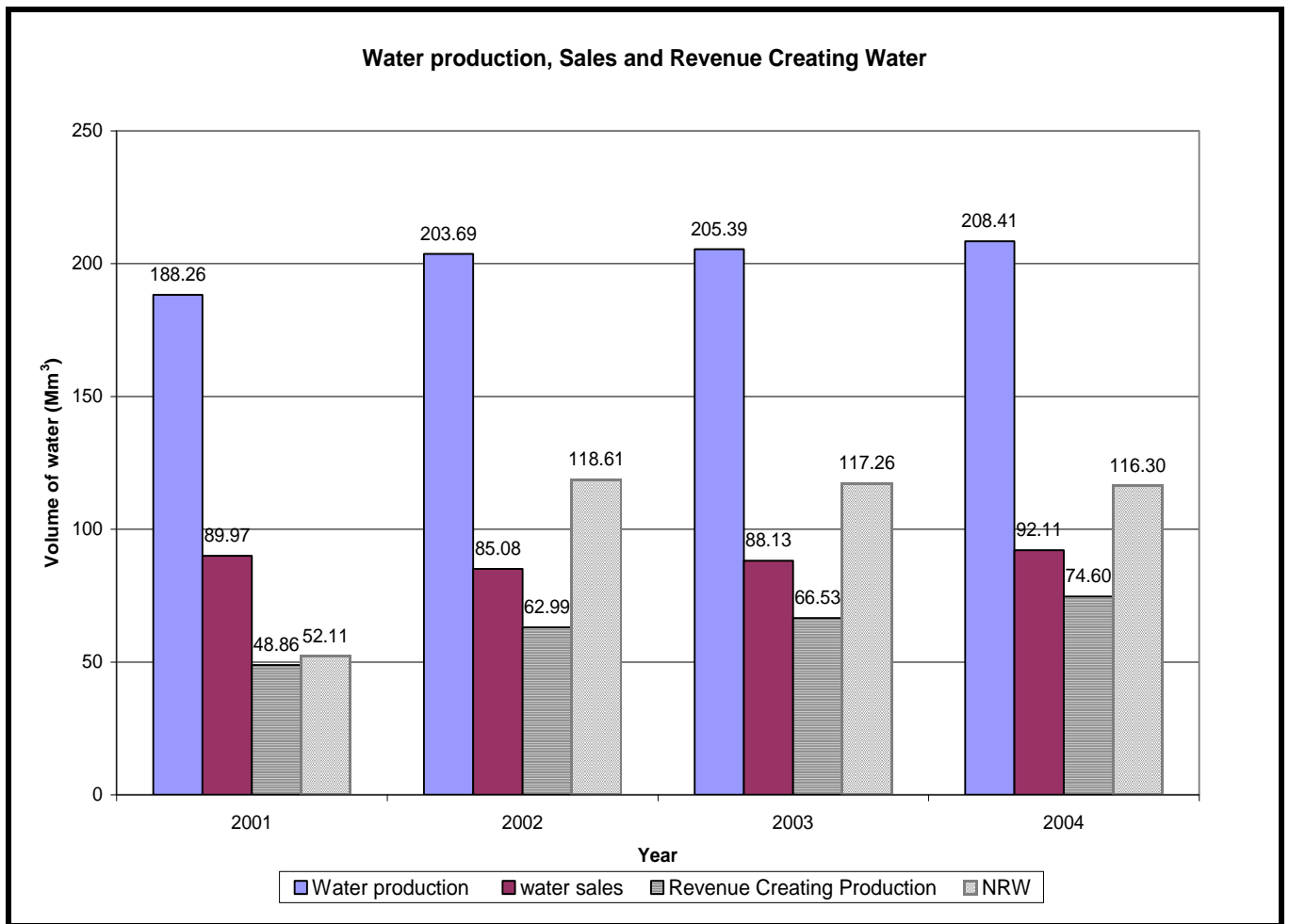
### 3.2 WATER PRODUCTION

GWCL operated a total of 84 systems during the period under review. As has been stated, the 4th quarter report for the company was not available at the time of writing this report. 4th quarter figures were therefore projected based on performance of the first three quarters.

Estimated water production for the review period was 208.4 million cubic meters (Mm<sup>3</sup>). Water sales for the period under review was estimated at 92.11 Mm<sup>3</sup>.

The figure below shows the water production and sales for the period 2001 to 2004. From the figure, it is quite clear that NRW continues to exceed water sales. This is one area where the company needs to consider seriously. With the introduction of the nationwide consumer survey and the procurement and installation of more consumer meters, it is expected that the level of NRW will begin to decline.

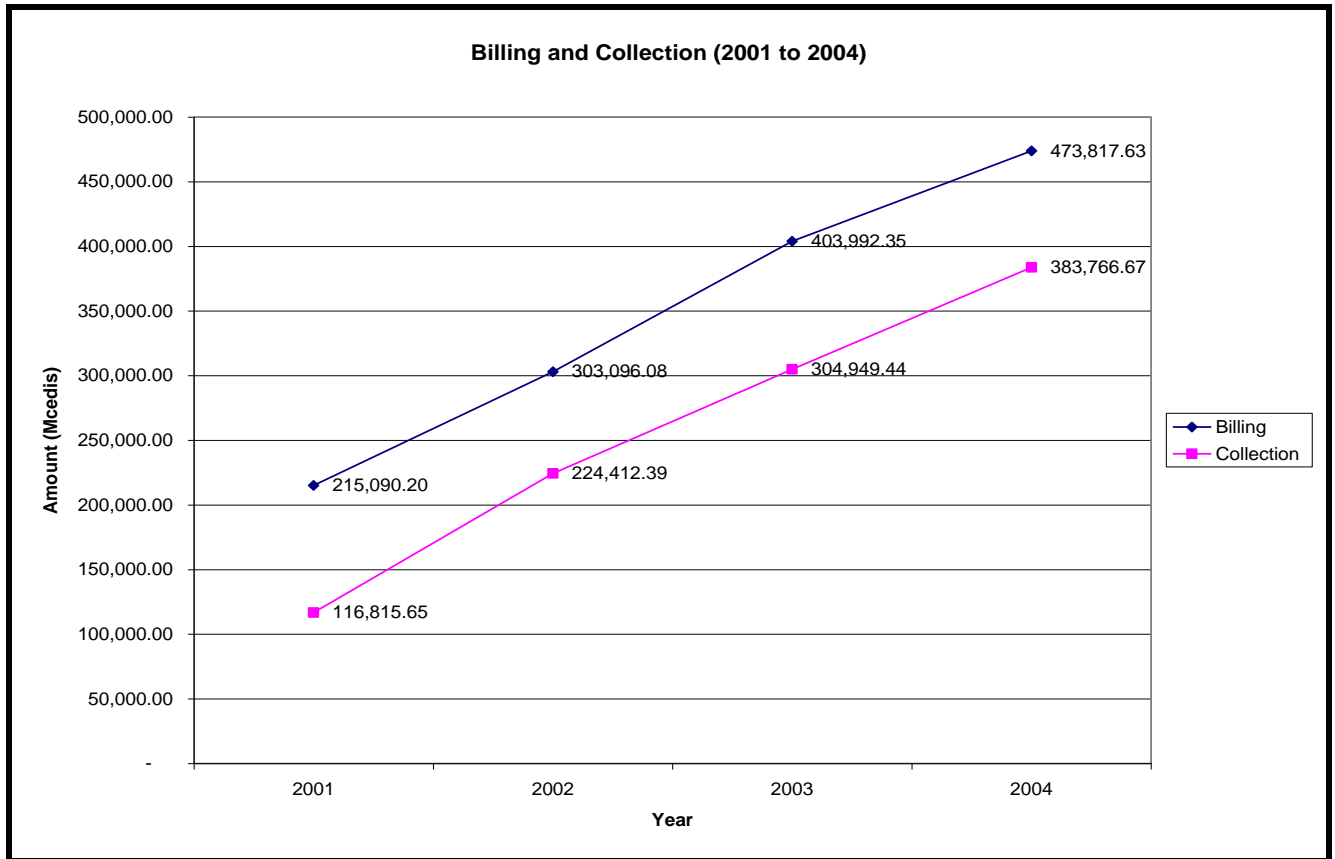
**Figure 1. Comparative analysis of water production, sales and revenue creating water for GWCL (2001 – 2004)**



### 3.3 COLLECTION AND BILLING

The revenue collection ratio which is the actual amount of monies collected expressed as a percentage of the total amount of water billed over the review period did not meet the PURC stipulated target of 95%. Over the review period, the average collection ratio was 79.42%. A comparative analysis of the billing and collection for the period 2001 to 2004 is presented in the figure below.

Figure 2. Billing and collection for the period 2001 to 2004

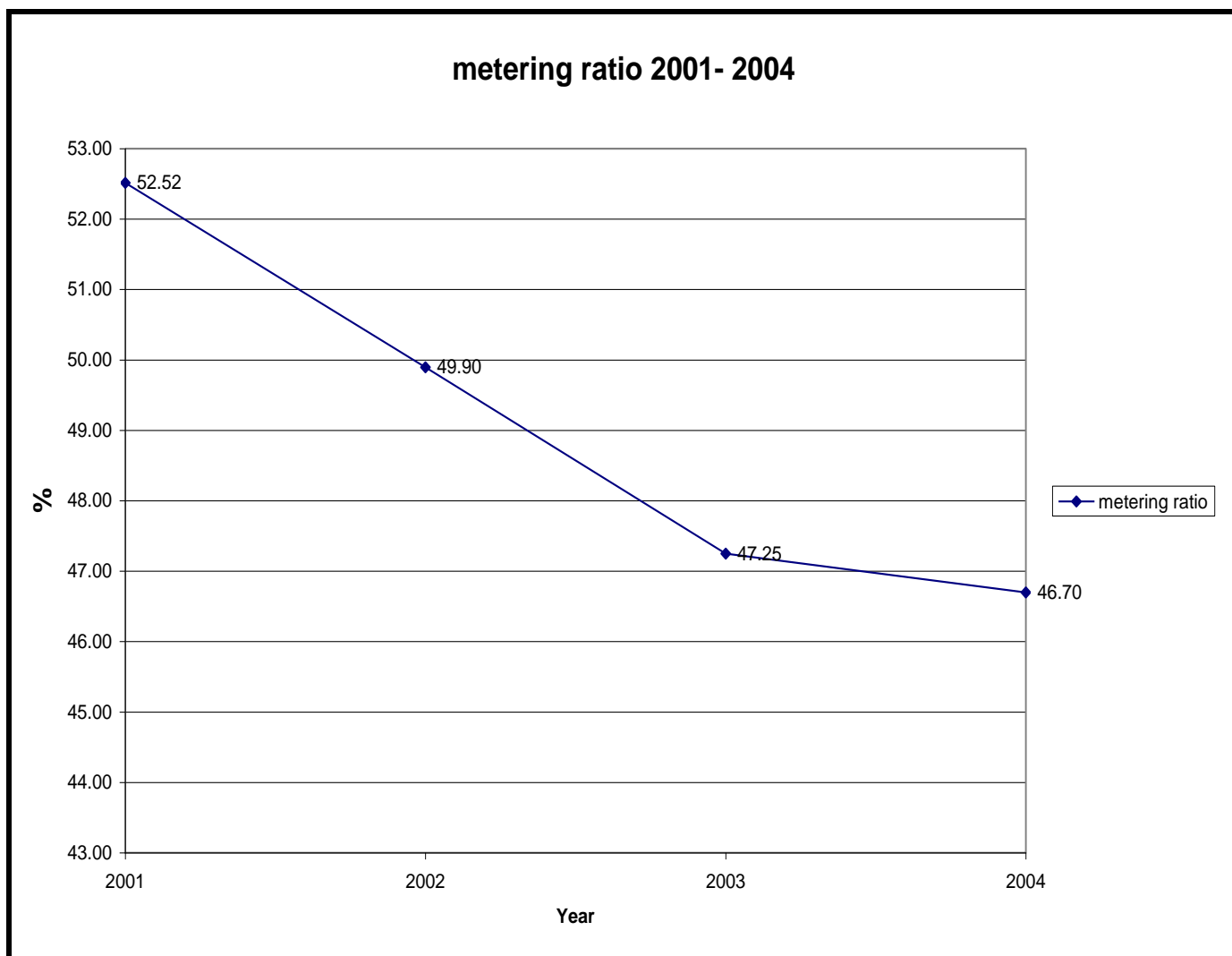


### 3.4 METERING SITUATION

The metering ratio, that is the number of effective meters divided by the number of customers of the company for the review period stood at 46.70% compared to 47.25% for 2003. As part of efforts to improve the amount of NRW, the company embarked on a nationwide survey to assess customer strength and acquired more meters for installation. A comparison over a four-year period from 2001 to 2004 for the metering ratio is shown in the figure below. From a figure of 52.52% in 2001, the metering situation has continued to decline each year to a low of 46.7% at the end of 2004. This may be due to the low level of investment in meters by the company. PURC expects

that with the on-going nationwide survey and meter installation programme, the situation will improve.

**Figure 3. Metering ratio for the period 2001 to 2004**



### **3.5 FINANCIAL PERFORMANCE**

The financial performance of the company was reviewed based on the following financial and economic indicators:

- Average collection ratio
- Revenue collection period
- Rate of return
- Net profit or loss before tax

The figures below indicate the financial performance of the company over a four year period from 2001 to 2004.

Figure 4. % Analysis of GWCL operations (2001 to 2004)

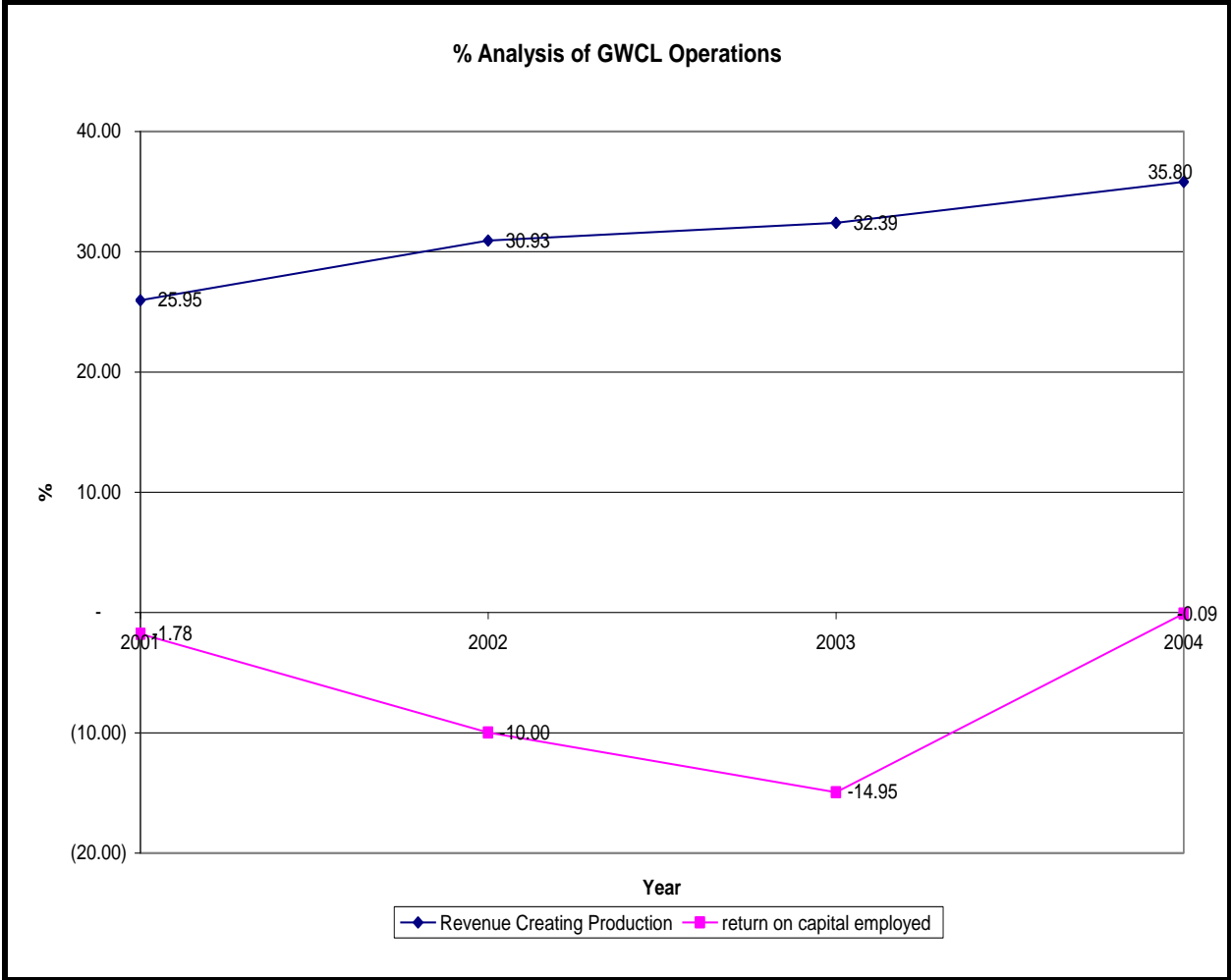
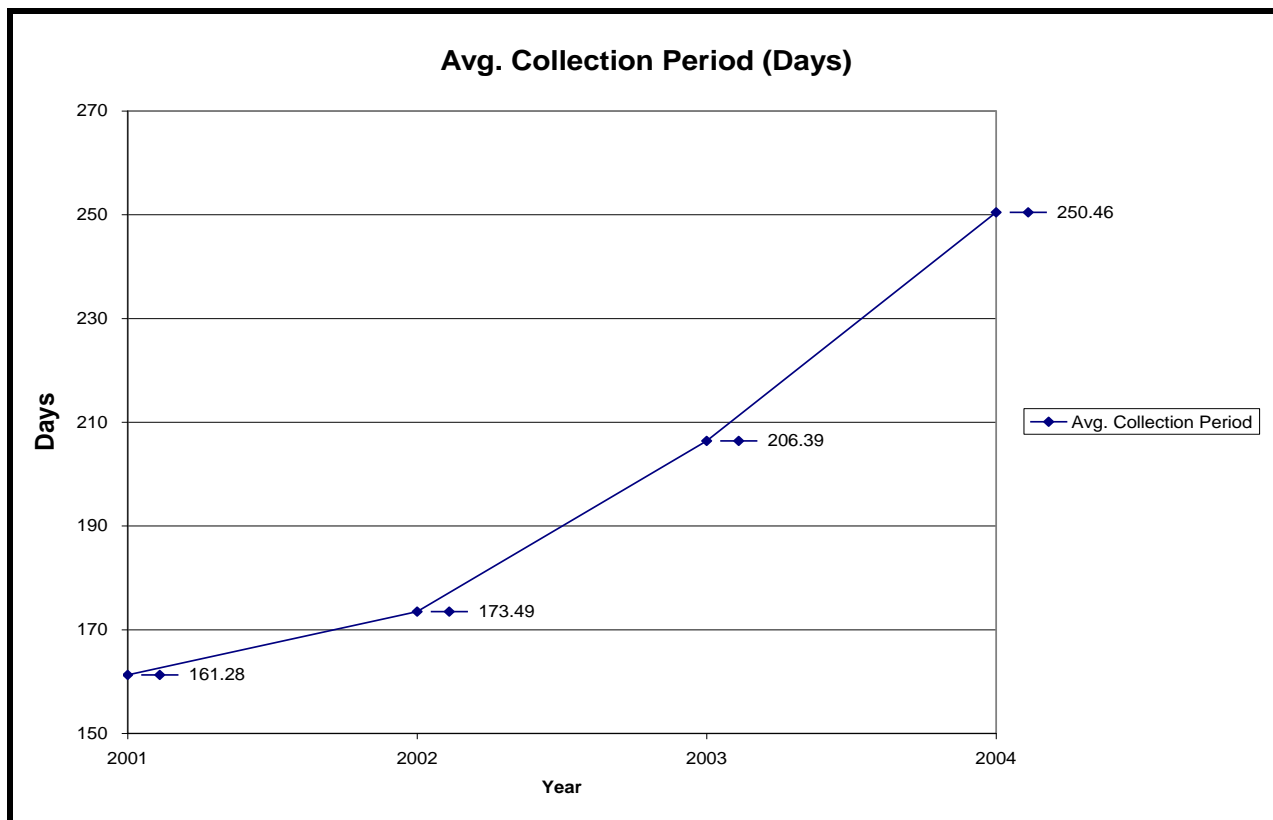


Figure 5. Average collection period (days) [2001 to 2004]



Collection ratio over the years has been decreasing. This indicates that the company is either relaxing in its efforts to collect its bills or more customers are not paying their bills. The average collection period had also been increasing over the years and from an average of 161 days in 2001, the average collection period rose to 250 days at the end of 2004.

Revenue Creating Production (RCP) which can be described as the volume of water which is actually converted into revenue has seen a slight improvement from 25.95% in 2001 to 35.80% at the end of 2004. Improvement of this indicator ultimately depends on the reduction in non – revenue water and increasing collection ratio.

### 3.6 EXPENDITURE ANALYSIS

Total expenditure of the company is estimated at ₦553 billion Cedis. This amount is made up of operating expenditure of ₦369 billion and non-operating expenditure of ₦184

billion. A breakdown of the individual cost components of the operating expenditure is presented in the table below.

**Table 4. Breakdown of Expenditure of GWCL for 2004**

<b>COMPONENT</b>	<b>COST ₪</b>	<b>% of Direct Expense</b>
<b>Direct Expense</b>		
Electricity	130,992,177,985	30.06
Personnel	105,882,911,763	24.29
Treatment chemicals	28,642,381,465	6.57
Repairs and, maintenance	21,367,763,688	4.90
Fuel and lubricants	10,438,335,317	2.39
Overheads	61,232,197,675	14.05
materials cost	6,557,428,052	1.50
Operarating materials	1,834,622,867	0.42
Lab and analytical cost	46,671,333	0.01
Hiring of equipment	6,666,669	0.001
Bank charges and interest	1,833,161,775	0.42
<b>Sub Total</b>	<b>368,834,318,589</b>	<b>100</b>
<b>Indirect Expense</b>		
		<b>% of indirect Expense</b>
Depreciation expenses	66,930,162,136	36.27
Loan Interest	64,760,000,000	35.09
Exchange Loss	52,842,786,565	28.64
<b>Sub Total</b>	<b>184,532,948,701</b>	<b>100</b>
<b>Total Expenditure</b>	<b>553,367,267,291</b>	

Electricity continues to be the major component of the direct operation and maintenance expenditure contributing 30.06% of the total operating expenditure, followed by personnel cost which accounted for 24% of the direct expenditure. Depreciation expenses also contributed significantly to the indirect expenditure contributing 36.27% of the total indirect expenditure, followed by interest payment on loans which accounted for 35% of indirect expenses.



## 3.7 DRINKING WATER QUALITY

### Drinking Water Safety Plan

The traditional approach to the regulation of drinking water quality is to put the whole emphasis on checking the quality of the water that has been delivered rather than on managing the supply system to ensure safe water. This end product testing approach had been not able to assure the safety of drinking water that will have the trust of the consumers.

There has therefore been growing consensus among water professionals about the need to create a new framework within which the quality of drinking water can be assured. These discussions have been given impetus by the latest WHO Drinking Water Quality Guidelines, 3<sup>rd</sup> Edition (2004).

This placed much more emphasis on proactive risk, based management systems to achieve safe drinking water. In these Guidelines, such approach that encompasses all steps in water supply from catchment to consumer is termed **Water Safety Plans**.

The Bonn Charter for Safe Drinking Water has also been developed by the International Water Association. It provides a high level framework describing the operational and institutional arrangements that are basic requirements for managing water supplies from catchment to consumer.

In line with the principles enshrined in the Bonn Charter, the PURC led an initiative with GWCL, WRC, EPA and the Consumer Association of Ghana to develop this approach to drinking water safety for Ghana. This collaboration entailed a pilot project study to be undertaken using the Weija water supply system.

The study identified three areas of particular importance in this drinking water supply system. These were as follows.

- Massive deterioration of the raw water quality leading to algal blooms in the source water
- Disinfection controls within the treatment system
- Loss of pressure in the distribution system.

The integrated team pilot project has identified some critical improvement requirements on the Weija supply system. One important aspect is lowering the level of nutrients getting into the lake to reduce the algae problem. WRC, EPA and GWCL are working on solutions to this problem. Another area of concern is the water distribution system which will call for an aggressive leakage control programme.

## Water Quality

### Raw Water

Table 5 shows some basic parameters of key treatment plants. High colour and turbidity still remained a big challenge for the water treatment plants under review. All waters were however treatable.

**Table 5. Raw Water Characteristics of Key Treatment Plant**

Indicator	Weija	Kpong	Brimsu	B'kese	Daboase	Densu	Kpeve	Dalun
pH	7.9	6.9	6.5	6.8	7.0	7.0	6.9	7.7
Turbidity (mg/l)	23	1.0	16	29.0	19.0	-	1.0	60.6
Color(HU)	128.6	5.0	186.6	219.6	360	90	5.0	182
Iron (mg/l)	0.04	0.01	1.6	2.0	0.9	0.04	-	1.85

As shown in Table 6 below, performance with regard to residual chlorine levels were not satisfactory for Brimsu, Barekese and Daboase Treatment Plants. Meanwhile bacteriological quality of the treated water was satisfactory.

**Table 6. Levels of Achievement of Key Treatment Plant**

Major Plants									
Indicator	Weija	Kpong	Brimsu	B'kese	Daboase	B/A	Densu	Kpeve	Dalun
Residual Chlorine (% compliant)	100	94.6	64	81.5	75	95	100	93	93
Bacteriological (% compliant)	100	100	100	100	100	100	100	100	100
pH (%compliant)	98	99	65	64	53	86	86	92	92
Turbidity (% compliant)	100	100	85	94	84	100	100	98	89

## Treated Water Quality at Distribution Systems

The compliance values for residual chlorine for ATMA, Central and the Western regions were not satisfactory.

**Table 7. Levels of Achievement of Distribution system**

Indicator %Compliance	ATMA	ASH	C/R	W/R	N/R	B/A	V/R	E/R	U/E
No Sample	71	81	87	80	60	100	100	100	100
Bact	100	100	100	86	90	98	100	99	100
Residual chlorine	36	80	57	66	94	68	78	98	98
pH	95	64	62	79	93	80	99	100	97

## Visits to Water Systems

This was part of the Water Inspectorate's regulatory role in the monitoring standard of performance of the Ghana Water Company. A visit was made only to the Western region to meet water tankers operators and other stakeholders on the draft water tanker guidelines being developed by the Commission.

### 3.8 CONCLUSION

GWCL has recognized the need to reduce its non revenue water by embarking on a nationwide survey and installation of more consumer meters. The company needs to work on improving its performance targets, especially on the reduction of NRW and improve its revenue collection ratio to enhance its headline performance (i.e. Revenue Creating Production.)

## 4. PERFORMANCE REVIEW OF ELECTRIC UTILITIES

### 4.1 INTRODUCTION

This section of the annual report reviews the technical and financial performance of the electric power utilities, that is, the operations of Volta River Authority (VRA), Northern Electricity Department (NED) and the Electricity Company Ghana (ECG) for the year ended December 31, 2004. Section 5 reviews the quality of service performance and level of service delivery from the three power utilities.

### 4.2 VOLTA RIVER AUTHORITY - TECHNICAL ANALYSIS

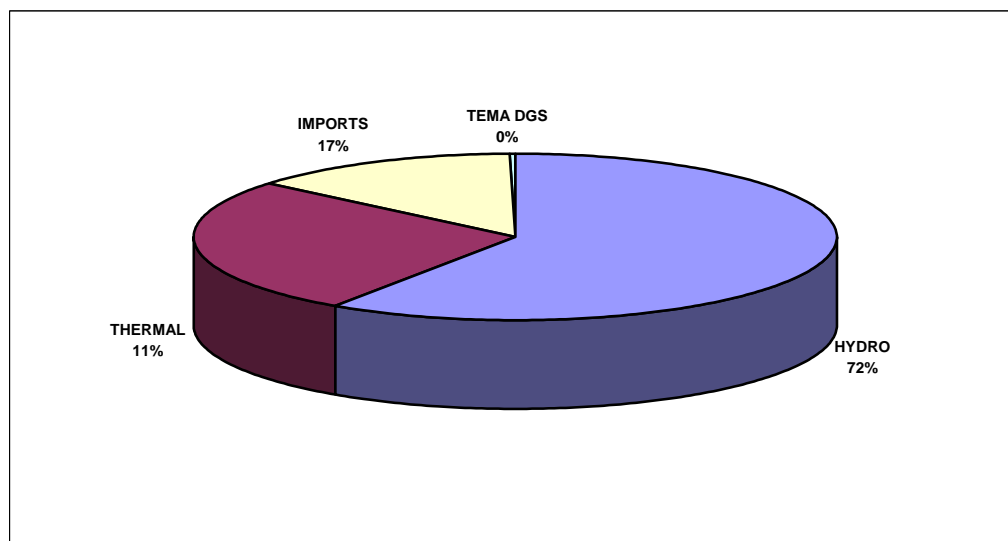
#### 4.2.1 GENERATION MIX ANALYSIS

System Energy supply from the various generation sources for the period under review is shown in Table 8 below. Total energy generated for the year 2004 from hydro, thermal and imports amounted to 6,917 **GWh** excluding 371 **GWh** of energy wheeled to CEB. Of this amount, hydro sources contributed 5,280 **GWh** representing 72 %, generation from thermal sources (TAPCO and TICO) amounted to 759 **GWh**, representing 11% of total generation for the year while imports amounted to 878 **GWh**, accounting for 17%. There was no energy generated from the Tema Diesel Generating Station for the period. Transmission Losses amounted to 205.0 **GWh** representing about 3.0% of total energy generated.

TABLE 8. ENERGY GENERATION BY SOURCE

Generation Source	GWh	% Composition
HYDRO:	5,280	72
THERMAL:	759	11
IMPORTS	878	17
SRP	0	0
TEMA DGS	0	0
Energy Wheeled to CEB	371	0
<b>TOTAL</b>	<b>7288</b>	<b>100</b>
Transmission Losses	205	3.0

FIGURE 6. PIE CHART SHOWING GENERATION-SUPPLY MIX -2004



#### 4.2.2 SYSTEM CAPACITY FOR 2004

TABLE 9. DOMESTIC CAPACITY FOR THE YEAR ENDED DECEMBER 31, 2004

SOURCE	1.1.1.1.1.1.1.1	EFFECTIVE CAPACITY (M)	INSTALLED CAPACITY (MW)	% COMPOSITION
Hydro:				
Akosombo		850	1020	
Kpong		120	160	68.0
Thermal:				
TAPCO		150	330	
TICO		200	220	32.0
Total Available Effective Capacity		<b>1320</b>	1730	
System Coincident Peak Demand		1135		
Reserve Margin (Effective)		185		

Table 9 above shows composition of effective domestic supply and installed capacity for the year. Total effective capacity amounted to 1320 MW, whilst system coincident peak demand was 1,135 MW, thus giving a reserve margin of 185MW. Though VRA had reserve margin of 185 MW coming mostly from its thermal sources, the Authority had to rely on imports from natural gas-fired plants in La Cote d'Ivoire to provide the necessary support for system security and reliability due to the high price of crude oil on the international oil market.

#### 4.2.3 ENERGY DEMAND ANALYSIS

Total energy demand comprising domestic and export markets for the year (shown in Table 10 below) totalled **7288 GWh**. Demand by local customers including ECG and NED for the period amounted to **6004 GWh**, representing **82.0%** of energy demand. Total energy supplied to foreign customers including VALCO, CEB and SONABEL amounted to **1,046 GWh**, representing **14.4%** of total demand for the period, while system usage accounted for **3.6%**.

**TABLE 10. ENERGY DEMAND: DOMESTIC AND EXPORTS MARKETS**

<b>DOMESTIC DEMAND (GWh):</b>	<b>2004</b>	<b>% COMPOSITION</b>
ECG	4,819.7	
NED	472.6	
Mines	599.0	
Others	112.7	
Total Domestic	<b>6004.0</b>	<b>82.0</b>
<b>EXPORTS (GWh):</b>		
VALCO	10.0	
CEB (Contractual)	300.0	
CEB (Additional VRA Supply)	362.0	
Sonabel	3.0	
Total Exports	<b>1046.0</b>	<b>14.4</b>
System Usage <sup>1</sup>	<b>238.0</b>	<b>3.6</b>
<b>TOTAL DEMAND</b>	<b>7288.0</b>	<b>100.0</b>

### 4.3 VRA - FINANCIAL ANALYSIS

#### 4.3.1 ANALYSIS OF VRA'S OPERATING EXPENSES

	<b>Billion Cedis</b>
<b>Revenue from Electricity Sales</b>	<b>2,958.6</b>
<b>Other Income</b>	<b>349.5</b>
<b>Total Income</b>	<b>3,308.1</b>
Cash Operating Expenses	(1,737.8)
<b>Gross Profit/(Loss)</b>	<b>1,570.4</b>
Depreciation	(976.9)
Loss/(Gain) on Foreign Exchange	(25.1)
Total Operating Expenses	<b>(2,689.5)</b>
<b>Operating Profit/(Loss)</b>	<b>618.6</b>
Exchange Fluctuation on Foreign Debt	(275.3)
Interest Charges	(206.7)
<b>Net Profit/(Loss)</b>	<b>136.6</b>

<sup>1</sup> System Usage represents total amount of energy used in VRA's Generation and Sub-stations.

**TABLE 11. DETAILS OF VRA'S O & M EXPENSES- 2004**

DIRECT O & M EXPENSE	YEAR 2004	% COMPOSITION	YEAR 2003	VARIANCE 2004 vs. 2003) BILLION CEDIS (+/(-))	VARIANCE IN % (+/(-))
Hydro Generation	19.9	1	23.3	-3.4	-15
System Generation: TAPCO & TDS	795.2	46	716.2	79.0	11
SRP	24.3	1	125.1	-100.8	-81
Supply from TICO	63.1	4	661.3	-598.2	-90
Imports of Electricity (CIE)	461.3	27	442.8	18.5	4
Transmission	41.9	2	33.9	8.0	24
Central Services	225.5	13	171.4	54.1	32
Akosombo/Akuse Township	30.4	2	20.9	9.5	45
Health Services	18.8	1	12.7	6.1	48
Distribution	57.4	3	42.7	14.7	34
Total	1,737.8	100	2,250.5	-512.7	-23

Table 11 above shows Key Cost Drivers of VRA's Direct Total Operating Expenses for the year ended December 31, 2004. Energy supply from TICO fell by 90.0% from 661.3 Billion Cedis in 2003 to 63.1 Billion Cedis in 2004. This could be attributed to curtailment of electricity purchases from TICO by VRA so as to avoid the high variable cost associated with generation resulting from increased prices of crude oil on the international oil market. However, the cost of generation from TAPCO which constitutes a significant cost component of the VRA increased by 11% from 716.2 Billion Cedis in 2003 to 795.2 Billion Cedis in 2004, while Central Services also increased by 32% from 171.4 Billion Cedis in 2003 to 225.5 Billion Cedis in 2004.

**Table 12. SELECTED FINANCIAL INDICATORS- 2004**

INDICATOR	UNIT	2004	2003
<u>Operating income/(Loss)</u>	¢B	<u>619.0</u>	<u>391.0</u>
<u>Net Operating Income/(Loss)</u>	¢B	<u>137.0</u>	<u>(33.0)</u>
<u>Rate of Return on Average Re-Valued Net Fixed Assets</u>	%	<u>2.9</u>	<u>2.3</u>
<u>Overall Operating Cost/Sales Revenue (Ratio)</u>	%	<u>91.0</u>	<u>83.0</u>
<u>Debt Service Coverage (Ratio)</u>	%	<u>2.8</u>	<u>1.9</u>

**4.3.2 VRA CASH FLOW STATEMENT- 2004**

	Billion Cedis
Cash flow from operating activities	404.4
Cash flow from investing activities	(256.3)
Cash flow from financing	(237.2)
Decrease in cash and cash equivalents	(89.1)
Cash and cash equivalents at beginning of year 2004	124.4
Cash and cash equivalents at end of year 2004	35.4

#### 4.4 ELECTRICITY COMPANY OF GHANA - TECHNICAL ANALYSIS

##### 4.4.1 DISTRIBUTION SYSTEM ANALYSIS

In 2004, ECG purchased a total of **4,810.5 GWh** of energy from the Volta River Authority. Energy billed for the period totalled **3,3561.2 GWh**, whilst distribution system losses for the period totalled **1249.3 GWh** as shown in Table 6 below. In percentage terms, ECG recorded **25.97%** system losses as against PURC's system loss benchmark of **21%**. ECG's system loss deterioration with respect to PURC benchmark for the period was **-4.6%**. Power Sales as percentage of Power purchased amounted to 74.03% as shown in Table 13.

**TABLE 13. ANALYSIS OF POWER PURCHASES, SALES AND SYSTEM LOSSES- 2004**

DETAIL	GWh	%
Power Purchased (GWh)	4810.5	100.0
Power Sold (GWh)	3561.2	74.03
Total System Losses (GWh)	1249.3	25.97
PURC System Losses Benchmark	1010.205	21.0
<b>System Loss Deterioration With Respect To PURC Benchmark</b>	<b>239.095</b>	<b>4.97</b>

**TABLE 14. COMPOSITION OF ECG'S DISTRIBUTION SYSTEM LOSSES 2003 AND 2004**

SYSTEM LOSS	Year 2004	Year 2003
Total System Loss (%)	25.97	25.65
PURC System Loss Benchmark	21.0	21.0
<b>System Loss Deterioration With Respect To PURC Bench</b>	<b>-4.97</b>	<b>-4.65</b>

**TABLE 15. COST OF SYSTEM LOSSES TO ECG- 2004**

DETAIL	Billion Cedis
Power Purchased	2,052.01
Power Sold	2,543.20
Expected Power Sales Based On PURC Benchmark	2,704.05
Total System Losses (25.97%)	888.92
System Losses Based on PURC Benchmark (21.0%)	718.80
<b>Cost of System Losses to ECG</b>	<b>160.85</b>



## 4.5 ECG - FINANCIAL ANALYSIS

### 4.5.1 HIGHLIGHTS OF ECG FINANCIAL PERFORMANCE- 2004

	Billion Cedis
	¢
<b>Total Revenue</b>	<b>2,543.2</b>
Direct Operating Costs	(2,110.9)
<b>Gross Profit</b>	<b>433.6</b>
Operating, General & Admin. Expenses	(227.6)
<b>Depreciation</b>	<b>(418.5)</b>
<b>Operating Profit/(Loss) (Before Exchange Fluctuation, Interest, Commitment Charges &amp; Exceptional Items)</b>	<b>(212.5)</b>
<b>Exchange Fluctuation Loss</b>	<b>(42.4)</b>
<b>Loan Interest</b>	<b>(31.5)</b>
<b>Net Operating Profit/(Loss)</b>	<b>(286.4)</b>

### 4.5.2 ANALYSIS OF ECG'S OPERATING COST- 2004

The key cost drivers of ECG's operations for the period under review were:

- a. Direct: - Cost of power purchase –¢2,052.0 Billion Cedis
- b. Indirect: - Depreciation ¢ 418.5 Billion

Though the PURC granted an increase of ¢16.00 per kWh (5.4%) to ECG in February 2004 under the Commission's Automatic Adjustment Formula, the Company nonetheless recorded a net operating loss of **¢286.4 billion** for the year. The net operating loss for the year would have been reduced by at least 60% or **¢116.4 Billion** if the Company had achieved PURC system losses benchmark of 21% and benchmark revenue collection rate of 95%.

### 4.5.3 ANALYSIS OF ECG'S CASH FLOW POSITION FOR 2004

	Billion ¢
Net Cash inflow from Operating Activities	295.1
Net Cash Outflow from Investing Activities	(280.8)
Net Cash inflow before Financing Activities	14.3
Net Cash inflow from Financing Activities	18.2
Increase in cash and cash equivalents	32.5
Balance in cash and cash equivalents (At Jan 1, 2004)	43.4
<b>Balance in cash and cash equivalents (As at December 31, 2004)</b>	<b>¢75.9</b>

**TABLE 16. KEY STATISTICS FOR THE YEAR 2004**

	<b>UNIT</b>	<b>2004</b>	<b>2003</b>	<b>VARIANCE</b>
Distribution System Losses	%	25.97	26.4	-0.43
Revenue Collection	%	84.1	86.8	-2.7
Debtors Collection Period	Days	142.0	169.0	-27.0

Table 16 above shows key statistics for the year 2004. During the year, Distribution System Losses was reduced from **26.4%** in 2003 to **25.97%** in 2004, representing **1.6%** reduction. Though the Company recorded a reduction in its Debtors Collection period by **27 days** from **169 days** to **142 days**, this performance could not reflect on its revenue Collection as its revenue collection fell by **2.0%** from **86.8%** in 2003 to **84.1%** in 2004.

## 5.0 REVIEW OF ELECTRICITY QUALITY OF SERVICE PERFORMANCE

The review of quality of service performance of the regulated electric utilities for the year 2004 involved analysis of the performance of VRA's generation and transmission systems, that is, transmission and generation availability, generation utilization factor, duration of transmission planned and unplanned outages. The performance of ECG's distribution network was also assessed, including duration of supply hours lost per connected customer (a measure of network availability), supply interruption per 100 km of system length (measure of network security and system reliability) and distribution system loss levels.

### 5.1 GENERATION & TRANSMISSION SYSTEM QUALITY OF SERVICE

**Table 17. Generation Availability Factor (%)**

GENERATION STATION	AVAILABILITY FACTOR (%) 2004	PURC BENCHMARK
Akosombo GS	96.86	95.0
Kpong GS	98.42	95.0
TAPCO	78.07	85.0

**Table 18. Generation Utilization Factor (%), 2004**

GENERATION STATION	UTILIZATION FACTOR (%) 2004	PURC BENCHMARK
Akosombo GS	73.28	95.0
Kpong GS	90.4	95.0
TAPCO	19.09	85.0

**Table 19. Transmission System Analysis for the Year Ended December 31, 2004**

DETAIL	YEAR 2004	PURC BENCHMARK (%)
Transmission System Losses (%)	2.98	2.80
Transmission System Line-in-Service (%)	99.52	97.0
Power Supply Availability (%)	99.02	97.0

## 5.2 DISTRIBUTION SYSTEM QUALITY OF SERVICE

### 5.2.1 CUSTOMER OUTAGE HOURS

The average cumulative outage-hours in the eight ECG operational areas for Special Load Tariff (SLT) Customers for the year under review was below PURC's benchmark of 30hrs by 26.4 hours, whilst that of the non-SLT Customers was 41.8 hours higher than the PURC's benchmark of 100. NED also registered average cumulative outage-hours of 156.35 hours, (56.35 hours) higher than PURC benchmark as noted in Tables 20 and 21 below.

**TABLE 20. DURATION OF SUPPLY HOURS LOST PER CUSTOMER (PLANNED) - 2004 (ECG)**

DETAIL	YEAR 2004	PURC BENCHMARK (HRS)	VARIANCE (HRS)
SLT (Caused by ECG)	3.59	-	
Non-SLT (Caused by ECG)	112.2	-	
SLT (Caused by VRA)	0.03	-	
Non-SLT (Caused by VRA)	29.61	-	
Total SLT	3.62	30	26.38
Total Non-SLT	141.81	100	41.81

**TABLE 21. DURATION OF SUPPLY HOURS LOST PER CUSTOMER (PLANNED) -2004 (NED)**

DETAIL	YEAR 2004	PURC BENCHMARK (HRS)	VARIANCE (HRS)
SLT/Non-SLT (Caused by NED)	73.82	-	
SLT/Non-SLT (Caused by VRA)	82.53	-	
Area Average	156.35	100	56.35

### 5.2 SUPPLY INTERRUPTIONS PER 100KM OF SYSTEM LENGTH

During the year under review, ECG and NED recorded varying levels of supply interruptions per 100km of system length outside the PURC benchmark. Cumulatively, ECG recorded an average of 43.57 hours for SLT Customers and 334.58 hours for Non-SLT Customers for the year. These figures are 13.57 hours and 234.58 hours higher than PURC benchmark for SLT and Non-SLT Customers respectively as shown in Table 22. These high levels of supply interruptions per 100km of system length indicate very unstable network security. NED also exceeded the PURC benchmark by 77.0 hours (see Table 23).

**TABLE 22. DURATION OF SUPPLY HOURS LOST PER CUSTOMER (PLANNED) -2004 (ECG)**

DETAIL	YEAR 2004	PURC BENCHMARK (HRS)	VARIANCE (HRS)
SLT (Caused by ECG)	40.59	-	
Non-SLT (Caused by ECG)	329.62	-	
SLT (Caused by VRA)	2.98	-	
Non-SLT (Caused by VRA)	4.96	-	
Total SLT	43.57	30	13.57
Total Non-SLT	334.59	100	234.59

**TABLE 23. DURATION OF SUPPLY HOURS LOST PER CUSTOMER (PLANNED) -2004 (NED)**

DETAIL	YEAR 2004	PURC BENCHMARK (HRS)	VARIANCE (HRS)
SLT/Non-SLT (Caused by <a href="#">NED</a> )	111.17	-	
SLT/Non-SLT (Caused by VRA)	65.85	-	
Total	117.02	100	17.02

## 5.3 DISTRIBUTION SYSTEM LOSSES

**TABLE 24. ECG'S DISTRIBUTION SYSTEM LOSSES - 2004**

SYSTEM LOSS TYPE	Year 2004
Total System Loss (%)	25.97
PURC System Loss Benchmark	21.00
System Loss Deterioration With Respect To PURC Benchmark	-4.97

**TABLE 25. NED'S DISTRIBUTION SYSTEM LOSSES -2004**

SYSTEM LOSS TYPE	Year 2004
Total System Loss (%)	27.94
PURC System Loss Benchmark	25.00
System Loss Deterioration With Respect To PURC Benchmark	-2.94

Distribution system losses as shown in Tables 24 and 25 above indicate that ECG recorded 25.97% distribution system losses, whilst NED registered a distribution system loss of 27.94% in 2004. In comparison with PURC distribution system losses benchmark of 21.0% for ECG and 25.0% for NED respectively, ECG exceeded the benchmark by 4.97% and NED by 2.94%.

## **6. EXTERNAL RELATIONS**

### **6.1 African Forum for Utility Regulators [AFUR]**

As a founding and executive member of the African Forum for Utility Regulators, PURC hosted an AFUR international training course in Ghana from the 21<sup>st</sup> to 25<sup>th</sup> of June 2004. The programme was co-hosted by the National Telecommunications Authority.

This was the second after the success of a training course held in Nairobi-Kenya in October 2003, and was part of AFUR's objective to enhance capacity building in Regulatory Institutions across Africa. It was funded by the Public Private Infrastructure Advisory Facility (PPIAF) with support from the World Bank and AFUR itself.

The programme had a true international flavour with over 50 participants attending from Anglophone West African countries namely Nigeria, Sierra Leone, Gambia, Liberia, Cameroon and Ghana. A high level of participation was seen in discussions on regulation of electricity, water and telecommunications.

### **6.2 West African Gas Pipeline Project**

During the year the Commission continued to be involved in the West African Pipeline Project. In collaboration with the Ministry of Energy, Ministry of Finance, the Attorney General's Department, Bank of Ghana, Internal Revenue Service and other institutions, PURC contributed towards a review and redraft of Government's Consent and Support Agreement and some of the legislative arrangements being put in place for the Final Investment Decision on the project to be taken.

The Commission considers that negotiations for specific contractual arrangements such as the Gas Sales Agreement between VRA, N-Gas, and the West African Gas Company Ltd. fall within the realm of commercial arrangements of regulated entities. In order not to prejudice its regulatory role, the Commission's strategy in this regard during

the year was to independently assess issues to be discussed at various stages of the negotiations and restate PURC's policy or pricing philosophy where necessary.

### **Preparations for Natural Gas Secondary Market**

The second important benefit of the gas pipeline project to the country apart from electricity generation is the potential use of the commodity as an alternative source of energy for industries – “the secondary market”. In this respect, PURC is mandated under the Energy Commission Act 1997, Act 541 to set the tariffs for distribution and sale of natural gas. During the year, PURC and other public institutions concerned with this aspect of the power sector commenced discussions on how to ensure that the public institutions are reasonably well placed to address concerns of industry with regards to natural gas, so as to encourage them to convert to the alternative source of energy when it becomes available.

PURC's regulatory mechanisms for natural gas will be similar in some respects to its established framework for electricity. However significant levels of training will be required to boost regulatory capacity for gas tariff regulation as well as prescription and monitoring of safety and service standards. The Commission has identified specific areas of need and is exploring options for technical and financial support. In the coming year PURC will be working together with the Energy Commission to agree on broad policies concerning regulation of the secondary market within the requirements of Acts 538 and 541.

### **6.3 Power Sector Reforms**

The Power Sector Reform initiated in 1994 is aimed at commercializing the operations of the state-owned power utilities and introducing private sector participation so as to minimise the historic use of public resources to finance power generation projects. A key component is to ensure competition in the delivery of services. In 2004, progress made in the reform process included.....

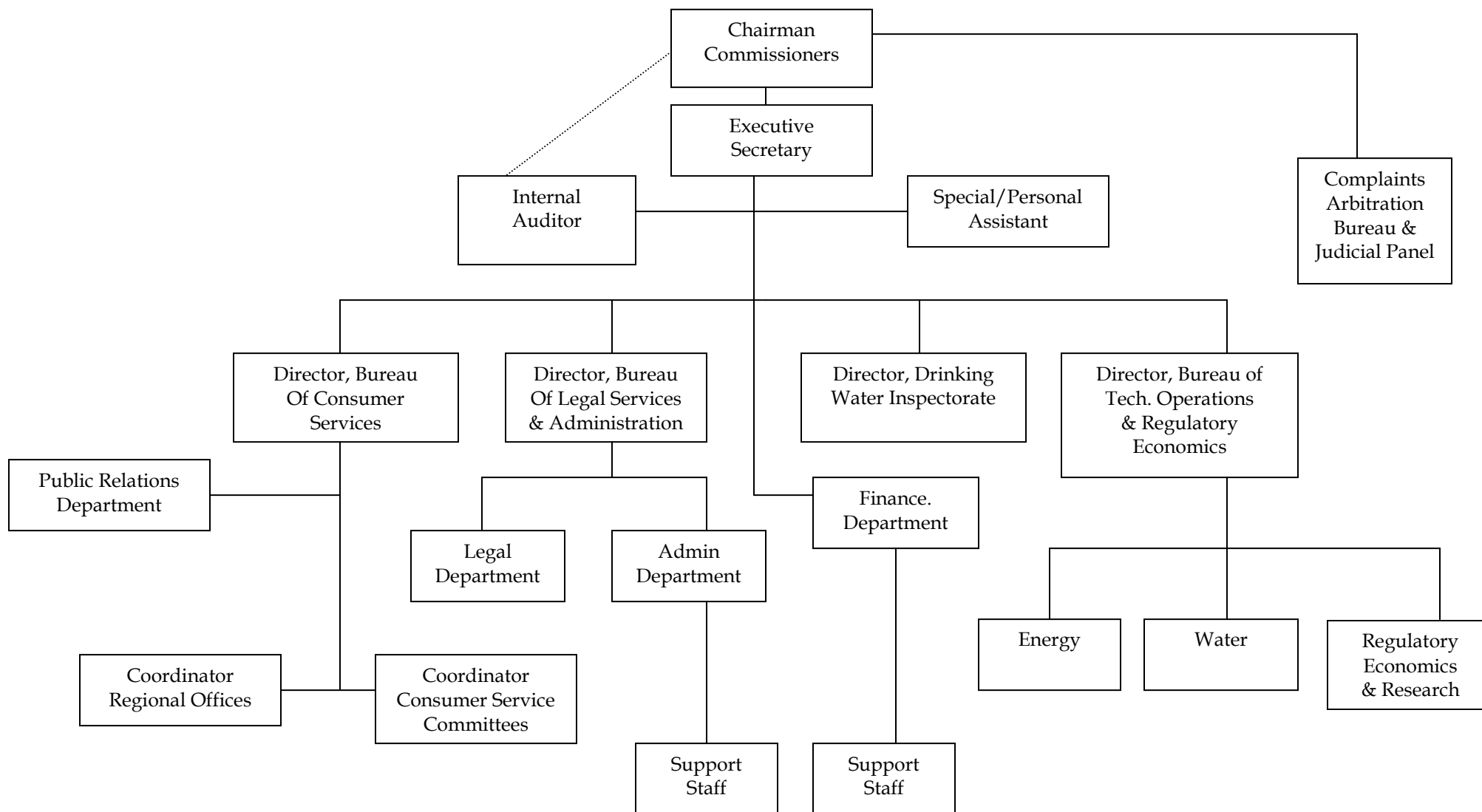
PURC's key responsibilities under the reforms include developing an Open Access Transmission System to encourage competition, rules for separate regulation of hydro and thermal energy and guidelines for embedded power generation.

#### **6.4 Urban Water Project (UWP)**

PURC has been working to ensure that it is well placed to secure improvements in quality of urban water delivery within Government's policy framework for the sector. During the year, the Commission keenly monitored developments in the UWP and participated in related policy debates. Timely contributions were made in the development of benchmarks and performance indicators which will govern the operations of the Management Company contracted to operate the water systems of the Ghana Water Company Limited (GWCL). It is noted that the current policy decision restricts opportunities for public or private competition in the short term. However right from the onset PURC will compare the performance of the initial systems taken on by the Management contractor with that of the systems not yet handed over to the contractor which will in the meantime still be operated by GWCL.



## ORGANISATIONAL CHART



## **2004 FINANCIAL STATEMENTS**