

# PUBLIC UTILITIES REGULATORY COMMISSION



ANNUAL REPORT 2001

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**PUBLIC UTILITIES REGULATORY COMMISSION**  
**SUMMARY OF ACTIVITIES IN 2001**

DATE / MONTH	EVENT
MARCH 8 & 13	<p><b>Public Hearings</b>  Holding of Public Hearings in respect of Electricity and Water tariff proposals submitted by utility companies in 2000.</p>
MARCH 22	<p><b>Water Rate-Setting Guidelines</b>  A workshop on the PURC Water Rate-Setting Guidelines was held for all stakeholders including representatives from GWCL, potential PSP bidders, and the Ministry of Works and Housing.</p>
APRIL 27	<p><b>Tariffs</b>  New tariffs for Electricity and Water were published in the Gazette and mass media to take effect from May 2001.</p>
MAY 2-3	<p><b>African Forum of Utility Regulators</b>  PURC hosted a workshop for the African Forum of Utility Regulators (AFUR). The forum brought together over 80 high level participants from all over Africa, and provided the opportunity to exchange information and share experiences in utility regulation in the Region with specific emphasis on the treatment of Consumer Issues.</p>
JUNE 21	<p><b>Transitional Plan for Adjusting Electricity Tariffs</b>  A one-day workshop was organized at the Labadi Beach Hotel to deliberate on the PURC Transitional Plan drawn up for moving current electricity tariffs to efficient full cost/economic rates over the next two years. Participants included representatives from industry, consumers associations, the utility companies and relevant Government Ministries.</p> <p>Public fora were also organized in Kumasi, Ho, Tamale and Takoradi to explain the implications of the Plan and obligations of stakeholders under the Plan.  Views from the public and other identifiable groups with respect to the Plan were collated.</p>

<p>JULY</p>	<p>A workshop was organised for the Parliamentary Select Committees on Energy, Works and Housing and Legislative Drafting on the PURC Transitional Plan.</p> <p><b>Study on the Rationalization of the Tariff Structure</b> CEED Solutions presented the initial report for the Study on the Rationalization of the Tariff Structure for Multiple Dwellings, to ascertain the impact of utility tariffs on multiple dwellings, establish the nature and constitution of typical compound houses, and to highlight the inequities in the flat rate billing system.</p>
<p>JULY 7</p>	<p><b>Office Accommodation</b> The Ministry of Works and Housing allocated Bungalow No. 51, Liberation Road to PURC to be rehabilitated and used as its offices.</p>
<p>NOVEMBER</p>	<p><b>Draft Regulations</b> The Draft Regulations on the Establishment of PURC Consumer Service Committees were submitted to the Attorney General's Department for review and submission to Parliament.</p>
<p>DECEMBER</p>	<p><b>Human Resource Review</b> Completion of PURC Human Resource Review by Ken Wright, Human Resources Consultant for Adam Smith Institute (ASI).</p> <p><b>Press Conference</b> PURC held its first Press Conference to apprise the mass media and public of PURC's activities.</p> <p><b>Quality of Service Meetings</b> Meetings were held with the Senior Management of the Utility Companies for an update of progress made towards attaining the Quality of Service Benchmarks specified in the May 2001 tariffs, and to specify steps being taken by utilities to address quality of service issues.</p>

## **FOREWORD**

The Public Utilities Regulatory Commission has the pleasure to present to the Parliament of the Republic of Ghana, its Annual Report for the year 2001.

The fourth year of the Commission turned out to be an eventful one. Notwithstanding the perennial funding difficulties, the Commission made a push for projects and activities, which established our determination to pursue the Commission's regulatory agenda. We took steps to operationalize the regional programme to make the Commission more accessible to consumers and the general public, with the formal opening of the Kumasi Office. This was followed immediately by plans to establish a presence in other regions. It is expected that during the next year, plans towards establishing offices in the Northern and Western Regions will be pursued vigorously.

The Commission also put structures in place to demonstrate its resolve to fulfill the statutory requirement of ensuring that consumer interests are protected at all times.

Firstly, the May 2001 tariff increases were accompanied by stringent but realistic quality improvement benchmarks as a condition for subsequent increases. Additionally, the Commission set up task forces to collaborate with Consumer and Residents Associations for monitoring service quality. Also, an LI for Consumer Service Committees - a concept aimed at involving volunteer consumers to act as watchdogs nationwide to assist and advise PURC - was submitted to the Attorney General's department for further consideration.

The public interest, awareness and the publicity that these measures and events generated improved, in no small measure, the public's awareness of PURC and its activities.

It should be noted that whilst we have made progress in positively projecting our public image, one major challenge that confronted us particularly during the review year is the apparent misconception about the role of PURC. In the wake of the hot debate about the inefficiencies of the utilities and the media spotlight on managerial lapses among other things, some impression has been created that PURC - as a regulator- has the primary responsibility for tackling these lapses.

The Commission has taken pains to explain at every opportunity, the responsibilities of other major stakeholders vis-à-vis those of PURC. At the opening of PURC's Regional Office in Kumasi on October 31 2001, the Chairman of the Commission, Nana (Dr) S.K.B. Asante, said the following in his speech:

“...Various stakeholders have a role to play if the utilities are to operate efficiently. However, PURC has all along maintained that the *operational* responsibility for achieving good quality of service rests with the boards and management of the utility companies. It is to be noted that boards of these state-owned monopolies are appointed by the Government.

The key role for the PURC is to set the broad parameters or framework for the operators of the utilities, but it is not legally competent to hire or fire, or discipline executives or to suspend the operations of the utilities. The most PURC can do is to deny an application for increased tariffs to an incompetent company, or impose sanctions against a service provider pursuant to a successful complaint”.

It should be pointed out that the Commission's power to deny applications for increased tariffs is exercised against the historical background of tariffs having been kept below cost-recovery levels. Indeed PURC has also pointed out that as the shareholder, Government may have to intervene from time to time to inject capital into the utility companies, especially in view of the past under-funding since some of the deficiencies in utility service are traceable to the use of obsolete equipment that must be replaced.

Apart from the need for investment however, the Commission expects the Boards of these companies to provide the necessary guidance to ensure operational efficacy with respect to the improvement in billing and collection of revenue, modernization of management techniques, re-examination and re-vamping of corporate image particularly with regards to staff attitude and poor response to faults and complaints. It is the hope of PURC that with more public education and enhanced awareness, all stakeholders will begin to appreciate their respective responsibilities and also understand the distinct role of the regulatory institution.

Undeniably, the better-known responsibility of the PURC currently is tariff setting, and one of the major tasks that engaged the attention of the Commission for a substantial part of the year was the finalization of the Transitional Plan for ensuring the improvement in the quality of service through a gradual adjustment of electricity tariffs.

It is refreshing to note that the key elements/components of the Transitional Plan were developed and finalized in consultation with major stakeholders comprising the utilities and representatives of major consumers, including AGI and the Ghana Chamber of Mines. The plan was out-dooed at a workshop in May 2001, which brought together not only participants from the Government, Utilities, and International agencies e.g. World Bank, but also a strong representation from consumers – Consumer and Neighbourhood Associations, Trade Associations, as well as industrial consumers.

In the months following this up to the year-end, the Commission embarked on a nationwide “road show” to sensitize the general public on the objectives and the expected outcomes of the Transitional Plan.

The Commission believes that the workshops held in Kumasi, Tamale, Takoradi and Ho, were successful in obtaining broad agreement from the general public that rather than increasing tariffs in one move to economic levels, all stakeholder concerns will be more adequately addressed by implementing a gradual process which allows for proper planning and for monitoring of services alongside tariff increases.



There is no doubt that more challenges lie ahead of the Commission in the next few years as we endeavour to push through policies aimed at stabilizing the regulatory environment. The Commission is bracing itself to face these challenges and hopes that its capacity will be strengthened through the provision of adequate funding secured via a levy or regulatory charge on the utilities.

## **1.0 CAPACITY BUILDING**

**RECRUITMENT.** In year 2001, the Commission moved closer to achieving the required complement of staff. A new Director of the Consumer Services Bureau, and a Director for the newly established Water Inspectorate Division were recruited during the year. These additions bring the number of professional/technical staff to 17.

**TRAINING.** Utility regulation is still a fairly new concept in the country and indeed in Africa. Therefore, although the Secretariat consists of highly qualified professionals in Finance, Economics, Engineering, Law and Public Relations, there is the need to train staff in the specialised area of utility regulation. The Commission therefore continued its training programme so as to enhance their skills and ability to balance the various challenges associated with the Commission's work. During the year, Commissioners and staff benefited from a number of workshops and training programmes organized by highly reputable institutions.

A number of technical and legal staff attended a two-week program on "International Training Program on Utility Regulation and Strategy" in Florida, USA in January and June 2001. The objective of this World Bank sponsored programme was to equip the participants with the basic economic, technical, and policy development skills needed for establishing and managing a credible and sustainable regulatory framework for the public infrastructure sectors.

The Adam Smith Institute, consultants sponsored by the DFID to provide technical support for capacity building of PURC in the water sector, organized a Workshop for Africa and the Middle East on Private Participation in Utilities & Infrastructure, in Cairo, Egypt from June 10 - 13, 2001. A delegation from the Commission including Commissioners and members of the Secretariat attended this workshop.

PURC staff also benefited from training programmes at the Institute for Public-Private Partnership (IP3) in Washington, DC, in September and November respectively, and at the Institute of Public Utilities, Michigan State University in August. In summary, these courses provided the staff with insight into the fundamentals of regulation, technical knowledge on rate-setting and regulatory tools used in other parts of the world.

All staff members who attend training programmes submit reports of topics covered and lessons learnt. These reports are placed in the library of the Secretariat for the use of all staff, to maximize the benefits of these programmes.

## **2.0 BUDGETARY CONSTRAINTS**

The Commission's funding difficulties have not been resolved. As in previous years, this has been characterized by what has become an annual ritual of arbitrary imposition of a budgetary ceiling bearing no relation to the Commission's requirements for effective operation. For the year 2001, the Commission's submitted proposed budget of ¢ 8. 0 billion was reduced to ¢ 2, 057,327,346 following the imposition of the ceiling.

The effect of this is to deny the Commission the opportunity to carry out projects and activities which are considered critical if the PURC is to fulfil its statutory and regulatory responsibilities.

The Commission has not given up in its quest to secure its own funding through the imposition of a levy or regulatory charge on the utilities. This would relieve Government of the burden on the central budget, and provide more flexibility for PURC in the fulfilment of its mandate.

The Commission continues to be hopeful that in view of the positive responses received from some Government officials, formal approval will be given to enable the Commission to obtain more assured funding for its regulatory work.

### 3.0 REVIEW OF ENERGY SECTOR ACTIVITIES

This review of the activities in the energy sector for the year ended December 31, 2001 highlights the main technical and financial performance indicators of the Volta River Authority, the Northern Electricity Department (NED) and the Electricity Company of Ghana Limited as monitored by the PURC for the period.

#### 3.1 VOLTA RIVER AUTHORITY (VRA)

##### 3.1.1 VRA TECHNICAL ANALYSIS

During the year under review, the Commission monitored the actual supply mix of VRA's generation sources against projections since these values formed not only the basis of the Commission's tariff computation, but also had implications for end-user tariffs, details of which are shown in Table 3.1 below.

Table 3.1

ACTUAL AND FORECAST ENERGY GENERATION BY SOURCE FOR YEAR 2001

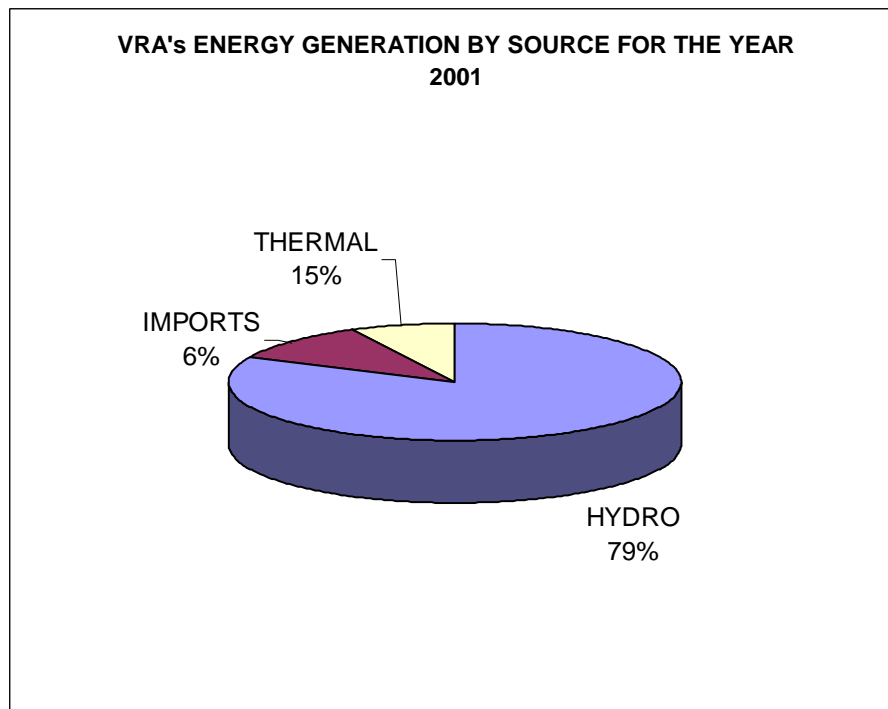
SOURCE	ACTUAL GWh	%	FORECAST FOR 2001 (GWh)	%	VARIANCE ACTUAL- FORECAST (GWh)	% VARIANCE
HYDRO	6609	79	6,100	69	509	8
TAKORADI-1	740	9	2,093	24	-1,353	-65
TAKORADI-2 (VRA/CMS)	<u>510</u> 1250	<u>6</u> 15	<u>188</u> 2281	<u>2</u> 26	<u>322</u> -1031	-45
IMPORTS	462	6	469	5	-7	-1
TOTAL	8321	100	8,850	100	-529	-6

As shown in Table 3.1, realized production of hydro generation for the year 2001 was higher than the projected, **8%** while generation from thermal sources comprising the units of Takoradi 1 (Simple and Combine Cycle) and Takoradi 2, was lower than forecast by **45%**. Supply from imports was lower than what was projected by **1%**. In total, energy generated from hydro and thermal sources plus imports for year 2001, fell short of forecast by **6%**, whilst increased generation of energy from hydro for the same

period is accounted for by completion of the Akosombo Retrofit in the second half of year 2000.

As shown in figure 3.1 below, actual energy generation by source as monitored by PURC during year 2001 shows that hydro accounted for **79%**, with thermal supply from Takoradi plants and imports accounted for **15%** and **6%** respectively.

**Figure 3.1**



During year 2001, total energy demand by all customer-types totalled 8029 GWh. Of this figure, domestic customers accounted for 5162 GWh representing 64%, while VALCO and CEB accounted for 2565 GWh and 302 GWh, respectively, representing 32% and 4% respectively. This is shown in Table 3.2 below.

Table 3.2

## TOTAL ENERGY DEMAND FOR THE YEAR 2001 BY CUSTOMER-TYPE

DESCRIPTION	DEMAND (GWh)	% COMPOSITION
DOMESTIC:		
ECG	4,175	52.0
Mines	569	7.0
Akosombo Textiles	24	0.2
Aluworks	14	0.1
Others	26	0.3
NED	355	4.4
<b>Subtotal</b>	<b>5162</b>	<b>64</b>
VALCO	2565	32
CEB	302	4
Subtotal	8029	100
Transmission Losses and Substation Use	292	
TOTAL	8321	

## Energy Supply-Demand Balance For Year 2001

A comparison of the energy supply and demand position for the period under review as shown in Table 3.1 and Table 3.2 above indicates that total energy supply from hydro, thermal and imports amounted to **8321 GWh**. With transmission losses of **259 GWh** and Generation and Transmission substation use of **33 GWh**, total energy demand by customers for the same period stood at **8029 GWh**.

As shown in Table 3.3 below, the available daily system peak capacity for year 2001 shows that hydro contributed **750MW (60%)**, while TAPCO and imports contributed **340MW (27%)** and **110MW (13%)** respectively.

Table 3.3

## VRA'S EFFECTIVE DAILY PEAK CAPACITY FOR THE YEAR 2001

SOURCE	CAPACITY (MW)	% COMPOSITION
HYDRO	750	60
THERMAL	340	27
IMPORTS	110	13
Subtotal	1200	100.0

Table 3.4 below shows daily peak demand situation during the period under review. With total average daily demand of **1,200 MW**, domestic customers accounted for **800MW**, VALCO **290MW** whilst CEB accounted for about **30MW**. The position implied that with effective daily peak capacity of **1120 MW** for the year 2001, VRA did not possess an adequate reserve margin for the period, which resulted in occasional load shedding.

**Table 3.4**

**AVERAGE DAILY CAPACITY DEMAND SITUATION DURING PEAK PERIOD FOR THE YEAR 2001**

<b>CUSTOMER-TYPE</b>	<b>MW</b>
DOMESTIC	800
VALCO	290
VRA SUPPLY TO CEB	30
Subtotal	1,120
Reserve Capacity	80

**3.1.2 VRA FINANCIAL PERFORMANCE**

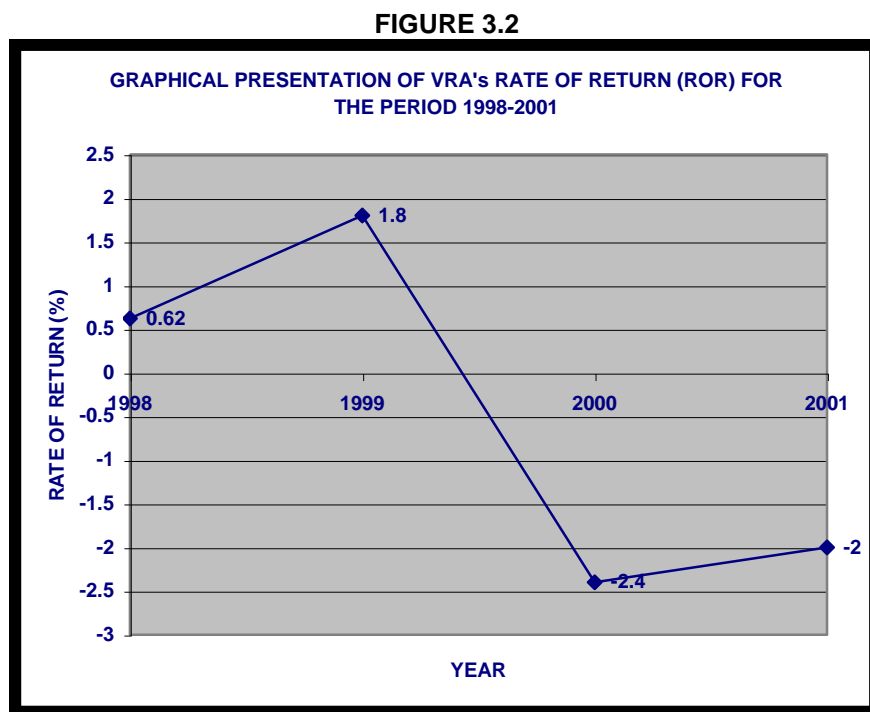
PURC's review of VRA's financial performance for the year 2001 focused on revenue from sale of power and its impact on operating and financial costs, as well as the rate of return on average revalued net fixed assets. During the period under review, revenue from sale of power by the Authority increased by **58.8%** to **1,393 Billion Cedis** over that of year 2001 which stood at **877 Billion Cedis**. The increase was due to tariff increases granted the Authority by the PURC as well as the increase in power sold for the same period, which amounted to **8029 GWh** compared to **7834 GWh** in year 2000, an increase of 2.5%.

**Highlights of VRA's Financial Performance in Year 2001**

<b>Total Revenue</b>	<b>1,477 bn cedis</b>
Operating Expenses	1,697 bn cedis
Operating Loss	220 bn cedis
<b>Net Loss (After Exchange Fluctuation, Interest &amp; Commitment Charges).</b>	<b>329 bn cedis</b>



In spite of the increase in sales revenue due to the tariff increase granted the Authority, realized revenues were not sufficient to cover operating and financial costs, which resulted in the Authority recording an operating loss of **220 Billion Cedis** compared to a **258 Billion Cedis** loss in year 2000. This represents a negative return of **2.0%** on average revalued net fixed assets in year 2001 as against negative **2.4%** in year 2000, **1.8%** in 1999 and **0.62%** in 1998 as shown in Figure 3.2.



**Table 3.5**

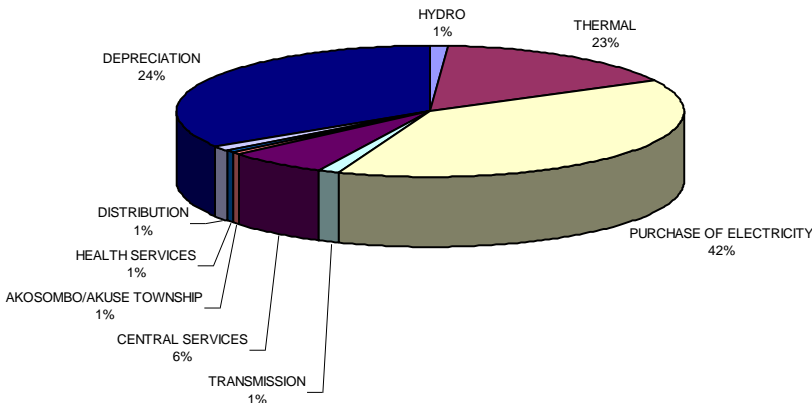
**PERCENTAGE COMPOSITION OF VRA'S OPERATING EXPENSES FOR THE YEAR 2001**

DESCRIPTION	OPERATING EXPENSE (BILLION CEDIS)	% COMPOSITION
System Generation: Hydro	19.25	1.1
Thermal (TAPCO)	<u>395.25</u>	<u>23.3</u>
	414.50	24.4
Imports of Electricity:		
Cote d'Ivoire (CIE)	340.206	20.1
TICO	<u>375.552</u>	<u>22.2</u>
	715.758	42.3
Transmission	22.54	1.3
Central Services	103.76	6.1
Akosombo & Akuse Township	9.20	0.5
Medical	9.48	0.6
Depreciation	400.67	23.7
<b>TOTAL</b>	<b>1,693.96</b>	<b>100%</b>

From Table 3.5 above, the total thermal cost incurred by VRA, including imports from CIE, constituted 66% of VRA’s total operating expenses, while the other two core operations, namely Hydro Generation and Transmission System Services accounted for only 2.4%.

**FIGURE 3.3**

PERCENTAGE COMPOSITION OF VRA's OPERATING EXPENSES FOR THE YEAR ENDED THE YEAR 2001



**Analysis Of VRA’s Cash Flow For The Period Ended December 31, 2001**

Our analysis of VRA’s Cash flow position revealed that during year 2001, net cash inflow from operating activities amounted to **338 Billion Cedis**, whilst returns on investments and servicing of finance recorded a net cash outflow of **40 Billion Cedis**. The Authority’s investing activities for the period also registered a net cash outflow of **238 Billion Cedis** and net cash inflow of **25. 5 Billion Cedis** from financing activities. Though VRA recorded a negative Rate of Return of 2.0%, it recorded a positive cash flow of **85 Billion Cedis**, at the end of 2001.

## Abridged Cash Flow Statement of VRA for Year 2001

Inflow from operating activities	<b>338 bn cedis</b>
Servicing of Finance	<b>( 40) bn cedis</b>
Investment	<b>(238) bn cedis</b>
Financing Activities	<b><u>25 bn cedis</u></b>
Net Cash Inflow	<b><u>85 bn cedis</u></b>

### 3.2 NORTHERN ELECTRICITY DEPARTMENT (NED)

#### 3.2.1 FINANCIAL PERFORMANCE

For the year ended December 31, 2001, the Northern Electricity Department (NED) achieved sales revenue of **74 Billion Cedis**, an increase of **79.4%** over year 2000 figure of **41 Billion Cedis**. Electricity purchases increased to **57 Billion Cedis** in 2001 from **31 Billion Cedis** in 2000, whilst total operating costs increased to **76 Billion Cedis** as against **45 Billion Cedis** in the preceding year.

#### Highlights of NED's Financial Performance in Year 2001

<b>Total Revenue</b>	<b>76 bn cedis</b>
Total Operating Expenses	161bn cedis
<b>Net Loss</b>	<b>85 bn cedis</b>

TABLE 3.6

#### ANALYSIS OF NED'S ELECTRICITY SALES FOR THE YEAR ENDED DECEMBER 31, 2001

DESCRIPTION	AMOUNT (BILLION CEDIS)	% COMPOSITION
Residential	37.13	50
Non-Residential	26.22	36
Low-Voltage	6.10	8
High-Voltage	4.68	6
<b>TOTAL</b>	<b>74.14</b>	<b>100</b>

Table 3.7 below shows the percentage composition of NED's operating expenses for the year ended December 31, 2001. As shown in the table, purchase of electricity constituted **24%** of total operating expenses whilst distribution accounted for **8%**, other operating expenses **32%** and depreciation **36%** respectively.

**TABLE 3.7**

**PERCENTAGE COMPOSITION OF NED'S OPERATING EXPENSES FOR THE YEAR 2001**

<b>DESCRIPTION</b>	<b>OPERATING EXPENSE (BILLION CEDIS)</b>	<b>% COMPOSITION</b>
Purchase of Electricity	57.41	24
Distribution	18.05	8
Other Operating Expenses (including salaries and related expenses)	75.46	32
Depreciation	86.04	36
<b>TOTAL</b>	<b>236.99</b>	<b>100%</b>

**Analysis Of NED's Cash Flow For The Period Ended December 31, 2001**

A review of the cash flow position of the Northern Electricity Department (NED) for year 2001 showed that the Department recorded net cash inflows of **17.5 Billion Cedis** and **1.5 Billion Cedis** from operating activities and returns on investments and servicing of finance respectively, whilst investing activities posted a net cash outflow of **10.9 Billion Cedis** for the year 2001. Though NED recorded a net loss of **85.0 Billion Cedis**, it however recorded a positive cash flow of **8.0 Billion Cedis** for year 2001.

### 3.3 ELECTRICITY COMPANY OF GHANA (ECG) LIMITED

#### 3.3.1 TECHNICAL ANALYSIS

Table 3.8

#### HIGHLIGHTS OF ECG'S OPERATIONAL PERFORMANCE FOR THE YEAR ENDED DECEMBER 31, 2001

ITEM	GWh
Total Energy Purchased (GWh)	4,175
Distribution System Losses for the Period (24.7%)	1,031
Distribution System Losses Based on PURC Benchmark of 21%	877
Distribution System Losses In Excess of PURC Benchmark of 21% (24.7%-21%=3.7%)	154

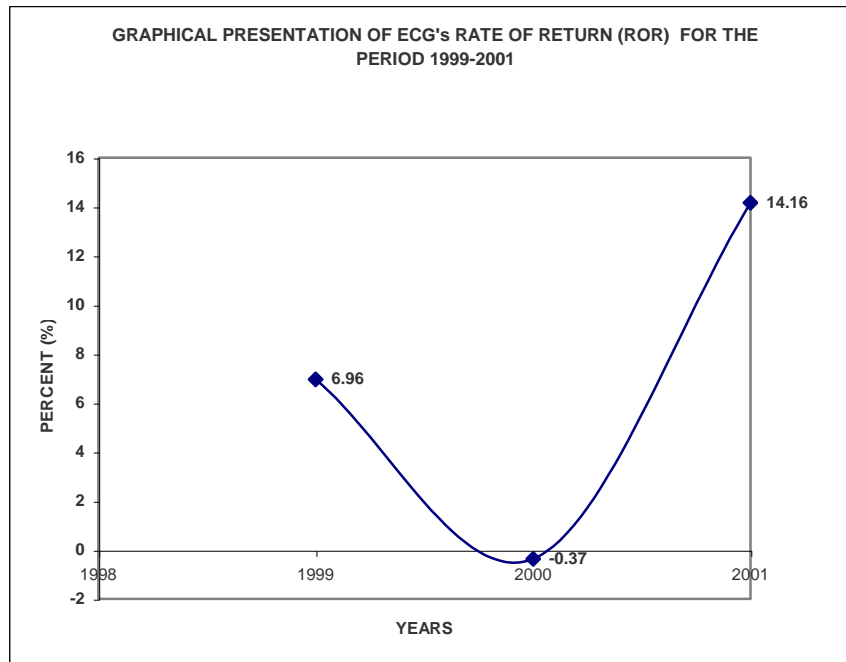
As shown in Table 3.8 above, energy purchased by ECG for the period under review amounted to **4,175 GWh**, while distribution system losses for the same period amounted to **24.7%** thus giving a total of **1,031 GWh** distribution system losses for year 2001. However, on the basis of PURC's distribution system losses benchmark of **21%**, a total of **877 GWh** should have been the regulated distribution system losses for year 2001. However, distribution system losses recorded by ECG in excess of PURC benchmark for the period amounted to **154GWh (1031 GWh-877GWh)**.

#### 3.3.2 FINANCIAL PERFORMANCE

In analysing the financial performance of ECG for the year 2001, PURC reviewed the company's Rate of Return (ROR) achieved, Electricity Sales Revenue, Power Purchased, Distribution System Losses and Operating Profit (or Loss) for the period.

During the year under review, ECG achieved a **ROR** of **14.2%** for year 2001, which showed a marked improvement in the performance of the company operations over that of year 2000 and 1999 which recorded values of **-0.4 % and 7.0%** respectively as shown in Figure 3.4 below.

**FIGURE 3.4**



Using PURC's Distribution System Loss Benchmark of 21%, ECG should have sold **3298 GWh** of energy, to yield sales revenue of **1,080.0 Billion Cedis**. However, the company sold only **3,080 GWh**, thus recording sales revenue of **1,009.0 Billion Cedis**. Thus the revenue shortfall of **71.0 Billion Cedis** was due to distribution system losses (see Table 3.9 below).

In comparison with year 2000 revenue of **552.0 Billion Cedis**, ECG recorded **83%** increase in revenue in year 2001, totalling **1,009.0 Billion Cedis**. The increase in revenue for the company is attributed mainly to the granting of a higher DSC by the PURC for year 2001.

### **COMMERCIAL ANALYSIS**

During year 2001, ECG achieved a Debtors Collection Ratio of **81%**. This ratio excludes collection from MDAs including Ghana Water Company Limited. However, with the addition of collection from MDAs and Ghana Water Company Limited, ECG achieved a

Collection Ratio of **86%** for year 2001 which is 9% below the PURC Collection Target of 95% set by the Commission for Distribution Utilities in year 2001.

**Table 3.9**

**ANALYSIS OF ECG SALES FOR THE YEAR ENDED DECEMBER 31, 2001**

	<b>GWh</b>	<b>Bn CEDIS</b>
Expected Revenue Based on PURC Benchmark	3,298	1,080
Actual Revenue recorded for the period	3,080	1,009
Lost Revenue from Excess Distribution System Losses (21%-24.7%=3.7%)	260	71

With an approved end-user-tariff of **196 cedis/KWh** granted by the Commission in 2001, and lower distribution system losses of **24.7%** for the year 2001 compared with **28%** in year 2000, ECG was able to generate enough revenue to fully cover its total operating expenses for the year under review, as shown below:

**Highlights of ECG's Financial Performance in Year 2001**

<b>Total Sales Revenue (Including Street Light Levy)</b>	<b>1,010.0 bn cedis</b>
<b>Total Operating Cost</b>	<b>857.0 bn cedis</b>
<b>Operating Profit</b>	<b>153.0 bn cedis</b>
<b>Net Operating Profit (After Exchange Fluctuation &amp; Loan Interest payment)</b>	<b>74.8 bn cedis</b>

**TABLE 3.10**

**PERCENTAGE COMPOSITION OF ECG's OPERATING COST FOR THE YEAR 2001**

<b>DESCRIPTION</b>	<b>OPERATING COST (BILLION CEDIS)</b>	<b>% COMPOSITION</b>
Purchased Power	673	79
Distribution, Operation and Maintenance	27	3
Other Operating Expenses (including staff cost and related expenses)	102	12
Depreciation	55	6
<b>TOTAL</b>	<b>857</b>	<b>100%</b>

As shown in Table 3.10 above, purchased power constituted the largest operating cost of ECG, accounting for **79%** of total cost for the year 2001, while distribution, operation and maintenance constituted **3%**, other operating expenses **12%** and depreciation **6%** respectively.

### **Analysis Of ECG's Cash Flow For The Period Ended December 31, 2001**

An analysis of ECG's Cash flow position revealed that during year 2001, net cash inflow from operating activities amounted to **184.2 Billion Cedis**. Investment activities yielded a net cash outflow of **(123.7) Billion Cedis**, whilst financing activities yielded a net cash inflow of **(8.4) Billion Cedis**, resulting in an increase in cash and cash equivalents of **52.1 Billion Cedis** as shown below.

#### **Abridged Cash Flow Statement of ECG for Year 2001**

##### **Operating Activities**

Net cash inflow from Operating activities	184.2
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##### **Investing Activities**

Net cash outflow from investing acting activities	(123.7)
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##### **Financing Activities**

Net cash inflow from financing activities	<u>(8.4)</u>
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<b>Increase in Cash and Cash Equivalents</b>	<b><u>52.1</u></b>
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### **3.4 PURC AND THE WEST AFRICA GAS PIPELINE PROJECT (WAGP)**

Negotiations are on-going to establish a harmonised legal and fiscal regime among the four West African countries participating in the WAGP project. The project seeks to regulate natural gas operations by contract, thus excluding some aspects of regulation under the PURC and Energy Commission Acts. However in view of the fact that the pricing methodology and other issues affecting operations under the project have significant implications for domestic electricity generation under the natural gas scenario, PURC has been co-opted as a member of the Project Implementation Committee (PIC), to ensure that agreements reached by the stakeholders are acceptable to the Commission.

The Commission continues to point out unequivocally to the Commercial Group and the Volta River Authority, the major purchaser of the gas, that **pricing issues** dealt with in the Concession Agreement must have internal approvals, including that of the PURC, before conclusion of negotiations.

## 4.0 QUALITY OF SERVICE PERFORMANCE ANALYSIS

### 4.1 GENERATION - VOLTA RIVER AUTHORITY

#### 4.1.1 PERFORMANCE ANALYSIS OF HYDRO GENERATION

Quality of Service performance analysis of VRA's hydro generation involved a review of generation availability and utilization of the company's two hydro generation stations, that is, the Akosombo Generating Station and Kpong Generating Station.

In terms of generation availability, Akosombo GS on average achieved a Generation Availability Factor (GAF) of 98.08% and a Utilization Factor of 7046.31 hours or 88.25% for the year ended December 31, 2001. Kpong Generating Station, on the other hand, achieved an average Generation Availability Factor of 98.94% and Utilisation Factor of 7221.76 hours or 82.23% for the same period. Details are shown in Table 6.1 below.

In comparison with PURC Performance Benchmarks, both Akosombo and Kpong Generating Stations exceeded the PURC Generation Availability Factor Benchmark of 95.0%. The two-generation stations achieved generation availability factors of 98.08% and 98.94% respectively, exceeding PURC target by 3.95%, and 3.94% as shown in Table 6.1 below.

**TABLE 4.1 TECHNICAL PERFORMANCE ANALYSIS OF AKOSOMBO AND KPONG HYDRO GENERATING STATIONS FOR THE YEAR 2001**

PERFORMANCE MEASURE	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	AVERAGE/ TOTAL	PURC BENCHMARK	VARIANCE +/(-)
GENERATION AVAILABILITY FACTOR							
AKOSOMBO	99.2	98.8	98.8	95.5	98.0	95	+3.0
KPONG	98.9	98.7	99.3	98.8	98.9	95	+4.0
UTILISATION FACTOR (NO. OF HOURS)							
AKOSOMBO	1704	1841.4	1796.9	1733.7	7046	N/A	N/A
KPONG	1818	1785.4	1876.3	1742.0	7222	N/A	N/A
UTILISATION FACTOR (%)							
AKOSMOBO	0.8	0.9	0.9	0.9	88	N/A	N/A
KPONG	0.8	0.8	0.6	0.8	82	N/A	N/A

#### 4.1.2 PERFORMANCE ANALYSIS OF THE THERMAL PLANT

As indicated in Table 4.2 below, the Aboadze Thermal Plant recorded a higher maintenance period than forecasted, resulting in a 13% drop in Utilization Factor (72%) compared with PURC Benchmark of 85% Utilization Factor for the period ended December 2001.

**TABLE 4.2 PERFORMANCE ANALYSIS OF ABOADZE THERMAL PLANT**

PERFORMANCE MEASURE	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	TOTAL	% UTILISATION	PURC BENCHMARK
UTILISATION FACTOR (HOURS)	1797	1751	1766	967	6281	72%	85%

#### 4.1.3 TRANSMISSION SYSTEMS PERFORMANCE ANALYSIS

Our analysis of Transmission Systems performance for the period ended December 2001, indicates that VRA achieved on average, a transmission system energy loss of 3.08% compared with the PURC target of 2.80%, a shortfall of 0.28%, which according to VRA was due to the poor end user power factors of customers.

VRA however, recorded a transmission system availability of 98.95% compared with PURC's Transmission System Availability Target of 97.0%, showing a favourable variance of 1.95% over PURC's target as shown in Table 4.3 below.

This improved performance, according to the company, was due to prudent planning and maintenance of the lines. A further reason for this achievement as noted by the company was that distribution feeder availability at all Bulk Supply Points during the period has been reasonably high.

**TABLE 4.3 TRANSMISSION SYSTEMS PERFORMANCE FOR THE YEAR ENDED DECEMBER 31, 2001**

PERFORMANCE MEASURE	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	AVERAGE	PURC BENCHMARKS	VARIANCE % +/-
Transmission System Energy Losses in (%)	3.9	3.7	1.9	2.9	3.1	2.8	-0.3
Transmission System Availability (%)	99.6	99.4	97.0	99.8	98.9	97.0	+1.9

## 4.2 DISTRIBUTION NETWORK

### 4.2.1 AVAILABILITY/DURATION OF SUPPLY

#### 4.2.1.1 ELECTRICITY COMPANY OF GHANA LIMITED

Analysis of availability of supply or duration of supply hours lost per connected customer during the period showed that Ashanti Region recorded the highest duration of outages of 1142.69 hours followed by the Western Region with 708.29 hours Central Region 654.14 hours, Eastern Region 398.32 hours Accra East 314.36 hours, Accra West 207.24 hours, Volta Region 161.90 and Tema 146.68 hours as shown in Table 4.4 below.

**TABLE 4.4 DURATION OF SUPPLY HOURS LOST PER CONNECTED SLT CUSTOMER FOR THE PERIOD ENDED DECEMBER 31, 2001**

REGION	DISTRIBUTION OUTAGES (HOURS)	DURATION OF OUTAGES BY VRA (HOURS)	OVERALL DURATION (HOURS)	PURC TARGET	VARIANCE +/-
	SLT	SLT			
ACCRA EAST	3.8	2.7	6.5	30	+ 23.5
ACCRAWEST	0.1	2.3	2.4	30	+ 27.6
TEMA	23.0	0.0	25.5	30	+ 4.5
EASTERN	4.8	0.1	4.9	30	+ 25.1
VOLTA	0.2	0.0	0.2	30	+ 29.8
WESTERN	3.9	0.6	4.6	30	+ 25.4
CENTRAL	7.4	0.1	12.0	30	+ 18.0
ASHANTI	33.5	0.6	34.1	30	-4.1
AVERAGE	9.6	0.8	11.3	30	+ 18.7

**TABLE 4.5 DURATION OF SUPPLY HOURS LOST PER CONNECTED CUSTOMER FOR THE PERIOD ENDED DECEMBER 31, 2001**

REGION	DISTRIBUTION OUTAGES (HOURS)	DURATION OF OUTAGES BY VRA (HOURS)	OVERALL DURATION (HOURS)	PURC TARGET	VARIANCE +/-
	NON-SLT	NON-SLT			
ACCRA EAST	213.9	94.1	308.0	100	- 208.0
ACCRA WEST	116.7	80.1	196.8	100	- 96.8
TEMA	119.9	20.6	140.5	100	- 40.5
EASTERN	160.0	233.4	393.4	100	- 293.4
VOLTA	17.3	144.5	161.7	100	- 61.7
WESTERN	87.4	616.3	703.7	100	- 603.7
CENTRAL	521.7	124.6	646.3	100	- 546.3
ASHANTI	703.5	410.9	1114.4	100	-1014.4
AVERAGE	242.6	215.5	458.1	100	-358.1

#### 4.2.1.2 NORTHERN ELECTRICITY DEPARTMENT

During our review of NED performance as shown in Table 4.6 below, we observed that the availability or duration of supply hours lost per connected customer in the NED operational zone for the year ended December 31, 2001, ranked the Northern Region

as worst (2738.771 hours), followed by Upper East (2538.96 hours), Brong-Ahafo (1524.55 hours) and Upper West (461.10 hours). However, overall duration for the year 2001 exceeded the PURC target of 130 supply hours lost per customer by 1685.845 hours.

**TABLE 4.6 AVAILABILITY /DURATION OF SUPPLY HOURS LOST PER CONNECTED CUSTOMER (SLT AND NON SLT) FOR THE PERIOD ENDED DECEMBER 31, 2001**

REGION	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	OVERALL DURATION (HOURS)	PURC TARGET	VARINACE +/-)
BRONG-AHAFO	210.6	379.9	584.0	350.3	1524.6	13	-1394.6
NORTHERN	912.4	744.7	611.6	470.1	2738.8	13	-2608.8
UPPER EAST	428.2	946.2	522.1	642.5	2538.9	13	-2409.0
UPPER WEST	130.2	162.5	131.5	36.9	461.1	13	-331.1
AVERAGE	420.4	558.3	462.3	374.9	1815.8	13	-1685.8

### 4.3 NETWORK SECURITY

#### 4.3.1 ELECTRICITY COMPANY OF GHANA LIMITED

During year 2001, network security (defined as the number of supply interruptions per 100Km of system length) showed that Ashanti Region recorded the highest number of outages of 581.36 per 100km of system length, followed by Volta Region with 530.74 outages, Accra East with 528.62 outages, Accra West with 499.91 outages, Central Region 269.43 with outages, Eastern Region with 246.96 outages, Tema 184.48 outages and Western Region 177.28 with outages respectively.

**TABLE 4.7 NUMBER OF SUPPLY INTERRUPTIONS PER 100KM OF SYSTEM LENGTH FOR THE YEAR ENDED DECEMBER 31, 2001**

REGION	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	TOTAL NO. OF OUTAGES PER 100KM OF SYSTEM LENGTH	PURC BENCHMARK	VARIANCE +/-)
ACCRA EAST	165.2	202.8	76.4	84.1	528.6	N/A	
ACCRA WEST	158.3	206.8	79.4	55.4	499.9	N/A	
TEMA	66.6	51.9	38.3	27.6	184.5	N/A	
EASTERN	74.5	79.4	56.7	36.3	247.0	N/A	
VOLTA	88.6	194.4	157.5	90.2	530.7	N/A	
WESTERN	68.2	40.1	39.9	29.2	177.3	N/A	
CENTRAL	47.8	69.7	52.5	99.3	269.4	N/A	
ASHANTI	174.3	217.7	117.2	72.1	581.4	N/A	
AVERAGE	105.6	132.9	77.3	61.8	377.3	N/A	

### 4.3.2 NORTHERN ELECTRICITY DEPARTMENT

Analysis of supply interruptions per 100km of system length within NED operational region for the period ending third quarter of year 2001, revealed that Northern Region recorded the highest number of supply interruptions of 27.35 outages followed by the Brong-Ahafo Region with a total of 16.66 outages, Upper West 2.955 outages and Upper East 0.542 with outages respectively as shown in Table 4.8 below.

**TABLE 4.8 NUMBER OF SUPPLY INTERRUPTIONS PER 100KM OF SYSTEM LENGTH FOR THE YEAR ENDED DECEMBER 31, 2001**

REGION	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	TOTAL NO. OF OUTAGES PER 100KM OF SYSTEM LENGTH	PURC BENCHMARK	VARIANCE +/-
BRONG-AHAFO	3.9	5.8	3.9	3.1	16.7	N/A	
NORTHERN	2.0	7.9	6.3	11.1	27.4	N/A	
UPPER EAST	0.1	0.2	0.1	0.1	0.5	N/A	
UPPER WEST	0.0	0.1	0.0	2.8	2.9	N/A	
AVERAGE	1.5	3.5	2.6	4.3	11.9	N/A	

### 4.4 DISTRIBUTION SYSTEM LOSSES

Shown in Tables 4.9 and 4.10 below are the Distribution System Losses for the Electricity Company of Ghana and the Northern Electricity Department for the year ended December 31, 2001. In comparison with PURC Distribution System Benchmarks, ECG's technical and Non- technical losses exceeded PURC's benchmark by 0.65% and 3.08% respectively, whilst total the system loss exceeded PURC target by 3.73%.

NED on the other hand, achieved Distribution System Loss of 26.61%, 0.39% positive variance of 27.0% over PURC benchmark for the period under review.

**TABLE 4.9 ECG'S DISTRIBUTION SYSTEM LOSSES FOR THE YEAR ENDED DECEMBER 31, 2001**

SYSTEM LOSSES	YEAR2 2000	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	AVERAGE 2001	PURC BENCHMARK 2001	VARIANCE +/-
TECHNICAL LOSS (%)		10.6	10.6	10.6	10.8	10.7	10.0	- 0.7
NON-TECHNICAL LOSS (%)		14.0	13.2	13.7	15.4	14.1	11.0	- 3.0
TOTAL SYSTEM LOSS (%)	26.5	24.6	23.8	24.3	26.2	24.7	21.0	- 3.7

**TABLE 4.10 NED'S DISTRIBUTION SYSTEM LOSSES FOR THE FOR YEAR ENDED DECEMBER 31, 2001**

REGION	YEAR 2000	1 <sup>ST</sup> Q	2 <sup>ND</sup> Q	3 <sup>RD</sup> Q	4 <sup>TH</sup> Q	AVERAGE 2001	PURC BENCHMARK 2001	VARIANCE +/-
BRONG-AHAFO		20.9	21.5	29.7	27.5	24.9	27.0	+ 2.0
NORTHERN		35.2	37.6	37.6	42.1	38.1	27.0	- 11.1
UPPER EAST		18.7	19.5	18.6	23.0	19.9	27.0	+ 7.1
UPPER WEST		19.9	23.9	24.7	26.0	23.6	27.0	+ 3.4
AVERAGE	29.0	23.7	25.6	27.7	29.7	26.6	27.0	+ 1.5

#### 4.5 BILLING REPORTS

To minimize the billing errors submitted to customers as required by the Commission, ECG continued with its policy of comprehensively identifying un-metered premises, faulty meters and also issuing out pre-payment meters into the system during year 2001.

**TABLE 4.11 NUMBER OF PREMISES AND METERS INSTALLED DURING YEAR 2001**

DETAIL	NO. OF PREMISES/ NO OF METERS INSTALLED
Unmetered Premises Identified	44,916
Faulty Premises Identified	50,662
ACTION TAKEN:	
Meters Issued: (3-Phase) (1-Phase)	3,108 16,039
Pre-Payment: (3-Phase) Issued For Installation (1-Phase)	1,397 6,575
Meters With Zero Consumption for At Least 3 Months	42,664

#### 4.6 ECG CUSTOMER POPULATION AND COMPLAINTS

ECG customer population as at the end of year 2001, is made up of the following customer classes as shown in Table 5.2 below.

**TABLE 4.12 CUSTOMER POPULATION AS AT END OF DECEMBER 31, 2001**

CUSTOMER TYPE	POPULATION	% COMPOSITION
SLT	556	0.1
Residential & Non-Residential (Non-SLT)	721,373	97.3
Prepayment	19,505	2.6
Total	741,434	100.0

## **5.0 STRATEGIES ADOPTED BY UTILITIES TO IMPROVE QUALITY OF SERVICE**

During year 2001, the Electricity Company of Ghana Limited and the Northern Electricity Department of the Volta River Authority employed a variety of strategies with a view to improving upon quality of service delivery to consumers. Among the strategies employed are the following:

### **5.1 ELECTRICITY COMPANY OF GHANA LIMITED**

1. Staff training in network operations and maintenance
2. Staff training in customer service
3. Customer education
4. LV system improvement programmes
5. 33 kV sub-transmission system reinforcements
6. Commissioning of 2<sup>nd</sup> Bulk Supply Point (Mallam) for Accra.

### **5.2 NORTHERN ELECTRICITY DEPARTMENT**

1. Carry out checks on all bulk supply meters for acceptable accuracy in an effort to assess actual losses and reduce arbitrariness in the allocation of distribution losses
2. Eliminate flat rate metering of customers in order to reduce non-technical losses
3. Check accuracy of residential billing meters, on a programmed basis
4. Publicize customer service centers and provide additional hot-line telephone numbers to receive complaints for rapid response
5. Upgrade overloaded distribution lines and transformers



## **6.0 REVIEW OF WATER SECTOR ACTIVITIES**

### **6.1 TECHNICAL ANALYSIS**

#### **6.1.1 Water Production**

During year 2001, GWCL recorded annual water production of **188 million cubic metres**, compared to a target of **197 million cubic metres**, representing a shortfall of **4.5%**. However, water production during the period under review showed an increase of **1.8%** over the previous year's figure of **185 million cubic metres**.

#### **6.1.2 Non-Revenue Water (NRW)**

The non-revenue water deteriorated marginally from **51%** in year 2001 to **52%** during the year under review. The regulated target was **47%**. GWCL's inability to meet the PURC's target for NRW was attributed to the commissioning of the Adam Clark Treatment Plant at Weija, in October 2001. This resulted in the utilization of pipelines that hitherto were not in use. The increased pressure of the water in these pipelines caused frequent pipe bursts therefore recording a high level of non-revenue water.

From the above explanation, it appears that weak joints along transmission and distribution pipes are constraints on the quantity of water that can be supplied by GWCL. Therefore, any attempt at increasing water delivery will result in corresponding increase in non-revenue water, unless the required investments are made to rehabilitate and renew the old pipelines. The Upper West Region recorded the lowest non-revenue water of 20.6% during the year under review. Eastern, Western and Ashanti Regions recorded 23%, 42%, and 44.6% respectively. Volta, Northern, Upper East, Brong-Ahafo, and Central Regions recorded NRW of 49.8%, 54.3%, 49.1%, 47.8% and 64.9% respectively. These figures are higher than the target of 47% and therefore are unacceptable.

## 6.2 COMMERCIAL ANALYSIS

### 6.2.1 Billing and Collection

**Table 6.1 Billing and Collection in 2001**

CUSTOMER	BILLING (₹B)	COLLECTION (₹B)	COLLECTION RATIO (%)	
			YEAR 2001	YEAR 2000
Private	179.8	144.7	80.5	92
Government	35.3	21.7	61.6	80
<b>Total</b>	<b>215.1</b>	<b>166.4</b>	<b>77.4</b>	<b>AVERAGE: 86</b>

The collection ratio deteriorated from **86%** in 2000 to **77.38%** in 2001. The fall in overall collection ratio was due to a dip in collections from the Private Consumers (comprising Domestic, Commercial and Industry) and the continued low collection ratio from the MDA's (Government Institutions).

A breakdown of the collections into the four quarters of last year is shown in Table 6.2 below.

**Table 6.2 QUARTERLY COLLECTIONS IN 2001**

CUSTOMER	UNIT	QUARTERS			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
Private	%	86	63	80	87
Government	%	116	39	19	91
<b>Total</b>	<b>%</b>	<b>101</b>	<b>70</b>	<b>70</b>	<b>87</b>

Discussions with GWCL indicate that the 101% collection during the first quarter was as a result of accumulation of arrears from previous quarter, which were added to collections in the first current quarter. This has soared collections and does not give a true picture of actual collections in each quarter. PURC first highlighted this problem during the half-year review of GWCL last year, and recommendations to address this and other issues were made.

## 6.2.2 Metering Ratio

During year 2001, a total of 2059 meters were installed, giving a metering ratio **53%** the period year under review. This ratio has remained constant since 2000, implying that the growth in consumer strength has remained at par with meter installations. This trend has made it impossible for GWCL to meet its target of **60%**.

## 6.3 FINANCIAL ANALYSIS

The Commission's financial analysis on GWCL was based on the draft financial statements included in the fourth quarter report of GWCL. The Company's financial statements showed a considerable improvement in the financial performance during the year under review. It recorded a net loss of **75.13 Billion Cedis** in 2001 compared to a net loss of **151.24 Billion Cedis** in 2000. The return on net fixed assets improved from **-2.8%** in 2000 to **-0.4%** in 2001. The improvement could be attributed to growth in Net Profit/Loss, which resulted from the upward adjustment in tariff and exchange gain recorded by GWCL.

### Highlights of GWCL's Financial Performance in 2001

<b>Total Income</b>	<b>225.6 bn cedis</b>
Total Operating Expenses	195.3 bn cedis
Surplus	30.2 bn cedis
Non-operating Cost	105.4 bn cedis
<b>Net Profit (Loss)</b>	<b>75.1 bn cedis</b>

## Total Production Cost at Headworks

The total cost of production recorded by GWCL was ₱300.7billion. The composition of cost is shown below in Table 6.3

**Table 6.3** Composition of Headworks Cost of Production

ITEM	KEY COMPONENTS OF TOTAL COST OF PRODUCTION		
	₱MILLION	PERCENTAGE	
Financial Charges	30.4	10	
Material Cost	7.8	3	
Electricity	61.7	20	
Personnel	52.2	17	
Water Treatment Chemical	24.3	8	
Operation & Maintenance	86.6	29	
Fuel & Lubricant	5.8	2	
Overheads	31.9	11	
<b>Total Operating and non-Operating Cost</b>	<b>300.7</b>	<b>100</b>	

## **7.0 BUREAU OF WATER INSPECTORATE**

### **7.1 WATER QUALITY STANDARDS**

Water delivered by GWCL is subjected to drinking water standards established by the Ghana Standards Board (GS 175 PTS 1, 2, 4 and 5). Over the years, GWCL have sampled water from fixed points and randomly selected customers' taps. Regular samples were also taken from the treatment works and service reservoirs.

During 2001 the Bureau initiated discussions with GWCL on the reporting format to be used for drinking water quality analysis and the timing of such reports. Timely receipts of reports would enable the Inspectorate to respond adequately to any consumer problems with respect to water quality because of the health implications. Meanwhile Quarterly reports were received from the GWCL.

### **7.2 VISITS TO WATER SYSTEMS**

The objective of the visits was to familiarize the Inspectorate with the water treatment and quality control monitoring and reporting processes. This is part of Water Inspectorate's regulatory role in the monitoring standard of performance of the Ghana Water Company.

During the year under review, personnel of the Inspectorate visited, Ho Water Works, the Kpeve Water Treatment Plant, the Central Control Laboratory in Accra and Cape Coast.

### **7.3 DRINKING WATER QUALITY**

Performance of key treatment plants has been satisfactory with respect to bacteriological quality. Table 7.1 shows performance of key plants. Compliance for residual chlorine has been below average for Volta and Brimsu due to a reported frequent breakdown of plant and equipment.

Table 7.1

## Residual Chlorine &amp; Bacteriological Levels of Achievement of Treatment Plant Samples

<b>Major Plants</b>									
INDICATOR	WEIJA	KPONG	VEA	B'KESE	BRIMSU	B/A	DENSU	KPEVE	DALUN
Residual Chlorine (% compliant)	85.1	77.6	80	62.4	70	100	100	70	95
Bacteriological (% compliant)	100	100	97	100	100	100	100	100	100

**Water Distribution Systems:**

The level of performance of the regional distribution systems is shown in Table 7.2

Table 7.2

## Level of Performance of Regional Distribution Systems

INDICATOR	ATMA	ASH	W/R	B/A	C/R	U/E	E/R	V/R	N/R
% of Target Achieved (sampling)	58.5	89	63	98	48	82	46	75	77
Residual Chlorine (% Compliant)	67	90	50	99.5	100	66	98	100	60
Bacteriological Quality (% Compliant)	100	96	98	100	100	95	97	98	96
pH (% Compliant)	98	72.5	88	100	80	71	94	100	96

#### **7.4 INDEPENDENT LABORATORIES NETWORK**

To build independence and confidence in the testing procedures to be adopted, there is the need to provide an accreditation system for water testing laboratories of the GWCL and other private laboratories. A meeting between the GWCL, the Ghana Standards Board, and the Water Sector Restructuring Secretariat was held under the auspices of the PURC to discuss modalities involved in such an exercise. A proposal from the Ghana Standards Board was received and has been forwarded to GWCL for comments and further action.

#### **7.5 PUBLIC AWARENESS**

The Bureau is concerned with the low level of public awareness on drinking water quality issues. An article titled “ Assuring Safe Drinking Water” was written and published in the Ghanaian Times. This was to highlight the need for all stakeholders to cooperate in the delivery of water and health to the public. With the assistance of the Consumer Services Bureau, outreach programmes were held to address this low level of awareness.

#### **7.6 CONSUMER COMPLAINTS**

Occasional consumer complaints with respect to quality were made. Presence of particles and odour were found to be most prominent. These were very localised and were readily resolved by adequate flushing.

Two major water quality complaints to PURC which were promptly resolved by the GWCL were as follows:

ITEM	LOCATION	SOURCE	NATURE OF COMPLAINT	ACTION TAKEN	REMARKS
1	DOME CFC Bungalows	Telephone to PURC	Salty water from portions of distribution line	Access to existing 4" line could not be made. New bypass made. Affected residents supplied by tanker	Satisfactory. Other new concerns of the area to be addressed
2	Dansoman Awoshie, Anyaa, Abeka Lapaz	Joy FM phone in programme Accra Mail, 20/9/01	Coloured water with particles	Affected area isolated and flushed. GWCL was on the Radio and also made a publication on the issue	Satisfactory. GWCL to continue with public education



## **8.0 PURC AND THE PRIVATE SECTOR PARTICIPATION (PSP) PROCESS**

PURC has indicated that it welcomes a policy initiative that will ensure improvement in quality of supply and greater accessibility of a larger proportion of the population to utility services. It is the Commission's understanding and expectation that PSP will, inter alia, bring about the employment of trans-national companies with requisite expertise and resources to participate in the rehabilitation and expansion of our urban water system.

Although the launching of PSP and the selection of foreign operators are the prerogatives of Government, PURC has taken steps to clarify its statutory responsibilities relating to the water sector to ensure that stipulations within the law, policy, regulations and guidelines formulated by the Commission are taken on board and complied with.

### **8.1 QUALITY OF SERVICE UNDER PSP**

PURC will continue to set and monitor standards of performance for provision of service. To that end, a Water Quality Inspectorate has been created within the Secretariat of the Commission. This division will be resourced to work in collaboration with other bureaux to achieve tangible and desirable results.

The quality of service monitoring being undertaken by the Bureau of Consumer Services will continue and even be intensified with the active participation of our regional centres.

In addition, the Commission will set up, as statutorily required, Consumer Service Committees. These will be set up in various districts around the country and will be tasked with a watchdog role in respect of utility service provision including private operators under the PSP.

## **8.2 TARIFF REGULATION UNDER PSP**

The Commission by law will remain the sole tariff setting body. Consequently, we have prepared tariff-setting guidelines for water, which will transparently address the investor interest. These guidelines have been discussed extensively with the utilities, individuals and other stakeholders. In considering proposals for rate adjustment, PURC will scrupulously vet the level of investment and delivery of regulatory targets since these will be taken into account in arriving at the tariff.

The rates that will be approved will enable the utility companies to recover only reasonable investment levels and efficient operational costs. The tariff level will be linked to quality of service to ensure that consumers get value for money and supply satisfaction.

## **9.0 CONSUMER SERVICES**

The Bureau of Consumer Services (BCS) within the PURC Secretariat has the responsibility of ensuring (in collaboration with other bureaux) that the regulated utilities deliver good quality of service to meet consumer expectations.

The bureau has been engaged in the following: -

- providing responsive, efficient and accountable management of consumer complaints;
- Protecting rights of consumers with regard to quality of service;
- Advising consumers of their rights and responsibilities, and conducting public education to help customers make informed choices;
- Investigating consumer complaints and resolving service related disputes.

The following specific activities were undertaken: -

### **9.1 CONSUMER COMPLAINTS**

Monitoring of consumer complaints is one of the feedback mechanisms that enable the Commission to respond to consumer demands and to correct lapses in service delivery. In this regard, the Commission has established, and continues to improve on, mutually acceptable channels of communication with consumers to facilitate the process of making, receiving and responding to consumer complaints and concerns.

During the period under review, 170 complaints were received and satisfactorily resolved. These complaints include among other things the following:

- Wrongful disconnections
- Wrong billing
- Imposition of prepayment meters

The most protracted complaint was brought by Horex (Eastwood) Timber Products Limited against the Electricity Company of Ghana Limited (ECG). This case, referred to

the Commission by the High Court, involved wrong billing and wrongful disconnection. Unfortunately, the Commission was unable to secure an amicable resolution due to the unco-operative attitude of one of the parties.

The BCS, with the assistance of the Bureau of Legal Services (BLS), adopts the following steps in resolving complaints lodged with the Commission.

1. Acknowledgement of receipt of complaint.
2. Investigation by the BCS to examine the merit of the complaint.
3. The Utility asked to investigate and submit report.
4. Receipt and examination of the Utility's report.
5. Further inquiry and mediation.
6. Recommendations based on findings to the Commission.
7. Parties informed about the decision of the Commission.
8. Monitoring the enforcement of the Commission's decision.

The BCS also assisted in resolving some community complaints which were not directly lodged with the Commission. These included an acute water shortage in parts of the Central and Ashanti Regions especially in Cape Coast, Mankessim and surrounding areas; and parts of Kumasi East.

In all cases, the Ghana Water Company Limited (GWCL) was reminded that any circumstances that result in interruption of water supply to their customers must be explained to them to avoid negative publicity. Moreover, the PURC ought to be apprised of interruption in supply and the steps taken to restore supply. The Commission also demanded that prior notification and explanation of any prolonged interruption in water supply in future must be given to the affected consumers. It must be stated that PURC has ensured the inclusion of these minimum requirements in the utilities' customer charters. The breakdown of the complaints is tabulated as follows:

## COMPLAINTS CLASSIFICATION FOR THE YEAR ENDED DECEMBER 31, 2001

Quarter	Company	Complaint	Quality Of Service/ Load Shedding	Billing/ Bill Delivery	Disconnection / Reconnection	Illegal Connection	Prepaid Metering	New Service/ Capital Contribution	Payment	Metering	Malfeasance/ Extortion	Response Complaints, Faults & Enquiries	To
1 <sup>st</sup>	ECG	18	4	6	4	0	0	0	2	1	0	1	
	VRA	4	2	1	1	0	0	0	0	0	0	0	
	GWCL	6	1	1	0	0	0	1	0	2	0	1	
2 <sup>nd</sup>	ECG	32	6	11	7	3	1	2	0	0	0	2	
	VRA	4	1	2	1	0	0	0	0	0	0	0	
	GWCL	12	3	6	2	0	0	1	0	0	0	0	
3 <sup>rd</sup>	ECG	40	6	17	3	2	1	2	3	2	2	2	
	VRA	4	0	2	0	0	0	1	0	0	0	1	
	GWCL	10	2	4	0	0	0	2	0	0	1	1	
4 <sup>th</sup>	ECG	28	2	15	0	1	1	2	3	2	2	0	
	VRA	1	1	0	0	0	0	0	0	0	0	0	
	GWCL	11	3	5	3	0	0	0	0	0	0	0	
Total		170	31	70	21	6	3	11	8	7	5	8	

From the above, 118 (69.4%) complaints were made against the ECG while 39 complaints were lodged against the GWCL.

Only 13 (7.6%) complaints were, however, made against the VRA-NED. The explanation is that PURC's Public Awareness and Educational programmes have been concentrated in the Southern part with little in the Middle belt of Ghana due to inadequate funding. No serious Public Awareness programmes had been done in the Northern Regions of Ghana. Working visits to the VRA-NED operating areas revealed that the quality of service was not better than that of the ECG.

Billing problems continued to be the major causes of dissatisfaction and therefore complaints among consumers of utilities. However, unlike the previous years, it accounted for as high as 41.2% followed by quality of service and load shedding making 18.2%. A summary of the complaints is presented below:

COMPANY	NO. OF COMPLAINTS	QUALITY OF SERVICE/ LOAD SHEDDING	BILLING
ECG	118	18	49
GWCL	39	9	16
VRA	13	4	5
Total	170	31	70

## 9.2 DECENTRALIZATION OF OPERATIONS

### 9.2.1 REGIONAL OFFICES

The Commission gave an indication in the 1999 Annual Report of its intention to open regional offices in each of the 10 regional capitals and the industrial hub of Tema. The establishment of the regional offices forms part of PURC's policy of decentralization of operations. These offices will ensure that consumers of the regulated utility services, that is, water and electricity, can avail themselves of the Commission's services. The regional offices will serve as focal points where consumers' concerns in the regions will be addressed. Consumer complaints will be submitted to these offices which will also act as liaison for the head office.

In October 2001, after operating informally for some time, the first of the regional offices was formally opened in Kumasi to serve the Ashanti and Brong Ahafo Regions.

This model will be operated on a pilot basis and replicated in the other regions depending, inter alia, on availability of funds.

### **9.2.2 CONSUMER SERVICE COMMITTEES**

In addition to the regional offices, the Commission is carrying the decentralization process further to the districts through the Consumer Service Committees.

By virtue of Section 31 of Act 538 the Commission may establish such Committees in such areas of the country as deemed necessary and also prescribe their membership and functions.

In furtherance of this mandate, the Commission has decided to establish a committee in several districts albeit through a phased approach. The committees will be tasked inter alia, to advise on policy issues and act as “watch dogs” with regard to utilities operation and consumer education.

The related legislative instrument has been prepared in conjunction with the Legal Drafting Section of the Attorney General’s Department and will be laid before Parliament for processes necessary to adopt it into law.

### **9.3 MONITORING OF PREPAYMENT METERING**

Over the years, the VRA-NED, ECG and GWCL have used the conventional credit metering and billing system in their revenue collection efforts. Measures such as termination of service of defaulters, use of bonded cashiers, private debt collection companies, threat of prosecution and raffles did not result in a significant reduction in the debtors’ position of the utility service providers. Rather, the debtors’ position of these companies worsened. Prepayment metering was seen as a better option for improving the cash flow position and reducing the level of debts owed to these companies by customers.

Between 1994 and 1995 ECG ran the prepayment programme on a pilot basis in Accra, Tema and Kumasi for residential and non-residential customers with small loads. Areas where the meters were installed were Adenta SSNIT flats and surrounding areas, Sakumono Estates, some communities in Tema, Asuoyeboah SSNIT flats, Kwadaso, Patase and Danyame areas of Kumasi.

Discussions held with the officials of ECG have confirmed prepayment metering as a cost-effective solution for:

- ∞ Improving revenue collection
- ∞ Creating awareness on the need for customers to conserve energy and reduce wastage
- ∞ Reducing costs associated with meter reading, billing errors, bill production and delivery of bills.

Interactions between the officials of the Bureau of Consumer Services and prepaid customers revealed that a large number of prepaid customers did not want to change to alternative payment methods because of the help prepayment meters provided with budgeting. Avoidance of billing errors, delay in bill delivery and crediting payments were some of the reasons cited for patronizing prepayments meters. Most customers who voluntarily opted for prepayment meters were satisfied with the service provided. However, some of the prepaid customers suspected it was more expensive using the service from the prepayment meters than the conventional metering system. Most of these complainants were non-residential customers like hoteliers and furniture companies. There were also complaints about discrimination in the imposition of prepayment meters on customers. Some customers argued that prompt paying customers should be given the freedom to choose whatever metering system they wanted.

In the year 2002, the Bureau of Consumer Services would propose to management to appoint an independent agency to investigate the accuracy and the degree of



conformity of the prepayment meters to the PURC approved tariffs. Based on the findings of the investigation appropriate recommendations would be made to the Commission.

GWCL and VRA-NED have started the prepayment metering system on a pilot basis.

#### **9.4 CONSUMER PROTECTION AND ADVOCACY**

In our interactions with the utility service providers, the BCS advocated the following changes in delivering improvements in the following specific areas:

- ∞ Making it easier for customers who want to pay by cash or cheque.
- ∞ Providing better information and services for prepayment meter customers.
- ∞ Improved communications with customers in debt and an obligation to take into account the customers' ability to pay when negotiating debt payments.
- ∞ Providing more energy efficiency advice, in particular for customers on low incomes or those with payment difficulties.
- ∞ Improved provision of services and adhering to regulations on special protection for vulnerable customers such as the elderly, chronically ill or disabled.

The following measures that would improve customer service were advocated:

- ∞ Prompt response to billing errors.
- ∞ Prompt response to complaints, faults and leaks.
- ∞ Ensuring metered customers' bills were based on meter readings and ease of telephone contact.

#### **9.5 AFRICAN FORUM OF UTILITY REGULATORS & CONSUMER ISSUES**

In September 2000, a workshop was held in Nairobi, Kenya for African Utility Regulators. At the end of that workshop, participants overwhelmingly endorsed a proposal to establish an African Forum of Utility Regulators (AFUR) to facilitate cooperation on utility regulation in Africa. The Forum currently focuses on issues

associated with energy, telecommunications, water and sanitation. PURC was privileged to host the second AFUR workshop in Accra from 2-3 May 2001. The workshop, which was organised with assistance from the Public Private Infrastructure Advisory Facility (PPIAF) of the World Bank, brought together about 100 regulators from all over Africa. The workshop provided participants with the opportunity to exchange information and share experiences in utility regulation in the region. The selection of PURC as host was no doubt in recognition of the developments in Ghana and the modest achievements of the Ghanaian regulatory agencies.

## **10.0 MONITORING OF PUBLIC UTILITIES**

One of the most important functions of the Commission is to monitor the performance of the utility service providers with the aim of ensuring that the desired quality of service is delivered to consumers. In furtherance of the Commission's statutory duties, regulatory policy and commitment towards ensuring quality of service, PURC instituted performance targets for compliance by the utilities after it approved new tariffs for water and electricity in May 2001. These targets have been communicated to consumers. The Commission made it clear that approval of new tariffs would be contingent upon the attainment of these targets and an improvement in customer service.

In view of the above, it was imperative that the Commission develop an effective and sustainable monitoring system that would not only ensure adherence to targets but also enhance consumer confidence in the utility service providers. Consequently, a taskforce made up of personnel within the Commission was set up to undertake this mission. To that end, and acknowledging that PURC alone could not effectively superintend the operations of the utilities without the participation of consumers, the Commission decided to solicit the assistance of identifiable consumer groups and organizations which have traditionally been involved in consumer issues in the implementation and monitoring of the quality of service of utility services.

The monitoring system was to be based upon a network, which would enhance the flow of information on quality of service of the utilities among major stakeholders – the PURC, Consumer and Residents associations and the Media. The following activities were undertaken.

**MEETINGS** – quarterly meetings were held in Accra with all stakeholders, including the media to present information and feedback on the provision of service and any other related matters. At these meetings, the Commission made it clear that it had a statutory responsibility to ensure that service was provided safely, efficiently and at reasonable cost that must translate into good quality of service. The Commission assured consumers that it took this duty seriously especially at a time that consumers were

being asked to pay more for services. The utilities were asked to step up efforts so that consumers could receive value for money.

**FIELD VISITS** – Field visits were undertaken to residential, non-residential and industrial customers to ascertain the levels of satisfaction with the services provided by the utilities. The visits were also meant to educate them on their rights and responsibilities as far as service provision was concerned, and to promote collaboration between the Commission and consumers.

The taskforce also undertook spot checks to monitor the performance of the utility service providers. This was done through surveys and actual testing of the quality of service. Information gleaned from the visits was used by the Commission to make informed decisions. In the year 2001, the taskforce visited Adenta, North Kwashieman, Atomic Hills Estates, Sunyani, Ho, Kumasi, Obuasi, Accra North West II, GWCL District Offices, ECG Legon Office, ECG Kumasi Office and VRA-NED Sunyani Office to carry out monitoring exercises.

## **11.0 UTILITY CUSTOMER CHARTERS**

The Commission has identified Customer Charters prepared and issued by the utilities as a proactive, convenient and customer-friendly means of governing the utility-customer relationship.

The Customer Charters will basically set out the contractual obligations between the parties, and outline the responsibilities of both consumers and the utility in a manner that underscores the importance of collaboration by the parties to ensure a good quality and high level of service. More importantly however, the utilities will be obliged to amplify what they can do for their customers who are responsible.

To that end, and as requested by the Commission, the utilities have submitted drafts of such charters based on PURC's guidelines. The drafts will be extensively discussed before they are finally approved, to ensure that they conform to the PURC guidelines, meet a minimum standard, and also ensure standardized provisions for all the utilities.

Additionally, in fulfillment of the provisions of Section 45 of the PURC Act (Act 538), which requires the utilities to establish and publicize internal procedures for dealing with consumer complaints after consulting consumers and PURC, the Commission has requested comprehensive procedures for dealing with consumer complaints within customer charters.

The establishment and adoption of such procedures will not only ensure speedy resolution of consumer complaints at the utilities' own level, but promote consumer confidence in the utility and also obviate the problem of sheer volumes of consumers complaining to the PURC in the first instance.

An obvious advantage of the utility consumer complaints procedure will be to free scarce personnel and resources for other equally important tasks. As indicated above, the charters will be publicized in the mass media when finalized.

## **12.0 STUDY ON RATIONALISING TARRIF STRUCTURE FOR MULTIPLE DWELLINGS OR COMPOUND HOUSES**

Having observed some weaknesses in the current electricity and water tariff structures which tend to exacerbate the inequities between the poorest and the better-off consumers, PURC in the year 2000, commissioned a study to rationalize the structure of the tariff for multiple-dwellings and to review billing strategies for electricity and water services in the country. The consulting firm, CEED Solutions, was appointed to undertake the study.

The overall goal of the study was to develop a series of assessment criteria that will assist the Commission to address the issue of consumer affordability as against economic tariffs and also rationalize the tariff structure in a fair and equitable manner for all residential consumers. The results of this important study have been submitted to the Commission with the following conclusions and recommendations among others: -

### **a) Impact of Tariffs on Compound House Dwellers**

The majority, rather than the minority of utility customers in Ghana, live in multiple dwellings, and therefore the subsidies in the current tariff structure do not benefit the category of customers for whom they were meant. Hence there is a need for the 4-tier inclining block tariff structure to be changed significantly, to ensure some equity in tariff setting.

### **b) Flat Rate Billing**

The evaluation of the flat rate billing strategy of the utilities revealed considerable losses for the companies, as in many instances the beneficiaries of the policy are not the disadvantaged in society but rather those who can afford to pay and whose consumption should be metered.

### **c) Meter Reading and Billing Strategies**

The use of irregular billing cycles and use of estimates instead of actual consumption in establishing monthly payment requirements by the utilities impose significant financial burden on utility customers. Extensive education should be done to empower customers to demand the use of the proper billing cycle by the utility companies.

### **13.0 PUBLIC RELATIONS**

The Public Relations Department played a pivotal role in public education programmes on Quality of Service issues and on the Commission's Transitional Plan for Electricity Rate Adjustment. The Department organised public fora in Kumasi, Ho, Tamale and Takoradi to explain the implications of the Plan and obligations of stakeholders under the Plan. Views from the public and other identifiable groups with respect to the Plan were collected and collated.

The Department also organised a workshop on the Transitional Plan for four Parliamentary Select Committees at Akosombo, to keep them abreast with developments in the energy sector. The Select Committees are: - Energy, Works and Housing, Legal and Constitutional Matters, and Finance.

As part of its public relations strategies, the department, together with other departments, participated in numerous radio and television programmes to articulate the views and programmes of the commission including the Private Sector Participation (PSP) concept. Posters were printed to aid the Commission's public education programme. As usual, the Department also responded positively to enquiries and concerns raised by individuals and corporate bodies in the Media. Plans were initiated by the Department for the opening of the Commission's second regional office at Tamale.

#### **14.0 MANDATE OF PURC UNDER THE ENERGY COMMISSION ACT, ACT 541**

Honourable members may recall PURC's additional rate-setting responsibilities to be undertaken by virtue of some provisions of Act 541.

Under Act 541, PURC is mandated to set rates in respect of the following:

- Wholesale supply, transmission and distribution of electricity and natural gas;
- Bulk storage and transportation of petroleum products by a refinery or other operator;
- Bulk transportation of petroleum products by pipelines, barges and rail tanker wagons; and
- Operation of the national network of petroleum products.

Although related discussions towards fulfilment of these responsibilities were initiated with the Energy Commission some time ago, the issue has as yet not been concluded.

With a re-constituted Energy Commission now in place, PURC is hopeful that the matter will receive the required attention. To that end, PURC will urge that the Ministry of Energy and Energy Commission initiate the appropriate measures to enable PURC assume its statutory responsibilities over those aspects of electricity, natural gas and petroleum products.

During the year, the Commission collaborated with the Energy Commission to draft the Standards of Performance Regulations pursuant to section 27 of the Energy Commission Act (Act 541) to regulate electricity distribution companies. Some of the issues the Regulations will govern include:

- a. Supply and Metering of Electricity;
- b. Quality of Supply of Electricity;
- c. Electricity Interruptions; and
- d. Electricity Billing.



When the Regulations, which are currently being reviewed by the Attorney General's Department, are finalised they will be monitored and enforced by the PURC under section 13 of the PURC Act.

## **15.0 PURC'S RELATIONSHIP WITH OTHER REGULATORY BODIES**

### **Maryland Public Service Commission**

The two-year Executive Exchange Programme between the PURC and the Maryland Public Service Commission (MPSC), which commenced in 1999, is managed by the United States Energy Association (USEA) and funded by the United States Agency for International Development (USAID).

The overall objective of the Partnership Program is to establish a long-term cooperative relationship between the MPSC and the PURC and provide a mechanism for MPSC to transfer its regulatory experience in market-based energy production, transmission and distribution and other regulatory issues to the PURC. In June 2001, a delegation of six from the MPSC paid a working visit to the PURC in furtherance of the exchange programme.

#### **a) African Forum Of Utility Regulators**

First established in Nairobi, Kenya in 2000, the second African Forum of Utility Regulators (AFUR) was hosted by PURC in Accra, from May 2-3 2001. The AFUR provides a forum for the sharing of information and experiences in utility regulation in the Region, modelled after the International Forum for Utility Regulation (IFUR). At the third forum held in Senegal in November 2001, PURC's Executive Secretary was nominated as a member of the first Consultative Group, which will help chart the future course of the AFUR. This was no doubt in recognition of the fact that Ghana is one of the few African countries with an independent utility regulator already in place, and whose experiences can be drawn upon by the many other African Countries keen to establish a similar system.

## **16.0 COLLABORATION WITH GOVERNMENT INSTITUTIONS**

### **a) Ministry of Energy**

During the year, PURC maintained good working relations with the Ministry of Energy. The Ministry continued to recognise the vital role of the Commission by inviting its input into such matters as the West Africa Power Pool and review of the Power Sector Reform Policy. The Commission appreciates the Ministry's support for PURC's activities and programmes, particularly its contribution to the finalization of PURC's Transitional Plan for Electricity Tariffs.

### **b) Ministry of Works and Housing**

Last year, we reported the efforts being made by the Ministry of Works and Housing to secure permanent office accommodation for the Commission. In November 2001 the Ministry allocated Bungalow No. 51, Liberation Road to PURC to be rehabilitated and used as its offices. However in view of the fact that the Commission has no independent source of funding, it again has to rely on the Ministry of Finance to make funds available from the central budget for the renovation of the bungalow, which has been extensively vandalized.

## **17.0 SUPPORT RECEIVED FROM DONORS**

### **17.1 DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID) UK**

The Commission received invaluable support from the DFID during the year under review, through the continuing work of the Adam Smith Institute which provides consultancy services in respect of regulation of the water sector. In addition DFID provided direct financial assistance in the setting up of the Commission's Drinking Water Inspectorate.

### **17.2 THE WORLD BANK**

Through the Private Enterprise Partnership Technical Assistance (PEPTA) programme, the World Bank continues to provide financial support for a variety of the Commission's activities including capacity building and project financing.

### **17.3 USAID**

As already set out above, the Executive Exchange Programme between the PURC and the Maryland Public Service Commission (MPSC) continues to be sponsored by the USAID through the United States Energy Association (USEA).