PUBLIC UTILITIES REGULATORY COMMISSION

ANNUAL REPORT 2021



A Comprehensive Report on the Commission's Regulatory Activities for the Year 2021



OUR MISSION

To build a credible and sustainable utility regulatory regime that protects the stakeholders' interests.

OUR VISION

To be a model utility regulatory institution in Africa

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THE COMMISSION

The Commission is made up of nine members, who 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 a representative each of the Trades Union Congress (TUC), the Association of Ghana Industries (AGI), and Domestic Consumers.



Mr. Ebo B. Quagrainie (Chairman), BSc Electrical Engineering, is a software engineer. He worked as a system engineer at British Telecom, New York, and was also Head of IT at the Continental Acceptances Merchant Bank (now CAL Bank) where he supervised the design of the first network of computers and the first indigenous banking software for CAL Bank. Having worked as a principal engineer at the New York Power Authority, Mr. Quagrainie has experience in undertaking corrective and preventive, maintenance on power plants. He was, once, a member of the Board of Ghana Civil Aviation Authority. He is currently Director for Technical Services at Savvytech Ghana Limited, an engineering consultancy company providing services to the mining, power, and petroleum industries.



Mrs. Mami Dufie Ofori (Member and Executive Secretary) B.Sc. (Hons) Development Planning, MBA Project Management with professional training in Corporate Strategy, Financial Policy, Strategic Planning, and Utility Regulation and Strategy from prominent institutions. Mrs. Ofori worked as a Senior Economic Planning Officer (1996 – 2001) at the Ministry of Finance, representing the Ministry on its World-Bank-sponsored advisory committee on the restructuring of the Water Sector. From 2012 to 2017 she worked in key positions at the Public Utilities Regulatory Commission and was at one time also a Director of the Local Content Unit of the Ministry of Power, being one of the key developers of Local Content Regulations for the electricity sector



Prof. Joe Amoako-Tuffour (Member) B.A., M.A., and Ph.D. in Economics, is a Professor of Economics with Public Policy experience and has interests in Natural Resource Economics, Monetary Economics, and Public Finance. Professor Amoako-Tuffour was the Director of Research at the African Center for Economic Transformation (2015-2017). He worked as a Tax Policy Advisor at the Ministry of Finance and Economic Planning and was significantly involved with the Revenue Management Technical Team, Oil and Gas Fiscal Regime and Fund Types Technical Team from 2009 to 2011. Professor Amoako-Tuffour, at one time, served as a visiting scholar to the Ministry of Finance and Economic Planning and worked on the tax exemptions regime and taxation of the mining sector in Ghana.



Dr. Kwabena Otoo (Member) works with the Trades Union Congress (TUC), Ghana as the Director of Research and Policy. He has been with the TUC for the past 16 years. Dr Otoo has assisted, to a large extent, in the formulation of the policy positions of the TUC-Ghana and in response to economic and social policies of the Ghanaian government. He works closely with ITUC-Africa assisting the regional organisation in research and policy engagement at regional and international levels. Between 2010 and 2011, Dr Otoo worked with the World Bank as a labour market specialist having been seconded by the ITUC. He has a Bachelor of Arts Degree in Economics (University of Cape Coast, Ghana), a Master of Philosophy Degree in Economics (from the University of Ghana) and PhD in Economics from the University of Kassel, Germany. Dr. Otoo has research interests in labour/employment, earnings and poverty, trade, economic growth and development.



Mr. Ishmael Edjekumhene (Member), BA Land Economy, MSc. Economics (Public Policy) is the Executive Director of the Kumasi Institute of Technology and Environment (KITE), a policy research and advocacy non-governmental organization working in the energy, environment and technology sectors. He has over 17 years of research and working experience in the afore-mentioned sectors. He was a member of the Electricity and Natural Gas Technical Committees of the Energy Commission and a pioneering member of the Public Interest and Accountability Committee (PIAC) from 2011 to 2014. He chairs the Steering Committee of the Sustainable Energy Network of Ghana, which is the first country affiliate of the Energy Access Practitioner Network.



Mrs. Dora Oppong (Member), is a Chartered Accountant by profession and holds an MBA Finance from the University of Ghana. She has undertaken professional courses in Finance, Audit and Accounting from renowned institutions including the Harvard School of Business (USA). Mrs. Oppong worked as the Accounts Manager of SSNIT in Charge of Finance and Data Management. She was also the Deputy Head of SSNIT Internal Audit and was in charge of the Finance and Investment Divisions, Subsidiary and Management Audit. Whilst in SSNIT she served on various committees including SSNIT Procurement Taskforce, Staff Assessment and SSNIT Study Leave Committees. Mrs. Oppong has served on the advisory board of JOSPON Group of Companies and the Audit Reports Implementation Committees (ARIC) of COCOBOD, Ministry of Environment and the Ministry of Gender, Children and Social Development. She was one of the pioneer Commissioners of the Postal and Courier Services Regulatory Commission. She also served on J A PLANTPOOL Board and currently serving on the Board of Coconut Grove Hotels.



Dr. Nii Darko Kwabena Asante (Member), is a Chemical Engineer with over 20 years' experience in energy management and optimisation. He was responsible for the development of standards, codes and regulations in the electricity and natural gas sectors in Ghana. He also led the enforcement of energy regulations and the execution of initiatives to promote renewable energy and the efficient use of energy at the Energy Commission, Ghana. Following the launch of Ghana's Country Action Plan on Sustainable Energy for all, Dr. Asante led the Energy Commission's activities in coordinating the refinement and implementation of the plan. Before joining the Energy Commission, Dr. Asante lectured at the University of Ghana, in Accra, where he was part of the team that set up the Engineering Faculty. He was also the technology manager of the energy optimisation business of Aspen Technology. He also served as a consultant to the Energy Sector Reform Program and the USAID West Africa Energy Program with Deloitte and Touche Ghana.



Mr. Patrick Nyarko (Member), holds an MSc. in Strategy & International Business from Aston University (UK), MBA in Oil & Gas Management from Coventry University (UK) and BSc. in Management with Computing from Regent University College (Ghana). He has over 15 years of experience in retail, business, corporate banking, and credit risk, having worked as a Branch Manager at the Capital Bank between 2016 and 2017, and as the Sales and Relationship Officer at Ghana Commercial Bank from 2018 to 2019. Other experiences include working with Baobab Energy as Energy Policy Analyst and with Kandifo Institute as Director of Strategy & Policy. He has been a Chartered Member of the Chartered Institute for Securities & Investment (CISI UK) & Chartered Risk Analyst (AAFM USA) since 2013. Mr. Nyarko is currently the Director of Corporate Affairs & International Relations at the Ghana Integrated Iron and Steel Development Corporation (GIISDEC). He was a counter-party staff chairing the review committee for development of GIISDEC's Community & Stakeholder Framework in respect of iron ore sites in Sheini in the Northern Region and Opon Mansi in the Western Region. Mr. Nyarko has many years of consulting experience in Energy, Project Management and General Management.

Board Sub-Committees

The Commission works through committees that conduct in-depth analysis of policy and operational issues relating to the work of the Commission. The Committees, which comprise of Commissioners, external experts, and Secretariat staff are:

Table 1: Committees of the Commission

REGION	MONTHLY BENCH MARK SCORE
Technical Committee	Consideration of utility tariff applications, tariff methodology, structure and benchmarking, and reports of technical and operational audits of utility companies.
Legal, Complaints and Dispute Resolution Committee	Review of enactments affecting the Commission, consumer - utility complaints management, PURC dispute settlement mechanisms and oversight of regional offices.
Finance and Administration Committee	Review of financial procedures and reports

Additionally, as statutory requirements, the Commission has an Entity Tender Committee and an Audit Committee established by the Public Procurement Act, 2003 (Act 663) as amended by the Public Procurement (Amendment) Act, 2016 (Act 914) and the Public Financial Management Act, 2016 (Act 921) respectively.

CHAIRMAN'S MESSAGE

Performance of the Commission



The year 2021 was quite challenging for the PURC for internal and external reasons. On the internal front, the Commission was without a Board until November 2021 when a new Board was constituted. Although the Secretariat worked assiduously throughout the year on its scheduled programmes, critical matters that required the policy direction of a Board remained outstanding, which significantly hampered the activities of the Secretariat. Preparatory work undertaken during the early part of the year included development of regulatory documents and guidelines, routine monitoring of utility operations, stakeholder engagements and public education. These provided the newly constituted Board under my leadership with an advantageous beginning for decision making, which helped to keep the utility services on an even keel, supporting them to deliver on their service mandates.

As may be expected, the ratemaking function of the Commission is highly sensitive to changes in macro-economic indices. The reality of exchange losses and the economic shock of the corona virus pandemic were two external factors that confronted the Commission in 2021. The Board therefore decided to adopt an enhanced approach to engagement and transparency in the regulation of the utility sector. This was to deepen stakeholder appreciation of competing interests, and obtain broad consensus for correcting some structural fundamentals in a gradual manner rather than immediately as demanded in some quarters. We hope that our more inclusive approach will go a long way to ensuring acceptance of the final tariff decision in 2022.

No doubt, the emergence of COVID-19 has accelerated digital innovation in the corporate world and the Commission was no exception. In 2021 we grasped the opportunity to extend digital solutions for receiving, analysing and resolving consumer and utility complaints, leading to an improvement in real time responsiveness and operational efficiency of the regulated utilities. Ultimately, thousands of consumers across the country benefited from the Commission's timely interventions.

Worthy of note are the pro-poor water projects which the Commission continued to process in 2021 in collaboration with the Ghana Water Company Limited. These initiatives in deprived areas around the country help to complement Government's quest to make water accessible to consumers, protect livelihoods and assist businesses to improve. In 2022, the Commission will build upon the foundational work accomplished in 2021 to bring relief to areas outside the reticulated water system.

I believe that the Commission's close partnerships, both within and beyond the regulated sectors, will help position it to emerge smarter and more effective in coming years. In this connection I wish to thank GIZ, who supported the Commission to conduct a study on the Electricity Network Reliability and Sub-Transmission Losses to inform our decision making. Additionally, our development partners have been invaluable in the provision of capacity building in renewable energy, net- metering and other emerging areas.

Appreciation

I would like to extend my sincere thanks to management and staff of PURC for their technical support for the Board, pivoting swiftly and effectively despite challenges to focus on building a resilient water and power sector. My sincere gratitude to all our stakeholders, including the regulated utilities, development partners, government and customers for their cooperation and support to the Commission through the year.

Mr. Ebo B. Quagrainie

Board Chairman

MANAGEMENT OF THE SECRETARIAT

The Commission is supported by a Secretariat with engineering, economics, finance, legal, customer service, and other expertise. The Secretariat, which is headed by the Executive Secretary, has six directorates and these are Regulatory Economics, Energy Services and Performance Monitoring, Water Services and Performance Monitoring, Regional Operations, Legal Services, and Finance and Administration.



Mrs. Mami Dufie Ofori – (Executive Secretary and Commissioner) B.Sc. Development Planning, MBA Project Management. Mrs. Ofori was at one time the Director for Consumer Services and the Director, Special Duties of PURC where she coordinated the Commission's Strategic Plan, monitored regulatory standards, established and managed the Commission's regional offices, among others.

Ing. Emmanuel Fiati (Director – Water Services and Performance Monitoring) BSc. (Mechanical Engineering), Executive MBA, Chartered Banker (ACIB). Ing. Fiati previously worked in various engineering capacities in AngloGold Ashanti. He is a member of the Ghana Institution of Engineering, Chartered Institute of Bankers (Ghana), Chartered Management Institute (UK), and American Society of Mechanical Engineers.





Ing. Frederick Nii Amui Oblitey (Director – Energy Services and Performance Monitoring) is an electrical engineer and lawyer by profession. Before his current position, he worked as a Manager in both Energy and Legal Directorates. He also served as the Secretary of the Commission's Technical Committee and as a Member of the Professional Practice and Ethics Committee of the Ghana Institution of Engineering (GhIE).



Dr. Simons Yao Akorli (Director, Regulatory Economics). Dr. Akorli holds a PhD (Energy Economics and Policy), MSc. (Energy Economics) and BCom & Diploma Education. Before joining PURC, Dr. Akorli worked with Worldwide Investments as a consulting Energy Economist and Nielsen Corporation, Ghana (formerly AC Nielsen Ghana), as Operations Manager.

Mrs. Nancy Atiemo (Director - Legal Services). LLB 1995, LLM Energy Law and Policy. Mrs. Atiemo previously worked as a Senior Associate at the Ghartey & Ghartey Law Firm and as a Solicitor at Lynnes, Quarshie-Idun, and Co. She is a member of the Ghana Bar Association and the International Bar Association.





Alhaji Jabaru Abukari (Director, Regional Operations). B.A (Hons) Psychology, M.A Public Affairs. Before being appointed to his current position Alhaji Abukari worked as the Greater Accra Regional Manager as well as the Tamale Regional Manager of PURC.

Mr. Wallace Duodu (Director, Finance and Administration) BSc. Administration, MBA, Chartered Accountant. He once worked with Pricewaterhouse Coopers (PwC) Ghana Limited, African Mining Services and Her Majesty's Revenue and Customs Edinburgh, UK. Mr. Duodu is a member of the Association of Chartered Certified Accountants (UK), the Institute of Chartered Accountants (ICA) Ghana, the Institute of Internal Auditors (IIA), and the Association of International Petroleum Negotiators (AIPN).



LIST OF ABBREVIATIONS

AAF	-	Automatic Adjustment Formula
BGT	-	Bulk Generation Tariff
CSCs	-	Consumer Service Committees
ECG	-	Electricity Company of Ghana
GRIDCo	-	Ghana Grid Company Limited
GWCL	-	Ghana Water Company Limited
KWh	-	Kilowatt – hour
KVA	-	Kilovolt – Ampere
M^3	-	Cubic Meter
MW	-	Megawatts
NEDCO	-	Northern Electricity Distribution Company
TICO	-	Takoradi International Company Limited
VRA	-	Volta River Authority
MoEn	-	Ministry of Energy
MiDA	-	Millennium Development Authority
PforR	-	Program- for- Results Financing
EC	-	Energy Commission
NARUC	-	National Association of Regulatory Utility Commissioners
MYTO	-	Multi Year Tariff Order
SIGA	-	State Interest Governance Authority
ESRP	-	Energy Sector Recovery Programme
GW	-	Gigawatt
GWh	-	Gigawatt-hour
MMBTU Million	-	Millions British Thermal Unit
MWh	-	Megawatt-hour
W/kW	-	Watt/kilowatt
TAPCO	-	Takoradi Power Company Ltd
NITS	-	National Interconnected Transmission System
KPI	-	Key Performance Indicators

EXECUTIVE SUMMARY

1.0 Introduction

The Commission's main focus, in 2021, was to ensure the integrity of the data that informs its decisions and policies in the discharge of its mandate. In line with this, the Commission launched a state-of-the-art Database Management System (DBMS) as part of its efforts to ensure that the data it works with is accurate and consistent with the regulatory indicators and approved benchmarks. The DBMS would enable the Commission to efficiently and effectively collect and analyse utility regulatory data, engage stakeholders, handle consumer and utility complaints, and schedule and coordinate its internal activities, among others. The DBMS, which is being implemented in phases, would go a long way to enhance operations of the Commission if completed.

The Commission, in 2021, rolled out a number of energy support projects and studies to enhance the reliability and integrity of the power system of Ghana. Key among these projects are the Electricity Network Reliability and Sub-Transmission Losses Study and the establishment of a cooperation with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) for capacity building on renewable energy and net- metering.

Additionally, the Commission monitored and reviewed the performance of regulated utility companies in the energy and water sectors against the set benchmarks to ensure improvements in quality of service and to enhance the general performance of these utilities.

The Commission also conducted one quarterly tariff review, analysis and determination to cover the period, January 2021-March 2021, in line with provisions of the PURC Automatic Adjustment Formula (AAF)

The Commission continued executing its agenda of regulating with less interference in the post COVID-19 pandemic era by veering into the social media space (Twitter and WhatsApp) to allow for real time interaction with the regulated utilities and their consumers.

Lastly, the Commission developed and strengthened its website to enable it receive complaints and to monitor their resolutions electronically. This also aided the Commission in monitoring the operational efficiency of the regulated utilities and their performance around the country in real-time.

1.1 Special Projects

The Commission continued to receive several requests from various communities and stakeholders for boreholes under the Commission's Pro-Poor Water Projects.

The Commission in its 2021/2022 programme received sixty-one (61) applications for consideration. These applications covered a total of two hundred and ten (210) communities in almost all the regions of the country, with the exception of the Western North and Ahafo Regions.

1.2 Performance of Regulated Utilities

1.2.1 Electricity

The total installed generation capacity as at the end of December 2021 was approximately 5,288MW with a dependable capacity of 4,747.6MW. Hydro generation in the year constituted 35%, whiles thermal generation constituted 65%. Akosombo Generating Station (AGS) was the highest contributor to both total installed and dependable capacities. Available data indicates that total dependable capacity

at the end of 2021, constituted 89.78% of the total installed capacity. For the period under review, the power system recorded a peak demand of 3246MW, representing an increase of 156MW on the 2020 peak demand of 3090MW. The Karpowership Company Limited complied with all key performance indicators (KPIs) of the Commission, whiles Sunon Asogli Power Limited and AKSA Company Limited complied with all but one KPI (Plant Capacity Utilization) of the Commission.

The Commission also continued with its routine Reliability and Regulatory Compliance Monitoring and Evaluation in the regulated distribution utilities around the country. The essence of these routine checks was to assess the efficiency and reliability of power supply as well as the general operations of these power distribution utilities. In its reliability and regulatory monitoring, the Commission applied the indices, benchmarks and Key Performance Indicators (KPIs) determined by both the Energy Commission and PURC.

1.2.2 Urban Water

The Commission, in 2021, carried out an audit and inspection of Ghana Water Company Limited's (GWCL) facilities in the Accra-Tema Metropolitan Area (ATMA) and the Ashanti region. The facilities inspected, compared to the last inspection carried out in 2019 showed that there was significant improvement on all the conventional treatment plants. Significant improvements were noted at the Accra and Tema Booster Stations and the Weija Treatment Plant. In the Ashanti region, the Commission discovered that capacity utilization at both Konongo and Aframso Water Treatment Plants were low and these were attributed to limited pipe extensions. The Kumasi Central Laboratory lacked some basic laboratory equipment such as a Dissolved Oxygen (DO) meter, potential of hydrogen (pH) Meter, conductivity meter for water quality testing as well as dedicated vehicles for sampling. The Ashanti Region is benefitting from ongoing nationwide Bulk Meter installation project. Although the bulk meters have been deployed to the region, Water Safety Plans are yet to be implemented.

1.3 Consumer Services

The Commission received a total of 10,987 consumer complaints in 2021, out of which 10,701 were resolved, representing 97.40%. The remaining 2.60% of complaints received are at various stages of resolution. Complaints received range from billing, metering, service quality, damaged equipment, unlawful disconnections and payments not reflecting. Over 75.80% of complaints received from both water and electricity consumers, centred on issues of service quality. The Commission adopted the following; Monitoring exercises, settlements and mediations to resolve these issues. Additionally, public awareness programmes were undertaken to educate consumers on their rights and responsibilities with regards to services provided by public utilities in the country. These were done mostly in the form of community durbars, visits to lorry parks, markets and schools to create awareness about the functions and activities of the Commission. Consumer complaints were also received at these fora.

CHAPTER ONE: Overview of the Commission

The Public Utilities Regulatory Commission (PURC) was established under the Public Utilities Regulatory Commission Act 1997, (Act 538) to regulate and oversee the provision of utility services by public utilities to consumers. Public utilities are defined in Act 538 as persons engaged in the supply, transmission or distribution of electricity or water to the public for a fee, whether directly or indirectly. Under the Energy Commission Act 1997 (Act 541), the PURC has the additional mandate of regulating aspects of the natural gas industry.

In accordance with Section 4 of Act 538, the PURC is an independent body and not subject to the direction or control of any person or authority in the performance of its functions. However, PURC is statutorily required to submit annual audited statements of accounts and reports of its operations to the Parliament of Ghana.

The functions of the Commission include:

- Providing guidelines for rates to be charged for the provision of utility services;
- Examining and approving rates for utility services;
- Protecting the interest of consumers and providers of utility services;
- Monitoring and enforcing standards of performance for provision of utility services;
- Promoting fair competition among public utilities;
- Receiving and investigating complaints; and
- Advising any person or authority in respect of any public utility.

A key function of the PURC is to maintain a register of public utilities which can be accessed on the Commission's website. The public utilities directly regulated by the Commission by way of tariff filings are in Table 2.

Table 2: List of Public Utilities Regulated by the PURC

UTILITY	BUSINESS
Volta River Authority (VRA), Bui Power Authority (BPA)	Nationwide Power Generation
Ghana Grid Company Ltd (GRIDCo)	National Interconnected Power Transmission Systemes.
Finance and Administration Committee	Review of financial procedures and reports
Electricity Company of Ghana Ltd (ECG)	Power Distribution, Southern Sector
Northern Electricity Distribution Company Ltd (NEDCo)	Power Distribution, Northern Sector
Enclave Power Company Ltd (EPCL)	Power Distribution, Free Zones and Concession
Ghana National Gas Company Ltd (GNGC).	Natural Gas Processing and Transportation
Ghana Water Company Ltd (GWCL)	Urban Water Production, Transmission, and Supply

For purposes of effective monitoring and bringing the Commission closer to the doorsteps of consumers, the Commission in 2021 maintained its presence, in 9 out of the 16 regions of Ghana. These offices are in the Northern, Upper West, Bono, Western, Central, Ashanti, Eastern, Volta, and Greater Accra Regions of Ghana. Additionally, the Commission has established voluntary Consumer Service Committees (CSCs) in some parts of the country, which keep issues affecting the interests of consumers under constant review and submits reports to the Commission.

Under its rule-making powers, the Commission has issued the Public Utilities Regulatory Commission (Consumer Service) Regulations 2020, LI 2413 to effectively regulate utility service providers and enhance consumer protection in the provision of utility services.

CHAPTER TWO: Performance of Regulated Utilities

In line with its mandate, the Commission monitored the performance of regulated utility companies in the energy and water sectors to ensure improvements in quality of service and to enhance the general performance of these utilities. Key regulatory and monitoring activities that were undertaken on the various utilities and infrastructure in the year 2021 are presented below.

2.1 Energy Sector

2.1.1 Generation

The Commission monitored and assessed the performance of generation utilities within the regulated electricity market as per the Key Performance Indicators (KPIs) shown in Table 3.

Table 3: Generation Utilities Key Performance Indicators (KPIs)

KEY PERFORMANCE INDICATORS FOR THERMAL GENERATION

No.	PERFORMANCE INDICATORS	Based on Combustion		Based on Hot Gas Inspection (HGPI)		Based on Major Inspection (MI)	
		GAS	LCO	GAS	LCO	GAS	LCO
1	Forced Outage Rate	3%	4%	3%	4%	3%	4%
2	Planned Outage Rate	4%	6%	8%	10%	13%	15%
3	Availability	93%	90%	89%	86%	84%	81%
		MAX	MIN	Basic Underlying Assumptions.			
4	Starting Reliability	100%	75%	1. Other Planned Routine Maintenance = 2%			
5	Capacity Utilisation	94%	85%	2. Forced Outage Rate for LCO Fired Gas Turbines = 4% 3. Forced Outage Rate for Natural Gas Fired Gas Turbines = 3% 4. Plant to be dispatched fully			

Table 4: Definitions of Generation Utilities Key Performance Indicators (KPIs)

NO	INDEX	DEFINITION
1	Forced Outage rate =	(Total Hours of Emergency Outages + Total Hours of Unplanned Outages) / (Total Hours in the Year)
2	Planned Outage Rate =	(Total Hours Planned Outages) / (Total Hours in the year)
3	Availability Factor =	Hours Available/Total Hours in the year * [Hours Available includes running hours and shut down declared available hours (stand by)]
4	Starting Reliability	Number of successful starts/Total Number of Starts
5	Utilization Factor	The utilization factor or use factor is the ratio of the time that a piece of equipment is in use to the total time that it could be in use.

2.1.1.1 Generation Capacity on the National Interconnected Transmission System

The generation capacity on the National Interconnected Transmission System (NITS) to meet the demand on the grid, in 2021 was made up of thermal, hydro and renewable sources. Table 5 shows the generation sources, installed and dependable capacities as well as the fuel types used by the plants for power generation.

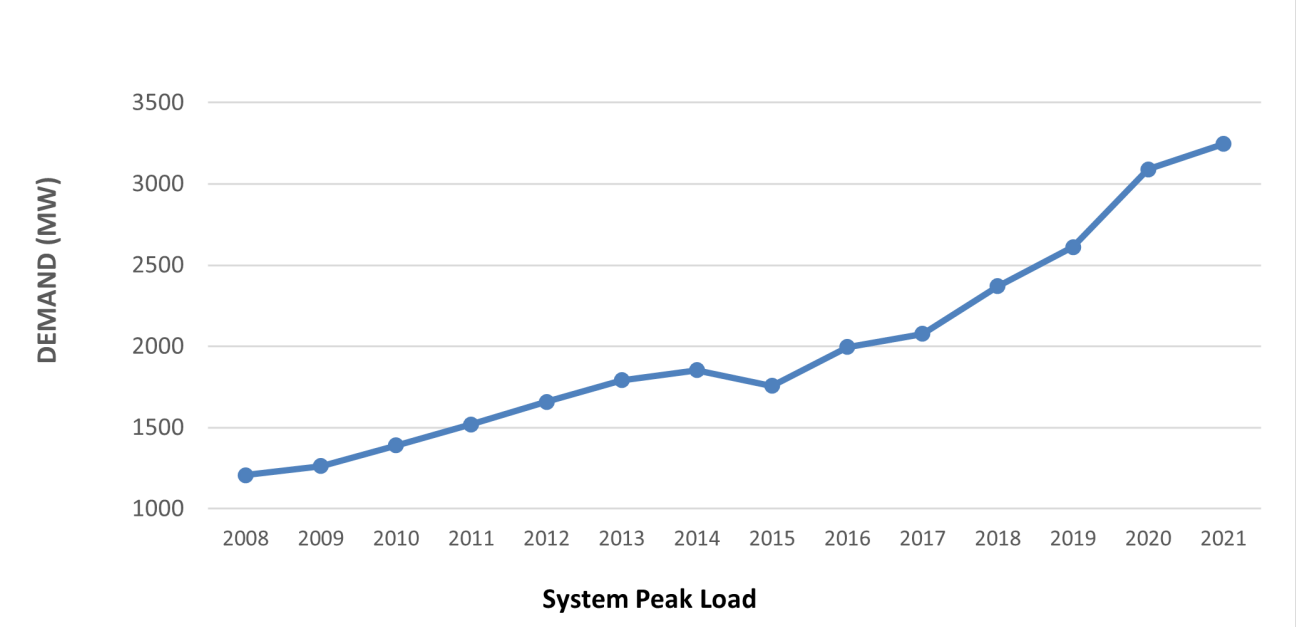
Table 5: Generation plants (VRA and IPPs) for 2021

PLANTS	INSTALLED CAPACITY (MW)	DEPENDABLE CAPACITY (MW)	FUEL TYPE
Akosombo GS	1020	900	Hydro
Kpong GS	160	140	Hydro
TAPCO (T1)	330	300	LCO/Gas
TICO (T2)	340	320	LCO/Gas
TT1PP	110	100	LCO/Gas
TT2PP	80	70	Gas
KTPP	220	200	Gas/ Diesel
VRA Solar Plant (Navrongo)	2.5	0	Sun
VRA Solar Plant (Kaleo)	13.0	0	Sun
VRA Solar Plant (Lawra)	6.5	0	Sun
AMERI	250	230	Gas
T3	132	120	Gas
TOTAL VRA	2664.0	2380.0	
Bui GS	404	360	Hydro
Bui Solar Power Plant	50	0	Sun
CENIT	110	100	LCO/Gas
SAPP 161	200	180	Gas
SAPP 330	360	340	LCO/Gas
KAR Power	470	450	Gas
AKSA	370	350	HFO
BXC Solar	20	0	Sun
Meinergy Solar	20	0	Sun
Trojan	44	39.6	Diesel/Gas
Genser	22	18	Gas
CEN Power	360	340	LCO/Gas
Twin City	194	190	LCO/Gas
TOTAL IPP	2170	2007.6	
TOTAL (VRA, Bui & IPPs)	5288.00	4747.6	

2.1.1.2 Demand Trend

The Commission observed that the maximum demand recorded during the period under review was 3,246.00 MW which occurred on December 8, 2021. Figure 1 is a graph of the demand trend from 2008 to 2021.

Figure 1: Trend of Electricity Peak Demand, 2008-2021



2.1.2 Hydrology of Dams

There was steady decline in the hydrology levels for the Akosombo and Bui hydro plants between January 2021 to July 2021 as shown in figures 2 and 4 below. However, the water levels in both dams began to increase in August 2021.

The low hydrology between May and August 2021 had a significant impact on hydro power generation from Bui and also impacted the stability of the NITS thereby leading to poor voltages along the mid-northern sections of the NITS. This also resulted in rolling outages in the Ashanti and Northern Regions over the period. Further analysis of the hydrology levels for both dams over the past four (4) years disclosed that the Bui Dam recorded its lowest hydrology level in 2021 while the Akosombo Dam recorded the highest hydrology level in the same year as shown in figures 2 and 3. The Akosombo Dam also experienced a year-on-year increase over the four-year period.

Figure 2: Hydrology levels at Bui Dam in 2021

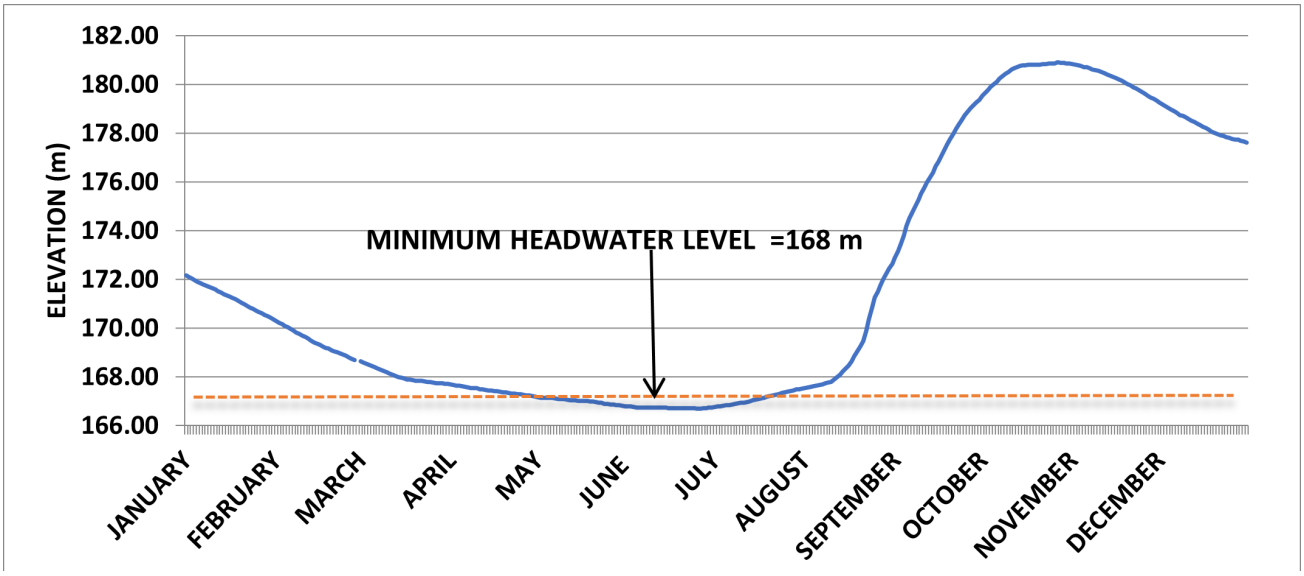


Figure 3: Bui Hydrology, 2017 – 2021

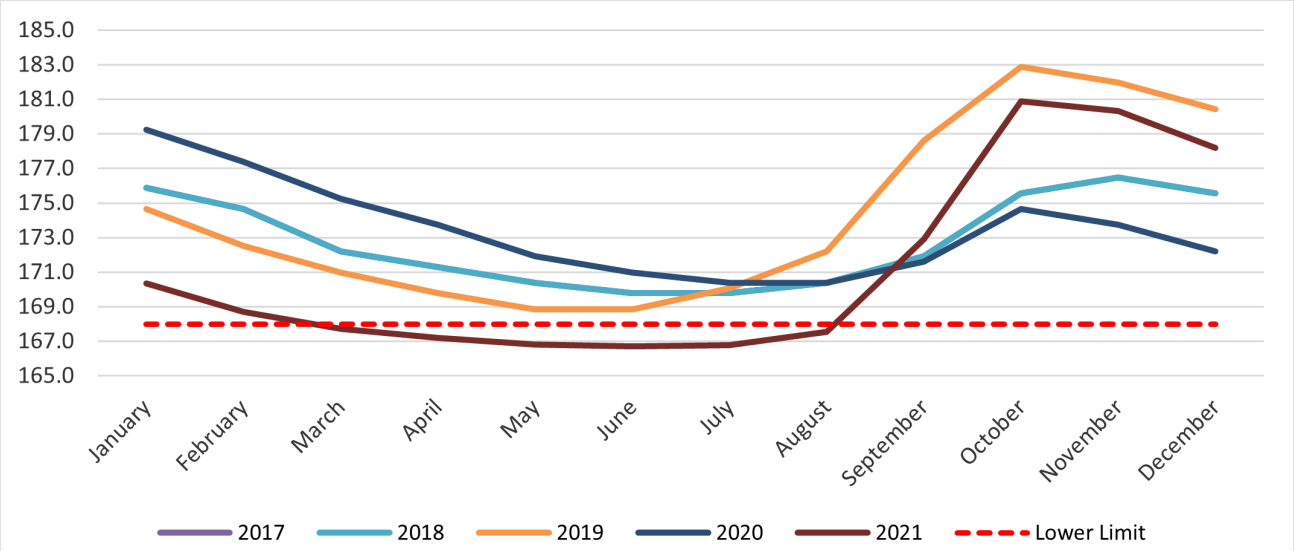


Figure 4: Hydrology levels at Akosombo Dam in 2021

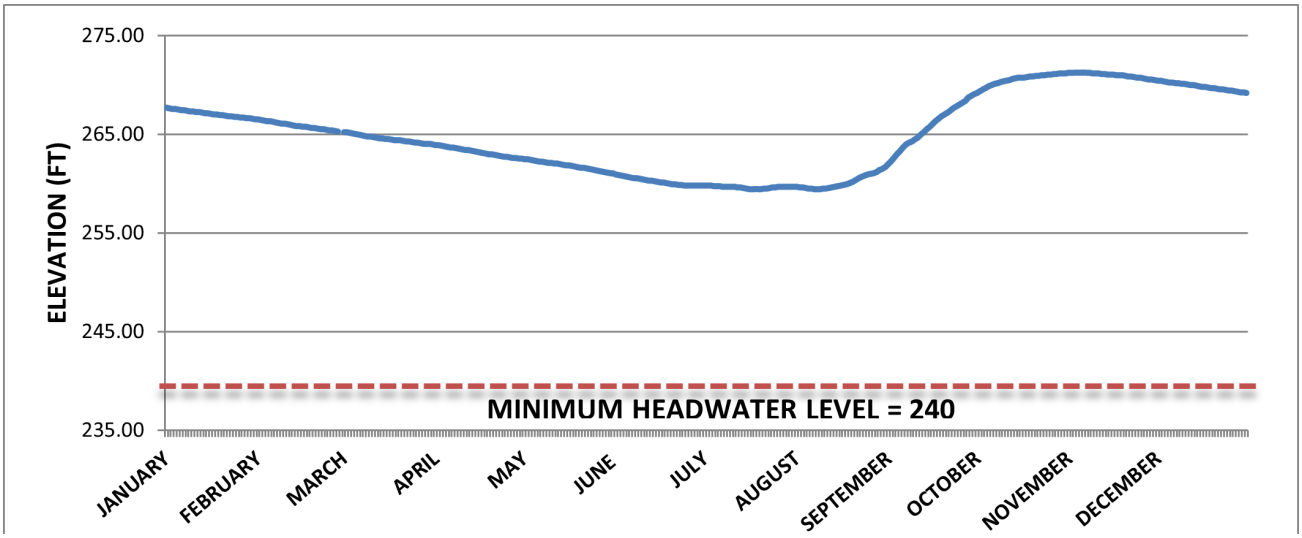
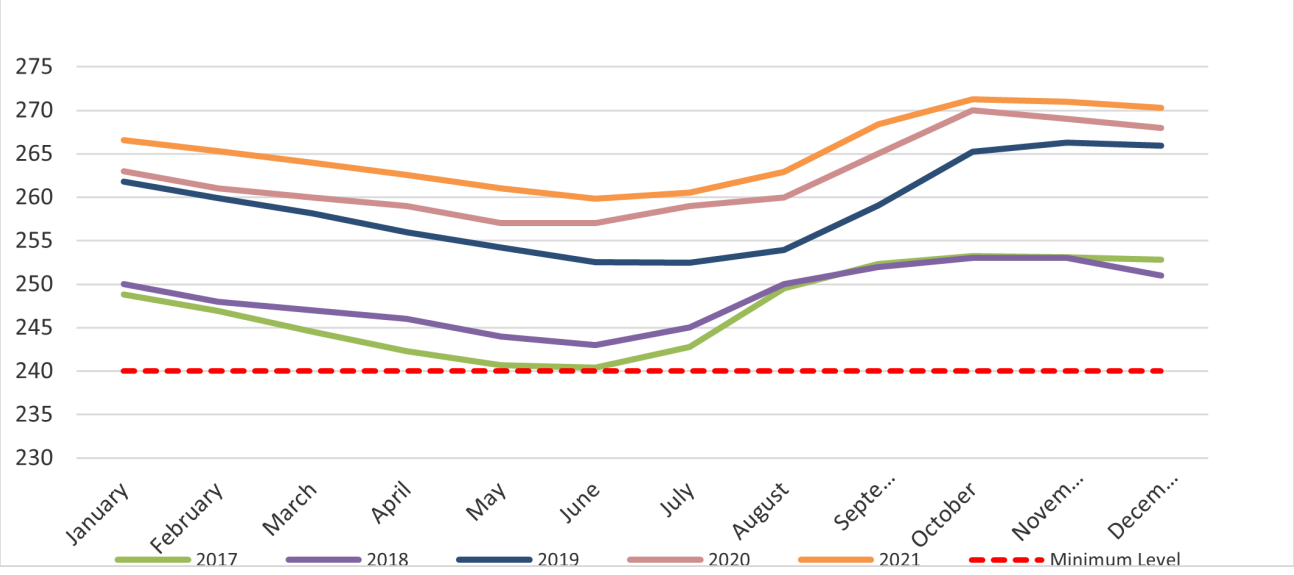


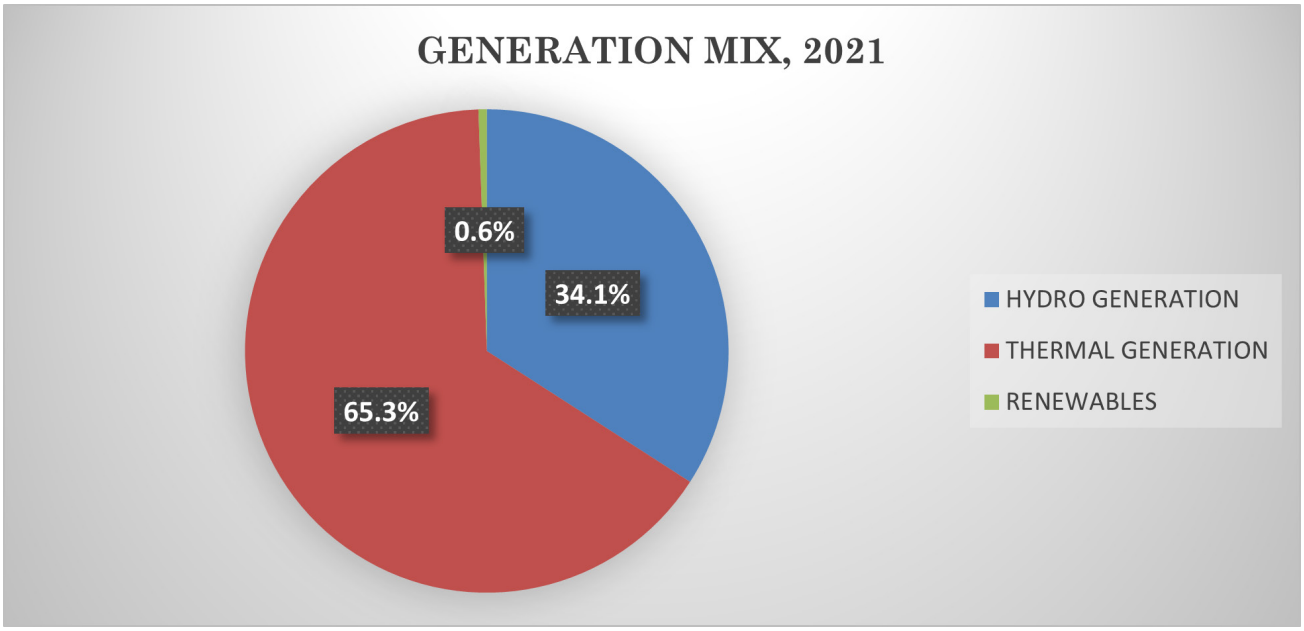
Figure 5: Akosombo Hydrology, 2017 – 2021



2.1.2.1 Generation Mix

The total electricity generated over the period was 21,466 GWh, comprising 7,521 GWh from hydro generation, 14,408 GWh from thermal generation and 122 GWh from renewable sources. The generation mix for the period comprised 34.1% from hydro sources, 65.3% from thermal sources and 0.6% from renewables. This is as shown in Figure 6.

Figure 6: Generation Mix for 2021



2.1.2.2 Hydro Generation Trend

Figure 7 shows the contribution to hydro generation by the Akosombo, Kpong and Bui Generating Stations in 2021. During this period, a substantial decline in generation was recorded at the Bui Generating Station from March to August, 2021 due to low hydrology levels. However, energy generation at the Kpong generating station remained steady whilst generation from the Akosombo plant increased marginally. The contribution of Bui was normalized due to the increased hydrology in August.

Figure 7: Trend of Hydro Generation for 2021

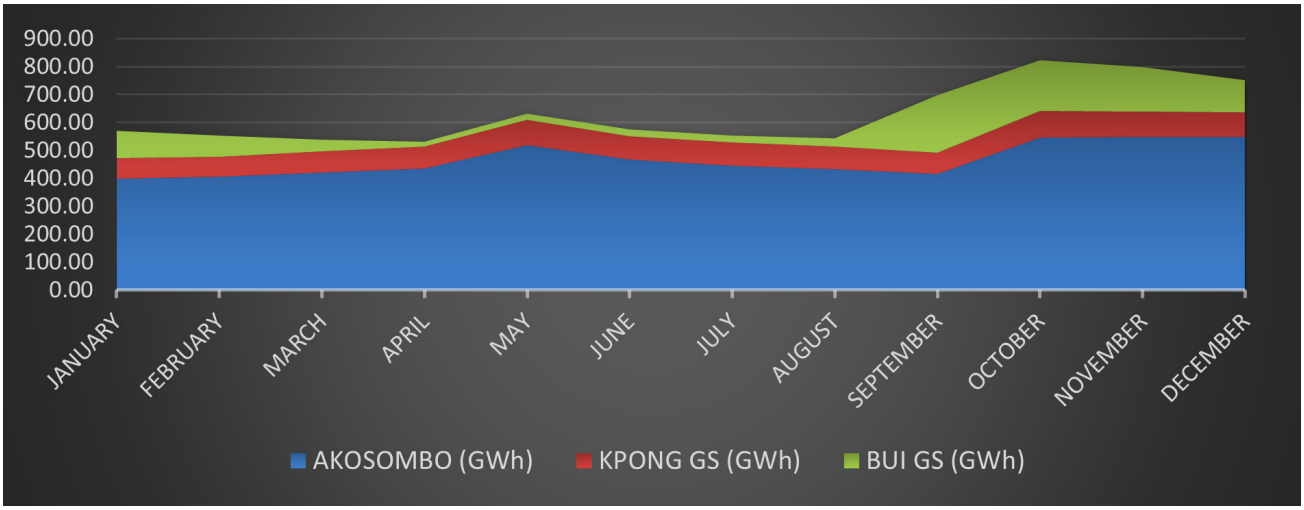
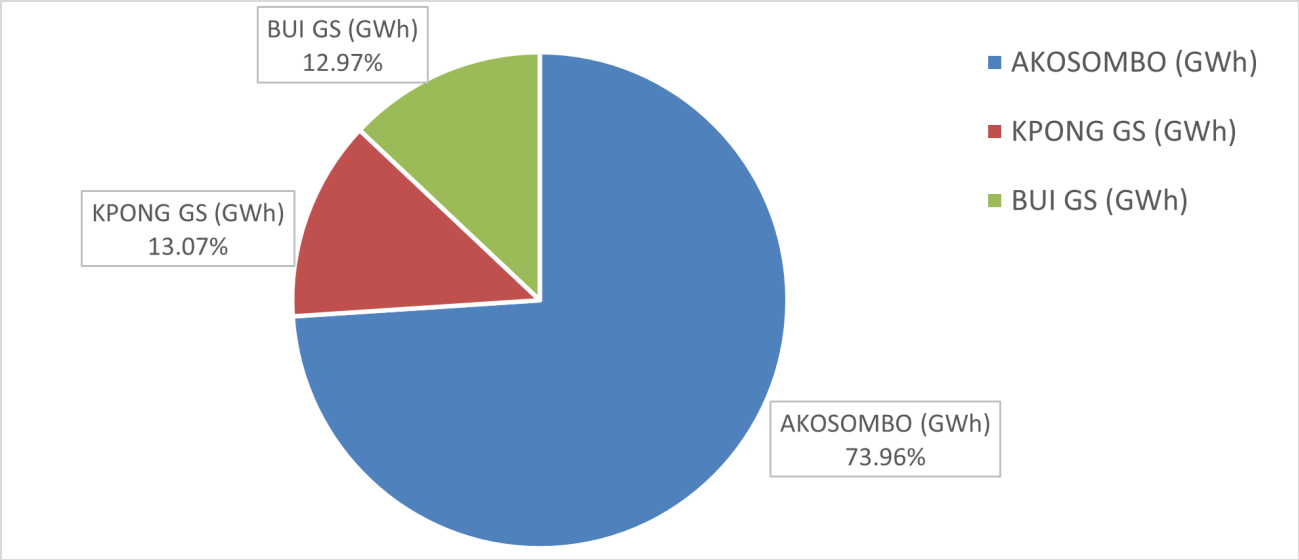


Figure 8 shows the hydro energy mix for 2021. The graph shows that Akosombo contributed the highest proportion with 74% in the hydro generation mix, followed by Bui and Kpong GS with 13% each.

Figure 8: Hydro Energy Mix, 2021



2.1.2.3 Thermal Generation Trend

The contribution of individual thermal plants to generation over the period is as shown by Figure 9. The trend shows a significant contribution of Asogli, KarPower, TICo, TAPCo, CENPOWER and AMANDI to energy generation for the year. There was no contribution from AMERI, T3 and Bridge Power thermal plants during the third quarter. The energy demand in this quarter was met with some generation from TT1PP, CENIT, TT2P, KTPP and AKSA.

Figure 9: Trend of Thermal Generation for 2021

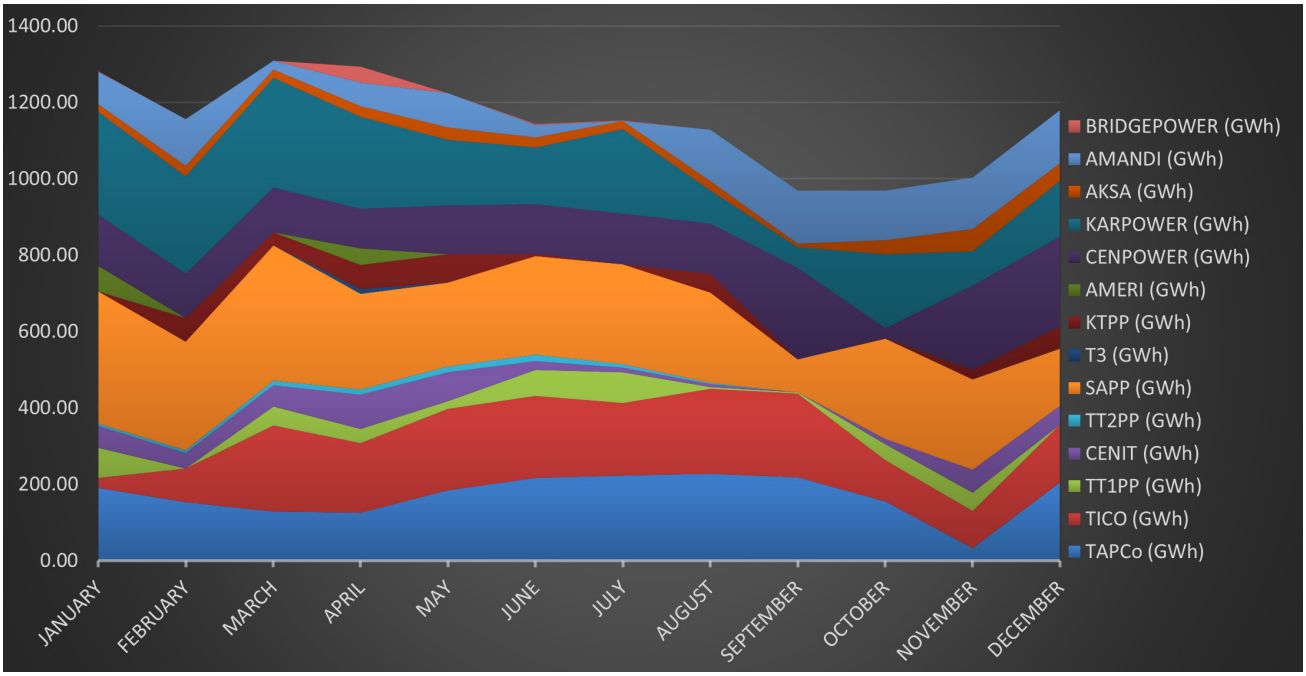
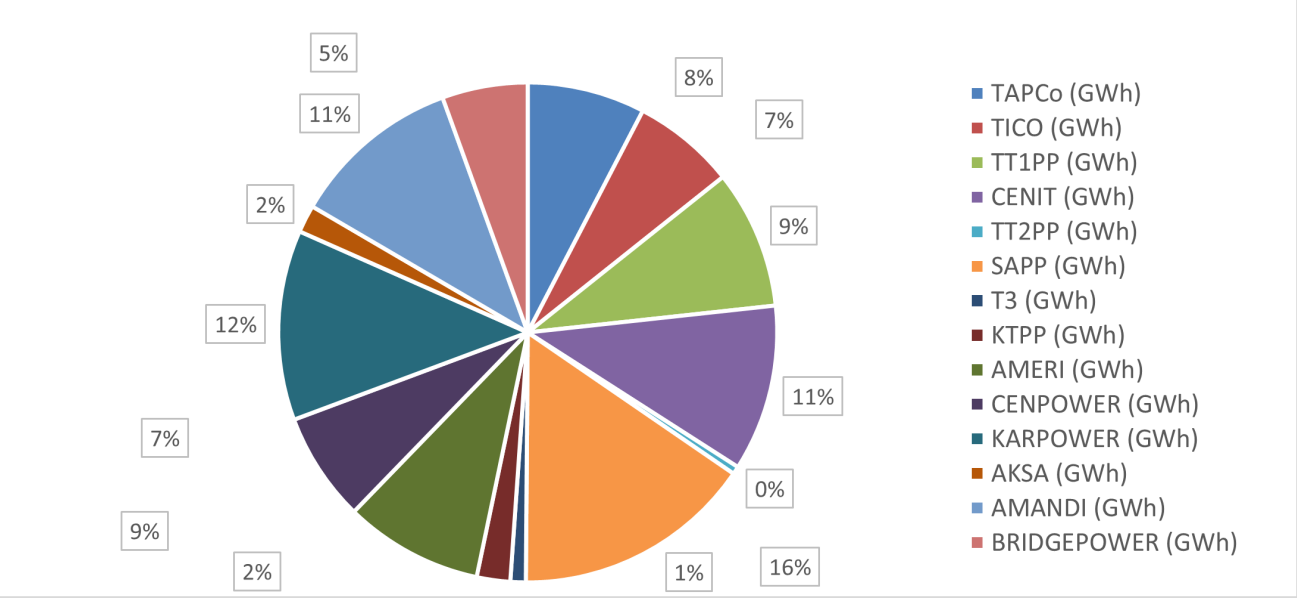


Figure 10: Thermal Energy Mix, 2021



2.1.2.3 Thermal Generation Trend

The Karpowership plant, in 2021, was compliant with all of the Commission's regulatory benchmarks, while the TT1PS, SAPP and AKSA plants complied with the Commission's regulatory benchmarks except for Capacity Utilization. The TTPS-T1 and KTPS, however, were not in compliance with the set benchmarks for Forced Outage, Availability Factor, and Capacity Utilization except for Starting Reliability and Planned Outage. Meanwhile, TT2PS and TICO were in compliance with Planned Outage and Starting Reliability respectively as shown in table 5.

Table 6: KPIs for various plants

	PLAT NAME	PERFORMANCE DATA						PURC BENCHMARK	COMPLIANCE STATURS
	TTIPS	PLANT TYPE: Combined Simple							
			QUARTER						
NO	INDEX	UNIT	QTR 1	QTR 2	QTR 3	QTR 4	AVERAGE		
1	Starting Reliability	%	100	100	100	77.40	94.35	75.00 (Minimum)	COMPLIANT
2	Forced Outage	%	6.07	1.12	0	2.88	2.52	3.00 (Maximum)	COMPLIANT
3	Planned Outage	%	0	3.29	0	0.00	0.82	4.00 (Maximum)	COMPLIANT
4	Availability Factor	%	82.81	95.59	100	97.12	93.88	93.00 (Minimum)	COMPLIANT
5	Capacity Utilization	%	54.6	95.59	37.89	39.06	56.79	85.00 (Minimum)	NON-COMPLIANT

	PLAT NAME	PERFORMANCE DATA						PURC BENCHMARK	COMPLIANCE STATURS
	TT2PS	PLANT TYPE: Combined ☐ Simple ■							
		UNIT	QUARTER						
NO	INDEX		QTR 1	QTR 2	QTR 3	QTR 4	AVERAGE		
1	Starting Reliability	%	86.03	85.60	85.60	0.00	**64.31**	75.00 (Minimum)	NON-COMPLIANT
2	Forced Outage	%	35.59	19.50	19.50	25.04	**24.91**	3.00 (Maximum)	NON-COMPLIANT
3	Planned Outage	%	0.00	1.02	1.03	0.00	**0.51**	4.00 (Maximum)	COMPLIANT
4	Availability Factor	%	72.10	79.47	79.47	74.96	**76.50**	93.00 (Minimum)	NON-COMPLIANT
5	Capacity Utilization	%	29.37	31.40	31.40	0.00	**23.04**	85.00 (Minimum)	NON-COMPLIANT
	TTPS-T1	PLANT TYPE: Combined ■ Simple ☐							
1	Starting Reliability	%	87.87	100	100	100	96.97	75.00 (Minimum)	COMPLIANT
2	Forced Outage	%	15.93	12.38	1.75	11.48	14.16	3.00 (Maximum)	NON-COMPLIANT
3	Planned Outage	%	0.00	0.00	0.00	0.00	0.00	4.00 (Maximum)	COMPLIANT
4	Availability Factor	%	85.05	85.15	98.25	66.86	85.10	93.00 (Minimum)	NON-COMPLIANT
5	Capacity Utilization	%	76.02	83.10	98.39	58.97	79.56	85.00 (Minimum)	NON-COMPLIANT
	KTPS	PLANT TYPE: Combined ☐ Simple ■							
1	Starting Reliability	%	88.50	100	100	100	97.13	75.00 (Minimum)	COMPLIANT
2	Forced Outage	%	22.70	50.00	0.00	0.00	18.18	3.00 (Maximum)	NON-COMPLIANT
3	Planned Outage	%	5.80	0.00	0.00	0.00	1.45	4.00 (Maximum)	COMPLIANT
4	Availability Factor	%	71.50	50.00	100	99.90	80.35	93.00 (Minimum)	NON-COMPLIANT
5	Capacity Utilization	%	22.00	34.60	22.20	36.40	28.80	85.00 (Minimum)	NON-COMPLIANT
	TICO	PLANT TYPE: Combined ☐ Simple ■							
1	Starting Reliability	%	100	97.77	100	95.54	98.33	75.00 (Minimum)	COMPLIANT
2	Forced Outage	%	14.21	1.7	1.74	5.68	5.83	3.00 (Maximum)	NON-COMPLIANT
3	Planned Outage	%	0.00	0.7	5.71	40.81	11.81	4.00 (Maximum)	NON-COMPLIANT
4	Availability Factor	%	76.08	97.51	92.55	53.51	79.91	93.00 (Minimum)	NON-COMPLIANT
5	Capacity Utilization	%	46.13	88.01	85.06	47.90	66.78	85.00 (Minimum)	NON-COMPLIANT

	PLAT NAME	PERFORMANCE DATA						PURC BENCHMARK	COMPLIANCE STATURS
	KARPOWERSHIP	PLANT TYPE: Combined ■ Simple □							
			QUARTER						
NO	INDEX	UNIT	QTR 1	QTR 2	QTR 3	QTR 4	AVERAGE		
1	Starting Reliability	%	100	100	100	100	**100**	75.00 (Minimum)	COMPLIANT
2	Forced Outage	%	0.11	0.05	3.09	0.02	**0.82**	3.00 (Maximum)	COMPLIANT
3	Planned Outage	%	0.88	0.42	0.11	0.18	**0.40**	4.00 (Maximum)	COMPLIANT
4	Availability Factor	%	99.47	99.88	96.92	99.88	**99.04**	93.00 (Minimum)	COMPLIANT
5	Capacity Utilization	%	93.55	91.99	90.86	91.89	**92.07**	85.00 (Minimum)	COMPLIANT
	SUNON ASOGLI	PLANT TYPE: Combined ■ Simple □							
1	Starting Reliability	%	100	100	100	100	100	75.00 (Minimum)	COMPLIANT
2	Forced Outage	%	0.00	0.00	0.04	0.00	0.01	3.00 (Maximum)	COMPLIANT
3	Planned Outage	%	0.21	6.88	1.89	0.07	2.26	4.00 (Maximum)	COMPLIANT
4	Availability Factor	%	99.79	93.11	98.07	93.31	96.07	93.00 (Minimum)	COMPLIANT
5	Capacity Utilization	%	85.71	66.45	49.36	55.20	64.18	85.00 (Minimum)	NON-COMPLIANT
	AKSA	PLANT TYPE: Combined ■ Simple □							
1	Starting Reliability	%	98.00	98	98	98	98	75.00 (Minimum)	COMPLIANT
2	Forced Outage	%	0.11	0.38	0.61	0.41	0.38	3.00 (Maximum)	COMPLIANT
3	Planned Outage	%	2.15	3.06	2.65	2.44	2.58	4.00 (Maximum)	COMPLIANT
4	Availability Factor	%	100	100	100	100	100	93.00 (Minimum)	COMPLIANT
5	Capacity Utilization	%	8.60	11.28	4.67	17.36	10.48	85.00 (Minimum)	NON-COMPLIANT

2.1.3 Power Transmission

The power transmission system operated by the Ghana Grid Company Limited (GRIDCo) network is the backbone of the power system. Its resilience, reliability and availability are therefore critical to the successful evacuation of power from generation utilities to load centres across the country. In the year under review, performance of the transmission system was compared to the Commission's benchmarks to ascertain the reliability of the grid.

2.1.3.1 System Average Interruption Duration Index (SAIDI)

GRIDCo's SAIDI value at the end of 2021 was 1,897 minutes which was in excess of the benchmark of 156 minutes as shown in Table 6. Non-compliance with the SAIDI benchmark indicated that GRIDCo recorded outage durations in excess of the permissible limits.Power thermal plants during the third quarter. The energy demand in this quarter was met with some generation from TT1PP, CENIT, TT2P, KTPP and AKSA.

Table 7: GRIDCo SAIDI, 2021

SAIDI (MINUTES/CUSTOMER)						
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC BENCHMARK	COMPLIANCE STATUS
355	650	650	242	1897	156	NON-COMPLIANT

2.1.3.2 System Average Interruption Frequency Index (SAIFI)

GRIDCo's SAIFI value at the end of the year under review was 12.74, which was above the allowable benchmark of 5.2 as shown in Table 7. Non-compliance with the SAIFI benchmark indicated that GRIDCo recorded frequent system outages in excess of the permissible limits.

Table 8: GRIDCo SAIFI, 2021

SAIFI (NO. OF TIMES)						
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC BENCHMARK	COMPLIANCE STATUS
3.45	5.49	1.31	2.49	12.74	5.2	NON-COMPLIANT

2.1.3.3 System Average Interruption Frequency Index (SAIFI)

The transmission system availability at the end of 2021 was 99.27%. This was below the Commission's benchmark for transmission system availability of 99.70%. Non-compliance with the Availability benchmark indicated that the National Interconnected Transmission System (NITS) was less available than expected. Table 8 gives a breakdown of the transmission system availability in 2021.

Table 9: Transmission System Availability, 2021

TRANSMISSION SYSTEM AVAILABILITY (%)						
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	AVERAGE	PURC BENCHMARK	COMPLIANCE STATUS
99.46	98.91	99.47	99.22	99.27	99.7	NON-COMPLIANT

2.1.3.4 Transmission System Frequency Deviation

The Commission uses this index to determine the percentage of time the frequency on the NITS deviates from the nominal frequency of 50.0Hz. Significant frequency deviations from the nominal values for extended periods of time can damage system components, which can result in total or partial system collapses. Table 9 shows the average frequency deviation of 21.61% in 2021 as compared to the PURC benchmark value of 15%. GRIDCo, therefore, did not meet the required benchmark in 2021.

Table 10: Transmission System Frequency Deviation

FREQUENCY DEVIATION (%)						
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	AVERAGE	PURC BENCHMARK	COMPLIANCE STATUS
24.52	22.68	25.32	13.9	21.61	15	NON-COMPLIANT

2.1.3.5 Transmission System Losses

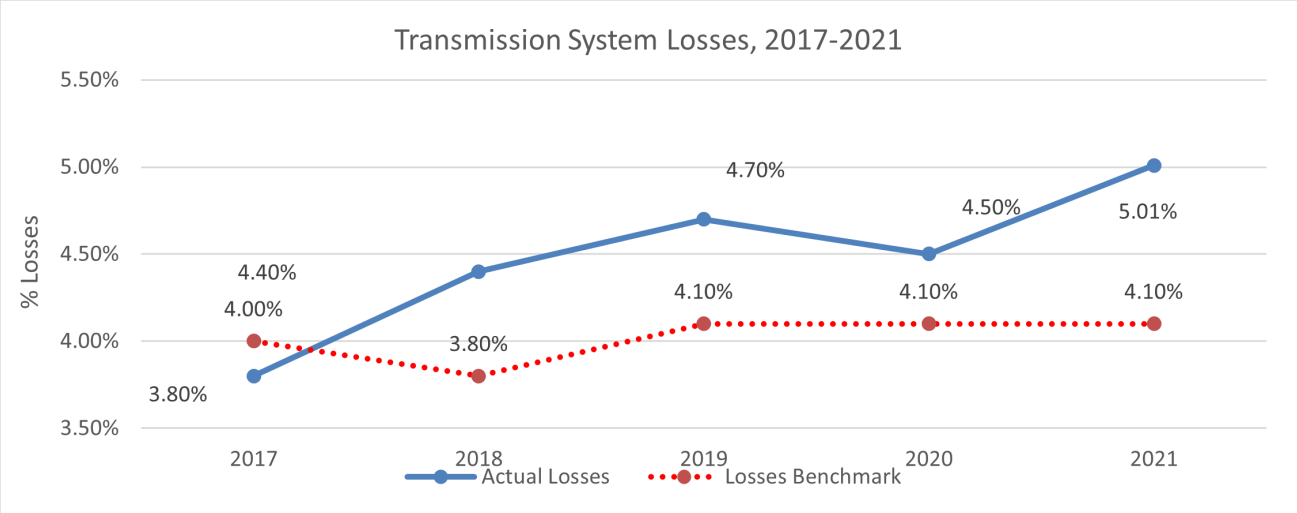
The total transmission system losses recorded in the year under review was 1,075.95 GWh, representing 5.01% of the total energy of 21,466.25 GWh transmitted. The total transmission loss recorded in 2021 was above the Commission's maximum threshold of 4.10% as shown in Table 10.

Table 11: Transmission System Losses

YEAR	2017	2018	2019	2020	2021
Transmission Losses - %	3.8	4.4	4.7	4.5	5.01
PURC Benchmark	4.0	3.8	4.1	4.1	4.1

Figure 11 shows the historical data on the transmission losses recorded from 2017 to 2021. Over the period, the transmission system losses have increased from 3.8% in 2017 to 5.01% in 2021, meaning GRIDCo has not been compliant with the transmission system losses benchmark for all the years except in 2017.

Figure 11: GRIDCo's Transmission System Losses



2.1.3.6 Discussion of GRIDCo's Results

Review of the performance of GRIDCo's operations at the end of 2021 shows violations of the Commission's reliability benchmarks. These violations were

i. Long and sustained system outage durations beyond the limits specified by the Commission as shown in the analyzed SAIDI figures.

ii. A higher system outage frequency beyond the limits specified by the Commission, by way of higher SAIFI values.

iii. Transmission system availability was below the set benchmark indicating the transmission lines were not in service as expected and

iv. System frequency deviated from the nominal value and stayed outside the permissible range longer than expected.

2.1.4 Power Distribution

In accordance with its mandate, the Commission undertook reliability and regulatory compliance monitoring and evaluation of the electricity distribution utilities comprising the Electricity Company of Ghana (ECG), Northern Electricity Distribution Company (NEDCo) and Enclave Power Company Limited (EPC) over the 2021 operational year. The Commission reviewed and analyzed the operations of the utilities for compliance with technical, tariff and efficiency benchmarks.

2.1.4.1 Electricity Company of Ghana (ECG)

2.1.4.1.1 System Average Interruption Duration Index (SAIDI)

The data in table 11 shows that ECG was compliant with the Commission's SAIDI benchmarks in all of its metropolitan, district capitals and rural areas for the year under review.

Table 12: ECG SAIDI, 2021

	SAIDI (HOURS/CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC BENCHMARK	COMPLIANCE STATUS
METRO	6.63	6.88	6.49	6.08	26.08	48	COMPLIANT
DISTRICT CAPITAL	12.77	14.5	12.07	12.83	52.17	72	COMPLIANT
RURAL	16.04	15.43	12.26	12.52	56.25	144	COMPLIANT

An evaluation of ECG's performance at the regional level shows the operational regions that heavily impacted their performance for the year under review. This is shown in Table 12 and the line graph in Figure 12.

Table 13: ECG SAIDI Per Region, 2021

REGION	2021 SAIDI
ACCRA EAST	26.75
ACCRA WEST	54.62
TEMA	18.24
EASTERN	49.98
VOLTA	40.02
WESTERN	60.72
CENTRAL	35.19
SBU ASHANTI	44.88
ECG GLOBAL	42.3

Figure 12: ECG SAIDI at the Regional Level, 2021

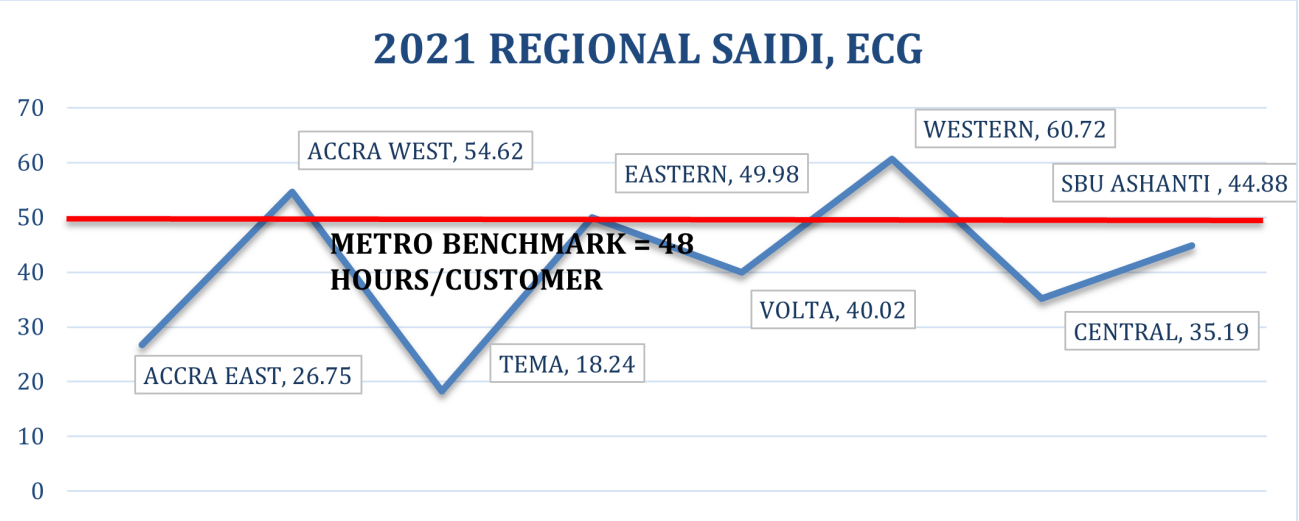
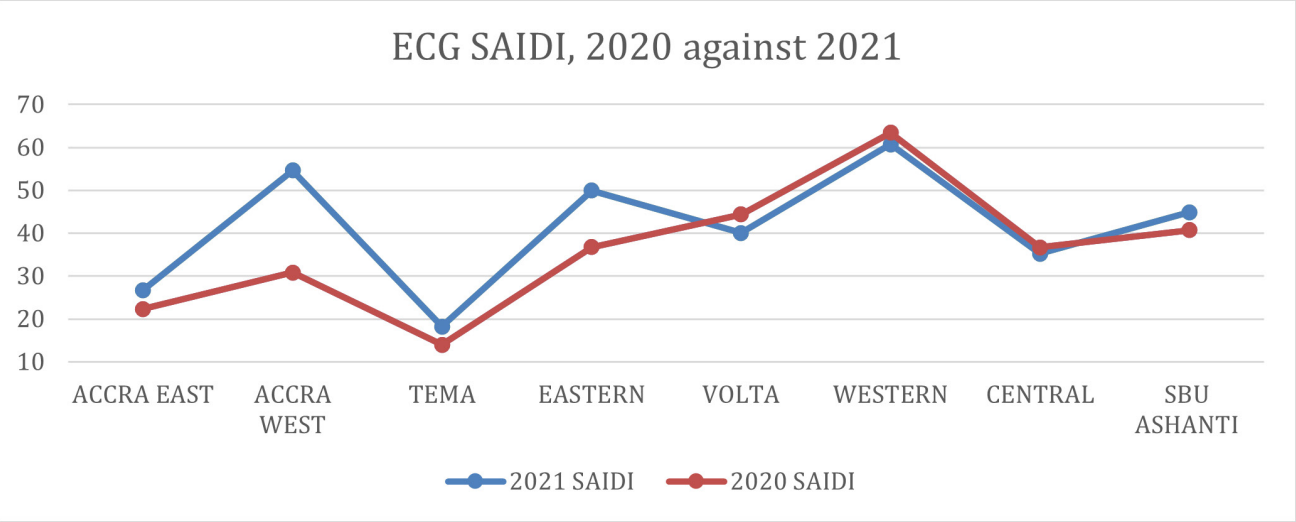


Figure 13 shows that the Western, Accra West, Eastern and Ashanti Regions contributed significantly to increasing the SAIDI value for ECG in 2021 thereby impacting ECG's compliance with the quality-of-service benchmark.

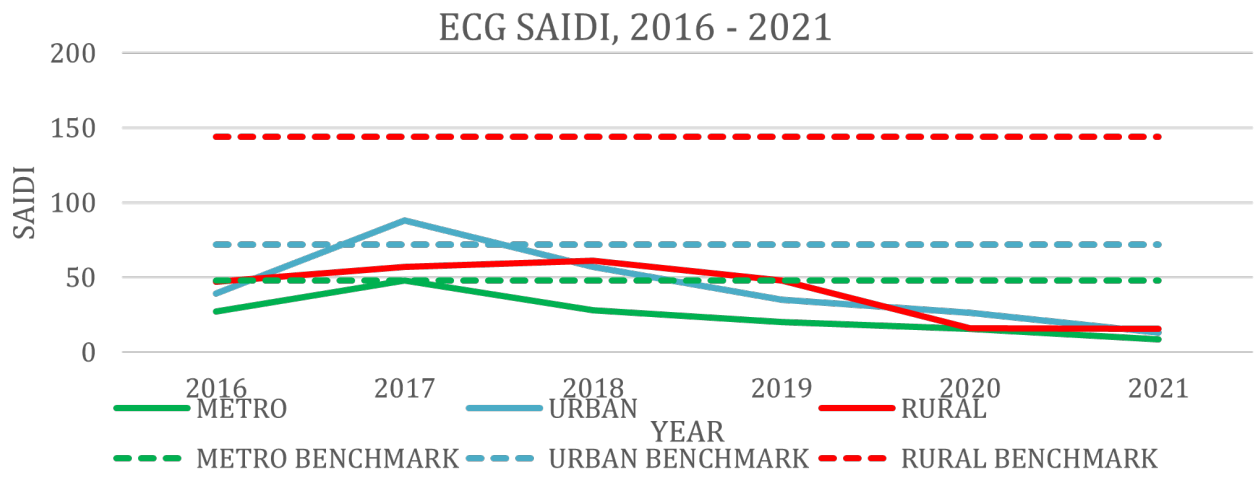
Figure 13: Regional ECG SAIDI, 2020 vs 2021



The SAIDI for ECG in Accra West Region and Eastern Region increased significantly in 2021 as compared to 2020 indicating an increase in the duration of outages in these regions compared to the previous year. The dip in performance of the Accra West Region could be attributable to the infrastructural improvement works executed by GRIDCo on the 161kV Mallam-Achimota tie line which necessitated major outages.

The graphs below show that ECG's performance over the period has gradually improved towards compliance with the PURC benchmark for SAIDI in the metropolitan and rural areas. The SAIDI performances in the urban areas have been compliant with the benchmark over the years, except in 2017. Figure 14 shows the SAIDI performance of ECG from 2016 to 2021.

Figure 14: ECG SAIDI, 2016 – 2021



2.1.4.1.2 System Average Interruption Frequency Index (SAIFI)

ECG did not meet the benchmark for SAIFI in any of the regions monitored. ECG's 2019 SAIFI performance indicates that ECG recorded frequent system outages than the permissible limits in the year under review. The Commission's reliability and regulatory monitoring in the areas showed that the failure of ECG to meet this benchmark was largely due to ECG's aging distribution network. The monitoring revealed that ECG recorded multiple instances of jumper cuts, linked fuses due to unavailability of fuses and vegetation breaches of their lines in several areas. Table 13 shows the SAIFI recorded for ECG in 2021 for the metro, district capital and rural areas.

Table 14: ECG SAIFI Data, 2021

	SAIFI (NO. OF TIMES/CUSTOMER)						
AREA	**FIRST QUARTER**	**SECOND QUARTER**	**THIRD QUARTER**	**FOURTH QUARTER**	**TOTAL**	**PURC BENCHMARK**	**COMPLIANCE STATUS**
METRO	4.34	4.17	4.09	4.47	17.07	6	NON-COMPLIANT
DISTRICT CAPITAL	6.82	6.46	6.67	7.41	27.36	6	NON-COMPLIANT
RURAL	8.24	7.18	5.93	6.85	28.2	6	NON-COMPLIANT

The regional SAIFI performance is shown in Table 14 and the graph in Figure 15.

Table 15: ECG SAIFI Per Region, 2021

REGION	2021 SAIFI
ACCRA EAST	14.55
ACCRA WEST	34.11
TEMA	6.68
EASTERN	23.7
VOLTA	42.4
WESTERN	31.73
CENTRAL	19.27
SBU ASHANTI	19.34
ECG GLOBAL	23.49

Figure 15: ECG SAIFI at the Regional Level, 2021

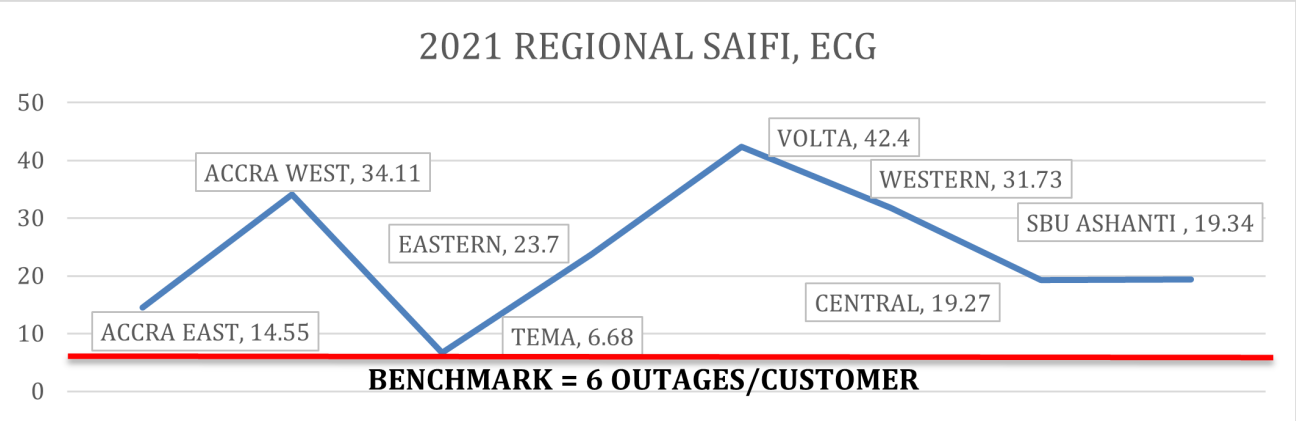
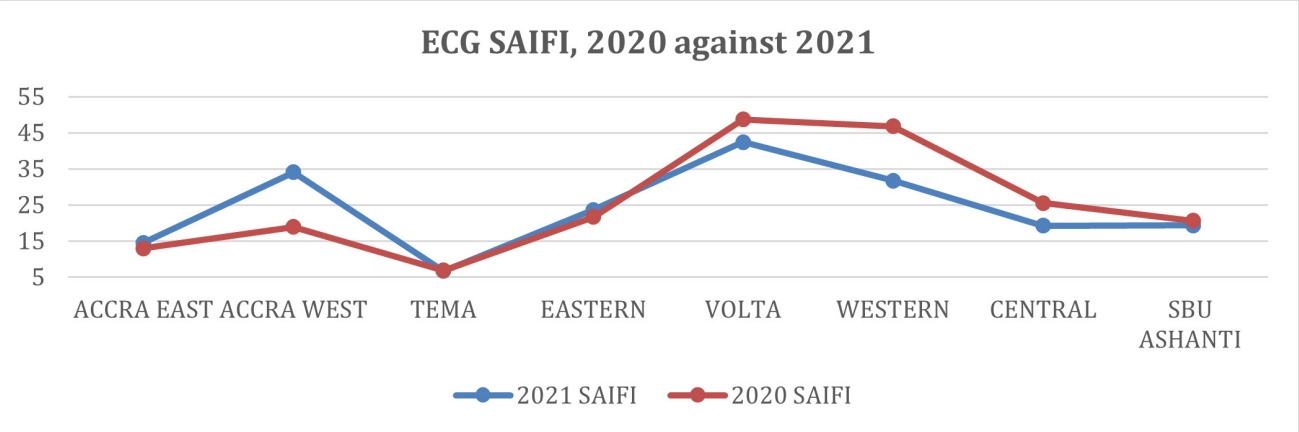


Figure 16 shows that even though ECG has over the years experienced an exponential reduction of the SAIFI towards benchmark compliance, ECG's SAIFI was non-compliant. The non-compliance was contributed to, significantly by Volta, Accra West, Western and Eastern regions in order of decreasing severity, indicating the frequency of outages in these regions were higher as compared to the other regions and negatively impacted ECG's performance.

Figure 16: Regional ECG SAIFI Performance 2020 vs 2021



In Figure 17, the SAIFI for ECG in Accra West increased significantly while it reduced for Volta, Western and Central regions in 2021 compared to 2020, exhibiting an increase in the frequency of outages in Accra West and a reduction in Volta, Western and Central regions compared to the previous year.

Figure 17: ECG SAIFI, 2016 – 2021

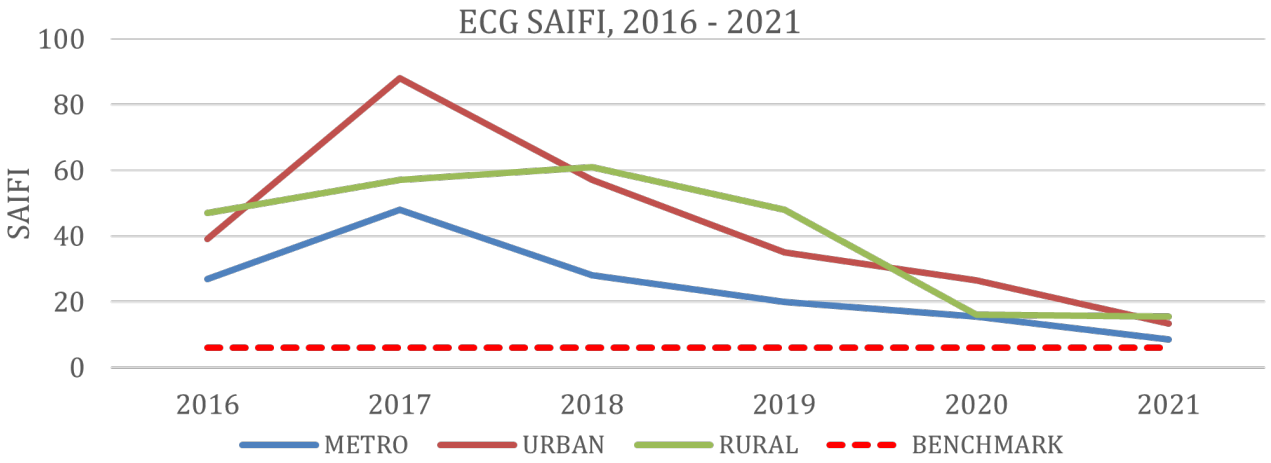


Figure 17 shows the historical SAIFI performance of ECG from 2016 to 2021.Even though ECG has not been compliant with this benchmark over the period, there has been a gradual improvement in the metropolitan, urban and rural areas.

2.1.4.1.3 Customer Average Interruption Duration Index (CAIDI)

Table 15 shows the CAIDI performance of ECG in the metro, district capitals and rural areas. The data shows that ECG met all of the Commission's benchmarks within the areas specified.

Table 16: ECG CAIDI Data, 2021

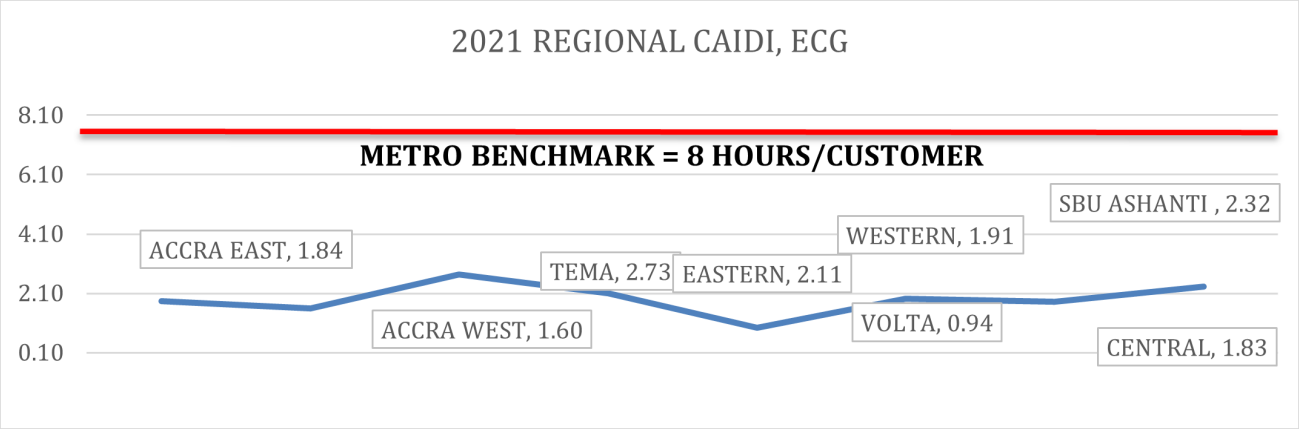
	CAIDI (HOURS/CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC BENCHMARK	COMPLIANCE STATUS
METRO	1.53	1.65	1.58	1.36	6.12	8	COMPLIANT
DISTRICT CAPITAL	1.87	2.25	1.81	1.73	7.66	12	COMPLIANT
RURAL	1.95	2.15	2.07	1.83	8	24	COMPLIANT

The regional CAIDI performance is shown in Table 16 and the line graph in Figure 18.

Table 17: ECG CAIDI Per Region, 2021

REGION	2021 CAIDI
ACCRA EAST	1.84
ACCRA WEST	1.60
TEMA	2.73
EASTERN	2.11
VOLTA	0.94
WESTERN	1.91
CENTRAL	1.83
SBU ASHANTI	2.32
ECG GLOBAL	1.80

Figure 18: ECG's Regional CAIDI Pperformance, 2021



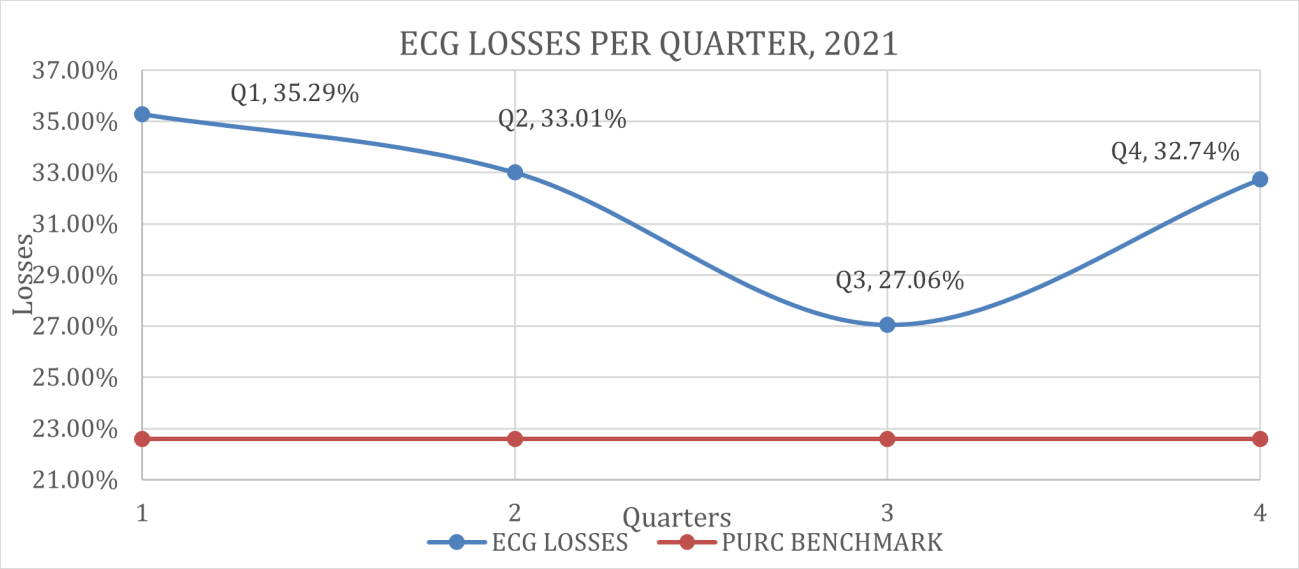
2.1.4.1.4 ECG System Losses

The Commission's energy distribution loss tariff benchmark for ECG operations is set at 22.6% with 10% for technical losses and 12.6% for commercial losses. The benchmark is to limit the quantum of energy lost in distributing power from bulk supply points to load centers. ECG recorded an average energy loss of 32.03% in the year under review, which is not in compliance with the Commission's maximum allowable threshold of 22.6% as shown in Table 17. The quarterly performance of ECG in 2021 for system losses is shown in Figure 19. The graph shows a reduction in system losses for the third quarter which was attributed to lower system demand due to the rainy season.

Table 18: ECG Energy Losses, 2021

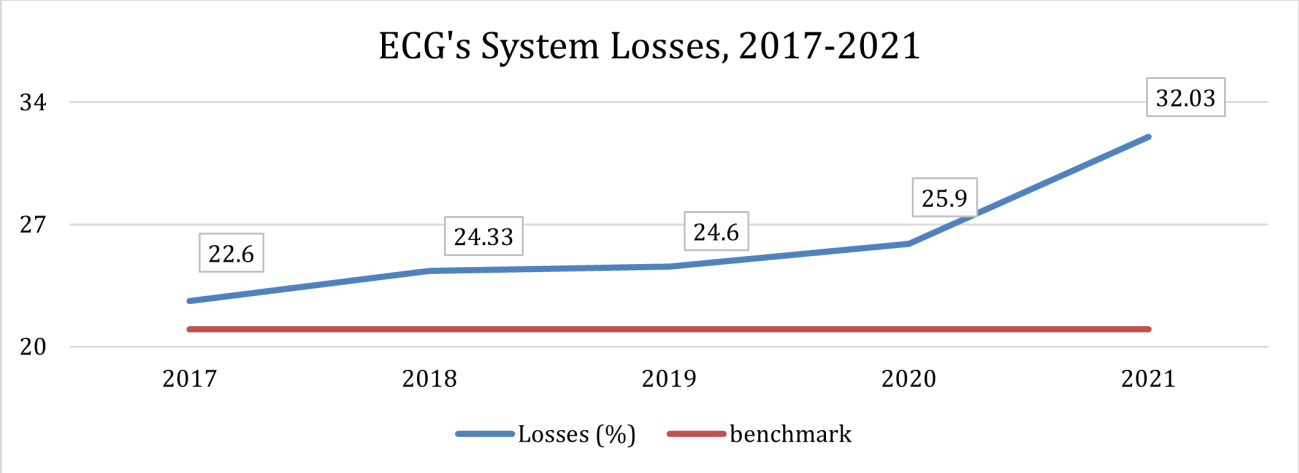
ECG SYSTEM LOSSES (%)						
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	AVERAGE LOSS	PURC BENCHMARK	COMPLIANCE STATUS
35.29	33.01	27.06	32.74	32.03	22.6	NON-COMPLIANT

Figure 19: ECG's Quarterly System Losses, 2021



There was a gradual increase in the losses from 22.6% in 2018 to 25.9% in 2020. However, in 2020, there was a steep rise in the losses from 25.9% to 32.03% in 2021, further increasing ECG's deviation from the Commission's losses benchmarks. Figure 20 shows the system losses from 2018 to 2021.

Figure 20: ECG's System Losses, 2017 - 2021



2.1.4.2 Northern Electricity Distribution Company (NEDCo)

2.1.4.2.1 System Average Interruption Duration Index (SAIDI)

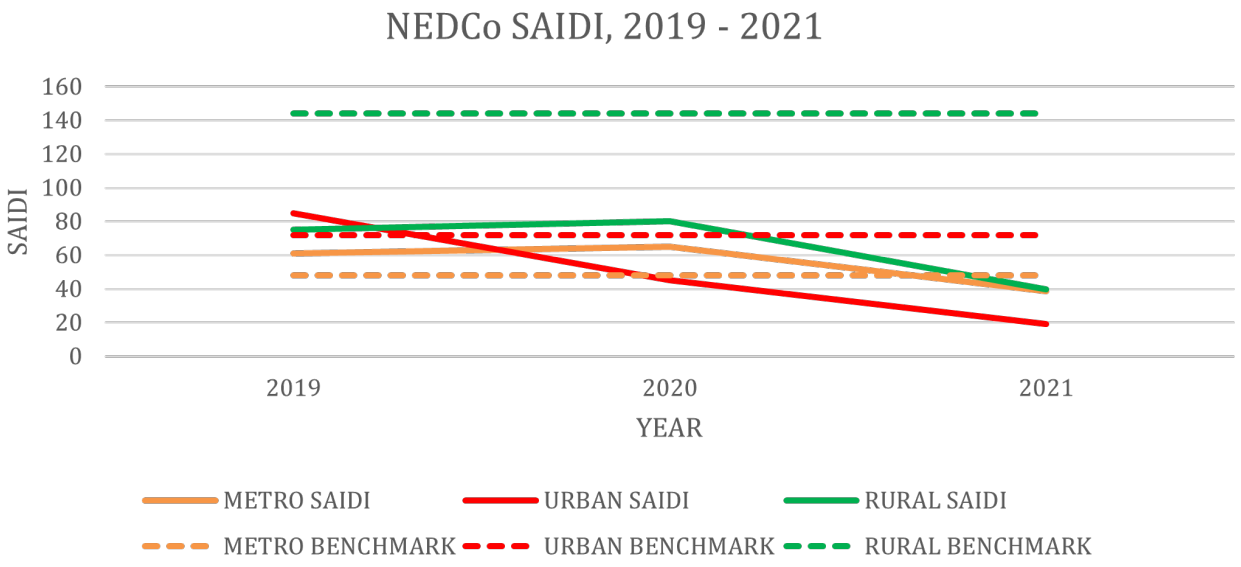
The data in table 18 shows that NEDCo met the performance benchmarks on SAIDI in the district capitals and the rural areas except in the metropolitan areas. NEDCo experienced more outages in the metropolitan areas with durations exceeding the permissible limits for the year under review.

Table 19: NEDCo SAIDI Data, 2021

	SAIDI (HOURS/CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC ANNUAL BENCHMARK	COMPLIANCE STATUS
METRO	6.9	31.8	14.09	6.5	59.29	48	NON-COMPLIANT
DISTRICT CAPITAL	10.2	9	7.9	11	38.1	72	COMPLIANT
RURAL	11.9	28	28.7	14.1	82.7	144	COMPLIANT

NEDCo's performance over the period has been compliant with the Commission's benchmarks for the urban and rural areas. NEDCO's SAIDI performance in the metropolitan areas have not been compliant although there is a general improvement in SAIDI in all of NEDCo's areas. Figure 21 shows a graph of NEDCo's SAIDI performance over a three-year period from 2019 to 2021.

Figure 21: NEDCo SAIDI, 2019 – 2021



2.1.4.2.2 System Average Interruption Frequency Index (SAIFI)

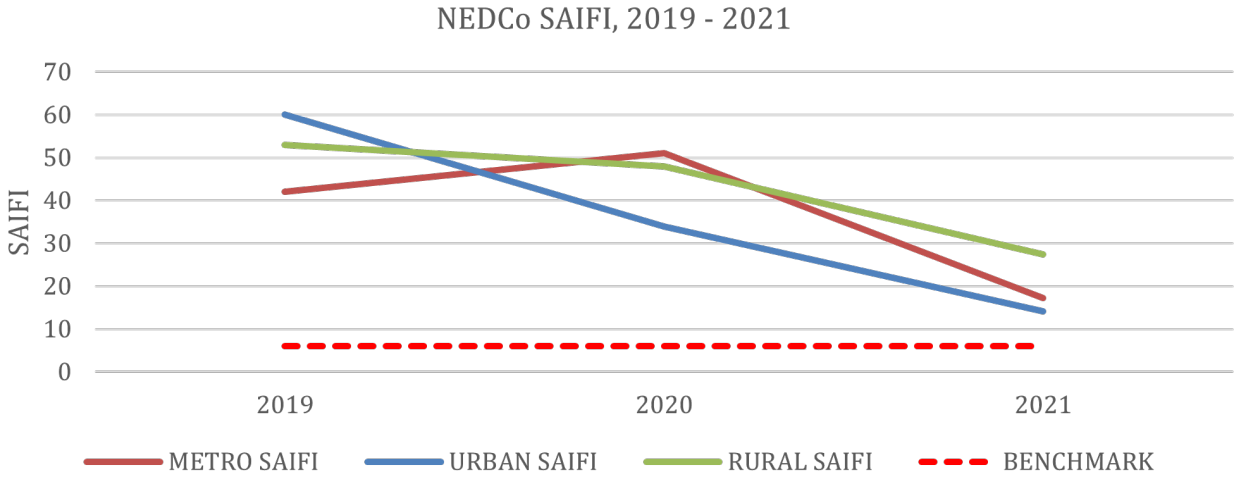
NEDCo did not meet the benchmarks for SAIFI in the metropolitan, district capitals and rural areas and is therefore considered as non-compliant in all these designated areas. Non-compliance with the SAIFI benchmark indicated that the network experienced outages exceeding the permissible limits for the year under review. The Commission's reliability and regulatory monitoring in the areas showed that the failure of NEDCo to meet this benchmark is largely due to multiple instances of jumper cuts, linked fuses and vegetation breaches of their lines in several areas as well as interference of some consumers with the network. Table 19 shows the SAIFI figures for NEDCo in 2021.

Table 20: NEDCo SAIFI Data, 2021

	SAIFI (NO. OF TIMES/ CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC ANNUAL BENCHMARK	COMPLIANCE STATUS
METRO	2	15.2	7.2	3.1	27.5	6	NON-COMPLIANT
DISTRICT CAPITAL	6.4	7.8	5.1	5.5	24.8	6	NON-COMPLIANT
RURAL	15.6	11.8	17.8	11.3	56.5	6	NON-COMPLIANT

NEDCo, over the period, did not meet the Commission's SAIFI benchmark in all the operational areas and its inability to do so was partly attributable to their large geographic area of operation. The graph however shows an improvement in its performance towards 2021. Figure 22 shows a graph of NEDCo's SAIFI performance from 2019 to 2021.

Figure 22: NEDCo SAIFI, 2019 – 2021



2.1.4.2.2 Customer Average Interruption Duration Index (CAIDI)

The data in table 20 shows that NEDCo met the Commission's benchmarks on CAIDI in the district capitals and rural areas but did not meet the benchmarks in the metropolitan areas. Non-compliance means that consumers in the metropolitan areas experienced outages with durations exceeding the permissible limits for the year under review.

Table 21: NEDCo CAIDI, 2021

	CAIDI (HOURS/CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC ANNUAL BENCHMARK	COMPLIANCE STATUS
METRO	2.1	3.4	1.96	2.1	9.56	8	NON-COMPLIANT
DISTRICT CAPITAL	1.4	1.5	1.56	2	6.46	12	COMPLIANT
RURAL	1.8	1	1.61	1.3	5.71	24	COMPLIANT

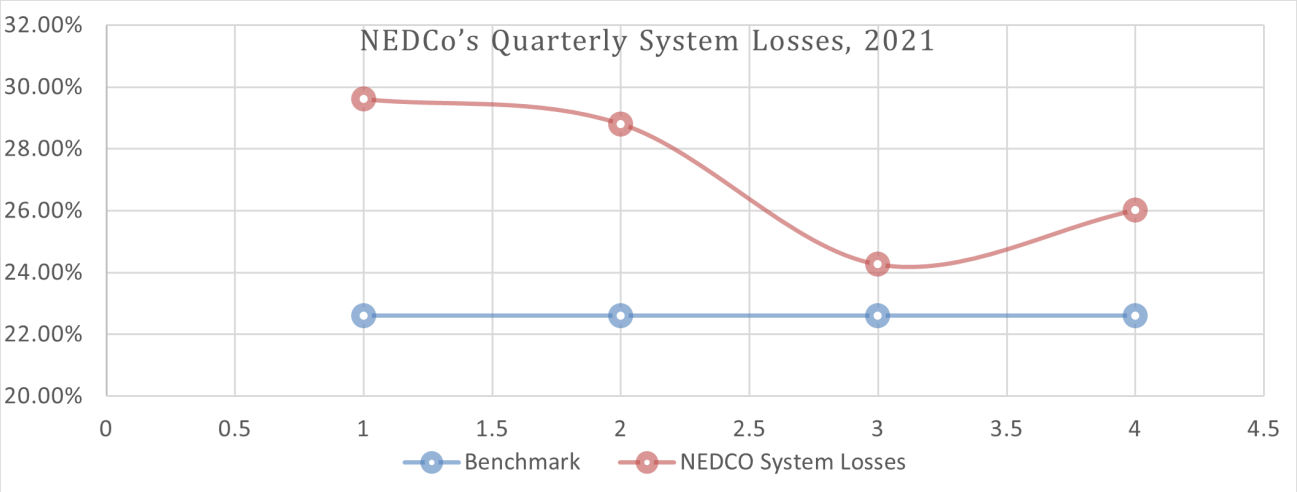
2.1.4.2.3 NEDCo System Losses

The Commission's energy losses' benchmark for NEDCo operations is set at 22.6% comprising of 10.0% technical losses and 11.0% commercial losses. Table 21 shows an average energy loss of 27.17% which was in excess of the annual benchmark of 21.0%. The quarterly performance of NEDCo in 2021 for system losses is shown in Figure 23. The graph shows a reduction in system losses for the third quarter attributed to lower system demand.

Table 22: NEDCo Energy Losses, 2021

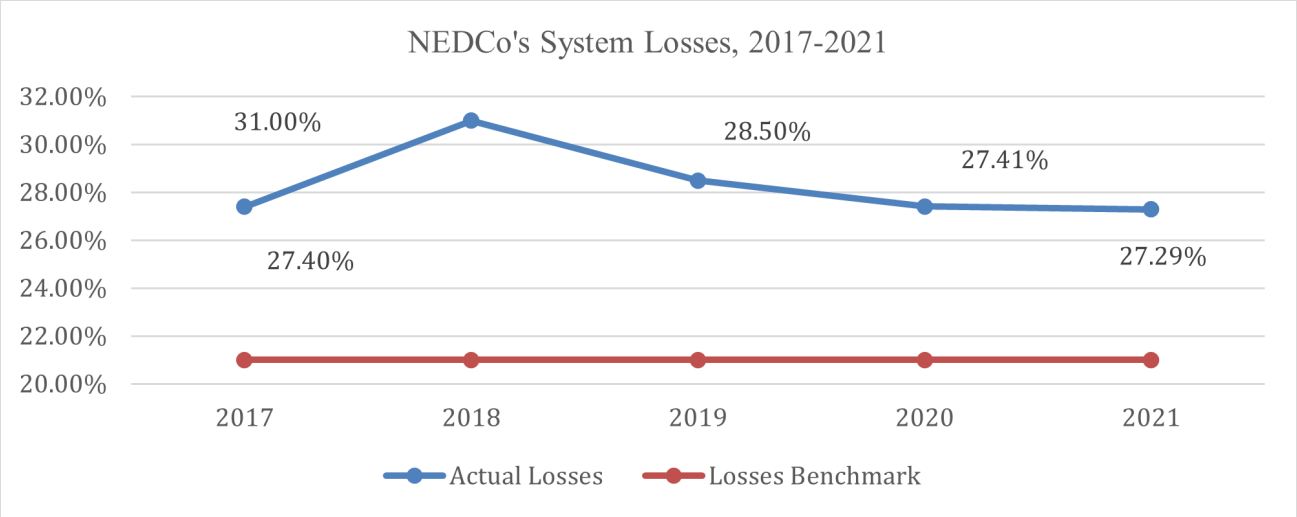
NEDCO SYSTEM LOSSES (%)						
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	AVERAGE LOSS	PURC BENCHMARK	COMPLIANCE STATUS
29.6	28.8	24.26	26.01	27.17	22.6	NON-COMPLIANT

Figure 23: NEDCo's Quarterly System Losses, 2021



There was a steep rise in losses from 27.4% in 2017 to 31.0% in 2018 and then a gradual reduction to 27.29% in 2021. NEDCo's system losses are in excess of the PURC benchmark. Figure 24 shows NEDCo's total system losses from 2017 to date.

Figure 24: NEDCo's System Losses



2.1.4.3 Enclave Power Company Limited (EPC)

2.1.4.3.1 System Average Interruption Duration Index (SAIDI)

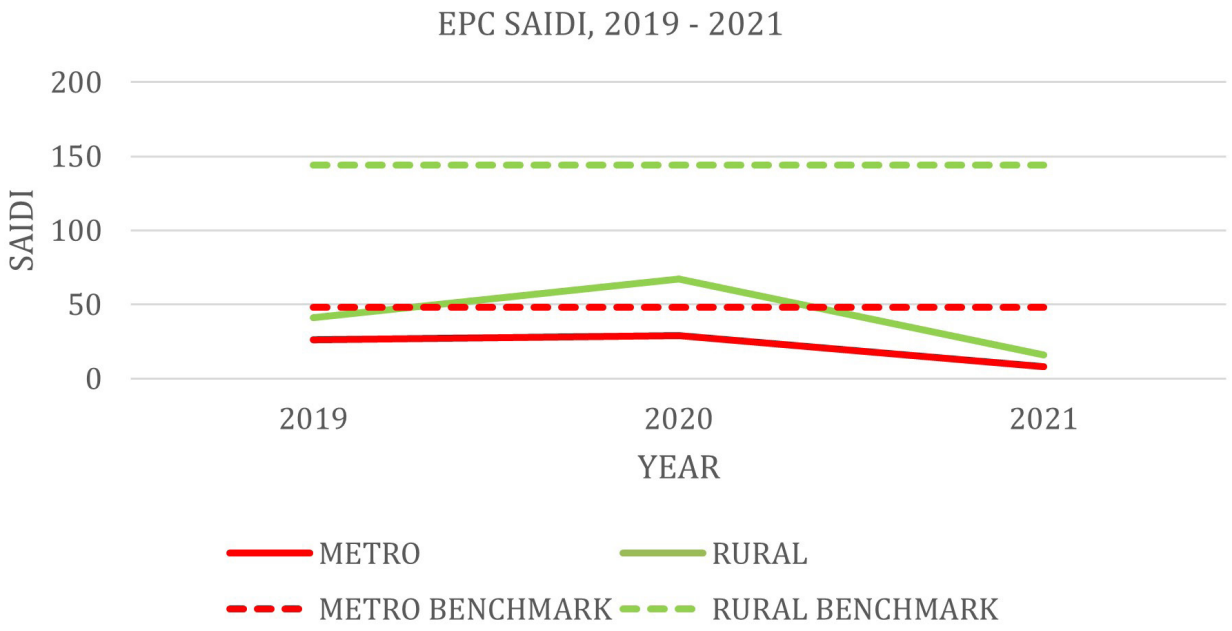
EPC met the Commission's benchmark for SAIDI in the metropolitan and rural areas. It is worth noting that EPC does not operate in any of the district capitals. EPC's performance within its operational areas was within the acceptable limits for 2021.Table 22 shows EPC's SAIDI figures for 2021.

Table 23: EPC SAIDI Data, 2021

	SAIDI (HOURS/CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC ANNUAL BENCHMARK	COMPLIANCE STATUS
METRO	1.39	6.71	4.09	3.57	12.19	48	COMPLIANT
DISTRICT CAPITAL	N/A	NA	N/A	N/A	N/A	72	N/A
RURAL	7.31	8.83	8.53	-	24.67	144	COMPLIANT

Figure 25 shows the historical performance of EPC in terms of SAIDI from 2019 to 2021 in the metropolitan and rural areas. Over the period, EPC has been compliant with the Commission's benchmarks. There was also an improvement in the benchmarks towards 2021.

Figure 25: EPC SAIDI, 2019 – 2021



2.1.4.3.2 System Average Interruption Frequency Index (SAIFI)

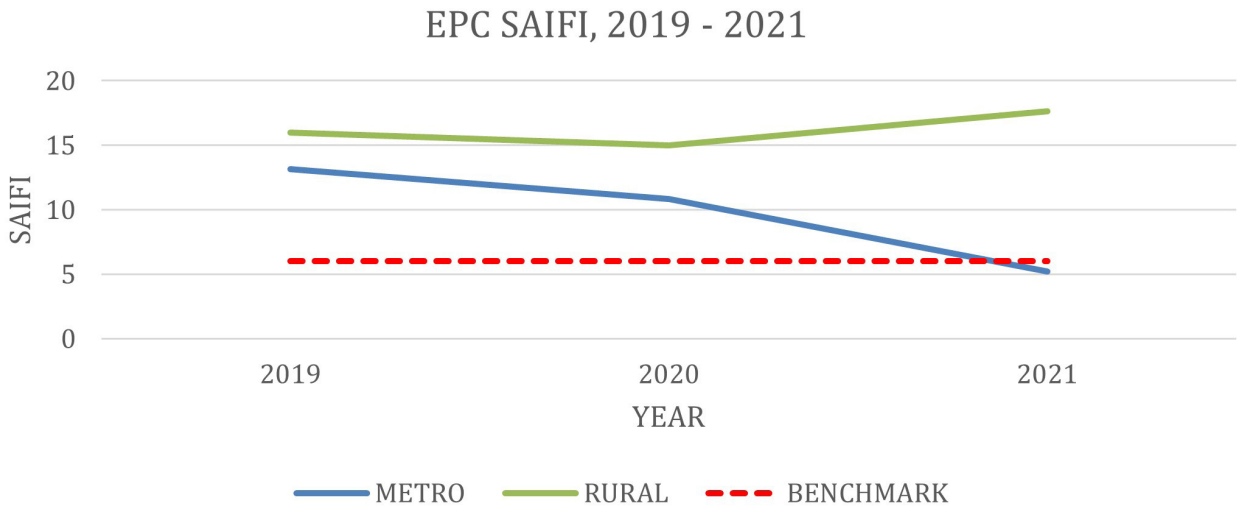
Table 23 shows EPC's figures for SAIFI in 2021. From the data, EPC did not meet the PURC benchmark for SAIFI in the metropolitan and rural areas. EPC currently has only Special Load Tariff (SLT) customers in its operational areas. Non-compliance with the SAIFI values indicated that EPC recorded frequent system outages in excess of the permissible limits with the resultant impact on industrial operation.

Table 24: EPC SAIFI Data, 2021

	SAIFI (HOURS / CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC ANNUAL BENCHMARK	COMPLIANCE STATUS
METRO	1.76	3.45	2.08	1.64	8.93	6	NON-COMPLIANT
DISTRICT CAPITAL	N/A	N/A	N/A	N/A	N/A	6	N/A
RURAL	2	3	9.0	-	14	6	NON-COMPLIANT

Figure 26 shows the SAIFI performance of EPC from 2019 to 2021. Over the period, EPC has not met the Commission's benchmarks except in 2021 when there was compliance in the metropolitan areas. EPC's SAIFI performance in the rural areas however saw an increase between 2020 and 2021.

Figure 26: EPC SAIFI, 2019 – 2021



2.1.4.3.3 Customer Average Interruption Duration Index (CAIDI)

EPC was compliant with the Commission's CAIDI benchmark in the metropolitan and rural areas for 2021 as shown in Table 24. Compliance with the CAIDI benchmark indicated that consumers experienced outage durations within the permissible limits for 2021.

Table 25: EPC CAIDI Data, 2021

	CAIDI (HOURS/CUSTOMER)						
AREA	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL	PURC ANNUAL BENCHMARK	COMPLIANCE STATUS
METRO	2.36	2.26	1.96	2.16	6.58	8	COMPLIANT
DISTRICT CAPITAL	N/A	N/A	N/A	N/A	N/A	12	N/A
RURAL	7.31	2.94	0.95	-	11.2	24	COMPLIANT

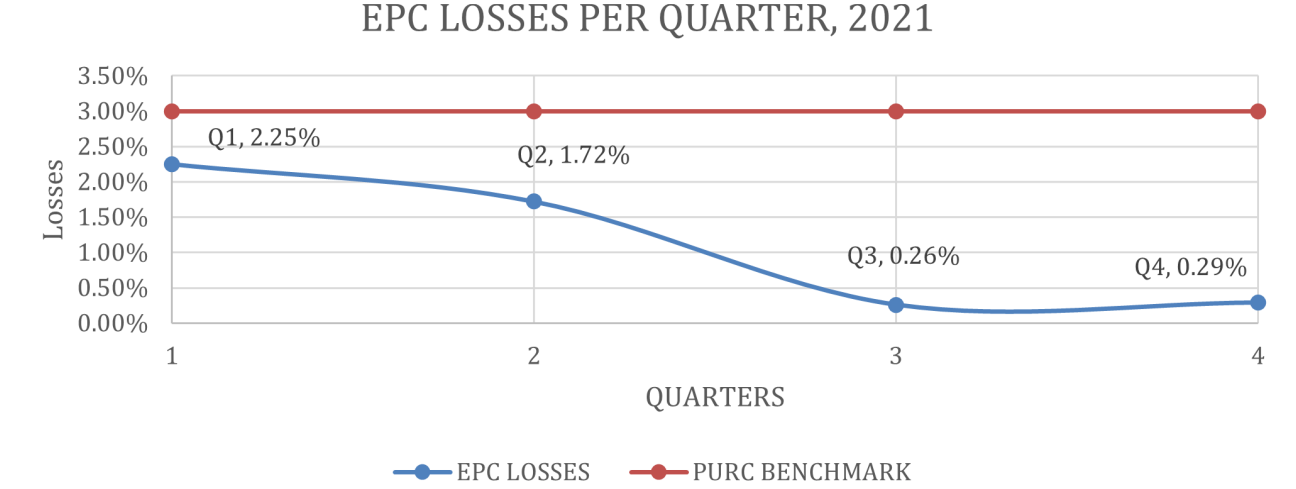
2.1.4.3.4 EPC System Losses

The Commission's energy losses' benchmark for EPC operations is set at 3.0% with 1.4% technical losses and 1.6% commercial losses. The benchmark is to limit the quantum of energy lost in distributing power from bulk supply points to loads. EPC recorded an average energy loss of 1.41% for 2021 in compliance with the Commission's maximum allowable threshold of 3.0% as shown in Table 25. The quarterly performance of EPC in 2021 for system losses is shown in Figure 27. The graph shows a reduction in system losses for the third quarter, which is as a result of lower system demand.

Table 26: EPC Energy Losses, 2021

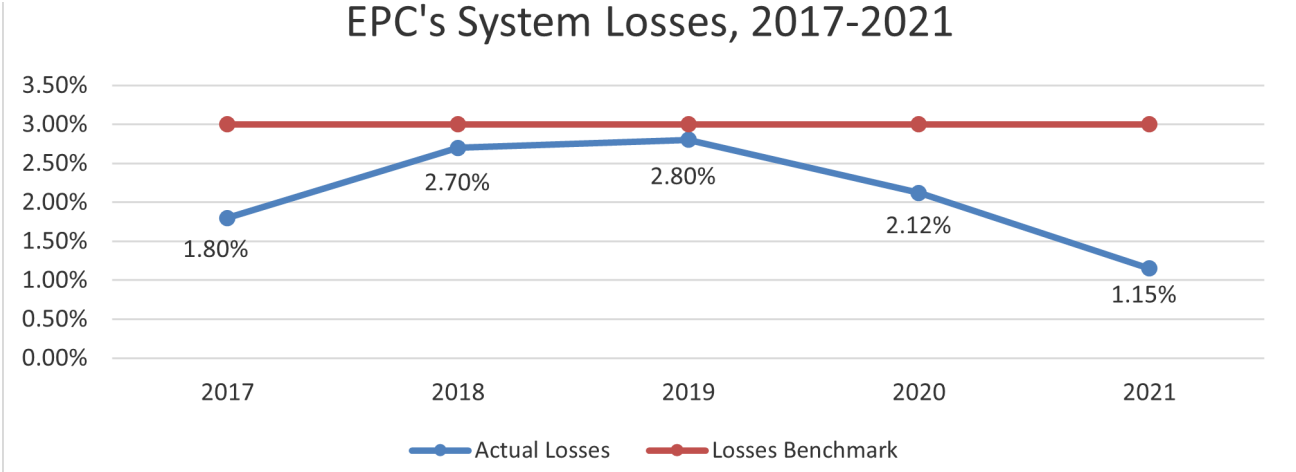
EPC SYSTEM LOSSES (%)						
FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	AVERAGE LOSS	PURC BENCHMARK	COMPLIANCE STATUS
2.25	1.72	0.26	0.29	1.41	3	COMPLIANT

Figure 27: EPC's Quarterly System Losses, 2021



There was a rise in losses from 1.8% in 2017 to 2.7% in 2018 which increased marginally to 2.8% in 2019. 2021 recorded a drop in losses to 1.15%. EPC's system losses over the period have been in compliance with the PURC benchmark. Figure 28 shows EPC's total system losses from 2017 to date.

Figure 28: EPC System Losses, 2017 – 2021



2.2 The Urban Water Sector

2.2.1 Water Quality

The Commission conducted desktop analyses of water quality reports received from GWCL for the year 2021, which covered all operational regions of the Utility. These analyses were based on sampling compliance and water quality compliance indices. Indicators considered include E. coli, pH, Residual Chlorine, Turbidity, and Colour. From the analyses, it was observed that most regions did not meet the sampling compliance index for Treated and Distributed water. Figures recorded fell below the PURC Regulatory Benchmark of 95% due to lack of logistics, illegal mining activities, lack of laboratory sampling kits and power outages. On the other hand, some regions recorded high Water Quality Compliance for Treated and Distributed water. However, information pertaining to quality of water for most Borehole systems across the country was not available.

2.2.2 Field Investigation

The Commission undertook inspections and audits of GWCL facilities in the Ashanti and ATMA Regions, and paid visits to the Teshie Desalination Water Treatment Plant to investigate reports of shutdowns together with other operational issues. The Commission also monitored the replacement and completion of the 42 inches' Kpong-Tema steel transmission pipeline at Gbetsele in Tema.

Figure 29: Replacement of the 42" steel transmission pipeline at Gbetsele in Tema



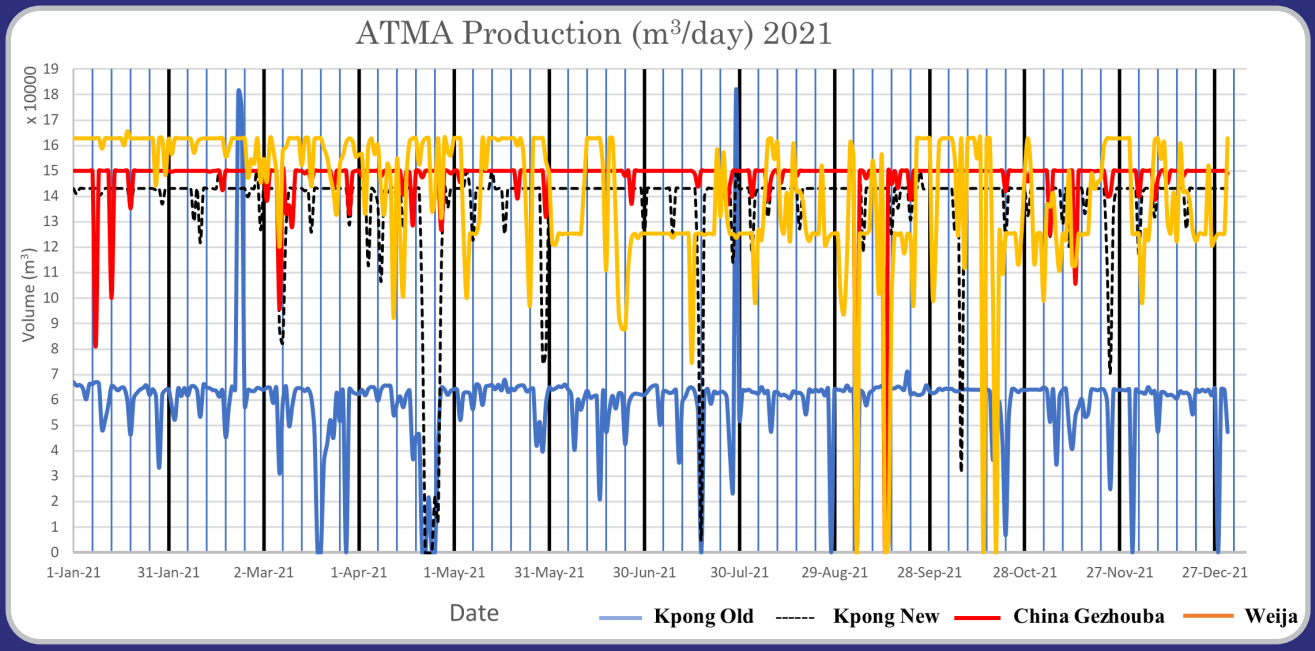
2.2.3 Routine Monitoring

The Commission continued its analyses of the Daily situational reports from GWCL. Analyses of reports received is presented below.

Figure 30 shows water production in the ATMA region from January to December 2021. As shown below, water production in the region was not stable; it fluctuated on daily bases due to factors such as power outages, pipe burst, meter installations and plant maintenance. Several errors were noticed in the production figures, possibly due to lack of bulk meters. Analysis of daily production figures revealed that recorded production figures in some plants were at variance with actual capacities of the plants, thus, recorded production figures far exceeded production capacity of these plants in some of the daily reports.

In the year under review, average production at the China Gezhouba stood at 150,000 m3/day as against its designed capacity of 181, 818 m3/day. The Adam Clarke plant at the Weija treatment plant is still operating eight (8) of its twelve (12) designed rapid gravity sand filters which had broken down for more than four years.

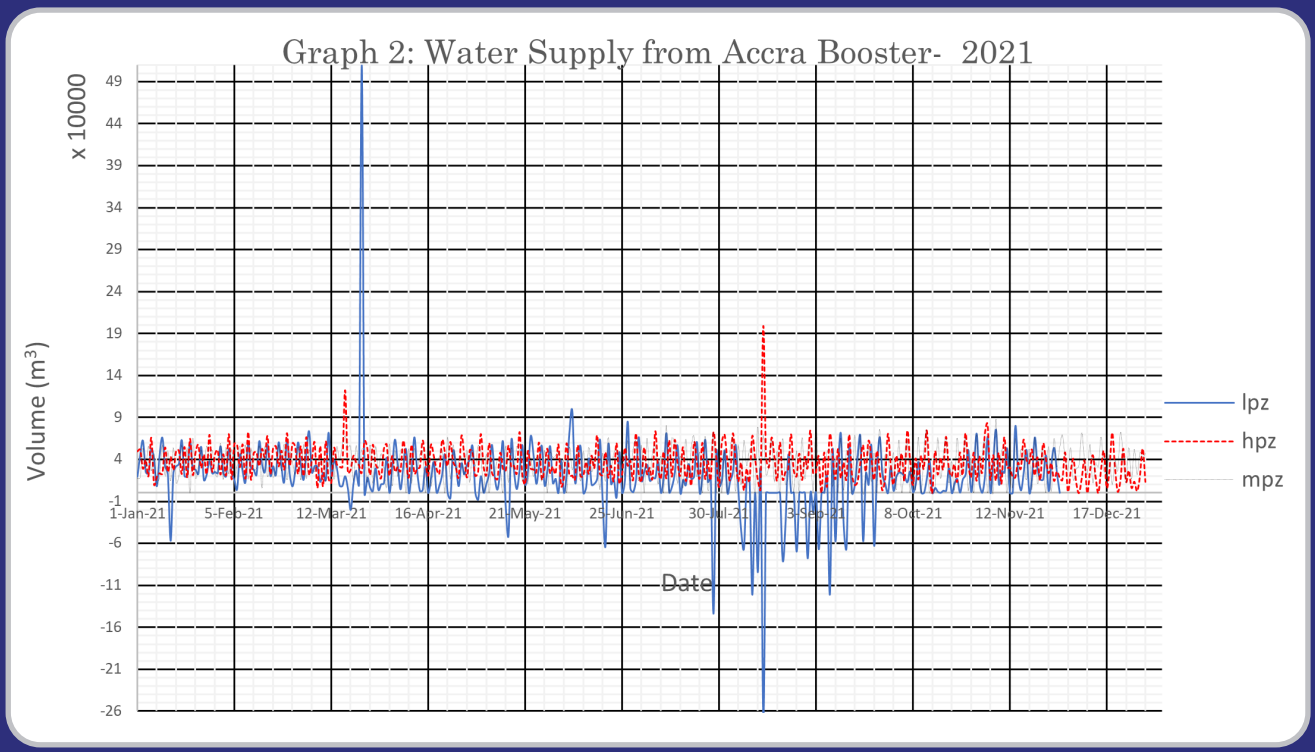
Figure 30: ATMA Water Production in m3/day-2021 for 2021



2.2.4 Water Supply from Accra Booster Station

The Accra Booster supplies water to three (3) areas in Accra East categorized as High-Pressure Zones (HPZ) where water is supplied by pumps, Medium Pressure Zone (MPZ) by pumps and gravity and Low-Pressure Zone (LPZ) by gravity alone. Water supplied to the LPZ recorded negative values in some instances. These anormalies were discussed with GWCL for rectification however they remain unresolved.. Figure 31 shows water supply from the Accra Booster.

Figure 31: Water supply from Accra Booster (m3/day)-2021



2.2.5 Audit and Inspection of GWCL facilities in the ATMA Region.

The facilities inspected compared to the last inspection in 2019 showed that there was significant improvement on all the conventional treatment plants within the region. Significant improvements were seen at the Accra and Tema Booster Stations and the Weija Treatment Plant. However, the Commission noticed that four failed filters at the Adam Clarke Plant, located at the Weija Treatment Plant were yet to be replaced. The Commission also inspected the installation of new electrical panels, new bulk meters, replacement of valves and cleaning of a reservoir at the Weija Plant in September, 2021. Installation of bulk/production meters at all treatment plants and booster stations is ongoing.

2.2.6 Audit and Inspection of GWCL Facilities in the Ashanti Region

The Mampong old and new Water Treatment Plants face illegal mining activities. In addition, both Plants have challenges with their High Lift pump and electrical panel. It was observed that the Barekese Treatment Plant had developed its Water Safety Plans (WSP) for which are yet to be implemented. There was extensive encroachment around the Barekese Water Treatment Plant which has affected the quality and quantity of raw water. Additionally, weak transmission pipeline and heavily silted reservoir were observed at the Owabi Plant.

2.2.7 Desalination Plant

The Commission conducted series of visits to the Teshie Desalination Plant to investigate reports of shutdowns and other operational issues. Even though the plant was operating, GWCL indicated that the operators were not meeting the Boron standard of 0.5mg/l for drinking water in Ghana.

2.3 Consumer Care

2.3.1 Complaints Management

The Commission received a total of ten thousand, nine hundred and eighty-seven (10,987) complaints against electricity and water distribution companies as well as some Consumers. A total number of ten thousand seven hundred and one (10,701) of the complaints, representing 97.40% were resolved. The rest were at various stages of investigation.

The Commission received six thousand, four hundred and seventy (6,470) complaints against ECG representing 58.89% of total complaints. Two thousand, nine hundred and ninety-five (2,995) complaints, representing 27.26% was lodged against NEDCo and one thousand, three hundred and ninety-eight (1,398) complaints representing 12.72% was lodged against GWCL. The regulated utilities also lodged one hundred and twenty-four (124) complaints against consumers, representing 1.13% of total complaints received. The details are represented in Table 26.

Table 27: Total Complaints Received and Resolved by the Commission

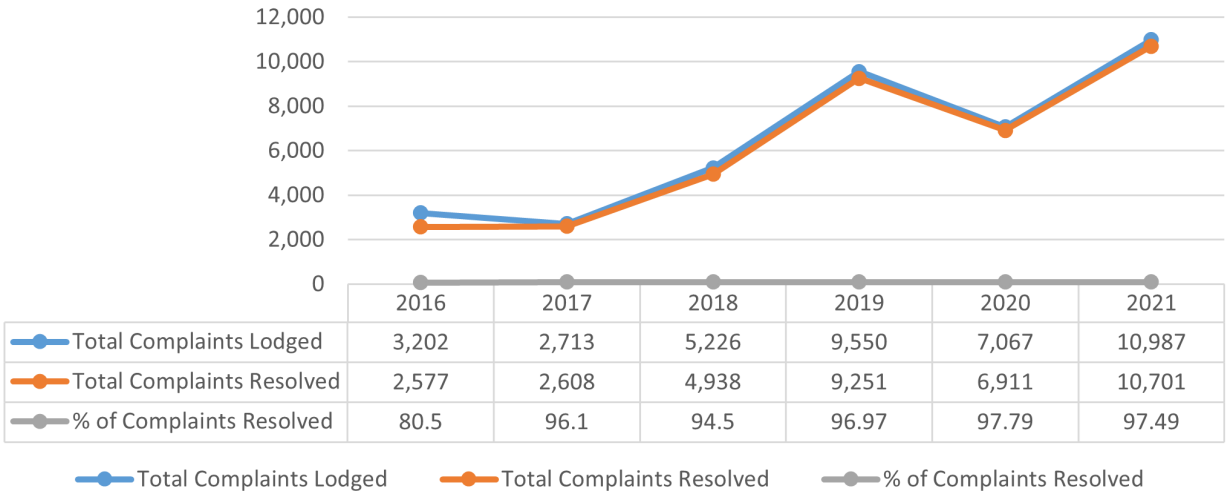
	Complaints lodged against and resolved by ECG		Complaints lodged against and resolved by NEDCo		Complaints lodged against and resolved by GWCL		Complaints lodged against and resolved by Consumers		Total Complaints lodged and resolved	
Regional Office	Lodged	Resolved	Lodged	Resolved	Lodged	Resolved	Lodged	Resolved	Total Lodged	Total Resolved
Ashanti	809	747	0	0	122	120	0	0	**931**	**867**
Eastern	1,789	1,786	0	0	255	253	0	0	**2,044**	**2,039**
Central	1,065	1,061	0	0	301	299	82	82	**1,448**	**1,442**
Western	877	852	0	0	75	72	0	0	**952**	**924**
Volta	1,108	1,102	0	0	118	118	0	0	**1,226**	**1,220**
Greater Accra	822	795	0	0	288	284	0	0	**1,110**	**1,079**
Northern	0	0	777	645	42	37	0	0	**819**	**682**
Upper West	0	0	1455	1446	71	71	0	0	**1,526**	**1,517**
Bono	0	0	763	763	126	126	0	0	**931**	**931**
Total	**6,470**	**6,343**	**2,995**	**2,854**	**1,398**	**1,380**	**124**	**124**	**10,987**	**10,701**

Table 26 above indicates that 98.04% of complaints lodged against ECG were resolved, whiles 95.29% of all cases lodged against NEDCo were resolved. The Commission also resolved 98.71% of cases lodged against GWCL with a 100% resolution of all the one hundred and twenty- four (124) complaints lodged by the utilities against consumers.

2.3.1.1 Trend Analysis of Complaints Lodged and Resolved from 2016 to 2021

Figure 32 shows 15.27% decline in the number of complaints received by the Commission between 2016 and 2017. Complaints received, however, increased sharply by 252% between 2017 and 2019 before declining by 26% between 2019 and 2020. The sudden increase in complaints over the period could be attributed to an innovation, which was introduced by the Commission, allowing complainants to lodge complaints electronically via WhatsApp. Additionally, complaints rose as a result of the challenge between ECG and the people of Kroboland, which necessitated the Commission's regular visits to communities within Kroboland to receive and investigate complaints of consumers. The decline in receipt of complaints in 2020 could be attributed to the outbreak of COVID 19 pandemic with its associated restrictions. Complaints lodged with the Commission, however, increased by 55.47% to 10,987 in 2021, from a figure of 7,067 in 2020. This was a result of the increase in the number of Regional Offices of the Commission and the effective use of the Commission's WhatsApp platforms for cases.

Figure 32: Trend Analysis of Complaints Lodged and Resolved from 2016 to 2021



	2016	2017	2018	2019	2020	2021
Total Complaints Lodged	3,202	2,713	5,226	9,550	7,067	10,987
Total Complaints Resolved	2,577	2,608	4,938	9,251	6,911	10,701
% of Complaints Resolved	80.5	96.1	94.5	96.97	97.79	97.49

Complaints resolved by the Commission increased by 15.60% from 80.50% in 2016 to 96.1% in 2017. This figure however, decreased in 2018 by 1.60% to 94.5%, and subsequently increased by 2.47% to 96.97% in 2019 and by 0.82% in 2020 to 97.79%. Complaints resolution further decreased by 0.30% in 2021 to 97.49%.

2.3.1.2 Sources and Categories of Complaints Lodged by Utility Consumers

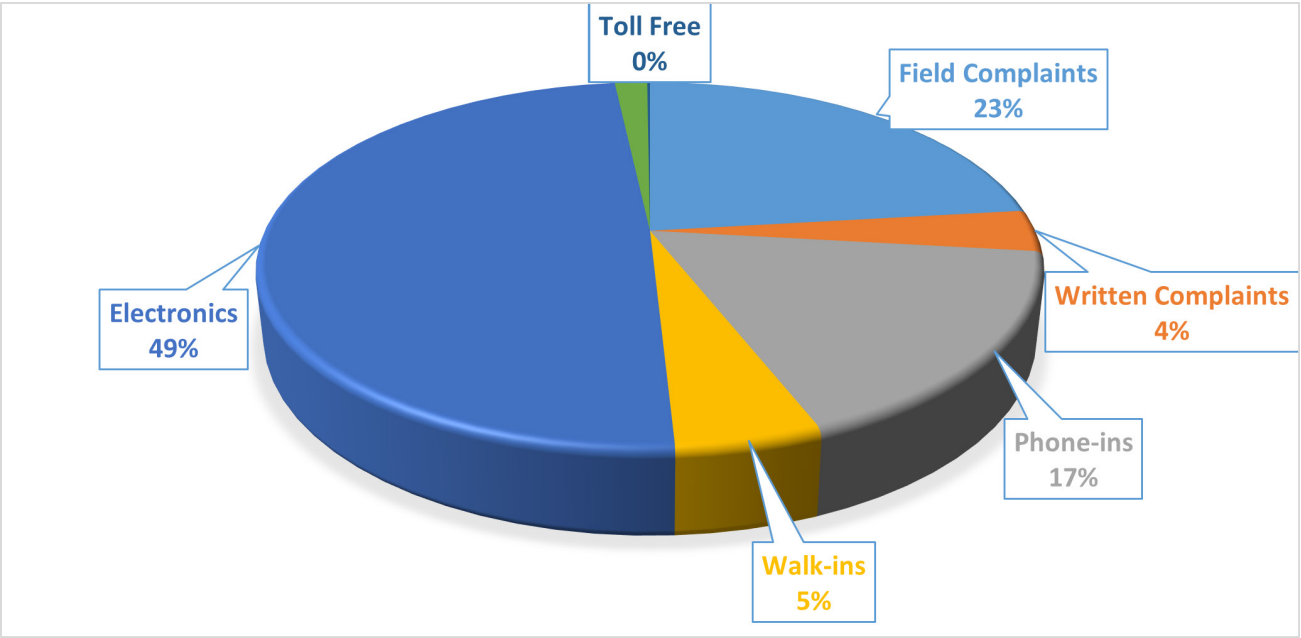
Various modes for reporting complaints were adopted by the Commission. These included field reports, written complaints, phone-ins, walk-ins, electronic media, complaints lodged with various consumer services committees of the Commission and by the Toll-Free line of the Commission. This is presented in table 27 below.

Table 28: Sources of Complaints

Region	Field Complaints	Written Complaints	Phone-ins	Walk-ins	Electronics	CSC	Toll Free
Ashanti	20	92	284	97	415	21	2
Eastern	756	3	210	45	1030		
Central	131	99	142	18	1058		
Western	488	2	52	29	248	133	
Volta	304	5	188	30	699		
Greater Accra	192	60	419	86	340		13
Northern	200	7	91	22	499		
Upper West	264	92	357	219	572	22	
Bono	188	43	146	19	535		
Total	**2,543**	**403**	**1,889**	**565**	**5,396**	**176**	**15**

Complaints received through the electronic medium (WhatsApp Platforms) was the highest means by which the Commission received complaints. This constituted 49.11% of all complaints received in the various communities. Field visits constituted 23.15%, followed by phone-ins (17.19%). The rest were walk-ins, Written Complaints, Consumer Service Committee (CSC) and Toll-free constituting 5.14%, 3.67%, 1.6%, and 0.14% respectively.

Figure 33: Sources of Complaints



2.3.1.3 Categories of Complaints Lodged

The various categories of complaints lodged with the Commission included; Billing, Metering, Payment, Quality of Service, Unlawful Disconnection and Damaged Property.

Table 29: Categories of Complaints

Utility	Regions	Damaged Equipment	Unlawful Disconnection	Payment	Quality of Service	Meters	Billing
ECG	Ashanti	7	23	14	629	20	116
	Eastern	3	17	10	1499	35	225
	Central	0	1	15	937	30	82
	Western	4	22	8	242	159	442
	Volta	1	21	5	856	87	138
	Greater Accra	10	15	65	561	77	94
	Sub Total	**25**	**99**	**117**	**4,724**	**408**	**1,097**

Utility	Regions	Damaged Equipment	Unlawful Disconnection	Payment	Quality of Service	Meters	Billing
NEDCo	Northern	7	3	4	713	8	42
	Upper West	1	33	8	1104	79	230
	Bono	2	6	3	609	16	127
	Sub Total	**10**	**42**	**15**	**2,426**	**103**	**399**
GWCL	Ashanti	-	7	0	107	0	8
	Eastern	-	1	1	239	2	12
	Central	-	2	3	268	0	28
	Western	-	5	3	56	3	8
	Volta	-	0	0	113	2	3
	Greater Accra	-	5	2	190	1	90
	Northern	-	0	1	40	0	1
	Upper West	-	1	0	47	2	21
	Bono	-	0	1	118	0	7
	Sub Total	**0**	**21**	**11**	**1178**	**10**	**173**
Consumers	Central	0	0	82	0	0	0
	Bono	0	1	41	0	0	0
	Sub Total		1	123	0	0	**0**
GRAND TOTAL		**35**	**163**	**266**	**8328**	**521**	**1674**

2.3.1.4 Over all Categories of Complaints

Table 28 above indicates that, the predominant complaint lodged with the Commission was Quality of Service, which was 75.80% of total complaints received. These include frequent power outages, phase-offs, voltage fluctuations and uncaptured Self Help Electrification Project (SHEP) customers, no flow of water, pipe bursts and leakages. This was followed by billing constituting 15.24% of total complaints. Complaints on over billing, bulk billing and billing consumers on estimated consumption was key. With respect to metering complaints, 4.74% were mainly ascribed to faulty meters with 2.42% attributable to payment issues and 1.48% due to unlawful disconnection, relating to disconnection without notice, whiles 0.32% represented damaged property.

2.3.1.5 Adjustment in Favour of Complainants

Credit sales adjustments were required for some category of complainants, which was as a result of billing irregularities. Accounts of complainants were credited with five million, seven hundred and seventy-eight thousand, three hundred and seventy-nine Ghana Cedis twenty pesewas (GHS 5,778,379.20p). The Commission also ensured that consumers were made to pay an amount of five hundred and forty-eight thousand, three hundred and eighty-three Ghana Cedis (GHS 548,383.00) to assist in defraying debts owed the utilities by consumers. Details are presented in table 29 below.

Table 30: Adjustment, Compensations and Revenue Interventions for Utilities

Region	Adjustments	Revenue Recovery for Utilities
Ashanti	207,513.98	
Eastern	16,008.28	
Central	3,455.63	35,510
Western	128,655.26	
Volta	4,462.89	
Greater Accra	5,154,232.37	
Northern Region	164,076.59	
Upper West Region	52,670.20	
Bono Region	47,304	512,873
Total	**5,778,379.20**	**548,383**

2.3.2 Community Monitoring

The Commission monitored seventy-one (71) communities across all regions of Ghana. This was to ascertain the actual quality of service being delivered to consumers through the involvement of community leaders and residents within the communities. The Commission also undertook monitoring of some selected Special Load Tariff (SLT) and non-residential customers in the Sekondi-Takoradi Metropolis to assess the impact of outages and non-flow of water in communities visited. The Community and Industrial Monitoring also served as a platform for complaint mobilization, where a desk was mounted to receive complaints from consumers of both electricity and water. The beneficiary communities monitored are listed in table 30.

Table 31: Communities Monitored

REGION	COMMUNITIES
Accra	Nsakina, Nsawam, Medie, Achiaman and Doblo
Ashanti	Abore, Agroyesum, Ankam, Datano, Mpatuam, Esaase, Keniago, Odaho, Watreso and Aponapon
Western	Beposo, Oforikrom, Atwima, Asempaneye, Awaso, Dwinase, Sukusuku, Asawinso B, Low Cost, Akaasu
Bono/Ahafo	Sankore, Kasapin, Buabeng Fiema, Sekyeredumase, Badu, Nsawkaw
Eastern	Teacher Mante, Asuboi, Suhum, Oterkpolu, Otrekper, Assesewa
Volta	Mafi Mawoekpor, Toklokpo, Sokotime, Gonu, Kpenu, Agbakope, Adusukope, Agbagorme, Hikpo, Atsieve, Dabala, Lolito, Nunyito, Hlotorto
Central	Dwenase, Kyeakor, Baifikrom, Enyan Asempanyin, Odumase
Northern	Sandema, Bolgatanga, Bindi, Bunkpurugu, Kpandai, Wulensi, Yendi, Chuchuliga, Mion, Fufulso

Picture Gallery of the Field Investigation

Figure 34: The Commission with some Chiefs and elders of Manya Krobo





Figure 35: The Commission at the site of a broken 33kV Transmission line





Figure 36: The Commission at Daboase Treatment Plant being dredged by Dredge Masters



Figure 37: The Commission at the Pro-Poor project site in the Central Region



Figure 38: The Commission at the Salaga Water Treatment Plant



Figure 39: The Commission at GRIDCo's BSP



2.3.3 Monitoring Third-Party Prepaid Vending Stations

The Commission monitored seventy (70) third-party prepaid vending stations. The main objective of the exercise was to assess and appraise the vending stations in terms of accessibility of the centre, operational times, knowledge of types of meters in its operational area, type of network used, associated challenges and knowledge of the existence and functions of the PURC.

Figure 40: Team Greater Accra at a Third-Party Vending Station





2.3.4 Public Education and Other Awareness Creation

Consumer awareness creation was extended to the grassroots level through the distribution of consumer informational leaflets, meetings with groups, associations, churches and the celebration of a Consumers' Day Programme; where there was one-on-one interaction with consumers in a particular locality and traditional and social media engagements with consumers.

The Commission embarked on various forms of public education which was done through the pasting of PURC's educational materials at vantage points in various regions, distribution of fliers, meetings with MMDAs and identifiable groups and consumer day activities. There were also radio and television educational programmes for consumers.

The Commission liaised with newspaper vendors and Ghana Post to distribute flyers of the Commission. Additionally, the Commission visited various lorry terminals to play official jingles to the travelling public. The Commission also collaborated with the Ghana National Fire Service to train employees of the Commission on the use of fire extinguishers. Virtual modes of education were adopted in reaching out to consumers during the COVID 19 pandemic. For instance, a programme dubbed "3 Minutes with the PURC", where consumers were educated virtually on weekly basis on issues that border on electricity and water services was inaugurated.

The Commission subsequently engaged both management and frontline staff of the utilities in the respective regions to educate them on the roles and functions of the Commission and the need for timely response and attendance to consumer complaints and education on the L.I.2413.

Figure 41: The Commission at a Radio Programme



Figure 42: The Commission having an in-house training on the use of fire extinguishers



Figure 43: The Commission engaged Ghana Post to Distribute flyers of the Commission



Figure 44: The Commission engaged Newspaper Vendors to Distribute flyers





2.3.5 Monitoring of Customer Service Centres and District Offices

A total of seventy-one (71) Customer Service Centres (CSC) and District Offices of the regulated utilities were monitored by the Commission to enforce standards of performance in six regions including Greater Accra, Ashanti, Eastern, Western and Northern Regions. In total, forty (40) ECG, fourteen (14) NEDCo and seventeen (17) GWCL centres were monitored.

CHAPTER THREE

3.1 Regulatory and Legal Operations

3.1.1 Quarterly Review of Electricity and Water Tariffs

The Commission, in 2021, conducted one quarterly tariff review, analysis and determination to cover the period, January 2021-March 2021, in line with provisions of the PURC Automatic Adjustment Formula (AAF).

3.2 Maintenance of Appropriate Methodologies for Rate Determination

In line with section 3 (a) of the PURC ACT, 1997, Act 538, the Commission developed and reviewed the following under-listed Rate Setting Guidelines for the provision of utility services to conform to international best practices.

3.2.1 Rate Setting Guidelines for Procurement and Supply of Electricity Generation Capacity and Energy in the Regulated Electricity Market

The Commission developed these guidelines in response to the Government of Ghana's Policy on Competitive Procurement of Energy Supply and Services Contracts. The Policy stipulated that the procurement of energy should be done in a sustainable and least-cost manner in accordance with the Public Procurement Act 2003, as amended by the Public Procurement [Amendment] Act 2016 (Act 914), and other applicable laws of Ghana. The purpose of the guidelines was to set out the principles, methodology and processes to be applied by the PURC for the determination of a Reference Capacity Charge for the competitive procurement of energy supply and services contracts in line with Government policy and the approval of tariffs for existing power plants. In terms of scope, it covers procurement of electricity generation capacity and energy from both new and existing entrants, conventional and non-conventional (renewable energy) power plants. Government's competitive procurement and bidding process for deployment in the regulated electricity market shall be based on a Reference Ceiling Capacity Charge determined and published from time to time by PURC. These guidelines are for non-conventional energy sources under Section 25(1) of the Renewable Energy Act, 2011 (Act 832) as amended by the Renewable Energy (Amendment) Act, 2020 (Act 1045).

3.2.2 Rate Setting Guidelines for Electricity Distribution and Supply

The Commission reviewed the existing Rate Setting Guidelines for Electricity Distribution and Supply, as a tariff governance framework intended to address tariff issues in electricity distribution and supply. It is applicable to any public utility licensed or authorised under any law to own or operate electricity distribution assets or to provide electricity distribution and electricity supply services in the regulated market in Ghana. Within that context, the guidelines set out the principles, methodology and processes for the approval of electricity distribution and supply tariffs by the Commission, whilst providing industry participants with information to facilitate tariff application and approval processes.

3.2.3 Rate Setting Guidelines for Water Production, Transmission, Distribution and Supply

The Rate Setting Guidelines for Water Production, Transmission, Distribution and Supply developed by the Commission

sets out the principles, methodology and processes to be applied by the PURC for determination of Revenue Requirement for Water Production, Transmission, Distribution and Supply. The guidelines also set out Detailed Proposals for Water Rates Setting and is applicable to a public utility licensed or authorised under any law to own or operate water production, transmission, distribution and supply assets or to provide water production, transmission, distribution and supply services in the regulated market in Ghana. The guidelines aim to provide the Commission with the information it needs to make decisions on tariff adjustments and provide industry participants with information to facilitate tariff application and approval processes.

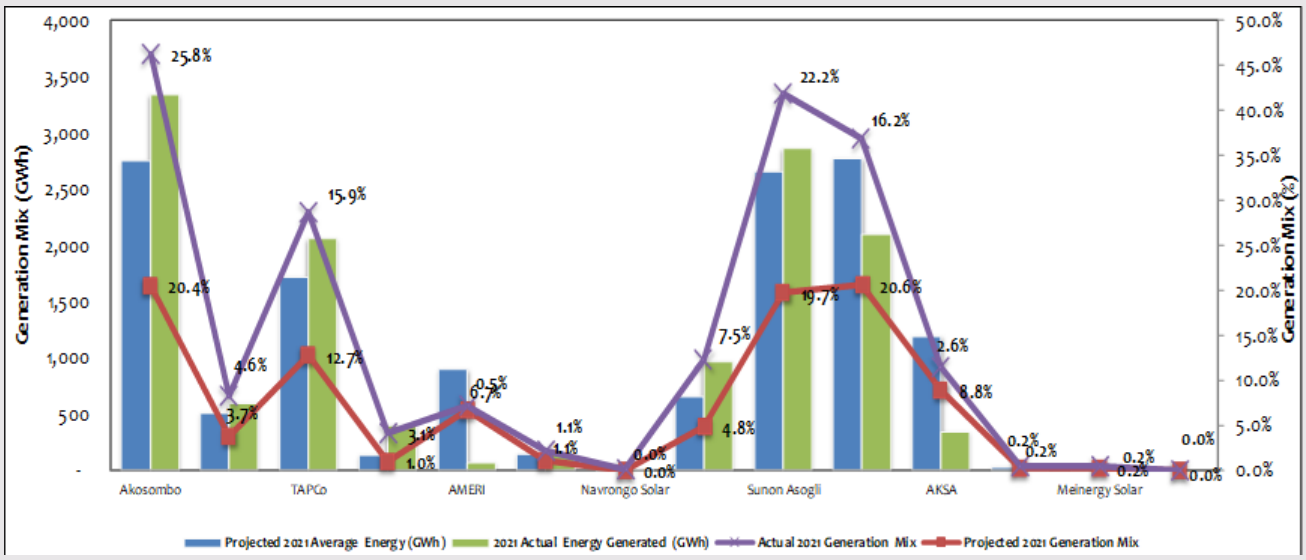
3.3 Analysis of Electricity Generation by Power Plant

Electricity generation data by power plants were compiled and analysed, with results presented in the following sections.

3.3.1 Electricity Generation Mix

Results from analysis of both projected and actual electricity generation mix for Operational Year 2021 indicated on average, actual Hydro-Thermal Generation Mix of 30.4% for Hydro and 69.6% for Thermal compared with Projected Generation Mix of 24.2% for Hydro and 75.8% for Thermal. These results are presented in Figure 45.

Figure 45: Summary of Projected Versus Actual Energy Generation Mix for Regulated Market - Operational Year 2021

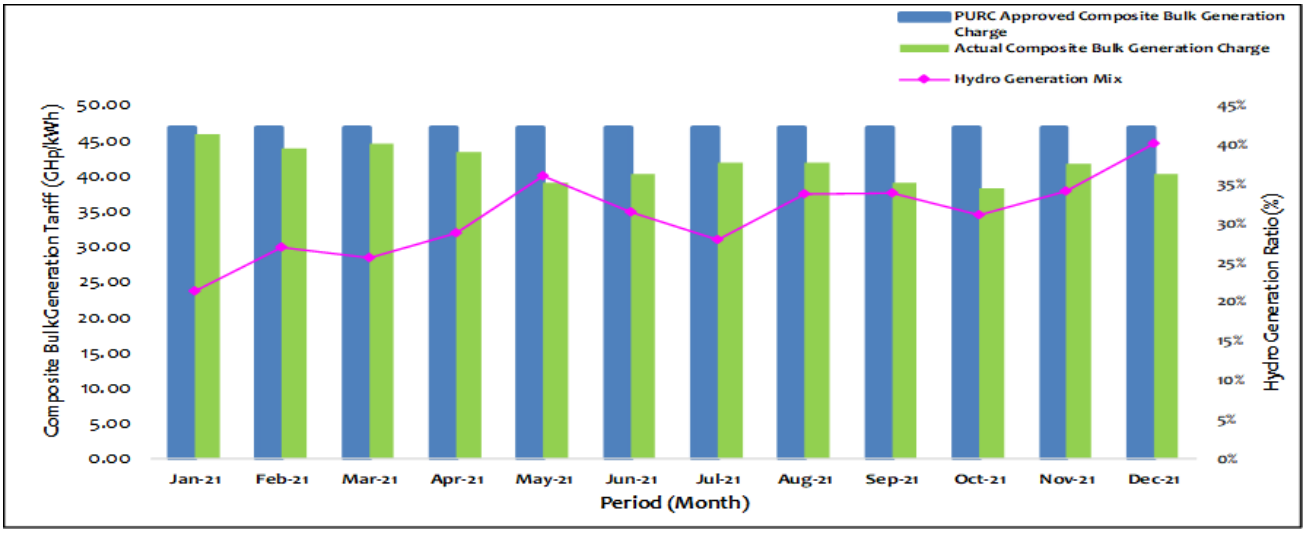


3.3.2 Impact of Electricity Generation Mix on Composite Bulk Generation Tariff

The results from analysis of impact of changes in Actual Hydro-Thermal Generation Mix on the Commission's Approved Composite Bulk Generation Tariff (CBGT) for the year under review indicated on average, significant variations in Actual CBGT compared with the Commission's Approved CBGT as shown in figure 46.

An increase in actual hydro generation above projected hydro generation resulted in an Actual CBGT lower than PURC Approved CBGT in some months whilst Actual CBGT was higher than PURC Approved CBGT in months where actual thermal generation was more than projected thermal generation. This can be attributed to the fact that cost of generation from hydro sources is cheaper than cost of generation from thermal sources.

Figure 46: Impact of Hydro-Thermal Mix on Approved Composite Bulk Generation Tariff for Operational Year 2021



3.3.3 Analysis of Electricity Generation, Transmission and Distribution Revenue

The Commission reviewed revenue for VRA, IPPs, GRIDCo as well as ECG and NEDCo. Results from analysis of Generation Revenue data for VRA and IPPs, Transmission Revenue for GRIDCo as well as the Distribution Companies are presented in Tables 31 and 32 respectively.

Table 32: Summary of Projected Versus Actual Electricity Generation Revenue for Regulated Market 2021

Power Plant	Projected 2021 Electricity Generation (kWh)	Actual 2021 Electricity Generation (kWh)	PURC Approved Tariff (GHp/kWh)	Projected 2021 Revenue (GHS)	Actual 2021 Revenue (GHS)	Non Fuel Revenue (GHS)	Fuel Revenue (GHS)
VRA Generation:							
Akosombo	2,755,410,000	3,338,326,467	10.8652	299,380,807	362,715,847	362,697,898	0
Kpong	504,090,000	589,360,485	22.2746	112,284,031	131,277,691	126,690,449	0
TAPCo	1,717,470,000	2,054,421,700	41.4236	711,437,903	851,015,427	298,241,864	552,773,563
TT1PP	132,550,000	402,213,000	46.2275	61,274,551	185,933,015	82,143,202	103,789,813
Ameri	898,200,000	64,542,200	65.6039	589,254,230	42,342,200	6,585,832	33,392,978
KTPP	145,270,000	145,270,000	46.0782	66,937,801	66,937,801	66,937,801	34,685,065
Navrongo Solar	3,000,000	3,000,000	98.1053	2,943,159	2,943,159	2,943,159	-
Total VRA	**6,152,990,000**	**6,594,133,852**		**1,840,569,324**	**1,640,221,981**	**943,297,045**	**724,641,419**
IPPs Generation:							
Bui	650,000,000	966,802,400	58.1772	378,151,800.00	562,458,566	562,458,566	-
Sunon Asogli	2,655,850,000	2,861,178,400	57.0898	1,516,219,895.34	1,633,441,502	789,151,887	844,289,615
Karpowership	2,775,150,000	2,096,528,100	59.6819	1,656,262,247.85	1,251,247,804	647,683,397	603,564,407
AKSA	1,189,680,000	338,947,300	74.6956	888,638,614.08	253,178,719	100,704,146	152,474,573
BXC Solar	27,000,000	28,283,885	108.2716	29,233,332.00	30,623,414	30,623,414	-
Meinergy Solar	27,000,000	25,712,150	97.4419	26,309,313.00	25,054,408	25,054,408	-
Safisana	700,000	-	94.0922	658,645.40	-	-	-
Total IPP	**7,325,380,000**	**6,317,452,235**		**4,495,473,848**	**3,756,004,414**	**2,155,675,819**	**1,600,328,595**
Total VRA&IPP	**13,478,370,000**	**12,911,586,086**		**6,336,043,171**	**5,396,226,395**	**3,098,972,864**	**2,324,970,014**

Table 33: Summary of Transmission and Distribution Revenues for 2021

Item Description	2021 Projected Electricity Transmission/Distribution (GWh)	2021 Actual Electricity Transmission/Distribution (GWh)	Tariff (GHp/kWh)	Weight of Cost Items in Tariff (%)	2021 Estimated Actual Revenue (GHS)
GRIDCo:					
Projected and Actual Energy Transmitted	13,427	15,919			
Regulatory Levy			0.6023	8%	95,877,934.40
TSC Attributable to Operation, Maintenance & Return on Investment			6.5398	92%	1,041,046,846.10
Total TSC Revenue			7.1421	100%	1,136,924,780.50
ECG/NEDCo:					
Projected and Actual Energy Distributed	9,036	12,321			
DSC Attributable to Losses			15.4213	48.9%	970,763,648.38
DSC Attributable to Operation, Maintenance & Return on Investment			16.1094	51.1%	1,014,079,222.71
Total DSC			31.5307	100.0%	1,984,842,871.10
ECG:					
Projected and Actual Energy Distributed	7,879	10,982			
DSC Attributable to Losses			15.4213	48.9%	865,257,360.69
DSC Attributable to Operation, Maintenance & Return on Investment			16.1094	51.1%	903,865,233.56
Total DSC			31.5307	100.0%	1,769,122,594.24
NEDCo:					
Projected and Actual Energy Distributed	1,156	1,339			
DSC Attributable to Losses			15.4213	48.9%	105,506,287.69
DSC Attributable to Operation, Maintenance & Return on Investment			16.1094	51.1%	110,213,989.16
Total DSC			31.5307	100.0%	215,720,276.85

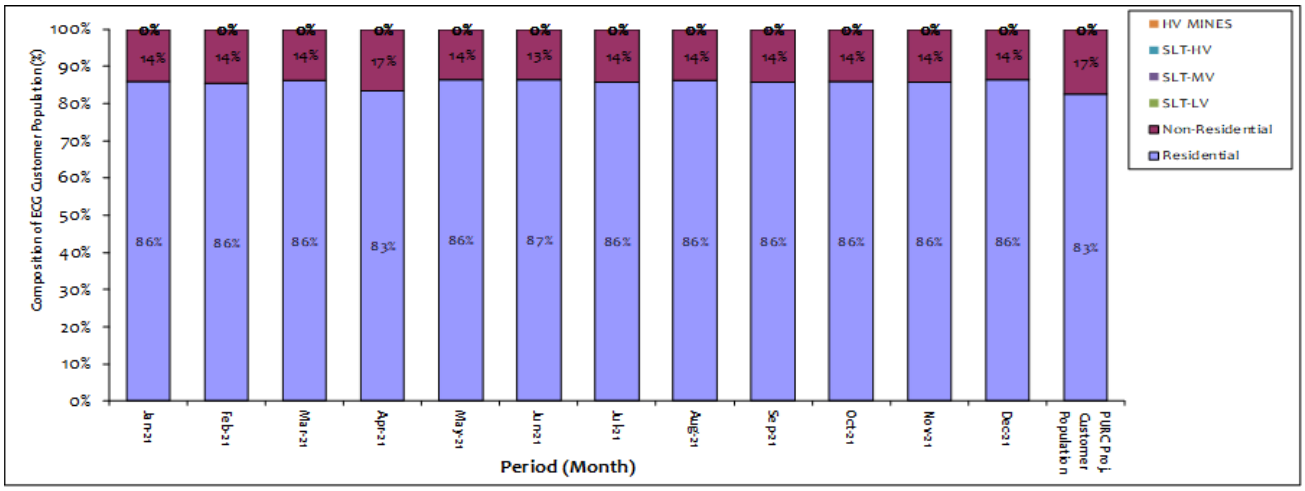
3.3.3.1 Analysis of Actual Versus Projected ECG Customer Population, Electricity Consumption and Revenue for Operational Year 2021

This section contains analyses of Actual versus Projected ECG Customer Population, Electricity Consumption by each Customer Class as well as revenues by Customer Category. The analyses cover the period January, 2021 – December, 2021.

3.3.3.2 Analysis of ECG Customer Population

In the year under review, the Commission undertook analysis of actual ECG Customer Population versus ECG Projected Customer Population. Results from analysis of data in respect of the above are presented in Figure 47.

Figure 47: Analysis of ECG Customer Population January – December 2021

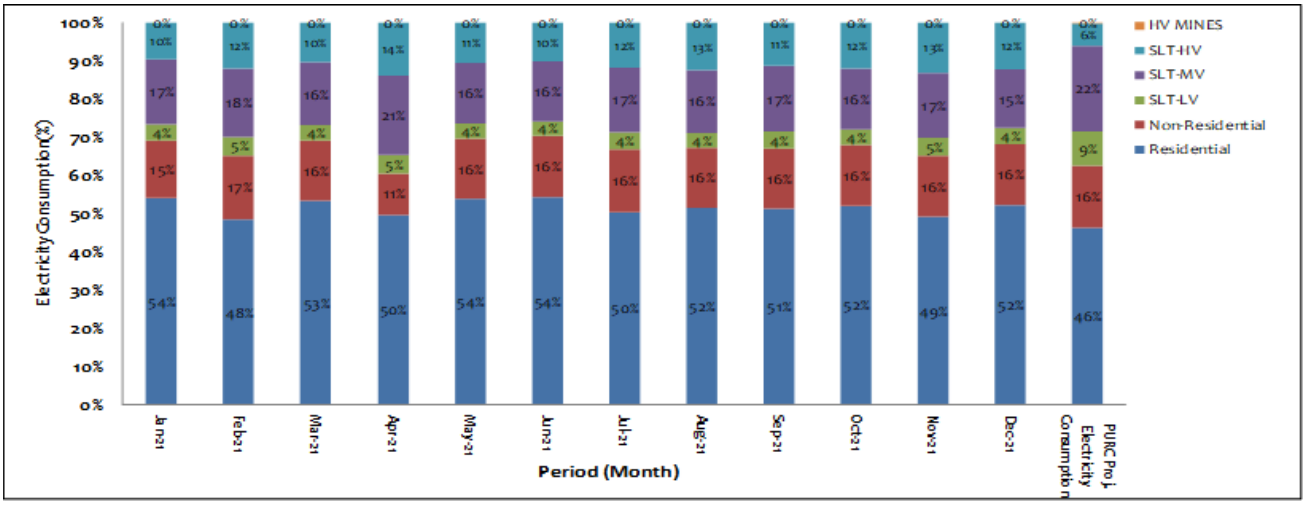


The results presented in Figure 47 shows an average increase in Actual ECG Residential Customer population and a marginal decrease in Non-Residential and Special Load Tariff Customer population as compared with ECG Projected Customer Population mix which was submitted to PURC as part of the Company's submission during the 2019-2020 Major Tariff Review.

3.3.3.3 Analysis of Electricity Consumption by ECG Customer Category

Results from analysis and review of electricity consumption by ECG Customer Category for the Operational Year ending December 31, 2021 are presented in Figure 48.

Figure 48: Electricity Consumption by ECG Customer Category January – December 2021

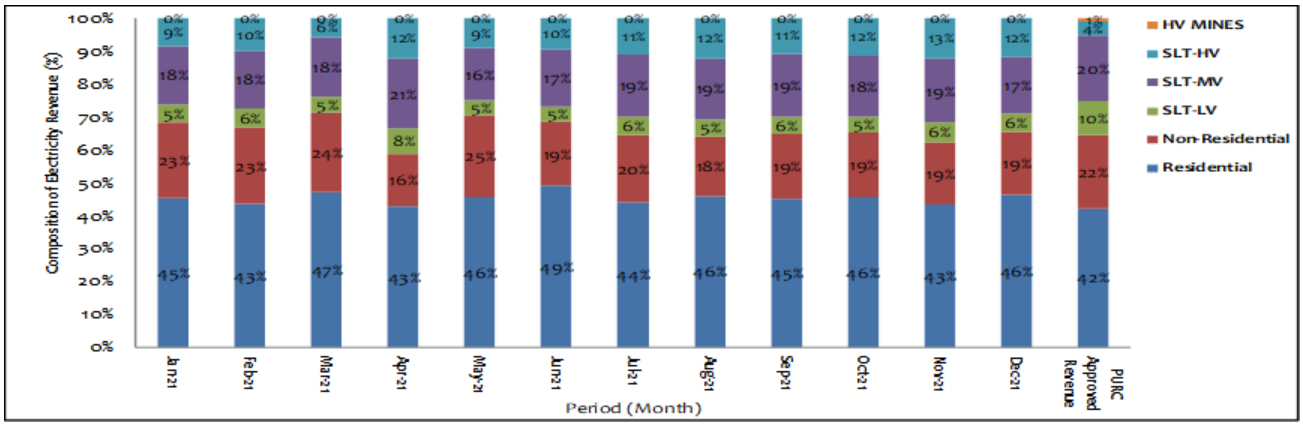


As shown in Figure 48, electricity consumption by ECG Customer Category indicated substantial decreases for SLT-LV and SLT-MV Customers averaging 4.7% and 5.2% respectively. Marginal decreases of 0.9% and 0.3% were also recorded for Non-Residential and SLT-HV Mines Customers as against appreciable increase of 5.6% for Residential and SLT-HV Customers as compared to ECG Projected Electricity Consumption Mix as approved by PURC during the 2019-2020 Major Tariff Review.

3.3.3.4 Analysis of ECG Revenue by Customer Category

Similar to other analysis presented in this report, analysis of ECG Revenue by Customer Category was carried out covering the 2021 Operational Year, with the view to ascertain how much revenues were collected from each customer grouping. The results are presented in Figure 49.

Figure 49: ECG Revenue by Customer Category January – December 2021



In terms of comparison between PURC projected ECG Customer Population, Consumption and Revenue figures against actual ECG realised figures in the year under review, the results above suggest the following:

1. ECG Residential Customer Population witnessed an increase of 3.3% with a corresponding 5.4% increase in electricity consumption and a rise in revenue by 3.2% compared with PURC's 2019-2020 Approved Revenue for Residential Customers;
2. Population of Non-Residential Customers on the other hand declined by 3.3% while there was a 0.7% increase in electricity consumption and consequently a 1.8% drop in revenue in comparison with PURC Approved Revenue for Non-Residential Customers for 2019-2020 Major Tariff Review period;
3. SLT-LV Customer Population saw a reduction of 0.01%, however, electricity consumption for the period declined by 4.7% and thus revenue also dropped by 5% compared with PURC Approved Revenue for 2019-2020 Major Tariff Review period for SLT-LV Consumers;
4. Compared with PURC projections, SLT MV Customer Population declined by less than 0.01% while electricity consumption and revenue decreased by 5.4% and 1.5% respectively.; and
5. With regards to SLT-HV, a 0.01% increase in Customer population was recorded with a 5.8% increase in in electricity consumption and a corresponding 6.3% increase in revenue.

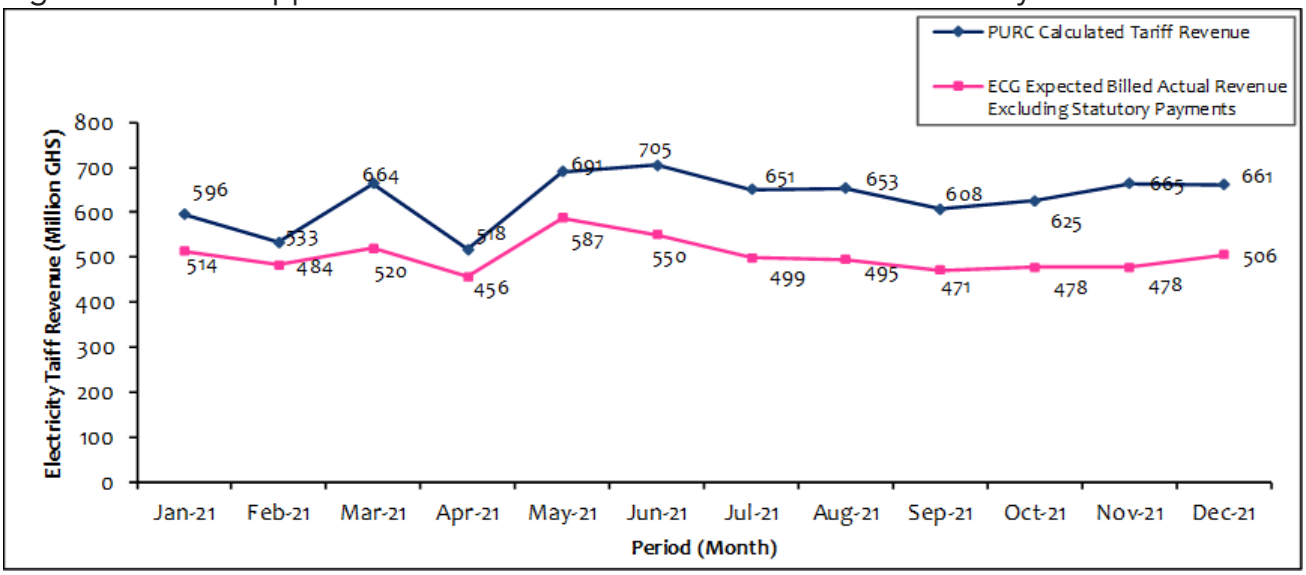
3.3.4 Analysis of ECG Tariff Revenue, Collection and Payments

Analysis of ECG Tariff Revenue, Collections and Payments are presented in this section. These results, including accompanying graphs are presented in Figures 50, 51 and 52 respectively.

3.3.4.1 Analysis of ECG Electricity Tariff Revenue

Results from analysis of data in respect of ECG Tariff Revenue is presented in Figure 50.

Figure 50: PURC Approved versus ECG Revenue Tariff Revenue January-December 2021

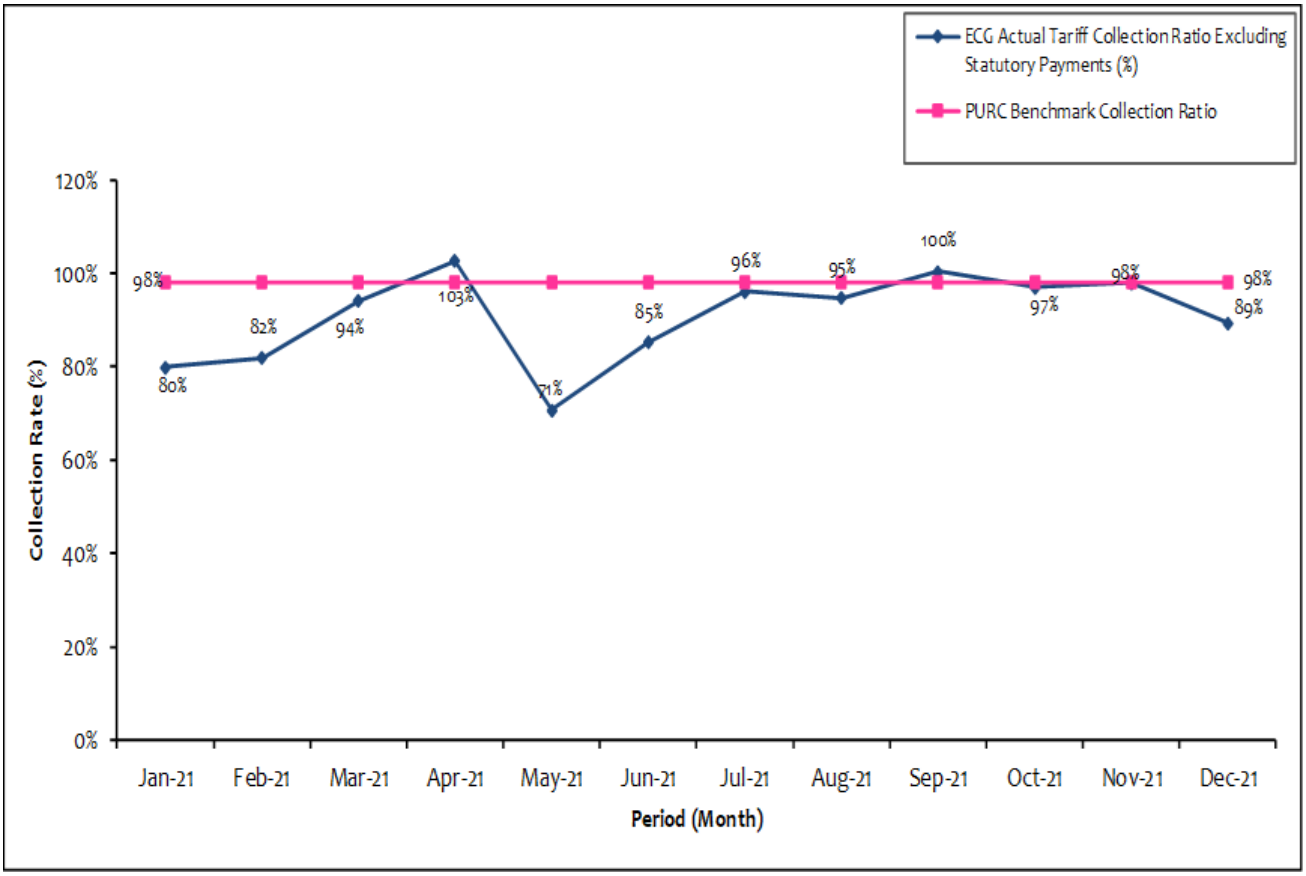


The results presented in Figure 50, indicates PURC's calculated tariff revenue above ECG expected billed revenue from January 2021 through to December 2021.

3.3.4.2 Analysis of ECG Electricity Tariff Revenue Collection

Results from analysis and review of ECG Revenue Collection covering January 2021-December 2021 are shown in Figure 51.

Figure 51: ECG Tariff Revenue Collection January-December 2021

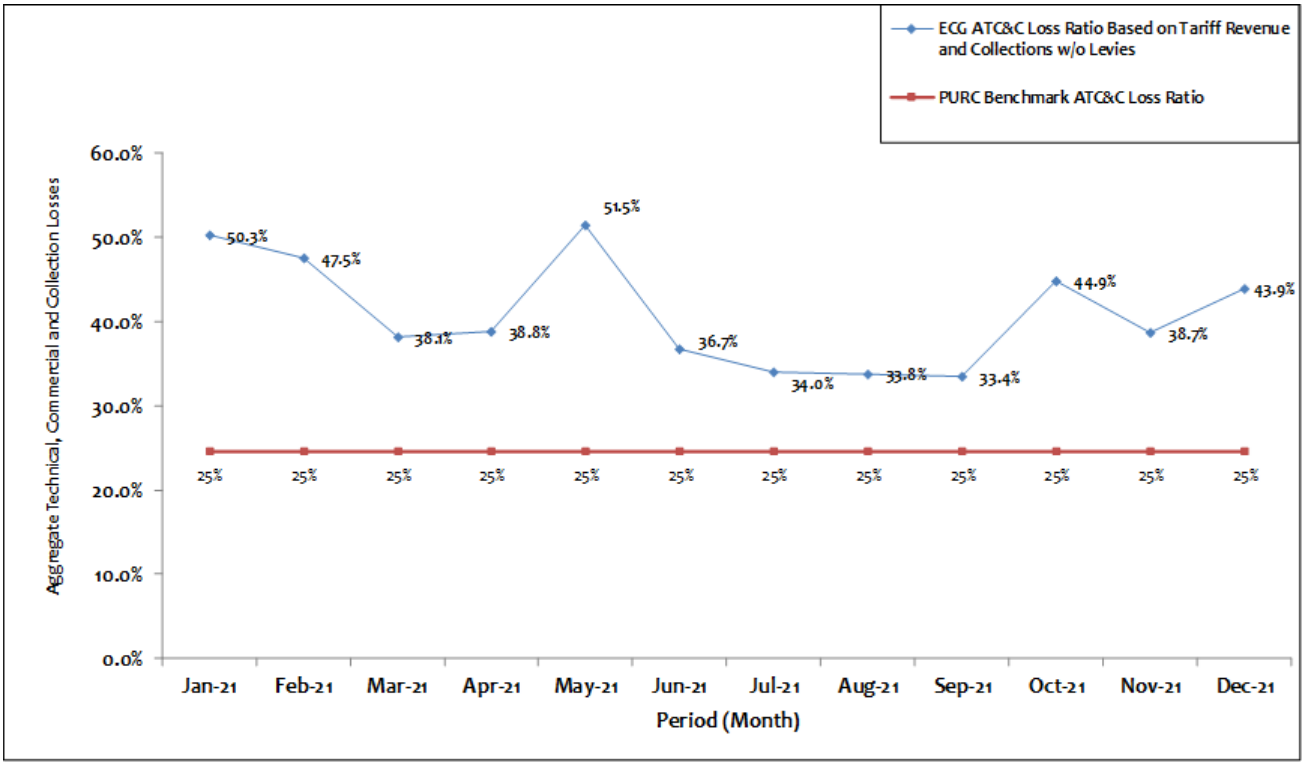


The results presented in Figure 51 indicates that, in terms of collection, ECG's Actual Average Collection ratio for January, 2021 was 80%, the lowest recorded for the period. ECG Actual Collection ratio increased slightly to 82% in February, 2021 and further to 94% in March ,2021. April, 2021 witnessed an Actual Collection ratio of 103% beyond PURC's Benchmark Collection Ratio of 98% and was the highest over the period under review. A sharp drop to 71% was recorded in May, 2021 which increased to 85% in June, 2021 then to 96% in July, 2021. ECG Actual Collection ratio dropped marginally to 95% in August, 2021 and increased to 100% in September, 2021. The Collection ratio reduced steadily over the last quarter of 2021 with December recording a collection ratio of 89%.

3.3.4.3 Analysis of ECG Aggregate Technical, Commercial and Collection Losses (ATC&C)

As part of the Commission's reporting requirements and measure of operational and financial performance of Distribution Utility Service Providers, an analysis of Aggregate Technical, Commercial and Collection (ATC&C) Losses was carried out. The results are presented in Figure 52.

Figure 52: ECG Aggregate Technical, Commercial and Collection Losses (ATC&C) January – September 2021



The results presented in Figure 52 shows a decrease in ECG's ATC&C Losses from 50.3% in January 2021 to 47.5% in February 2021. This declined further to 38.1% in March 2021 and rose slightly to 38.8% in April 2021. ECG's ATC&C Losses increased sharply to 51.5% in May 2021 and reduced significantly to 36.7% in June 2021. Actual ECG ATC&C Losses ranged between 34% and 33.4% from July 2021 to September 2021. With respect to the last quarter of 2021, ECG witnessed increases and decreases in the company's ATC&C Losses. The spikes in ECG's ATC&C Losses are closely linked to spikes in ECG Actual Collection ratio.

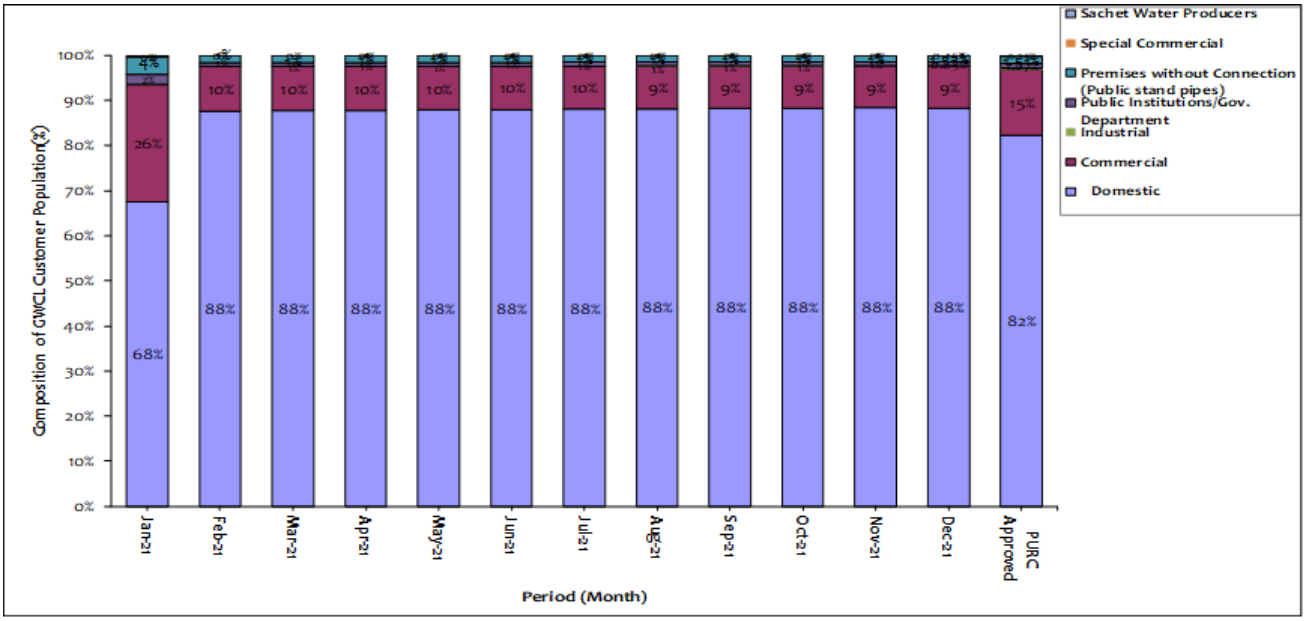
3.4 Analysis of Actual Versus Projected GWCL Customer Population, Electricity Consumption and Revenue

Ghana Water Company Limited is a wholly owned state enterprise with responsibility for the production, transmission and distribution of water in the urban communities in Ghana for public, domestic, commercial and industrial use. The company which formerly operated as Ghana Water and Sewerage Corporation (GWSC) was converted into a limited liability company under the new name Ghana Water Company Limited in July, 1999. GWCL, then GWSC was originally charged to operate as a commercial concern and to ensure that its revenues fully cover its cost from year to year.

3.4.1 Analysis of GWCL Customer Population

Results from analysis of Actual GWCL Customer Population versus Projected Customer Population data and related documentation from January, 2021 to December, 2021 are presented in Figure 53.

Figure 53: Analysis of GWCL Customer Population January – December 2021



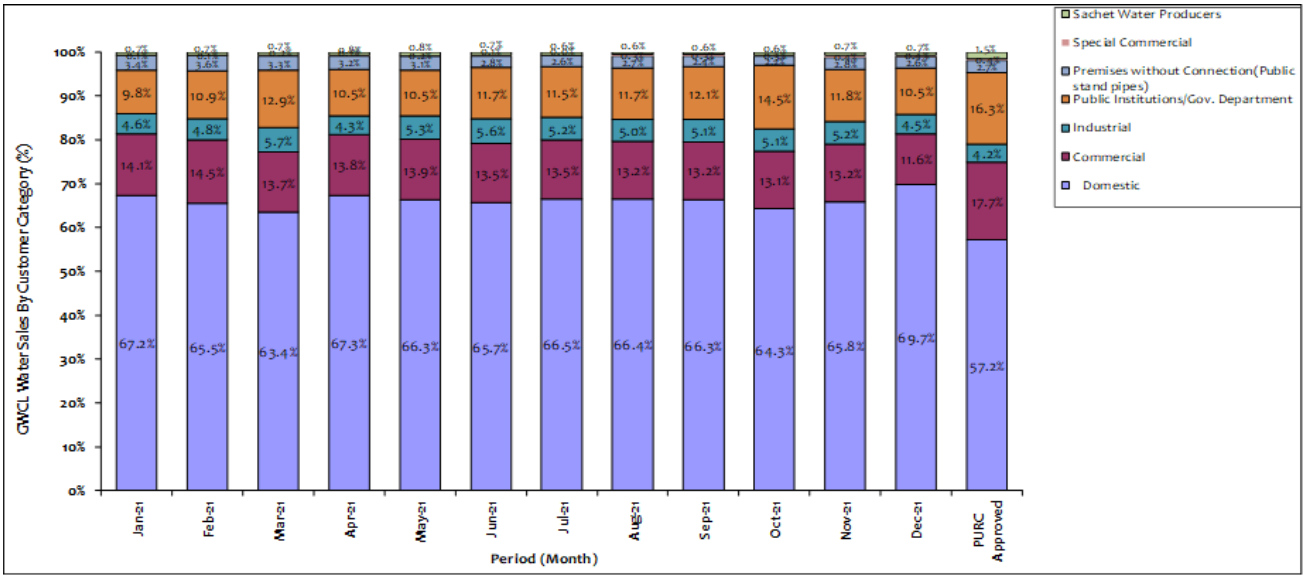
The results shown in Figure 53 indicates that in terms of Customer Mix, Domestic Customer numbers increased by 4.1% on an average as compared to projected Customer Population data submitted by GWCL to PURC for the 2019-2020 Major Tariff Review.

On the other hand, other Customer Categories, on an average, witnessed a reduction with Commercial Customers decreasing by 3.7% whereas Industrial Customers declined by 0.3%. Other Special Customers declined averagely by 0.1%. For the period January – December, 2021, there was variation in actual GWCL Customer Mix compared with projected Customer Population data submitted by the Company to PURC for the 2019-2020 Major Tariff Review.

3.4.2 Analysis of Water Sales by GWCL Customer Category

GWCL Water Sales/Consumption by Customer Category is reviewed in this section. The review and analysis of water sales data of GWCL by Customer Category for Operational Year ending December 31, 2021 is presented in Figure 54.

Figure 54: GWCL Water Sales Volume by Customer Category January – December 2021



The results presented in Figure 54 on Water consumption by GWCL Customer Category indicated a considerable increase in consumption for Domestic and Industrial Consumers and a slight reduction over other ranges of Customer Category in terms of GWCL Water Consumption Mix compared with GWCL Projected Water Consumption Mix approved by PURC during the 2019-2020 Major Tariff Review.

3.4.3 Analysis of GWCL Sales Revenue by Customer Category

GWCL Revenue by Customer category for the Operational Year ending December 31, 2021 is reviewed in this section. The results from analysis of data are presented in Figure 55.

Figure 55: GWCL Sales Revenue by Customer Category January – December 2021

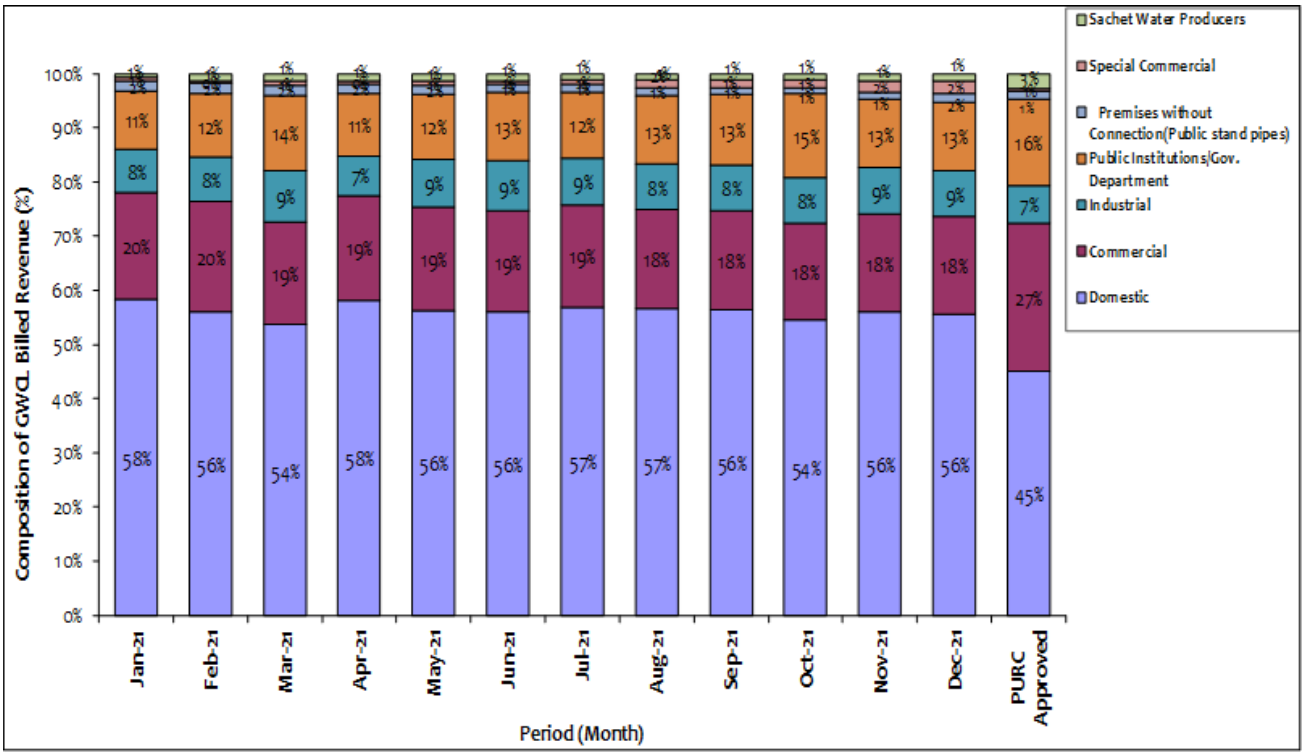


Figure 55 shows GWCL's Sales Revenue by Customer Category for January-December 2021. The results indicated an increase in revenue for Residential and Industrial Customers whereas there was a marginal decrease in GWCL's Revenue Mix for other Customers as compared with PURC's Approved Revenue for GWCL as part of the 2019-2020 Major Tariff Review.

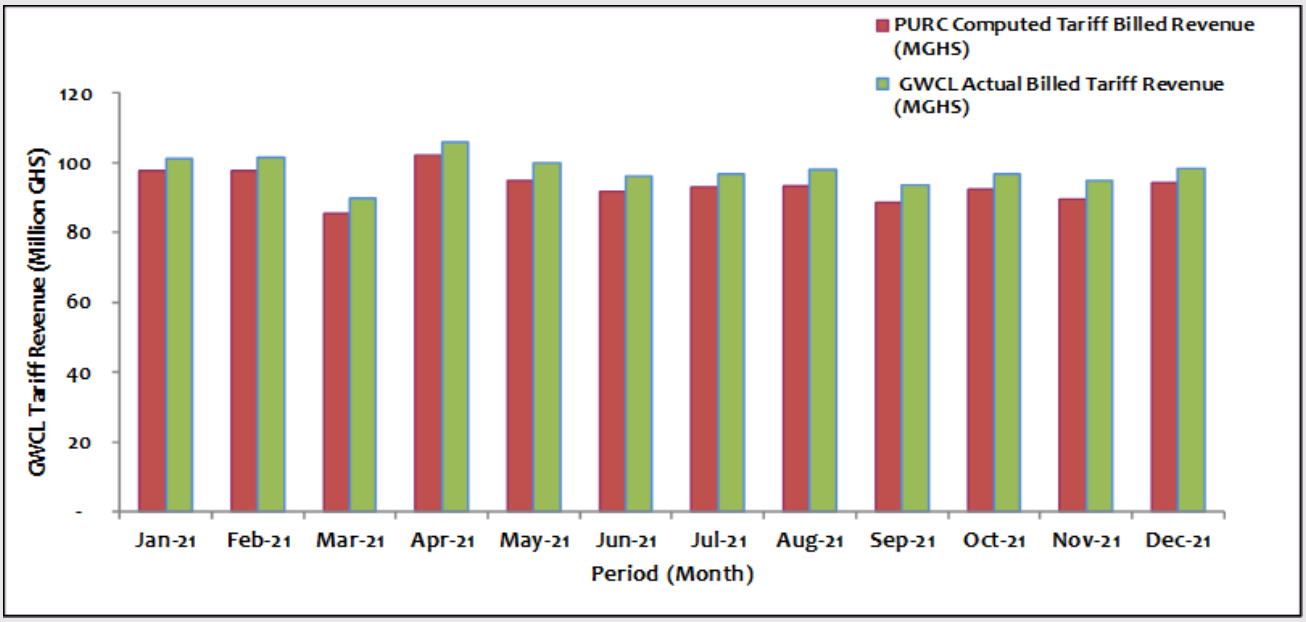
3.4.4 Analysis of GWCL Tariff Revenue, Collection and Payments

Similar to Tariff Revenue, Collection and Payments review and analysis of ECG, the commission also undertook analysis of GWCL's tariff Revenue, Collections and Payments for the period ending December 31, 2021. The results from this analysis are noted in the following sections.

3.4.4.1 Analysis of GWCL Tariff Revenue

GWCL's performance from a Tariff Revenue perspective in comparison with that of PURC position is presented in Figure 56.

Figure 56: GWCL Billed Revenue Versus PURC Computed Tariff Revenue January – December 2021

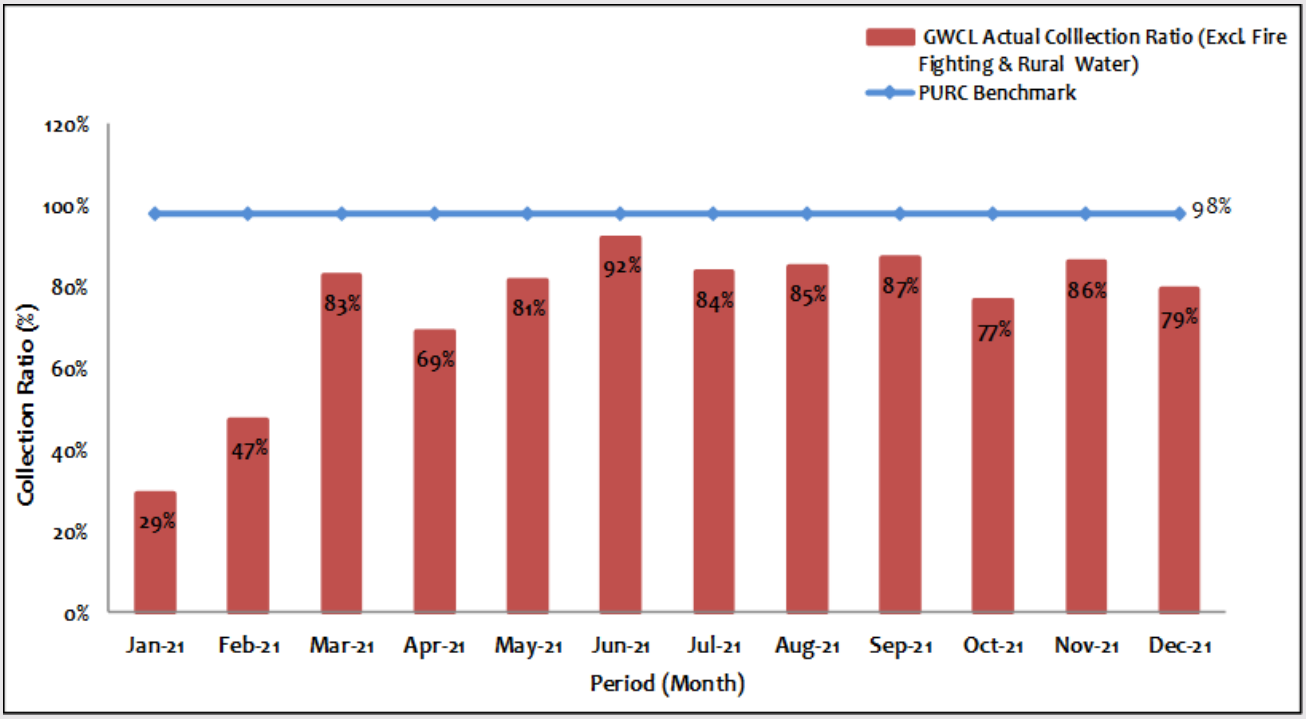


The results presented in Figure 56 on GWCL's performance in terms of Revenue indicated an increase in Actual GWCL Billed Revenue over PURC's Computed Tariff Revenue averaging 4.7% over the period January – December 2021.

3.4.4.2 Analysis of GWCL Tariff Revenue Collection Ratio

The Analysis involved review of the Company's revenue collection performance against PURC Revenue Collection Benchmark Ratio of 98% over 2021 Operational Year. Results from the review are presented in Figure 57.

Figure 57: GWCL Tariff Revenue Collection January – December 2021



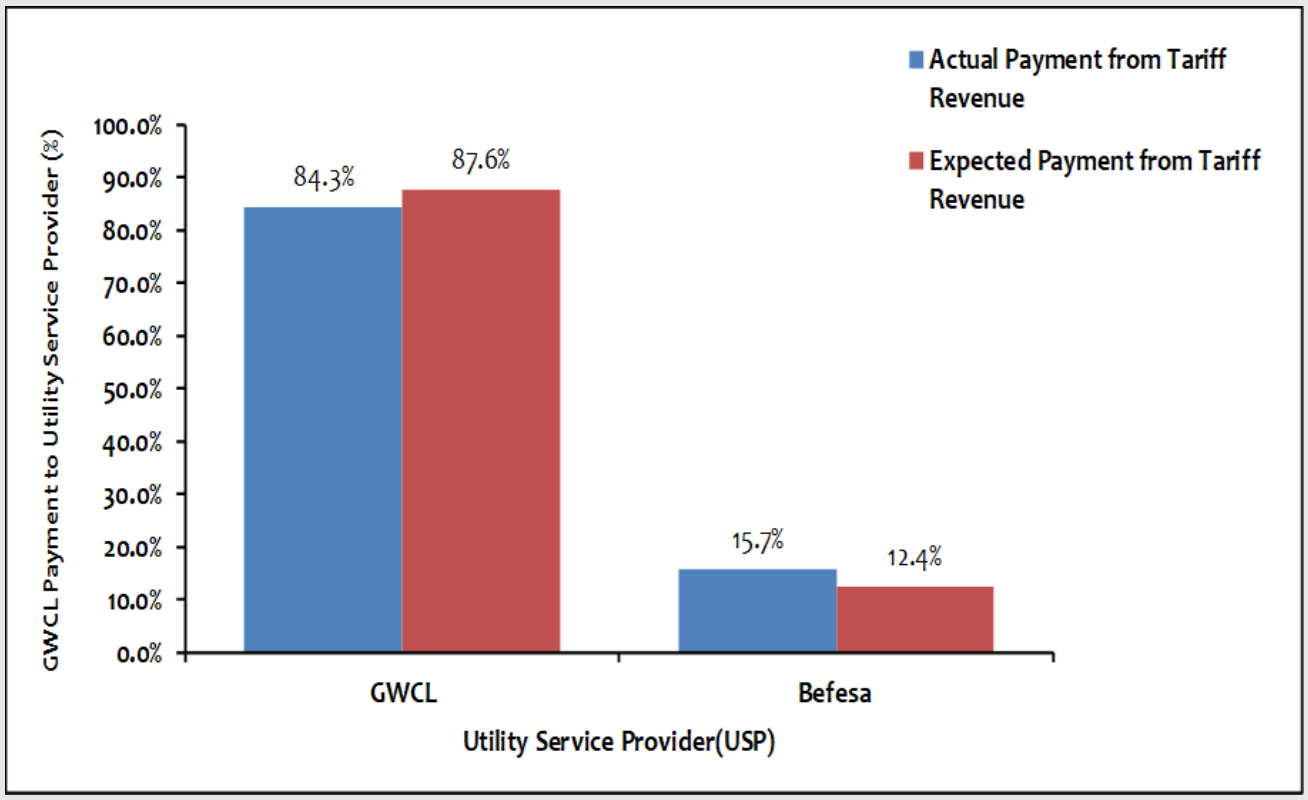
GWCL Tariff Revenue Collection performance shown in Figure 57 over the period under review averaged 75% compared with PURC Tariff Revenue Collection Benchmark of 98%. On month-by-month basis, the Company's Tariff Revenue Collection Performance in January, 2021 was the lowest with a Collection Ratio of 29%. This increased significantly to 47% in February, 2021 and then rose sharply to 83% in March, 2021. GWCL's Collection Ratio declined to 69% in April, 2021 and increased slightly to 87% in May, 2021.

The month of June witnessed a continuous rise to 92%, the highest recorded for the period under review. Collection ratio from July to September 2021 ranged between 84% to 87%. Actual Collection ratio decreased slightly with October 2021 recording 77% while November and December 2021 recorded 86% and 79% respectively.

3.4.4.3 Analysis of GWCL Payments

In terms of payments from Tariff Revenue, results from expected payments as against actual payments made by GWCL are presented in Figure 58.

Figure 58: Analysis of GWCL Payments January – December 2021

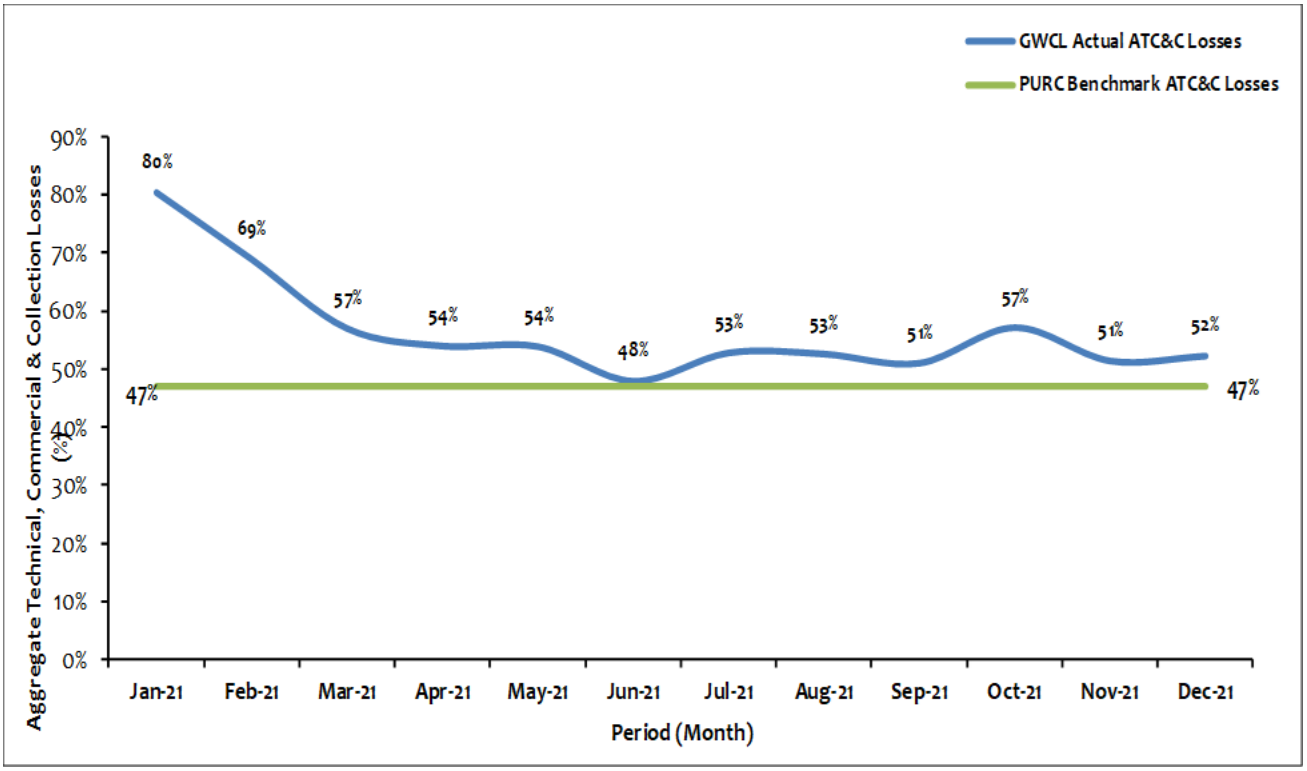


The results on GWCL payments as shown in Figure 58 indicates that over January – December, 2021 period, actual payments by GWCL to Befesa from the Company under the GWCL-Befesa Water Sale and Purchase Agreement, on average, increased beyond expected payments by 3.3% from 12.4% to 15.7%. GWCL's actual payments on the other hand witnessed a 3.3% decrease from expected payment proportion of 87.6% to 84.3%.

3.4.4.4 Analysis of GWCL Aggregate Technical, Commercial and Collection (ATC&C) Losses

GWCL's Aggregate Technical, Commercial and Collection performance over the January–December 2021 period is reviewed in this section. The results of this review are presented in Figure 59.

Figure 59: GWCL Aggregate Technical, Commercial and Collection (ATC&C) Losses January – December 2021



The results presented in Figure 59 on GWCL's Aggregate Technical, Commercial and Collection (ATC&C) Losses during the Operational Year 2021 indicates a stable performance of the Company over the period with the exception of January and February 2021. GWCL's ATC&C Loss performance ratio which stood at 80% in January 2021 experienced decreases over the period and ended the year at 52% in December 2021.

In comparison with PURC ATC&C Loss Benchmark of 47%, GWCL with the exception of January and February 2021 on an average recorded 53% ATC&C loss Level for the period under review.

3.4.4.5 GWCL Efficiency Analyses

The overall efficiency performance of GWCL comparing year 2020 with the period under review is discussed in this section. Data parameters used in the analysis are presented in Table 33.

Table 34: Summary of GWCL Efficiency Analysis for 2020 & 2021

Description	Unit	Period (Year) 2020	2021
Water Produced	Mm3	325.3	320.86
Water sold	Mm3	198.2	174.78
Revenue water	%	60.9%	54.5%
Billing (nominal)	MGCedis	1353.4	1179.88
Collection (nominal)	MGCedis	1160.95	1060.10
Average tariff	cedis per m3	6.83	6.75
Direct Operating Cost (Excluding energy) (nominal)	MGCedis	2980.81	1612.18
Energy (electricity and fuel) (nominal)	MGCedis	322.79	350.16
Depreciation (nominal)	MGCedis	766.3	794.33
Total Operating Cost (nominal)	MGcedis	3303.60	1962.34
Direct unit operating cost of water produced (nominal)	cedis per m3	9.16	5.02
Direct unit operating cost of water sold (nominal)	cedis per m3	15.04	9.22
Direct unit operating cost of paid for water (nominal)	cedis per m3	17.53	10.27
Direct unit energy cost of water produced (nominal)	cedis per m3	0.99	1.09
Direct unit energy cost of paid for water (nominal)	cedis per m3	1.90	2.23
Direct unit operating cost of water produced (nominal)	cedis per m3	8.17	3.93
Direct unit operating cost of water sold (nominal)	cedis per m3	13.41	7.22
Direct unit operating cost of paid for water (nominal)	cedis per m3	15.63	8.04
Unit cost of water produced (nominal)	cedis per m3	10.16	6.12
Unit cost of water sold (nominal)	cedis per m3	16.67	11.23
Unit cost of paid for water (nominal)	cedis per m3	19.43	12.50
Ratio of UfW to production	%	39.1%	45.5%
Ratio of collection to billing	%	85.8%	89.8%
Ratio of collection to production	%	52.3%	48.9%

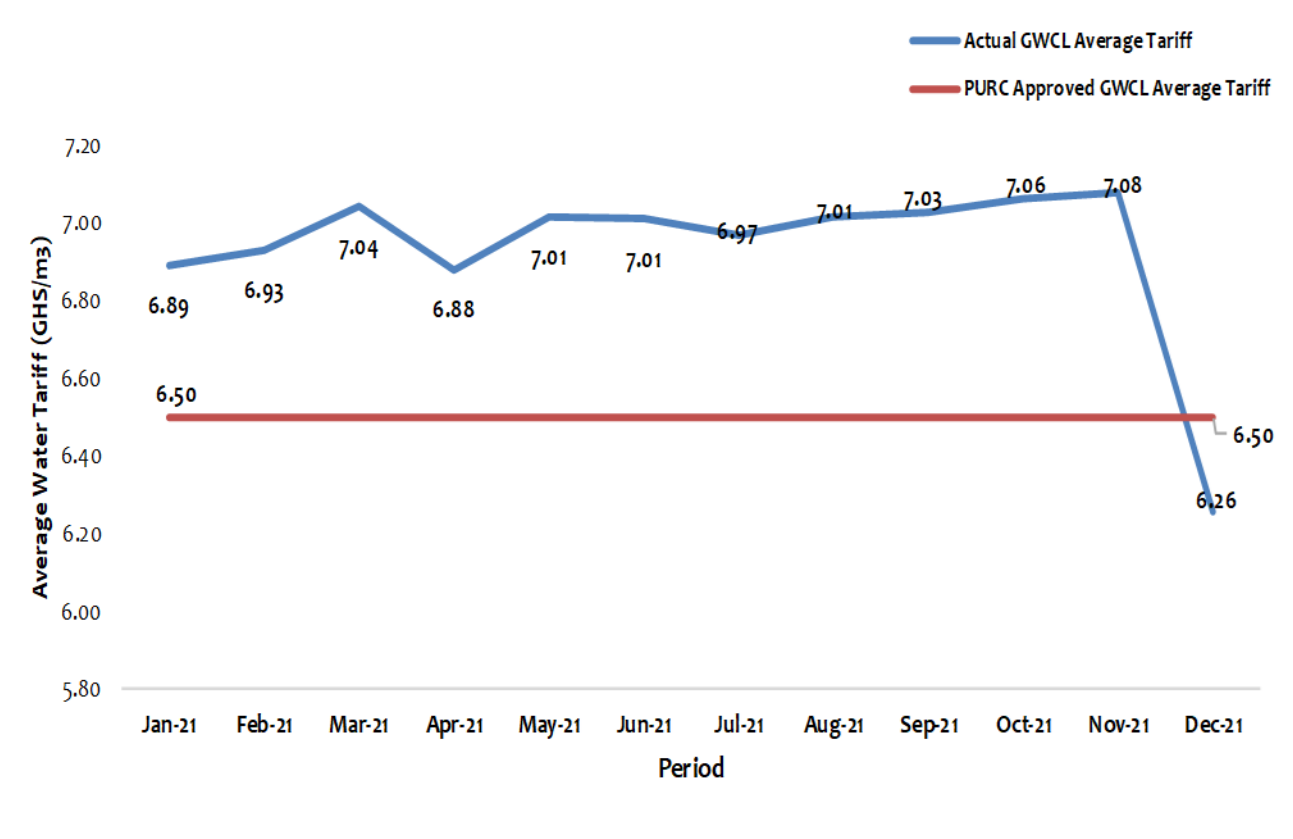
As indicated in Table 33, the volume of water produced decreased by 4.44Mm3 from 325.3Mm3 in 2020 t0 320.86Mm3 in 2021 with a corresponding decrease in water sold from 198.2Mm3 in 2020 to 174.78Mm3 in 2021. This can be attributable to the free water policy issued by Government as a COVID 19 relief to water consumers. It is worth noting that Non-Revenue water increased significantly from 39.1% in 2020 to 45.5% in 2021 slightly above PURC's Benchmark for Non-Revenue water of 45%.

GWCL also witnessed a reduction in Collection ratio as a proportion of production. This means that Headline Efficiency or Revenue Creating Production which is expressed as the percentage of water produced converted into revenue collected decreased in 2021, from 52.3% in 2020 to 48.9% in 2021. A decrease in average tariff from 6.83GHS/m3 in 2020 to 6.75GHS/m3 in 2021 was witnessed. This reduction can be as a result of decrease in operating expenses of GWCL. It must be noted that the policy of PURC is full recovery of efficient operation and maintenance costs by GWCL from water tariffs hence GWCL must continue to improve its performance.

3.4.4.6 GWCL Actual Average Tariffs

In the period under review, GWCL experienced fluctuations in actual average tariffs realised per month as against PURC approved average tariff. It must be noted that the PURC approved average Tariff for January-December, 2021 was GHS6.4962/m3. The tariff results are shown in Figure 60.

Figure 60: GWCL Actual Average Tariffs Versus PURC Approved Average Tariffs January – December 2021



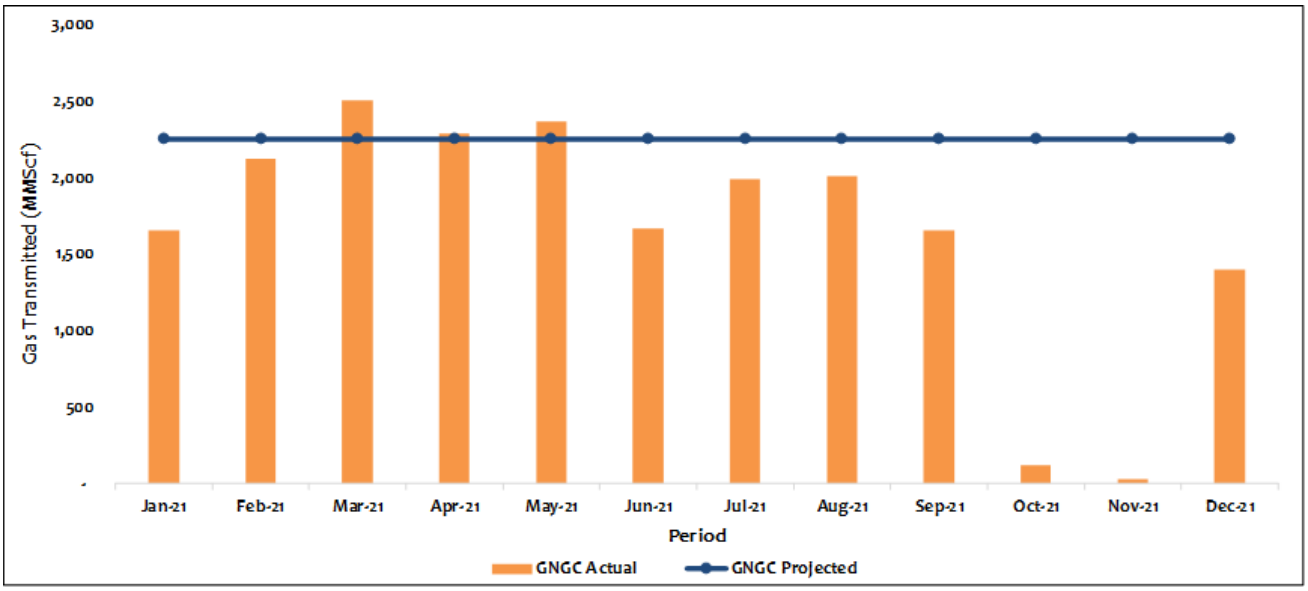
The results indicate that for the Operational year of 2021, GWCL's actual average tariffs were above PURC approved average tariff of GHS6.50/m3 with the exception of December, 2021. This indicates that GWCL recorded no efficiency gains for the period under review. However, for December, 2021, GWCL's actual average tariff was below PURC's approved average tariff of GHS6.50/m3 which implies that GWCL recorded some efficiency gains for that month.

3.5 Analysis of Actual Versus Projected Natural Gas Transmission

Under the provisions granted in Sections 23 and 25 of the Energy Commission Act, 1997(Act 541) regarding operations of Natural Gas Transmission and Supply, PURC determines the cost for natural gas gathering, processing and transmission for Ghana National Gas Company. This section therefore reviews GNGC's actual natural gas transmission from the Jubilee, TEN and Sankofa fields for the regulated electricity market compared with PURC'S Projected Natural Gas Transmission for GNGC over the January – December, 2021 period.

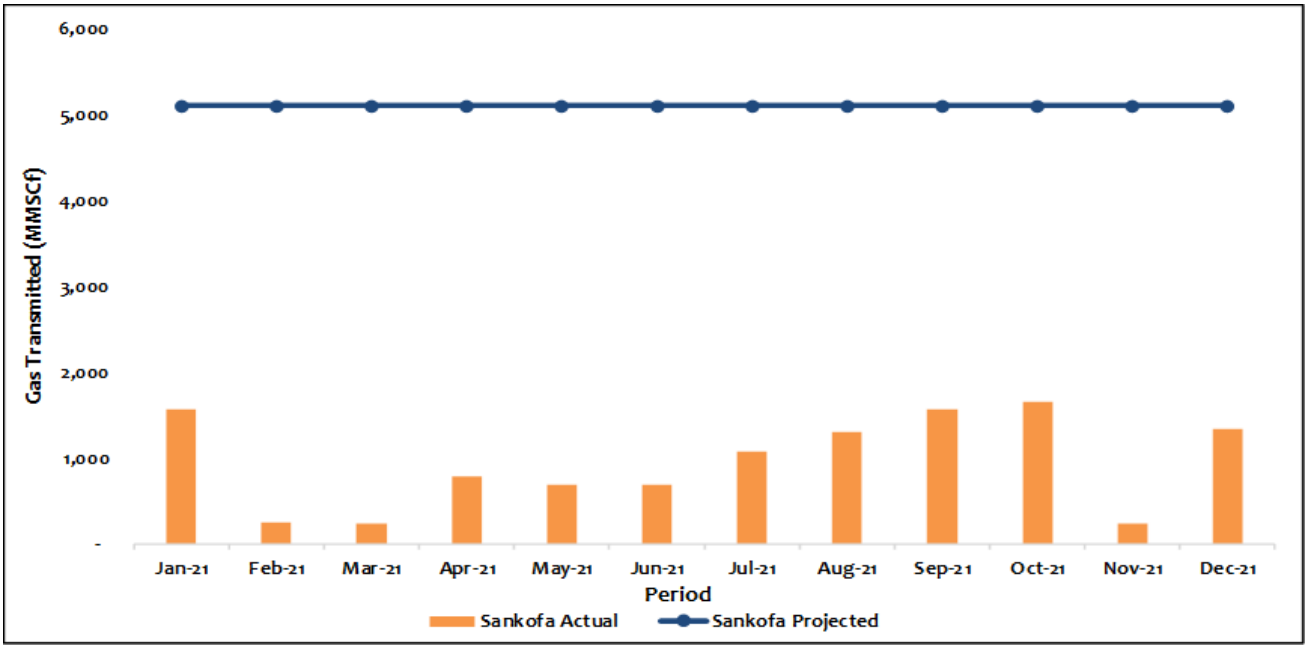
Over the period under review, actual Natural Gas transmitted experienced some spikes falling below and above PURC projected figures. This occurrence was attributed to mandatory maintenance in addition to some tie-in works over the course of the year. It must be noted that PURC Projected Natural Gas Transmission was adjusted for the second quarter of year as a result of the 2019-2020 Major Tariff Review which took effect from July 01, 2019. The results of this analysis are presented in Figure 61 and Figure 62.

Figure 61: Analysis of Jubilee & TEN Actual Vs Projected Natural Gas Transmission January – December 2021



With respect to Gas transmission from the Jubilee and TEN fields, actual transmission for January – December, 2021 on average experienced some fluctuations from PURC's projection for the year under review. The months of March to May, 2021 exceeded PURC's projected natural gas transmission from the Jubilee and TEN fields. However, October and November 2021 witnessed little or no production from above fields which was attributed to some mandatory maintenance and tie-in works.

Figure 62: Analysis of Sankofa Actual Vs Projected Natural Gas Transmission January – December 2021



In terms of natural gas transmission from the Sankofa field, actual transmission recorded for the year 2021 were lower than PURC's projection. Natural gas transmission from the Sankofa field witnessed some increases and decreases with the month of October, 2021 recording the highest volume of 1,654 MMScf compared to PURC's projected monthly volume of 5,100 MMScf.

3.6 2021-2026 Major Tariff Review

In light of the 2021-2026 Major Tariff Review, in which tariffs were scheduled to take effect from July 01, 2021, a number of key preparatory and preliminary actions were executed by the Commission. The Commission developed Tariff Filing Templates both in excel and word formats to be used by the natural gas, electricity and water Utility Service Providers (USPs) for submission of their tariff proposals. To this end, pre-filing meetings were held with the USPs to discuss Tariff Filing Templates and Tariff Review Process to ensure uniformity in tariff proposal submissions by all utility companies following which the Commission incorporated comments and suggestions to arrive at final financial and technical templates for use in submission of tariff proposals over the 2021-2026 Multi-Year Tariff Control Period.

Following receipt of tariff submissions from Utility Service Providers namely Ghana National Petroleum Corporation (GNPC), Ghana National Gas Company Limited (GNGC), Volta River Authority (VRA), Ghana Grid Company Limited (GRIDCo), Power Distribution Services Limited (PDS), Electricity Company of Ghana Limited (ECG), Northern Electricity Distribution Company (NEDCo), Enclave Power Company Limited (EPC) and Ghana Water Company Limited (GWCL), preliminary discussions of the tariff proposals which the companies had submitted to the Commission were organised. The objective of the meeting was to - identify any possible gaps in the tariff proposals and find ways to bridging those gaps.

Following execution of above tasks including submission of tariff proposals by USPs, the Commission undertook a preliminary review of the tariff proposals. The Multi-Year Major Tariff Review was subsequently rescheduled to 2022.

3.7 Compliance and Legal Processes

3.7.1 Public Utilities Regulatory Commission (Consumer Service) Regulations, 2020, LI 2413

3.7.1.1 Development of Guidelines under LI 2413

Following the passage of the Public Utilities Regulatory Commission (Consumer Service) Regulations, 2020 (L.I 2413) on 3rd November 2020, the Commission was required to develop a number of guidelines to operationalize aspects of the Regulations. In light of this, a Committee was established which successfully developed five Guidelines on the operational areas listed below, all aimed at enhancing transparency and certainty in regulatory processes:

1. Establishment and Operation of Consumer Service Committees;
2. Review of Utility Denial of Service to a Consumer;
3. Restoration of Water Supply following Maintenance, Repair or Safety Works;
4. Settlement of Complaints and Disputes; and
5. Compliance and Enforcement.

Utility companies were invited to make inputs towards finalization of the Guidelines for implementation.

3.7.1.2 Legal Sensitization Activities

A number of workshops were held in 2021 for the Commission's Regional Managers and staff of public utilities to discuss key areas of the new LI 2413. The purpose of the workshops was to deepen understanding of the Regulations to ensure effective enforcement and implementation. Participating utilities were: Volta River Authority, Bui Power Authority, Ghana Grid Company Limited, Enclave Power Limited, Ghana Gas Company Limited, Northern Electricity Distribution Company Limited, Electricity Company of Ghana and Ghana Water Company Limited. The Commission recognizes the public utilities as key stakeholders and as such the need to educate and inform them on the key role they play in the implementation of the Regulations.

Additionally, a public education campaign was undertaken through serialization of the Regulations in the Daily Graphic, Ghanaian Times & Business and Financial Times newspapers as well as the Commission's social media handles covering the areas listed below:

- Rights and Obligations of a consumer
- Rights and Obligations of a public utility
- Complaints and Dispute Resolution
- Consumer Service Committees
- Key Tarff Benchmarks
- Metering, Billing and Payment
- Reconnection
- Enforcement and Sanctions

3.7.2 Compliance and Enforcement

3.7.2.1 Notifications

The issuance of Notifications is one of the Commission's tools for ensuring utility compliance. In 2021 Electricity

Company of Ghana (ECG), Northern Electricity Company of Ghana (NEDCo), Enclave Power Company Ltd (EPC) and Karpowership Company Ltd all rectified their failure to submit regulatory data upon issuance of timely Notifications by the Commission. Going forward, the Commission has notified the utility companies that notifications may not be issued for routine breaches and the Commission will enforce penalties available in the law.

3.7.2.2 Sector Laws, Policies and Agreements

In the year under review the Commission undertook the development and review of the following critical documentation affecting the utility sector:

- Rate Setting Guidelines for Procurement of Generation Capacity
- Natural Gas Rate Setting Guidelines and Gas Clearing House rules.
- emplates & Processes for 2021 Major Tariff Review

3.7.3 Audit of complaints management processes

The Commission commenced a series of legal audits of complaints management procedures in its Regional Offices. The objectives of the exercise were to identify challenges or shortfalls through the observation of settlement meetings and review of complaints records and use results to inform strategies in the complaints management procedures of the Commission. This provided legal assistance to the Regional Offices and ensured compliance with legal requirements.

Based on the audit, a number of recommendations were made, key among these being continuous training of staff and utilities on legal requirements to improve efficiency of complaints resolution and the quality of reports.

3.7.4 Gazetting of Electricity and Water Tariffs

The Commission ensures the publication of its tariff decisions as required by Section 19 of Act 538. Due to the delay in the appointment of the Board of the Commission, the tariff review for the year was done under the Commission's Automatic Adjustment Formula (AAF) for only the first quarter of 2021. This tariff review decision was published in Gazette No. 200 of Thursday, 31st December 2020

3.8 Special Projects

3.8.1 Pro-Poor Water Projects

The Commission through its Pro-Poor Water Management Team (PPWMT) received sixty-one (61) proposals for consideration under the 2021/2022 project year. These include the request for mechanized boreholes as well as pipe extensions. The number of boreholes requested ranged from 1 to 34 with six (6) communities requesting for pipe extensions within one (1) km of GWCL distribution lines.

The proposals covered approximately two hundred and ten (210) communities in fourteen regions of the country. The 2021/2022 projects are being executed in two phases. Validation exercises for the first phase of the project was undertaken in two stages. This was to determine viability of the project in the selected communities and type of intervention to be provided.

3.8.2 Launch of the PURC Database Management System (DBMS)

The Commission launched a state-of-the-art Database Management System (DBMS) as part of its efforts to streamline processes and increase the efficiency and efficacy of service. It also aligns with the Ministry of Information and Digitalization's development objective of technological advancement and digitalization, which is championed by the Ghanaian government. The DBMS will allow the Commission to efficiently and effectively collect and analyze utility regulatory data, engage stakeholders, handle consumer and utility complaints, and schedule and coordinate its internal activities, among other things. The project was funded by the Korea Africa Economic Cooperation (KOAFEC) through the African Development Bank (AfDB).

3.9 Finance and Administration

3.9.1 Human Resources and Administration

3.9.1.1 Staff Strength

The total staff complement of the Commission, as at December 31, 2021, stood at 118, with 6 newly recruited staff over the period under review. The total number represents permanent staff, with 61 employed at the Head Office in Accra and 57 stationed across PURC Regional Offices in the Greater Accra, Ashanti, Brong Ahafo, Western, Central, Northern, Volta, Upper West and Eastern Regions of Ghana.

The financial statements below, represent the unaudited provisional accounts of the Commission.

APPENDIX

THE COMMISSION'S FINANCIAL STATEMENT FOR THE YEAR ENDED 31ST DECEMBER 2021

INDEPENDENT AUDITOR'S REPORT TO THE COMMISSIONERS OF PUBLIC UTILITIES REGULATORY COMMISSION

REPORT OF THE COMMISSIONERS

ON THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED DECEMBER 31, 2021

The Commission has the pleasure to present this Financial Statements for the year ended December 31, 2021 as follows:

Activities

The principal activities of the Commission continue to be, to regulate and oversee to the provision of utility services by public utilities to consumers and to provide for related matters.

Results of Operations

The results of the operations for the year ended December, 2021 are set out in the Statement of Income and Expenditure, Statement of Financial Position, the Statement of Cash Flows and the notes to the Financial Statements set out on pages 90 to 114.

The operations for the year resulted in an excess of Income over Expenditure of GHS20.107,821 as against that of (2020 of GHS33,523,198). The total assets as at December 31, 2021 was GHS746,773,741 as against (GHS655,804,228 in 2020)

Statement of Commissioners' Responsibility

The PURC Act,1997 (Act 538) requires the Commissioners to maintain proper books of accounts and submit Audited Financial Statements at the end of the financial year to Parliament. In preparing the Financial Statements the Commissioners are required to:

- Select suitable accounting policies and apply them consistently;
- Comply with all appropriate Accounting Standards and all relevant Statutes of Ghana;
- Make judgments and estimates that are reasonable and prudent;
- State whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the Financial Statements; and
- Prepare the Financial Statements on the going concern basis unless it is inappropriate to presume that the Commission will continue in business.

The Commissioners are responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the Financial Position of the Commission which enable them to ensure that the Financial Statements comply with the PURC Act 1997, (Act 538) and the Public Sector Accounting Standard (IPSA). The Commissioners are also responsible for safeguarding the assets of the Commission and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The above Statements, which should be read in conjunction with the Statement of the Auditors' Responsibilities set out on pages 86 to 90 are made with a view to distinguish to the stakeholders, the respective responsibilities of the Commissioners and the Independent Auditors in relation to the Financial Statements.

Going Concern

The Commissioners have made an assessment of the ability of the Commission to continue as a going concern and have no reason to believe that the Commission will not be a going concern in the year ahead.

Nature of Business

There was no change in the nature of business of the Commission during the year. The Commissioners consider the state of affairs of the Commission to be satisfactory, so long as this remains within their control.

Other Matters

The Commissioners confirm that no matters have arisen since December 31, 2021 which materially affect the Financial Statements of the Commission for the year ended on that date.

Commissioners in Office

The under-listed are the Commissioners in office at the time of signing the financial statements of the Commission;

Mr. Ebo B. Quagrainie	-	Chairman
Prof. Joe Amoako - Tuffour	-	Member
Mrs. Dora Oppong	-	Member
Mr. Ishmael Edjekumhene	-	Member
Dr. Nii Darko Kobina Asante	-	Member
Dr. Yaw Adu-Gyamfi	-	Member
Dr. Kwabena Nyarko Otoo	-	Member
Mr. Patrick Nyarko	-	Member
Dr. Ishmael Ackah	-	Member / Executive Secretary

By Order of the Commissioners

…… ……

Signature of the Commissioner Signature of the Commissioner

…….. ……..

Name of the Commissioner Name of the Commissioner

Accra,

……, 2022

REPORT OF THE INDEPENDENT AUDITORS ON THE FINANCIAL STATEMENTS OF PUBLIC UTILITIES REGULATORY COMMISSION

Report on the Financial Statement

We have audited the Financial Statements of Public Utilities Regulatory Commission

(The Commission), set out on pages 90 to 114. which comprise

i. Statement of Financial Position as at December 31, 2021;

ii. Statement of Income and Expenditure for the year then ended;

iii. Statement of Changes in Accumulated Fund for the year then ended;

iv. Statement of Cash Flows for the year then ended; and

v. Notes to the Financial Statements, including a summary of significant accounting policies and other explanatory.

Opinion

In our opinion, the accompanying Financial Statements give a true and fair view of the Financial Position of the Commission as at December 31, 2021, and its Financial Performance and Cash Flows for the year then ended in accordance with International Public Sector Accounting Standards (IPSAS) and in the manner required any other relevant legislation.

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the audit of the Financial Statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion

Independence

We are independent of the Commission in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with the IESBA Code.

Other Information

The Commissioners are responsible for the other information. The other information comprises the Commissioners report and Corporate Governance but does not include the Financial Statements and Auditor's report thereon.

Our opinion on the Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the Financial Statement or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If based on the work we have performed on the other information, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Commissioners for the Financial Statements

The Commissioners are responsible for the preparation and fair presentation of the Financial Statements in accordance with IPSA and in the manner required by The PURC Act, 1997 (Act 538) and any other relevant legislation, and for such internal control as the Commissioners determine is necessary to enable the preparation of Financial Statements that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements, The Commissioners are responsible for assessing the Commission's ability to continue as a going concern, disclosing, as applicable, matters related to the going concern and using the going concern basis of accounting unless the Commissioners either intend to liquidate the Commission or to cease operations, or have no realistic alternative but to do so.

The Commissioners are responsible for overseeing the Commission's financial reporting process.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an Auditors' Report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISA will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

As part of an audit in accordance with ISA, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Commissioners.
- Conclude on the appropriateness of the Commissioners' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Commission's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Financial Statements or, if such disclosures are inadequate, to modify our opinion.
- Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Commission to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.
- We also provide the Commissioners with a statement that we have complied with relevant ethical requirements regarding independence, and have communicated with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Commissioners, we determined those matters that were of most significance in the audit of the Financial Statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' report unless the law or regulations precludes public disclosure about the matter or when, in extreme rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication

We also communicate with the Commissioners regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

We report on other regulatory requirement that the Financial Statements give a true and fair view and fairly comply with:

i. Financial Administration Regulations, 2004, L.I. 1802;

ii. The Internal Revenue Act, 2000 (Act 592) as amended;

iii. Value Added Tax Act, 1998 (Act 546) as amended;

iv. Public Procurement Act, 2003 (Act 663) as amended; and

v. Public Financial Management Act, 2016 (Act 921).

The engagement partner on the audit resulting in this independent Auditors' Report is **Diana Shormeh Otoo (ICAG/P/1574)**

……

Aryeetey & Associates (ICAG/F/2020/105)

Chartered Accountants

No. 3, off Brewery Road

Adabraka, Accra

....., 2022

PUBLIC UTILITIES REGULATORY COMMISSION			
Statement of Financial Position			
As at December 31, 2021			
	Notes	**2021**	**2020**
		GH¢	**GH¢**
Non-Current Asset			
Property, Plant and Equipment	**6**	10,653,205	9,108,740
Capital Work in Progress	**8**	11,410,201	5,631,082
Deferred Expenditure	**9**	180,283	185,193
Intangible Asset	**10**	150,952	-
		22,394,641	**14,925,015**
Current Assets			
Cash and Cash Equivalent	**11**	25,226,906	7,316,919
Accounts Receivable	**12**	699,152,194	633,562,294
		724,379,100	**640,879,213**
Total Asset		**746,773,741**	**655,804,228**
Current Liabilities			
Accounts Payable	**13**	553,211,965	482,350,273
		553,211,965	**482,350,273**
Equity			
Accumulated fund		189,066,125	168,958,304
Capital Reserve	**14**	4,495,651	4,495,651
		193,561,776	**173,453,955**
Total Equity & Liability		**746,773,741**	**655,804,228**
		-	

Approved by the Commissioners on ……., 2022 and signed on its behalf by:

…….	……..…….
Signature of Commissioner	Signature of Commissioner
…….	……..…….
Name of Commissioner	Name of Commissioner

The notes on pages 14 -31 forms an Integral Part of the Financial Statement.

PUBLIC UTILITIES REGULATORY COMMISSION			
Statement of Income & Expenditure			
For the year ended December 31, 2021			
	Notes	**2021**	**2020**
		GH¢	**GH¢**
Income			
Regulatory Income	**15**	56,874,853	61,641,697
Non-Regulatory Income	**16**	1,572,055	2,293,202
Total Income		**58,446,908**	**63,934,899**
Expenditure			
Personnel Cost	**17**	24,144,294	20,565,569
Commissioners' Allowances	**18**	323,813	540,750
Operational Expenses	**19**	7,204,831	3,851,588
Administrative Cost	**20**	6,666,149	5,453,793
Total Expenditure		**38,339,087**	**30,411,701**
Surplus/(Deficit) Income over Expenditure transferred to Accumulated Fund		**20,107,821**	**33,523,198**

The notes on pages 14 -31 forms an Integral Part of the Financial Statement.

PUBLIC UTILITIES REGULATORY COMMISSION

Statement of Changes in Accumulated Fund

For the year ended December 31, 2021

	Accumulated Fund	Total
December 31, 2021	**GH¢**	**GH¢**
Balance as at January 1, 2021	168,958,304	168,958,304
Excess income over expenditure	20,107,821	20,107,821
Balance as at December 31, 2021	**189,066,125**	**189,066,125**
December 31, 2020		
Balance as at 1 January, 2020	135,435,106	135,435,106
Excess income over expenditure	33,523,198	33,523,198
Balance as at December 31, 2020	**168,958,304**	**168,958,304**

The notes on pages 14 -31 forms an Integral Part of the Financial Statement.

PUBLIC UTILITIES REGULATORY COMMISSION		
Statement of Cash Flows		
For the year ended December 31, 2021		
	2021	**2020**
	GH¢	**GH¢**
Excess Income over Expenditure	20,107,821	27,207,959
Add: Depreciation	1,236,868	1,228,868
Gain on Disposal	(86,784)	(37,074)
Amortization of Deferred Expenditure	4,910	4,910
Computer Software Amortization	75,363	4,584
	21,338,178	**28,409,247**
Changes in Working Capital		
(Increase)/decrease in accounts receivables	(65,589,900)	(105,661,879)
Increase/(decrease) in Payables	71,176,293	79,820,569
Net cash flows from operating activities	5,586,393	(25,841,310)
Cash flows from Investing Activities		
Purchase of Fixed Assets	(2,781,333)	(3,122,482)
Capital Work-in-Progress	(5,779,119)	-
Intangible Asset	(226,316)	
Proceeds from Sale of Assets		36,841
Net Cash flow from Investing Activities	**(8,786,767)**	**(3,085,641)**
Net Increase in Cash & Cash Equivalent	**17,909,987**	**(517,704)**
Cash & Cash Equivalent at 1st January	7,316,919	784,910
Net Increases in Cash & Cash Equivalent	17,909,987	6,532,009
	25,226,906	**7,316,919**
Analysis of Cash and Cash Equivalent as shown in the statement of Financial Position		
Cash on hand	81,509	73,990
Cash at Bank	25,145,397	7,242,929
Cash and cash equivalents	**25,226,906**	**7,316,919**
The notes on pages 14 -31 forms an Integral Part of the Financial Statement.		

Note 1. General information

Public Utilities Regulatory Commission is the economic regulator of electricity, natural gas and water in Ghana. The Commission is an independent body set up to provide guidelines on rates chargeable for the provision of utility services; among others as spelt out in Section 3 of the Public Utilities Regulatory Act,1997 (Act 538) an Act of Parliament.

The Commissioners do not have the power to amend the financial statements after issue

Note 2. Basis of Preparation

2.1 Statement of compliance

The Financial Statements of the Commission have been prepared in accordance with International Public Financial Reporting Standards (IPSAS) framework, including International Accounting Standards and interpretation as issued by the International Public Sector Accounting Standards Board (IPSASB) and its committees as required by the Institute of Chartered Accountant (Ghana).

2.2 Basis of Measurement

The financial statements have been prepared on a historical cost basis except for those assets and liabilities that are stated at their fair values. Historical cost is generally based on the fair value of consideration given in exchange for goods and services.

Fair value is the price that will be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or liability, the Commission takes into account the characteristics of the asset or liability if market participants will take those characteristics into account when pricing the asset or liability at the measurement date.

2.3 Functional and presentation currency

The financial statements are presented in Ghana Cedi which is the Commission's functional and presentation currency. Except otherwise indicated, the financial information presented has been rounded off to the nearest one Ghana cedi.

2.4 Preparation of the financial statements

The preparation of financial statements in conformity with IPSAS framework, requires the use of certain critical accounting estimates. It also requires management to exercise its judgment in the process of applying the Commission's accounting policies. Changes in assumptions may have a significant impact on the financial statements in the period the assumptions changed. Management believes that the underlying assumptions are appropriate. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in Note 4.

Note 3. Summary of Significant Accounting Policies

The following Principal accounting policies have been applied consistently in dealing with items that are considered material in relation to the Commission's financial statements. These policies have been consistently applied to all years presented, unless otherwise stated. The significant accounting policies which have been adopted by the Public Utilities Regulatory Commission in the preparation of these Financial Statements are disclosed under the appropriate headings in the notes below:

3.1 Revenue recognition

Revenues are recognised when they are realised or realisable, and are earned no matter when cash is received.

Revenues from grants and sponsorship received are measured at fair value and recognised on obtaining control of the grant if it is free from conditions and it is probable that the economic benefits or service potential related to the asset will flow to the Commission and can be measured reliably.

When a liability is subsequently reduced, because a condition is satisfied, the amount of the reduction in the liability is recognised as revenue.

Revenue from Exchange Transaction

Interest income is accrued using the effective yield method. The effective yield discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount. The method applies this yield to the investment outstanding to determine interest income each period.

3.2 Foreign Currency Translation

Foreign Currency Transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the profit or loss for the year.

Foreign exchange gains and losses that relate to borrowings and cash and cash equivalents, unless they are capitalised, are presented in profit or loss within "finance income or costs". All other foreign exchange gains and losses are presented in profit or loss within "other income or expenses".

3.3 Operational Expenses

When expenses are incurred in relation to the achievement of the objectives of the Commission. The fair value of such expenses are recognised as an expense in the period in which they are related to.

3.4 Goods and Services

These represent expenses include amount paid or payable for goods and services including legal, auditing and others that are incurred in the course of the Commission's normal operations. They are recognised in the Income and Expenditure Statement in the period in

which they are incurred (on an accruals basis).

3.5 Employee Benefit

(a) Long-term benefits

The Commission operates a defined contribution plan. Payments to defined contribution retirement benefit plans are recognised as an expense when employees have rendered service entitling them to the contribution.

Under the National Pension Scheme, the Organization contributes 13% of employees' total emolument to the Social Security and National Insurance Trust (SSNIT) for the employee pension. The Organization's obligation is limited to the relevant contribution, which were settled on due dates. The pension liabilities and obligation therefore rest with SSNIT

The Commission is required to contribute 13.5% of employees' basic salary to the Social Security and National Insurance Trust and 5% to a Fund Manager under the terms of the Pension Act 2008 (Act 766).

(b) Short-term benefits

The cost of short-term employee benefits, (those payable within 12 months after the service is rendered, such as wages, salaries, paid annual leave and sick leave, bonuses and non-monetary benefits such as medical aid, cars and housing), are recognised in the period in which the service is rendered and are not discounted

The expected cost of accrued leave is recognised as an expense as the employees render service that increase their entitlement or, in the case of non-accumulating leave, when the absence occurs. Accrued leave is measured as the amount that the Commission expects to pay as a result of unused entitlement that has accumulated to the employee at the balance sheet date.

The expected cost of bonus payments is recognised as an expense when there is a legal or constructive obligation to make such payment as a result of past performance

The expected cost of bonus payments is recognised as an expense when there is a legal or constructive obligation to make such payment as a result of past performance.

3.6 Provisions

Provisions for legal claims are recognised when:

- The Commission has a present legal or constructive obligation as a result of past events;
- It is probable that an outflow of resources will be required to settle the obligation; and
- The amount can be reliably estimated.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to passage of time is recognised as finance cost.

Where the Commission, as lessee, is contractually required to restore a leased property to an agreed condition prior to release by a lessor, provision is made for such costs as they are identified.

3.7 Cash and Cash Equivalents

Cash and cash equivalents include cash in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less, and bank overdrafts. Cash and cash equivalents are carried in the financial statement at cost.

For the purpose of cash flow statement, cash and cash equivalents consist of cash on hand and bank deposits net of any outstanding bank overdrafts

3.8 Accounts Receivable

These are stated deduction of impaired loss and the net of provision for bad and doubtful debts. At the end of each year reporting period, carrying amount of account receivable are reviewed to determine whether there is any objective evidence that the amounts are not recoverable. If so, an impairment loss is recognised immediately in the Income.

Pre-payments are carried at cost less any accumulated impairment losses.

3.9 Property, Plant and Equipment

All property, Plant and Equipment (PPE) is stated at historical cost less depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items and where applicable borrowing costs.

Cost of an item of PPE includes its purchase price and any direct attributable costs. Cost includes the cost of replacing part of an existing PPE at the time that cost is incurred if the recognition criteria are met; and excludes the costs of day-to-day servicing of an item of PPE.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Commission and the cost of the item can be measured reliably. The carrying amount of those parts that are replaced is derecognised. All other repairs and maintenance are charged to the statement of profit or loss during the financial period in which they are incurred.

Depreciation, based on a component approach, is calculated using the straight-line method to allocate the cost over the assets' estimated useful lives, as follows:

- Motor Vehicle 5 years
- Computer & Accessories 3 years
- Furniture & Fittings 5 years
- Office Equipment 5 years
- Leasehold Land 50 years

If there is an indication that there has been a significant change in the depreciation rate, useful life or residual value of an asset, the depreciation rate of that asset is revised prospectively to reflect the new expectations. It is treated as a change in estimates. The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at least at each financial year end.

An asset's carrying amount is written down immediately to its recoverable amount if it carrying amount is greater than its estimated recoverable amount.

Gains and losses on disposals are determined by comparing proceeds with carrying amount and are included in the statement of comprehensive income statement.

Revaluation of Property, Plant & Equipment

It is the policy of the Commission to revalue its Land and Buildings every 5 years based on a professionally Qualified Valuer's Certificate. The carrying value is determined by the fair value at the date of revaluation less any Accumulated Depreciation and subsequent Accumulated Impairment. The revaluation shall be made to ensure that the carrying amount does not differ materially from that which would be determined using Fair Value at the end of the reporting year.

3.10 Accounts Payable

Accounts payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payable are classified as current liabilities if payment is due within one year or less. If not, they are presented as non-current liabilities.

Accounts payable are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method.

3.11 Events after reporting date

Events after reporting dates are reflected in the financial statement only to the extent that they relate to the year under consideration and effect is material.

3.12 Impairment of non-financial assets

Assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount.

The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units). The impairment test also can be performed on a single asset when the fair value less cost to sell or the value in use can be determined reliably. Non-financial assets

3.13 Financial Instruments

Financial assets and liabilities are recognised when the Commission becomes a party to the contractual provisions of the instrument. Financial assets are derecognized when the rights to receive cash flows from the assets have expired or have been transferred and the Commission has transferred substantially all risks and rewards of ownership. Financial liabilities are derecognised when the obligation specified in the contract is discharged, cancelled or expires.

(i) Classification

At initial recognition, the Commission classifies its financial instruments in the following categories:

a) Financial assets at amortised cost:

The Commission classifies its financial instruments as financial assets at amortised cost when both criteria set out below are met:

- The asset is held within a business model whose objective is to collect the contractual cash flows; and
- The contractual terms give rise to cash flows that are solely payments of principal and interest.

b) Financial liabilities at amortised cost

Accounts payables are initially recognised at fair value and subsequently measured at amortised cost using the effective interest method. These are classified as current liabilities in the statement of financial position if payment is due within twelve months. Otherwise, they are presented as non-current liabilities.

(ii) Offsetting financial instruments

Financial assets and liabilities are offset and the net amount reported in the statement of financial position when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realize the asset and settle the liability simultaneously.

(iii) Impairment of financial assets

The Commission assesses on a forward-looking basis the expected credit losses associated with its debt instruments carried at amortised cost. The impairment methodology applied depends on whether there has been a significant increase in credit risk.

For Trade Receivables, the Commission applies the simplified approach permitted by IFRS 9, which requires expected lifetime losses to be recognised from initial recognition of the receivables.

Loans and Receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial measurement, such financial assets are subsequently measured at amortized cost using the effective interest method, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the effective interest rate. Losses arising from impairment are recognized in the surplus or deficit. The Commission's loans and receivables comprises of cash and cash equivalent and other receivables.

Loans and Borrowing

After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest method. Gains and losses are recognized in surplus or deficit when the liabilities are derecognized as well as through the effective interest method amortization process. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the effective interest rate.

Held-To-Maturity Financial Assets

Non-derivative financial assets with fixed or determinable payments and fixed maturities are classified as held to maturity when the Commission has the positive intention and ability to hold it to maturity. After initial measurement, held-to-maturity investments are measured at amortized cost using the effective interest method, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the effective interest rate. The losses arising from impairment are recognized in surplus or deficit.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in surplus or deficit.

3.14 Capital Grants and Gifts

Grants meant for capital expenditure are capitalised and written back to income over the useful economic lives of the fixed assets in line with the depreciation rates. Actual capital items received either in lieu of grants or as gifts are also treated in the same manner.

Conditions on Transferred Assets

Conditions on transferred assets require the Commission either to consume the future economic benefits or service potential of the asset as specified or return future economic benefits or service potential to the transferor in the event that the conditions are breached.

The entity incurs a present obligation to transfer future economic benefits or service potential to third parties when it initially gains control of an asset subject to a condition. This is because the entity is unable to avoid the outflow of resources as it is required to consume the future

economic benefits or service potential or else to return to the transferor future economic benefits or service potential. Therefore, when the entity initially recognizes an asset that is subject to a condition, the entity also incurs a liability.

Conditions on a transferred asset that give rise to a present obligation on initial recognition shall be recognized as a liability. When a liability is subsequently reduced, because the condition is satisfied, the amount of the reduction in the liability is recognized as revenue.

3.15 Capital Reserves

This represents the difference between the carried value and the revalued amount of Property Plants and Equipment of the Commission. This amount will be transferred to the Accumulated Fund when the asset is realised.

Note 4. Critical accounting judgements and key sources of estimation uncertainties

The preparation of the financial statements in conformity with IPSAS requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, at the end of the reporting period.

Estimates and Assumptions are recognised in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

4.1 Critical Accounting Estimates and Assumptions

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including experience of future events that are believed to be reasonable under the circumstances.

Management makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates, assumptions and management judgements that have a significant risk of causing a material adjustment to the carrying amounts of evaluation assets.

In the process of applying the Commission's accounting policies, management has made judgments, which have the most significant effect on the amounts recognized in the financial statements.

Useful lives and residual values

The useful lives and residual values of assets are assessed using the following indicators to inform potential future use and value from disposal:

- The condition of the asset based on the assessment of experts employed by the Commission
- The nature of the asset, its susceptibility and adaptability to changes in technology and processes

- The nature of the processes in which the asset is deployed
- Availability of funding to replace the asset
- Changes in the market in relation to the asset

Fair value estimation – financial instruments

Where the fair value of financial assets and financial liabilities recorded in the statement of financial position cannot be derived from active markets, their fair value is determined using valuation techniques including the discounted cash flow model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, judgment is required in establishing fair values. Judgment includes the consideration of inputs such as liquidity risk, credit risk and volatility.

Changes in assumptions about these factors could affect the reported fair value of financial instruments.

Note 5 Financial Risk Management

The Commission's activities expose it to a variety of financial risks: market risk, credit risk and liquidity risk. The Commission's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on its financial performance. The Commission does not hedge any of its risk exposures.

Financial risk management is carried out by the finance department under policies approved by the Commissioners of Public Utilities Regulatory Commission.

The Commission's risk management policies are established to identify and analyse the risks faced by the Commission, to set appropriate risk limits and controls and is to monitor risk and adherence to limits.

5.1 Foreign Exchange Risk

Foreign currency risk arises on financial instrument that are dominated in a currency other than the functional currency in which they are measured. Transaction related risks are therefore not included in the assessment of the Commission's exposure to currency risk.

5.2 Credit Risk

Credit risk is the risk of financial loss to the Commission if counterparties to financial instruments fail to meet their contractual obligations, and it arises principally from receivables and cash and cash equivalents.

The carrying amount of financial assets represents the maximum credit exposure.

The maximum exposure to credit risk as at 31 December was:

Financial Assets	Amount
	GH¢
As at December 2021	
Cash and Bank Balance	25,226,906
Receivables	699,152,194
	724,379,100
As at December 2020	
Cash and Bank Balance	7,316,919
Receivables	633,562,294
	640,879,213

5.3 Liquidity Risk

Liquidity risk is the risk that the Commission will not be able to meet its obligations as they fall due. Prudent liquidity risk management includes ensuring the availability of funding. Management performs cash flow forecasting and monitors rolling forecasts of the Commission's liquidity requirements to ensure it has sufficient cash to meet its operational needs.

The Commission's approach when managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, without incurring unacceptable losses or risking damage to the Commission's reputation.

The table below analyses the Commission's financial liabilities that will be settled on a net basis into relevant maturity groupings based on the remaining period at the reporting date to the contractual maturity date:

	Contractual undiscounted cash flows
At December 31, 2021	
Accounts payable	**553,211,965**
At December 31, 2020	
Accounts Payable	**482,350,273**

5.4 Fair Value Estimation

The Commissioners consider that the carrying amount of the Commission's financial assets and financial liabilities in the financial statements approximate their fair values.

Financial Instruments

Exposure to currency, commodity, interest rate, liquidity and credit risk arises in the normal course of the Commission's operations. This note presents information about the Commission's exposure to each of the above risks, policies and processes for measuring and managing risk, and the Commission's management of funds.

The fair value of the financial assets and liabilities are included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced sale or liquidation. Cash and short-term deposits, receivables and other current liabilities approximate their carrying amounts largely due to the short-term maturities of these instruments.

Fair Values

	Carrying Amount GH¢	Fair Value GH¢
Financial Assets		
2021		
Cash & Cash Equivalents	25,226,906	25,226,906
Receivables from Exchange Transaction	699,152,194	699,152,194
	724,379,100	**724,379,100**
2020		
Cash & Cash Equivalents	7,316,919	7,316,919
Receivables from Exchange Transaction	633,562,294	633,562,294
	640,879,213	**640,879,213**
Financial Liabilities		
2021		
Accounts Payable from exchange transaction	**553,211,965**	**553,211,965**
2020		
Accounts Payable from exchange transaction	**482,350,273**	**482,350,273**

PUBLIC UTILITIES REGULATORY COMMISSION
Notes to the Financial Statements (Continued)
For the year ended December 31, 2021

Note 6 Property, Plant and Equipment

2021	Leashold Land	Motor Vehicle	Computer & Accessories	Office Equipment	Furniture & Fittings	Total
Cost	GH¢	GH¢	GH¢	GH¢	GH¢	GH¢
Cost 01/01/2021	4,890,929	5,892,736	711,361	2,703,782	510,751	14,709,558
Additions		2,222,090	163,331	244,978	150,934	2,781,333
Disposal		(617,694)				(617,694)
Cost 31/12/2021	**4,890,929**	**7,497,132**	**874,692**	**2,948,759**	**661,685**	**16,873,197**
Depreciation	2%	20%	33%	20%	20%	
As at 1/01/2021	897,405	2,523,961	517,853	1,320,178	341,422	5,600,818
Current Depreciation	99,579	699,882	162,459	220,749	54,200	1,236,868
Disposal		(617,694)				(617,694)
As at 31/12/2021	**996,984**	**2,606,149**	**680,311**	**1,540,927**	**395,621**	**6,219,992**
Carrying Amount						
As at Dec 31, 2021	**3,893,945**	**4,890,983**	**194,381**	**1,407,832**	**266,063**	**10,653,205**

PUBLIC UTILITIES REGULATORY COMMISSION
Notes to the Financial Statements (Continued)
For the year ended December 31, 2021

Property, Plant and Equipment

2020	Leashold Land	Motor Vehicle	Computer & Accessories	Office Equipment	Furniture & Fittings	Total
Cost	**GH¢**	**GH¢**	**GH¢**	**GH¢**	**GH¢**	**GH¢**
Cost 01/01/2020	4,884,629	4,579,554	570,758	1,443,610	402,374	11,880,925
Additions	6,300	1,573,738	157,403	1,274,251	110,790	3,122,482
Disposal		(260,556)	(16,799)	(14,080)	(2,413)	(293,848)
Cost 31/12/2020	**4,890,929**	**5,892,736**	**711,361**	**2,703,782**	**510,751**	**14,709,558**
Depreciation	**2%**	**20%**	**33%**	**20%**	**20%**	
As at 1/01/2020	797,826	2,090,636	374,193	1,113,276	289,634	4,665,565
Current Depreciation	99,579	693,882	160,459	220,749	54,200	1,228,868
Disposal	-	(260,556)	(16,799)	(13,847)	(2,413)	(293,615)
As at 31/12/2020	**897,405**	**2,523,961**	**517,853**	**1,320,178**	**341,422**	**5,600,818**
Carrying Amount						
As at Dec 31, 2020	**3,993,524**	**3,368,774**	**193,508**	**1,383,603**	**169,329**	**9,108,740**

PUBLIC UTILITIES REGULATORY COMMISSION
Notes to the Financial Statements (Continued)
For the year ended December 31, 2021

		2021	2020
		GH¢	GH¢
Note 7	**Disposal of Property and Equipment**		
	Cost	617,694	293,848
	Accummulated Depreciation	(617,694)	(293,615)
	Carring Amount	-	233
	Sales Proceeds	86,784	36,841
	Gain/(Loss) on Disposal	**86,784**	**37,074**
Note 8	**Building Work-In-Progress**		
	Balance as at Jan 1, 2021	5,631,082	4,006,261
	Addition for the year	5,779,119	1,624,821
	Balance as at December 31, 2021	**11,410,201**	**5,631,082**
	This represent expenditure to date on the commission's proposed 15 Storey Office Complex at African Liberation Circle, Accra and PURC Office Complex at Koforidua in the Eastern Region.		
Note 9	**Rehabilitation Expenditure**		
	Balance as at Jan 1, 2021	185,193	190,103
	Addition for the year		
	Amount Written Off	(4,910)	(4,910)
	Balance as at December 31, 2021	**180,283**	**185,193**
	This represents Rehabilitation works on the commission's Rented Office Building which is being wriiten off over 5 years. During the year 2019, the Commission refurbished the old block for Water and Energy Laboratories and other staff offices.		
Note 10	**Intangible Asset**		
	Balance as at Jan 1, 2021	1,184,727	1,184,727
	Additions	226,316	
	Disposal for the year		
	Balance as at December 31, 2021	**1,411,043**	**1,184,727**
	Amortization		
	Balance as at Jan 1, 2021	1,184,727	1,180,143
	Disposal for the year		
	Charge for the year	75,363	4,584
	Balance as at December 31, 2021	**1,260,090**	**1,184,727**
	Net Book Value	**150,952**	**-**

PUBLIC UTILITIES REGULATORY COMMISSION

Notes to the Financial Statements (Continued)

For the year ended December 31, 2021

		2021	2020
		GH¢	GH¢
Note 11	**Cash and Bank Balances**		
	Cash on Hand	81,509	73,990
	Cash at Bank	25,145,397	7,242,929
		25,226,906	**7,316,919**
Note 12	**Accounts Receivable**		
	GRIDCO Limited	319,664,166	254,735,674
	Ghana National Gas Company Limited	377,194,332	377,998,852
	Staff Debtors	493,338	274,503
	Sundry Debtors	4,127	-
	Rent Prepaid	1,521,805	320,985
	Insurance Prepaid	221,926	178,400
	Others	52,500	53,880
		699,152,194	**633,562,294**
Note 13	**Accounts Payable**		
	Energy Commission	126,693,673	116,835,252
	Rural Electrification	242,362,604	206,419,654
	Pro Poor	174,036,565	155,783,265
	Sundry Creditors	10,001,113	3,191,866
	Accrued Expenses	118,010	120,236
		553,211,965	**482,350,273**
Note 14	**Capital Reserve**		
	This resulted from the revaluation of Office Property at 51 Liberation Road, Ridge, Accra on November 9, 2011 by Bortey Consulting, Valuers and Estate/Project Managers, Estate Brokers.		
Note 15	**Regulatory Income**		
	Electricity Levy	44,563,494	45,197,903
	Natural Gas Levy	12,311,359	16,443,794
		56,874,853	**61,641,697**

PUBLIC UTILITIES REGULATORY COMMISSION
Notes to the Financial Statements (Continued)
For the year ended December 31, 2021

		2021	2020
		GH¢	GH¢
Note 16	**Non-Regulatory Income**		
	Sales of Tender Document	9,500	11,200
	Sundry Income	83,785	2,183,223
	Interest on Call Account	1,478,770	98,779
	Exchange Gain		
		1,572,055	**2,293,202**
Note 17	**Personnel Cost**		
	Salaries & Allowances	19,184,807.23	16,519,132
	Medicals	888,212.76	679,611
	Overtime Allowances	40,000	36,400
	Temporal Staff & National Serv. Allowances	100,950	128,800
	Staff Transfer Expenses	159,994	
	Employer's contributiona to Pension Funds	3,770,330	3,201,626
		24,144,294	**20,565,569**
Note 18	**Commissioners' Allowances**		
	Sitting Allowances	274,813	294,000
	Monthly Allowances	49,000	246,750
		323,813	**540,750**
Note 19	**Operational Expenses**		
	Travelling & Transport	362,644.46	149,900
	Training & Conferences	1,592,785.36	416,849
	Printing & Publication	248,300.43	206,010
	Materials & Consumables	45,456.30	91,078
	Commissioners' Sub-Committees Allowances	5,000	355,313
	Public Relations and Related Expenses	104,192	104,577
	Operational Program Expenses	4,771,051.96	2,354,135
	Local Consultancy Fees	75,400	99,851
	Legal Expenses		73,875
		7,204,831	**3,851,588**

PUBLIC UTILITIES REGULATORY COMMISSION			
Notes to the Financial Statements (Continued)			
For the year ended December 31, 2021			
		2021	2020
		GH¢	GH¢
Note 20	**Goods and Services**		
	Insurance	237,961	129,374
	Rent	519,354	411,999
	Electricity & Water	317,877	257,517
	Post & Telecommunication	646,043	483,697
	Motor Vehicle Running Cost	1,095,241	713,739
	Audit Fees	60,000	57,999
	Bank Charges	39,456	30,880
	Security	150,267	147,933
	Other Satutory Committee Allowances	135,048	98,445
	Printing & Stationery	724,988	741,362
	Travelling & Transport	101,488	77,440
	Welfare Expenses/ Honorarium	304,515	259,896
	General Repairs & Maintenance	362,096	139,284
	Corporate Social Resposibility	33,965	54,870
	Cleaning & Sanitation	299,164	243,852
	Computer Software Amortization	75,363	4,583
	Amortization of Rehabilitation Expenses	4,910	4,910
	Depreciation	1,236,868	1,228,868
	Professional Fees	207,196	216,060
	Loose Tools	114,349	151,085
		6,666,149	**5,453,793**

PUBLIC UTILITIES REGULATORY COMMISSION

Notes to the Financial Statements (Continued)

For the year ended December 31, 2021

Note 21 Related Party Transactions

a There was no payment to any Commissioner or past Commissioners in respect of compensation for any past event.

b **Compensation of key management personnel**

Key management personnel are those persons having authority and responsibility for planning , directing and controlling the activities of the entity directly or indirectly , including any director or trustee of that entity.

Key management compensation which includes salaries ,allowances and other benefits paid during the year under review was GH₵ 2,082,605. (2020: GH₵1,810,861).

c **Commissioners' Allowances**

During the year, Commissioners' allowances and sitting allowances paid to the members of the Commission amounted to GH₵ 323,813 (2020: GH₵540,750)

Note 22 Contigent Liabilities

The Commission had no contingent liabilities as at December 31, 2021.

Note 23 Capital Commitments

There were no outstanding commitments for capital expenditure not provided for in the Financial Statements at the financial position date.