



Nuclear Regulatory Authority

ANNUAL REPORT

2021



FOREWORD BY DIRECTOR-GENERAL

The Nuclear Regulatory Authority (NRA) is an independent regulatory body established by the NRA Act, 2015 (Act 895). The NRA has a statutory responsibility for regulating civilian use of nuclear and other radioactive materials in medicine, industry, agriculture, education and research in Ghana. This is to ensure the protection of people and the environment from the harmful effects of radiation.

The Authority was without a Governing Board for the year 2021, but still did all within its power to progress the agenda for the year. This was based on the backdrop of the experience gained in 2020 on how to deal effectively with the challenges of the COVID-19 pandemic. Furthermore, the year saw the commencement of the operationalization of the Corporate Strategic Plan, 2021-2025. There was progress made under the 4-pillars of the Corporate Strategic Plan.

The Radiological and Non-Ionising Directorate continued their work in the regulatory oversight of medical and industrial radiological facilities and activities. This included conducting planned and unplanned inspections, conducting review and assessment of license submittals and providing authorisations for the various radiological facilities and activities. The year also saw the directorate starting to develop its competency in

regulating other new facilities such as cyclotron.

The Nuclear Installations Directorate also continued its work of preparing itself for the country's impending nuclear power programme. Several draft regulations were developed, and others that were in the draft stage have been forwarded to the Attorney General for review. Through the European Union funded "Support for the Regulatory Authority of Ghana" project, work was conducted to enhance the Authority's Management Systems, Human Resource Documentation, Stakeholder Involvement preparation, among others.

The Authority was granted permission by the government to employ 40 additional staff, so this has increased the number of staff of the Authority to 98. The Authority also completed the construction of the New Containerized Office Block and this has greatly helped with the accommodation of the increased number of staff members for the Authority.

It is hoped that 2022 will see the establishment of the Authority's Governing Board, which will further help to push the agenda of the Authority

ING. DR. NII KWASHIE ALLOTEY

NRA MANDATE AND CORE ACTIVITIES

“ The Nuclear Regulatory Authority (NRA) is an independent regulatory authority established by the Nuclear Regulatory Authority Act, 2015 (Act 895). ”

The Nuclear Regulatory Authority Act, 2015 (Act 895) empowers the Authority to regulate activities and practices for the peaceful use of nuclear energy and radiation under the jurisdiction of Ghana. The Authority therefore controls the possession, use, import, export, transport, transfer, storage and the disposal of radioactive materials, radioactive waste and nuclear material as well as decommissioning or other related activities or practices identified.

The Scope of the NRA’s regulatory responsibility therefore includes among others:

- The authorisation and regulation of the civilian use of nuclear and other radioactive materials in Ghana.
- Regulating the Ghana Research Reactor 1 and the Gamma Irradiation Facility at the Ghana Atomic Energy Commission, radiation facilities in medicine, industry, research, education and in the near future commercial nuclear power plants; and
- Regulating the possession, use, transport, storage and the disposal of radioactive materials and radioactive waste and also licensing the import and export of radioactive materials.

The ultimate goal of the NRA is to ensure the protection of the general public, patients, people who work with radiation, property and the environment from the harmful effects of radiation.

NRA Vision and Mission

Vision

To ensure humans and the environment are protected from the harmful effects of radiation.

Mission

To regulate radiation to meet national and international standards and obligation in a professional, objective and transparent manner.

NRA is committed to sound and transparent governance that will enhance the Authority's relationship with all stakeholders. This is achieved through adherence to the following core values by management and staff:

Core Values

Professionalism:

Adhere to standard operating procedures in performance of duties using competent staff



Integrity:

Honesty in dealing with clients and stakeholders



Transparency:

In communication and decision making with licensees, relevant stakeholders and the public in an appropriate and accurate manner



Objectivity:

To be fair to all clients and other stakeholders



Functions of the NRA

The main regulatory functions of the NRA can be summarised as follows:

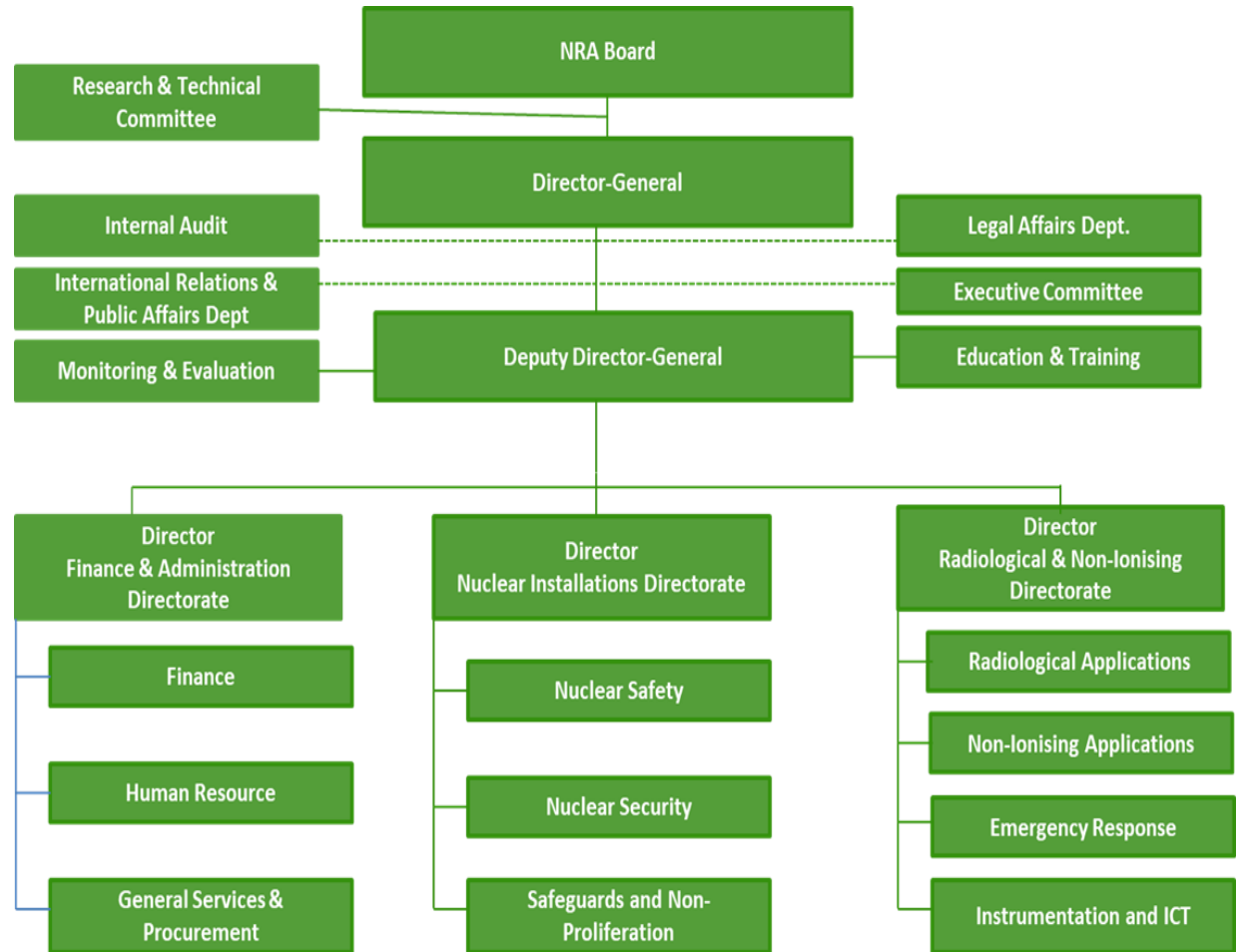
- Develop regulations and guides
- Regulatory review and assessment
- Regulatory inspection to ensure compliance with regulatory standards
- Issuance of authorisations and permits
- Enforcement
- Conduct research to support regulatory decisions
- Cooperate with other local and international regulatory bodies and agencies to enable effective implementation of mandate
- Implement appropriate international legal instruments to which Ghana is a signatory

ADMINISTRATIVE STRUCTURE

The Authority is governed by a seven-member Board. The Board, among other things, formulates policies and regulations for managing staff of the Authority as well as to oversee the safety and security of facilities and activities.

The day-to-day administrative activities of the NRA are managed by a Director General with the assistance of a Deputy Director General.

There are three Directorates and fifteen (15) departments to carry out technical and administrative activities to enable the Authority to achieve its mandate



Staff Strength

The total number of staff as at December 2021 was 98 consisting of 64 technical and 34 support staff. Three staff had been engaged on contract basis.

Position	Current Number	Status	
		Established	Contract
Research Scientists/ Technologist	64	64	0
Support Staff	34	31	3
TOTAL NUMBER OF STAFF	98	95	3

Major Activities Undertaken in 2021

Regulations

The following regulations which originated from the various Directorates are at various stages of the approval processes:

1. Basic Ionising Radiation Regulations (under review at the Attorney General's Department)
2. Safeguards Regulations (under review at the Attorney General's Department)
3. Reviewed Nuclear Security Regulations
4. Reviewed Radioactive Waste Management Regulations
5. Developed Well-logging Regulations
6. Reviewed EPR Guidelines and regulations.
7. Review of licensing regulations for nuclear installations.
8. Review of guidelines on licensing of nuclear power plants.
9. Review of guidelines on Siting of Nuclear Installations.
10. Reviewed Regulations on Integrated Management System for authorised persons of Nuclear Installations.
11. Reviewed Draft Design regulations of nuclear installations.
12. Reviewed Draft Construction regulations of nuclear installations.
13. Reviewed Draft Commissioning Regulations of nuclear installations.

Guides

The following guidance documents were drafted in the Radiological Applications Department of the Directorate in 2021.

The guidance documents will be reviewed in 2022 for approval.

1. Guidance on Integrated Management system for authorised Persons
2. Guidance for completing permits and authorisation forms
3. Guidance for safety assessment for facilities and activities
4. Current application forms have been reviewed and converted to Fillable Authorisation Application Forms

Authorisations Issued

During the year under review, 409 authorisations were issued for various facilities and activities including radiation emitting devices, radioactive sources, transport operators, storage bunkers and Technical Support Services (TSS) and the summary is provided in figure 1 below. A detailed list of facilities and activities authorised is provided in Appendix 1.

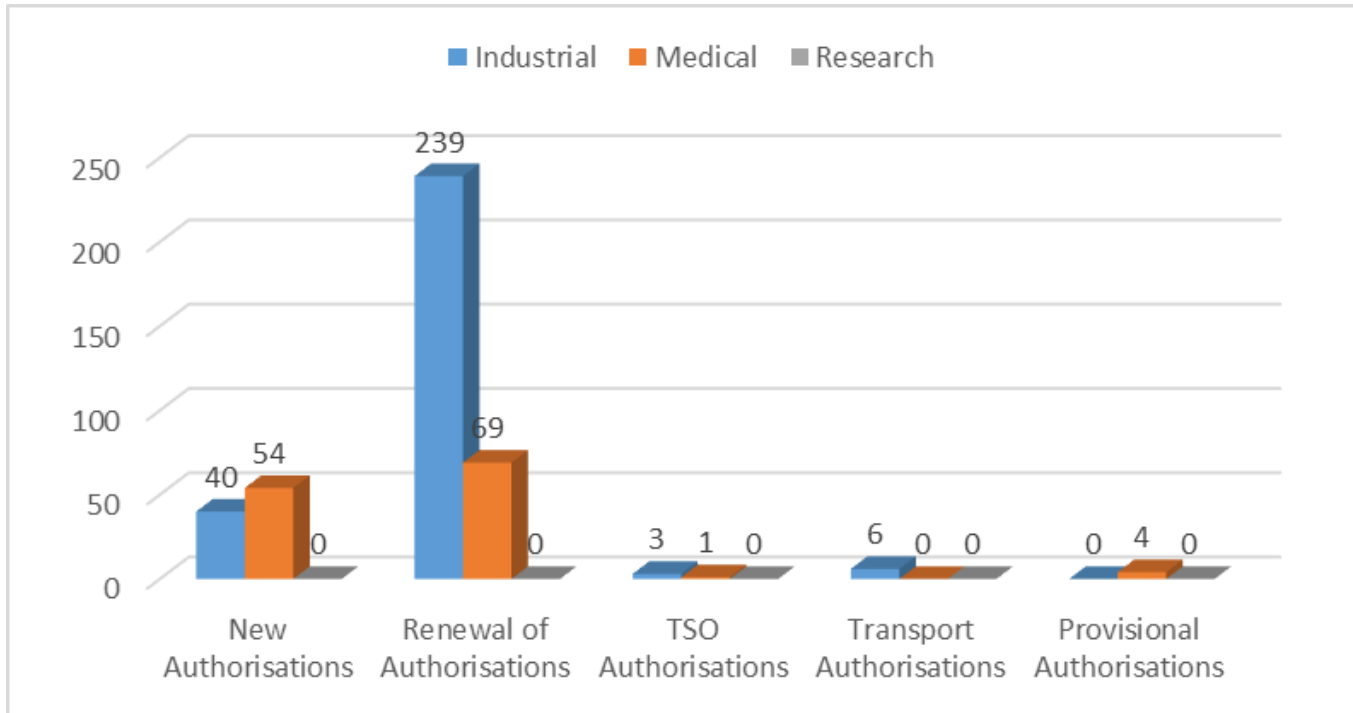


Figure 1: Different types of authorisations issued in the year 2021

Permits issued

A total of 483 permits were issued in the year 2021. These consist of import, export, transport, transfer, transit, construction, design approval and decommissioning/dismantling permits. Figure 2 shows a breakdown of the different permits issued for the different practices.

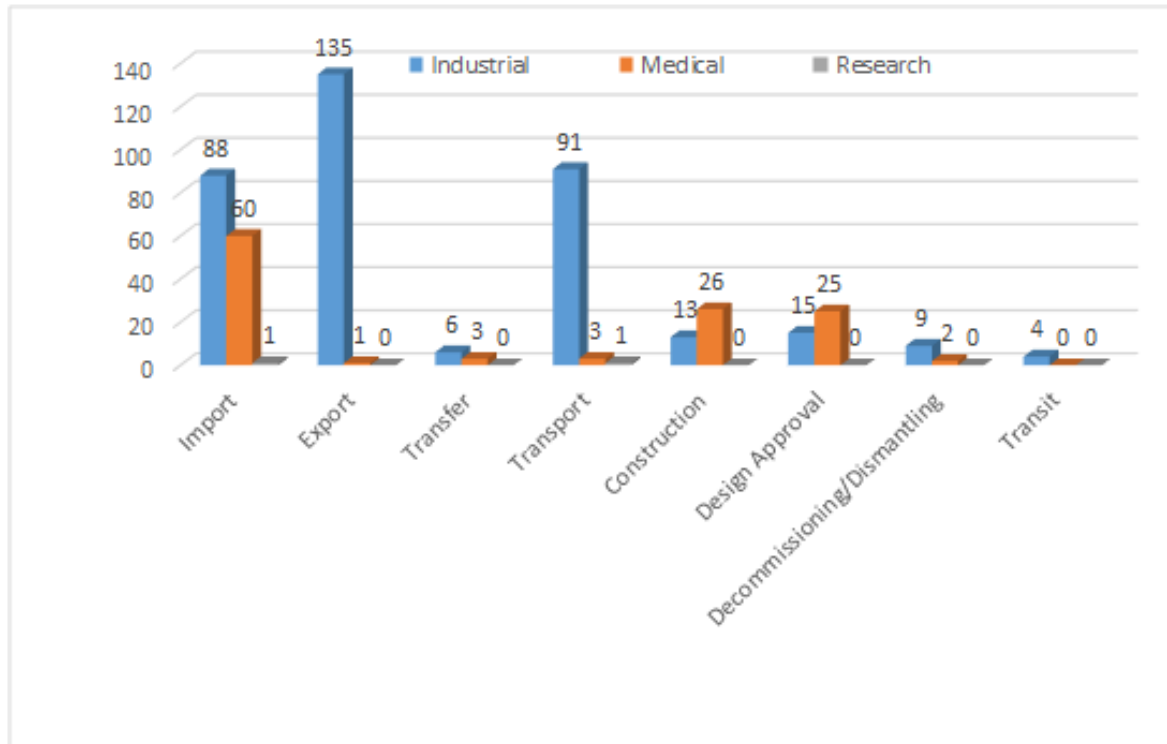


Figure 2: Different types of permits issued during the year 2021

Enforcement Actions

Enforcement notices were issued to 7 facilities for serious non-compliance issues observed when regulatory inspections were carried out in these facilities in the year 2021. Each facility was given a specific period to correct these issues. Authorisations of these facilities were not granted. Figure 3 shows the summary of the types of facilities that were issued with enforcement notices. A detailed list of facilities issued with enforcement notices is shown in Appendix 2.

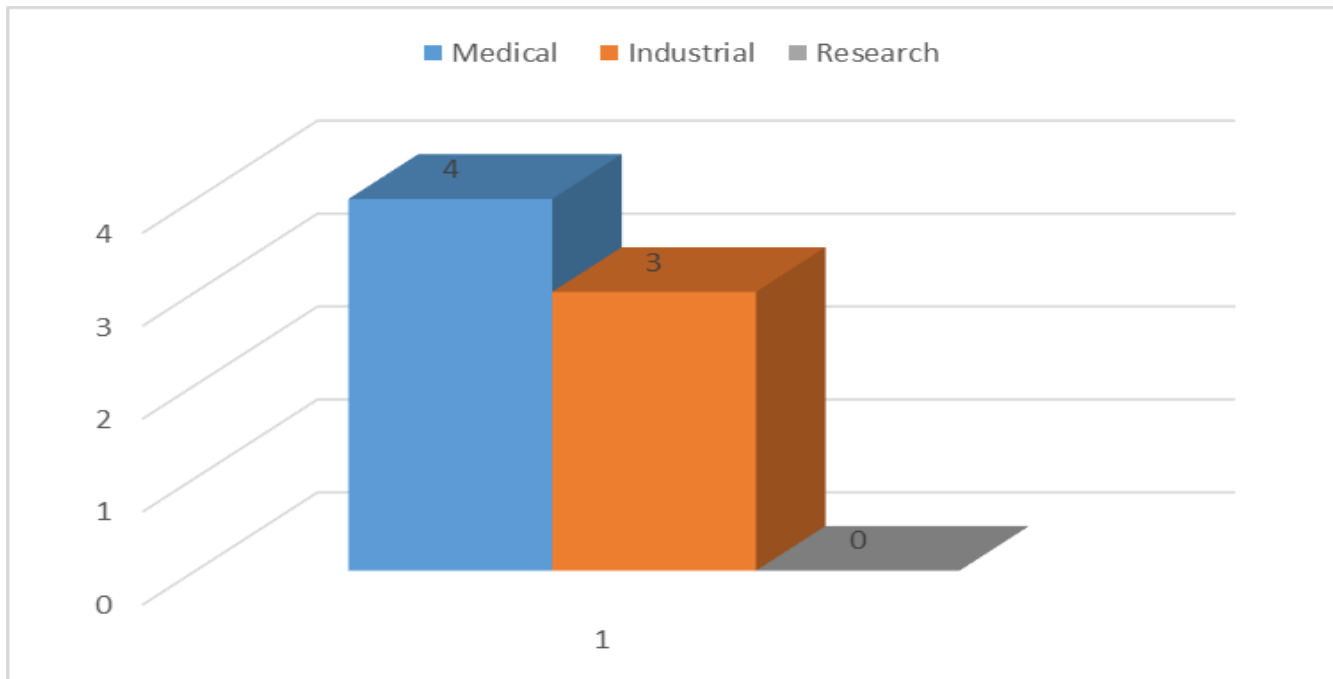


Figure 2: Enforcement notices issued in the year 2021

Common Non-Compliance Issues identified during regulatory inspections

1. Light leakage around darkroom.
2. Absence of radiation protection door.
3. Absence of a timer and thermometer for use in the darkroom during film processing for manual processing kits.
4. Inappropriate positioning of safe light.
5. High temperature in X-ray room and darkroom due to absence or faulty air-conditioners.
6. Unavailability of a survey meter in the department to carry out area monitoring.
7. Survey meter out of calibration or not calibrated.
8. Absence of lead aprons and other protective clothing.
9. Absence of physical protection and emergency plan with postulated scenarios for some fixed installations/activities and mobile installations/activities.
10. Facilities operating without authorisation or expired authorisations.
11. Absence of radiation protection programme.
12. Absence of area and contamination monitoring records.
13. Absence of working local rules.
14. Absence of a medical physicist and/or radiation protection officer.
15. Authorisation certificate not framed and posted within the control area of the facility.
16. Lack of training and retraining of radiation protection officers.
17. Lack of awareness training for persons using radiation sources.
18. Absence of quality control procedures.
19. Absence of emergency plan with postulated scenarios for:
 - Fixed installations/activities (radiotherapy, industrial irradiators, fixed nuclear gauges, diagnostic radiology etc.) and
 - Mobile installations/activities (Radiography, Transport etc.)

Participation in Meetings and Trainings

1. Joint Convention National Report Reviewers Training.
2. Workshop on safety principles, requirements and criteria for new power reactors: INSC project support to the regulatory authority of Ghana
3. Review Meeting on Integrated Management System Regulation
4. Directorate review of GHARR-1 Submittals
5. Meeting with Nuclear Power Ghana
6. INSC Project Task 1 Virtual On-Site-Assistance
7. EU-INSC Virtual Workshop on Management System, Virtual Event
8. INSC Task 3 – Webinar on Building Regulatory Body Competence
9. Virtual Training Course on safety & security interface including emergency preparedness for radioactive/nuclear material and facilities with EU Project
10. Integrated Nuclear Security Support Plan (INSSP) Implementation Discussion.
11. Human Resource Development Workshop on Task 3 of EU INSC Project
12. USDOE/NNSA/INS Cyber Security Workshop held virtually.
13. Workshop on nuclear security self-assessment and improvement in Ghana with Kings College London
14. Association of Ghana Industries Stakeholder Forum on Nuclear Power
15. Stakeholder Forum on Ratification of Treaty on the Prohibition of Nuclear Weapons
16. Borehole Disposal Safety Case Review Workshop with Canadian Nuclear Safety Commission (CNSC)
17. Progress Meeting of European International Instrument for Nuclear Safety Cooperation (INSC) Project
18. Fees and Charges Workshop with Canadian Nuclear Safety Commission
19. USDOE/NNSA Support to Implement Mobile Detection System Memorandum of Understanding.
20. Interview on STARR FM on Safeguards Careers.
21. Bilateral Meeting with USDOE/NNSA/INS.
22. IAEA General Conference
23. Meeting with GAEC/NNRI/RRRC on Proposed Security Upgrades Project with Kings College London; 1 October 2021;
24. Virtual Workshop with the USNRC on Overview of NPP Regulatory Oversight
25. Basic Professional Training Course (BPTC) on Nuclear Safety
26. Meeting on Subtask 2.1 – Identification of the Status of the Management System Development of MS structure and priority elements, Virtual Meeting
27. Virtual Stakeholder Engagement on the Authorisation Process and the New Fees and Charges Regime
28. Scientific Visit to Pakistan

Achievements

1. The Nuclear Security Committee was revived this year by creating a Nuclear Security Desk at National Security Council Secretariat. The Nuclear Security Department facilitated the formation of the Nuclear Security Desk.
2. A series of radio campaigns to educate the public on the establishment, mandate and activities of the Nuclear Regulatory Authority.
3. Successfully conducted a maiden recruitment process and employed forty (40) critically needed personnel with diverse backgrounds to augment the existing overwhelmed staff.
4. Completion of a sixty-three (63) seater office block with a forty (40) seater General Conference Room and an eight-seater Video Conference Room.



Statement of Financial Position as at 31 December 2021

ASSETS	2021 GH¢	2020 GH¢
Current Assets		
Cash and Cash Equivalents	1,528,096.68	878,760.34
Receivables	544,641.01	368,269.35
Total	2,072,737.69	1,247,029.69
Non-Current Assets		
Property, plant and Equipment	2,996,371.21	1,322,521.50
WIP-Office Building	-	713,000.00
TOTAL NON-CURRENT ASSET	2,996,371.21	2,035,521.50
Total ASSETS	5,069,108.90	3,282,551.19
LIABILITIES		
Current Liabilities		
Accounts Payables	23,621.25	57,511.00
Short term borrowings	-	245,834.79
Total Current Liabilities	23,621.25	303,345.79
NON-CURRENT LIABILITIES		
Long-term borrowing	-	-
Total Non-Current Liabilities	-	-
TOTAL LIABILITIES	23,621.25	303,345.79
NET ASSETS	5,045,487.65	2,979,205.40
FINANCED BY:		
Accumulated fund b/f	2,979,205.40	2,328,277.10
Surplus for the year	2,066,282.25	650,928.30
NET WORTH	5,045,487.65	2,979,205.40

Statement of Financial Performance for the Year Ended 31 December 2021

REVENUE	2021	2020
	GH¢	GH¢
GoG Subvention	7,824,945.17	6,149,600.43
Internally Generated Fund	2,897,123.10	1,893,800.37
Donor	24,896.26	201,643.84
Other Revenue	4,901.69	9,941.32
TOTAL REVENUE	10,751,866.22	8,254,985.96
EXPENDITURE		
Compensation of Employees	7,269,040.76	5,892,072.19
Goods and Services	609,865.62	475,100.64
Internally Generated Expenditure	806,677.59	1,236,884.83
TOTAL EXPENDITURE	8,685,583.97	7,604,057.66
SURPLUS/(DEFICIT)	2,066,282.25	650,928.30

Statement of Cash Flow for the Year ended 31 December 2021

CASH FLOW FROM OPERATING ACTIVITIES	GH¢	GH¢
	2021	2020
CASH RECEIPTS FROM OPERATING ACTIVITIES		
GoG-Subvention-Compensation	7,269,040.76	5,892,072.19
GoG-Goods and Services	365,904.41	257,528.24
GoG-CAPEX	190,000.00	-
IGF Receipt	2,720,751.44	2,000,311.51
Donor	24,896.26	40,472.74
Other Income	4,901.69	9,941.32
Total Receipt	10,575,494.56	8,200,326.00
CASH PAYMENTS FOR OPERATING ACTIVITIES		
GoG Subvention-Compensation	7,269,040.76	5,892,072.19
Goods and Services	365,904.41	257,528.24
IGF Payment	792,818.40	1,135,098.98
Total Payment	8,427,763.99	7,284,699.41
NET CASHFLOW FROM OPERATING ACTIVITIES	2,147,730.99	915,626.59
CASHFLOW FROM INVESTING IN NON-FINANCIAL ASSETS		
Acquisition of Fixed Asset	(188,741.37)	(57,508.19)
IGF-Office Building	(826,069.55)	(513,000.00)
GoG-Office Building	(190,000.00)	
NET CASHFLOW FROM INVESTMENT IN NON-FINANCIAL ASSETS	(1,204,810.92)	(570,508.19)
CASHFLOW FROM FINANCING ACTIVITY		
Borrowings	-	500,000.00
Repayment of Loan	(293,583.73)	(336,792.38)
NET CASHFLOW FROM FINANCING ACTIVITY	(293,583.73)	163,207.62

APPENDICES

Appendix 1: List of Facilities Authorised (Medical Facilities)

1. International SoS (Ghana) Limited Clinic, Wassa Mine
2. Sonotech Medical & Diagnostic Centre
3. Reveal Diagnostic Centre
4. Trust Clinic, Dansoman Branch
5. Medikah Diagnostic Services
6. Nova Wellness Center
7. Luccahealth Medical Specialty Center
8. Sonotech Medical & Diagnostic Centre, Tema
9. Holy Trinity Medical Center, North Kaneshie
10. Komfo Anokye Teaching Hospital, Kumasi
11. Sochibga Medical Laboratory & Diagnostic Service
12. Holy Family Hospital, Berekum
13. Plus Lab & Diagnostics
14. Twifo Atti/Mokwa District Hosp
15. Precious Gem Diagnostic Centre
16. National Centre for Radiotherapy and Nuclear, Korle-Bu
17. Tain District Hospital
18. The Bank Hospital
19. Redeemer Hospital Annex
20. VRA Health Services Limited, Aboadze
21. Goldstar Medical Group
22. VRA Hospital, Akosombo
23. Accra Medical Centre
24. St. Martins De Porres Hospital, Odumasi-Krobo
25. Tain District Hospital
26. Apex Dental Center
27. Global Medical Solutions
28. Eumedis
29. Habana Medical Services
30. International SOS, Newmont Akyem Mine Clinic
31. Soyuz Medical Imaging & Diagnostics Limited
32. Kemet Hospital Limited
33. Cato Clinic
34. Afari Community Hospital
35. Synlab Ghana Limited
36. Sam-J Specialist Hospital
37. Medray Diagnostic Imaging Centre
38. Obuasi Government Hospital
39. Obuasi Diagnostic Centre
40. Global Medical Imaging Centres, Kumasi
41. Gary Marvin Memorial Hospital
42. Sampa Government Hospital
43. Mother Of God Hospital, Ashaiman
44. Mankranso Government Hospital
45. Konongo Odumase Hospital

APPENDICES

Appendix 2: List of Facilities Authorised (Medical Facilities)

1. Nyaho Medical Centre (Accra Central)
2. Asanko Gold Mine Clinic
3. Benedict Hospital
4. Half Assini Government Hospital
5. St. Joseph's Hospital, Koforidua
6. Nsawam Government Hospital
7. Eastern Regional Hospital, Koforidua
8. Donkokrom Presbyterian Hospital
9. Abura Dunkwa District Hospital
10. Cape Coast Teaching Hospital
11. Eurapharma Care Services Ghana Limited
12. Juaben Municipal Hospital
13. Histolab Diagnostic Centre
14. Frimpong Boateng Medical Centre
15. Nkawie-Toase Gov. Hosp.
16. Juaso Municipal Hospital
17. Ejisu Government Hosp.
18. White Star Dental Clinic
19. Akai House Clinic
20. Wassa Akropong Gov. Hosp
21. St. Theresa's Hospital
22. Kwesimintsim Hospital
23. Essam Government Hosp.
24. St. Luke Catholic Hosp.
25. Kintampo South District Hospital
26. The Trust Hospital Company Limited
27. Lapaz Community Hospital Annex, Kissieman
28. Del International Hospital
29. Achimota Hospital
30. Kaneshie Polyclinic
31. Grace Diagnostic Limited
32. The Bank Hospital
33. University of Ghana Medical Centre

APPENDICES

Appendix 3: List of Facilities Authorised (Industrial Facilities)

1. Apave Ghana Inspection Ltd.
2. Amandi Holding Limited
3. GOS (D&M)
4. Bureau Veritas Oil & Gas Ltd.
5. GOS (Wireline)
6. Amandi Holding Limited
7. Baker Hughes Technology Services Ltd
8. Tullow Ghana Limited
9. Bureau Veritas Ghana Ltd.
10. Trac Oil and Gas Ghana Ltd.
11. Baker Hughes Ghana Ltd
12. QG Construction Uk Ltd.
13. Anglogold Ashanti Uaprim Mine
14. Golden Star Ogo/Pretea Limited
15. Abosso Goldfields Limited
16. Eiffage Genie Civil
17. Probe Engineering Services Ltd
18. Afcons Infrastructure Limited
19. Adamus Resources Limited
20. Knight Piesold Ghana Limited
21. SPV Andrade Guteirrez Odebrecht Limited
22. Halliburton Ghana Limited
23. Goldfields Ghana Limited, Tarkwa
24. Guinness Ghana Breweries Ltd
25. Nick-Tc Scan Limited,
26. Takoradi Harbour
27. Newmont Ghana Gold Ltd. Ahafo Mine
28. Chirano Goldmines Limited
29. Newmont Golden Ridge Akyem Mine
30. Perseus Mining Ghana Limited
31. Baker Hughes Energy Technology Ghana Limited
32. Asanko Goldmine Ghana Ltd

APPENDICES

Appendix 4: List of Facilities Authorised (Technical Support Organizations)

1. Advent International Ltd

Appendix 5: List of Facilities Issued with Enforcement Notices (Medical)

Medical

1. Bortianor Polyclinic
2. Akuse Government Hospital
3. Atua Government Hospital
4. Sege Polyclinic

Industrial

1. Ecobank Ghana Ltd
2. Amandi Holding Ltd
3. Ghana Highways Authority, Takoradi

