Ministry of Energy and Green Transition / Ghana Energy Sector Reform Project (GERSP)

Consultancy Services for Validation of Electricity Company of Ghana's (ECG) Revenue /Collection Accounts

2025 (Quarter 1 & Quarter 2) Report

JUNE 2026

FINAL

Contents

Abbreviations 8

Executive Summary 12

1. Introduction and Background 45

   1.1 Introduction 45

   1.2 Engagement Background 49

2. Review of the Cash Waterfall Mechanism 52

   2.1 Introduction 52

   2.2 Review of model structure and mechanics 54

   2.3 CWM Directives 55

   2.4 Key Observations and issues identified 61

3. Review of ECG's Billing and Invoicing Procedures 65

   3.1 Introduction 65

   3.2 Process Walkthrough 65

   3.3 Our Key Observations and Recommendations 75

4. General Observations, Approach and Methodology and Specific Key Issues Identified from the Validation Exercise 80

   4.1 Introduction 80

   4.2 Key documents reviewed 80

   4.3 Summary of our Approach and Methodology 86

   4.4 Key Issues and Observations 92

   4.5 Disbursement and Cash Collection Analysis 105

5. Conclusion and Next Steps ... 112

5.1 Introduction ... 112

5.2 Responses to our recommendations from our last two reviews (2023 and 2024) 112

5.3 Our Recommendations for the Q1 and Q2 2025 ... 112

5.4 Our Next Steps ... 114

Appendix 1: Quarterly Tariff Rates ... 118

Appendix 2: MMS Source Data Analysis compared with Power BI Reporting Data ... 120

Appendix 3A: Prepayment Billing Data Recomputation – Total Charge (GHS) ... 121

Appendix 3B: Prepayment Billing Data Recomputation – Units (GWh) ... 121

Appendix 4A: Prepayment Charges ... 122

Appendix 4B: Prepayment Units Supplied ... 123

Appendix 5: Prepaid PowerApp Deposits Re-Computation (GHS) ... 124

Appendix 6: Prepaid Vending Deposits Re-Computation (GHS) ... 125

Appendix 7A: Freezone Customer Bill Re-Computation ... 126

Appendix 7B: Freezone with Power Factor Surcharge Customer Bill Re-computation ... 127

Appendix 8: Cybersecurity and Data Protection Recommendations ... 128

Appendix 9- Comparison between collections per CWM and ECG Cash Settlement Platform Report (GHS) ... 131

Appendix 10- Reconciliation for total statutory payments ... 132

Appendix 11A- Total Value Analysis (exclusing statutory deductions) ... 133

Appendix 11B – Amount declared in the CWM vs Amount paid to IPPS ... 134

Appendix 12- IPP Ledger Amount vs Invoice Reconciliation.................................... 143

Appendix 13- Comparison between collections per ECG Collection report and Non-Energy PowerApp Report 149

Appendix 14- Energy Delivered vs Energy Sold 150

Appendix 15- Differences in receivable balance per ECG Trial Balance (TB) and PwC recomputed amount 151

Appendix 16- ECG Responses (including updates on Our Observations) to the Status of our Recommendations from the 2023 and 2024 review. 152

Appendix 17- Data Request List.. 162

Appendix 18 - Request for Systems Information and Access 164

Appendix 19 - Request for ECG Bank Statements Details 165

Appendix 20 - Request for CWM Directives 166

Appendix 21 – ECG Comments and Responses to Key Observations and Recommendations from 2025 Q1 and Q2 Reviews.. 168

List of Tables

Table 1: CWM model structure and mechanical review 54
Table 2: Directives Issued (Received from ECG and PURC) 56
Table 3: Summary of Documents Reviewed 81
Table 4: ToR scope of work, our objective, approach and methodology 87
Table 5: Our Key Issues and Observations 93
Table 6: Comparative Analysis of Single Collection Account (SCA) vs CWM Total Collections vs Revenue Report (in GHS) 105

Table of Figures

Figure 1: Summary of Ghana's Power Generation Capacity 45
Figure 2: Ghana's Power Sector Structure (Tariff/Charges Flow and Flow of Power) 46
Figure 3: ECG Billing Process – Prepaid 72
Figure 4: ECG Billing Process – Postpaid (Non-Industrial)... 73
Figure 5: ECG Billing Process – Postpaid (Industrial).. 74
Figure 6: Comparative revenue figures (in GHS) for single collection account, CWM and revenue report 106
Figure 7: PwC reported collections from bank statements (in GHS) vs ECG reported collections (in GHS).. 107
Figure 8: Collections and Revenue Performance Overview (in GHS) 108

Caveat

The information/data furnished in this report contains confidential information proprietary and confidential to PricewaterhouseCoopers (Ghana) LTD. (PwC) and shall not be disclosed outside the recipient’s organisation or duplicated, used or disclosed in whole or in part by the recipient for any purpose other than its intended use. Any other use or disclosure in whole or in part of the information contained herein shall be with the express permission of PwC.

All issues and results mentioned in this and other reports relate only to those matters that we have found in the course of our work or that were important for our work, and about which we feel you should be informed. However, this report is not a comprehensive listing of our findings; specifically, we cannot be held responsible for identifying all of the risks or all weaknesses of the internal control system.

This report was prepared for your exclusive use and may not be quoted either in whole or in part without our prior written consent. We do not accept any responsibility towards third parties, as this report was not prepared for any additional purpose.

Abbreviations

Abbreviation	Full Meaning
AI	Action Item
BOA	Bank of Africa
BOG	Bank of Ghana
CAATs	Computer Assisted Audit Techniques
CAL	CalBank Limited
CBG	Consolidated Bank Ghana
CMS	Customer Management System
CWM	Cash Waterfall Mechanism
DR	Disaster Recovery
ECG	Electricity Company of Ghana
ECSP	ECG Cash Settlement Platform
ESRP	Energy Sector Recovery Program
FAB	First Atlantic Bank
GCB	GCB Bank
GNGC	Ghana National Gas Company Limited
GoG	Government of Ghana
GHS	Ghanaian Cedi
GWh	Gigawatt hours
NEDCO	Northern Electricity Distribution Company
NGC	Natural Gas Clearinghouse
NSLT	Non-Special Load Tariff
OMNI	OmniBSIC Bank Ghana
PURC	Public Utilities Regulatory Commission
PwC	PricewaterhouseCoopers
RPO	Recovery Point Objective
RTO	Recovery Time Objective
SLA	Service Level Agreement

Abbreviation	Full Meaning
SLT	Special Load Tariff
SQL	Structured Query Language
UBA	United Bank for Africa
UMB	Universal Merchant Bank
USD	United States Dollars
VRA	Volta River Authority

The Honourable Minister,
Ministry of Energy and Green Transition,
Ministries, Accra

Attn: The Chief Director

2 June 2026

Dear Sir,

Subject: Validation of Electricity Company of Ghana (ECG) Revenue/Collection Accounts 2025 (Quarter 1 and Quarter 2)- Final Report

In accordance with our May 2026 contract addendum with you, we are pleased to enclose herewith our Final Report on the above-mentioned Project.

The report outlines:
- Our review of the Cash Waterfall Mechanism ("CWM");
- Our review of ECG's billing and invoicing;
- Our general observations and specific key issues identified from the validation/reconciliation exercise; and
- Our conclusion and next steps.

The period of review covered for this assessment are the first and second quarters of 2025.

This report is intended solely for the information and use of the Ministry of Energy and Green Transition and the Public Utilities Regulatory Commission. It is not intended to be and should not be used by anyone other than these specified parties.

We express our gratitude to all the stakeholders for the support during the conduct of the validation exercise.

Yours sincerely,
for: PricewaterhouseCoopers (Ghana) LTD

Prince Adufutse

Director

Winfred King

Director

PricewaterhouseCoopers (Ghana) LTD
PwC Tower, A4 Rangoon Lane, Cantonments City, PMB CT 42
Cantonments, Accra, Ghana
T: +233 (0) 302 761 500

Executive Summary

Executive Summary

Section 1: Introduction and Background

2025 Quarter 1 and Quarter 2 Assessment

As part of achieving financial sustainability in Ghana’s energy utilities and value chain, the Government of Ghana (GoG) initiated the Energy Sector Recovery Program (ESRP) in May 2019. The ESRP is a comprehensive recovery program that sets out the roadmap of policies and actions required for the financial recovery in the energy sector.

The ESRP implemented a payment mechanism in April 2020, the Cash Waterfall Mechanism (CWM), to ensure transparency, equitable and timely payment of all revenues billed and collected by the Electricity Company of Ghana (ECG) on behalf of the entire electricity generation value chain.

The CWM and the Natural Gas Clearinghouse (NGC) mechanisms were put in place to ensure equity and transparency in the disbursement of energy revenues, equitable allocation of tariff revenue collected by the Electricity Company of Ghana to all parties in the energy value chain.

In June 2023, a presidential directive was issued to GESRP to address the challenges with ECG’s compliance to the CWM guidelines. In summary, the objective of the directive sought to improve the financial sustainability of Ghana’s energy sector by restructuring the payment mechanism going forward. We have reviewed the details of the directive in the next section of our report.

This engagement seeks to validate electricity sales in terms of kWh and amount billed and collected by ECG over a defined period to confirm if these sales, billings and collections align with the requirements and outcomes of the Cash Waterfall Mechanism and its related payments. The assessment also validates the cycle of power delivered, corresponding billing and collection as well as the full transfer of these collected funds from the regional and/or district collection accounts into the Single Collections account.

The assessment covers the period of 1 January 2025 to 30 June 2025.

Status of the Implementation of Recommendations (as of the 2025 Review) from the 2023 and 2024 Reviews

This report highlights the improvements and related updates observed in the CWM and its use since the inception of the validation work in 2023. It also captures the improvements and updates implemented by ECG to enhance its revenue collection and its related internal processes.

The analysis builds on key observations and recommendations from our 2023 and 2024 reports and action taken as of the 2025 review.

The table as follows sets out the key thematic areas where critical mechanism strengthening considerations were put forward based on our review from 2023 and 2024. It also summarises our key observations on these recommendations during this 2025 review highlighting the status of each thematic area.

Based on our assessment, approximately 60% of the recommendations have been implemented by PURC and ECG as part of the CWM strengthening per our observations during our review.

Table A: Summary on Status of Implementation of Recommendations from 2023 and 2024 Reviews

No.	Thematic Area/ Status	Key Observations and Recommendations from 2023 and 2024 Reviews	Key Observations from 2025 Q1 & Q2 Review
1.	CWM Collections [Status: **Resolved**]	Our analysis revealed the following average revenue collections (compared to CWM declared revenues) for 2023 and 2024. 2023: GHC 6,216,270, 501 against a CWM declared amount of GHC 6,281,035,943 (shortfall: GHS 64,765,443) 2024: GHC 6,538,580,618 against a CWM declared amount of GHC 10,441,909,200 (shortfall: GHS 3,903,328,582). We recommended the use of a single bank entity to facilitate collection and efficient functionality of the single collection account for ECG's revenue.	In our 2025 review for Q1 and Q2, key observations we made was; GCB Bank now serves as ECG's primary banking institution for revenue collection, with customer deposits being routed into a single collection account in line with the CWM. This has led to an observed significant improvement to the collections of up to GHC 7,866,940,786 (in 2025 Q1 and Q2) as declared by the CWM Committee over the period compared to the GHC 8,511,361,025 PwC validated revenue collected. The observed difference over the 2025 Q1 & Q2 is mainly as a result of the ECSP Vendor payments and timing /cut off period differences.
2.	Debit Notes and Fuel Purchases [Status: **Resolved**]	ECG purchased fuel directly and issued debit notes, of GHS 1,187,013,644 in 2023, to IPPs. These payments reduced amounts to be allocated to beneficiaries. We recommended that ECG engage in discussions with key stakeholders, including the IPPs and the PURC, Ministry of Energy, to clearly define and agree on the responsibility for procuring fuel for power generation.	ECG no longer procures liquid fuels directly. Purchases are now issued as CWM directives from the Ministry of Energy and Green Transition and payments are made via CWM allocations. We observed CWM directives instructing liquid fuel purchases during the January –June 2025 review period. Furthermore, debit notes are appropriately issued for key gas purchases.
3.	Internal Reconciliation Mechanisms [Status: **Resolved**]	We observed discrepancies between ECG's records and CWM figures. The difference between the CWM reported collections and PwC validated revenue collected was GHS 64,765,443 in 2023 and GHS 3,903,328,582 in 2024. We made a recommendation that ECG should take steps to believe that these issues can be easily resolved if ECG conducts a reconciliation between its internal records and the amounts reported in the CWM.	Per our review, ECG started operating the Single Collection Account from the middle of February 2025. Consequently, differences between CWM and PwC validated figures reduced significantly compared to our observations from prior years. In the first half of 2025, the net difference between CWM and PwC validated collections stood at GHS 33,305,710. This difference was recorded in the period before, (i.e. January 2025 and early February 2025), the full institution and operation of the Single Collection Account in mid-February 2025.

No.	Thematic Area/ Status	Key Observations and Recommendations from 2023 and 2024 Reviews	Key Observations from 2025 Q1 & Q2 Review
4.	Revenue Data from ECSP Vendor [Status: **Resolved**]	The fees charged by the ECSP vendor (1.5%–3%) were high and directly impacted the amounts reaching CWM beneficiaries. We recommended that ECG engage stakeholders and renegotiate the arrangement with the ECSP vendor to promote transparency and reduce costs. Previously, tariff and non-tariff revenues were not clearly distinguished at the point of collection, making reconciliation difficult. PwC recommended ECG work with the ECSP vendor to establish mechanisms that clearly separate tariff and non-tariff collections	ECG's management has successfully renegotiated the fees to a fixed 1.65%, improving fairness and predictability. ECG has taken steps to delineate tariff revenue from non-tariff revenue, thereby reducing the commission fees charged by the ECSP Vendor, as non-tariff revenues are no longer collected by the ECSP Vendor and therefore does not attract commission.
5.	Single Collection Account Approach [Status: **Ongoing**]	ECG previously operated multiple collection accounts across multiple banks - 99 bank accounts across 19 banks. We recommended that the accounts should be streamlined to one or two banks with an extensive branch network coverage to facilitate the single account collection for ECG's revenue.	ECG now uses GCB as its primary collection bank, leveraging its nationwide reach and operational efficiency, which has improved the reconciliation process. However, a few issues were noted, including operational expenses being processed through revenue accounts prior to sweeping into the Single Collection Account.
6.	Monitoring System for Allocation [Status: **Resolved**]	ECG allocated 12.5% (7.5% VAT, 5% levies) of net collections in the Cash Waterfall Mechanism (CWM) for statutory payments, but these allocations were made on estimates rather than the actual obligations due. PwC recommended that ECG implement a statutory payments tracker to monitor transactions, reconcile allocations with actual payments, and prevent errors or omissions.	A structured process is now in place with monthly declarations and reconciliations. Each month, balances in the single collection account are declared, followed by CWM distributions within 24-48 hours. Stakeholders can reconcile declared amounts with allocation sheets and verify payments using supporting documents, replacing the old credit note system and ensuring real-time visibility and traceability of statutory disbursements.
7.	Cloud-based CWM Platform [Status: **Resolved**]	Previously, the Cash Waterfall Mechanism (CWM) model was circulated among stakeholders via email as an unsecured excel file. We recommended migrating the model to a cloud-based platform, which would enable stakeholders to access real-time updates, enhance transparency, and improve collaborative oversight.	The newly instituted CWM Committee led by PURC now has sole oversight of the collections, single account and CWM allocations subject to approval by National Energy Security Task Force. The role and activities of the new committee facilitate most of the benefits proposed under the cloud-based suggestion and strengthens the governance structures of the CWM.

<table>
<tr><th>No.</th><th>Thematic Area/ Status</th><th>Key Observations and Recommendations from 2023 and 2024 Reviews</th><th>Key Observations from 2025 Q1 & Q2 Review</th></tr>
<tr><td>8.</td><td>Digitalisation & Cybersecurity
[Status: Ongoing]</td><td>Based on the contractual agreement between ECG and Hubtel Limited for business improvement, ECG's IT environment faced several vulnerabilities:
No disaster recovery plan, leaving billing operations exposed to outages and reliance on estimated billing.
A cyber-attack disrupted activity, highlighting weak defences despite ECG's critical infrastructure role.
Third-party arrangements with Hubtel introduced risks that were not clearly documented, raising concerns about inadequate security scanning and vulnerability management.
We provided recommendations around disaster recovery, cyber defence, and third-party risk management.</td><td>ECG has made progress in strengthening its cybersecurity and data protection environment.
A Disaster Recovery Plan is in place, staff received cybersecurity awareness training in February 2025, and both a Third-Party Policy and Incident Response Plan have been drafted and are being used operationally, though they still await Board approval.
ISO 27001 implementation is ongoing, with certification delayed to March 2026.
A Security Operations Center (SOC) with 24/7 monitoring has been established, but some components remain incomplete, Operations Technology (OT) monitoring is not yet active, and full implementation is on hold due to payment issues.
Overall, while important steps have been taken, several measures remain incomplete or pending formalisation.</td></tr>
<tr><td>9.</td><td>Documentation of IPP Payments
[Status: Resolved]</td><td>Payments made to Independent Power Producers (IPPs) outside the allocations specified in the CWM model were not clearly identifiable in the bank statements or adequately detailed in the ledger. This limited transparency and made it difficult to trace the nature of such payments.
We recommended that a clear documentation of payments outside CWM allocations.</td><td>Per our review, payments to IPPs are processed through the consolidated CWM holding account and are supported by bank statements and corresponding ledger records that identify the nature of each payment. We did not identify any payments made to IPPs aside the allocations specified in the CWM in this review period.</td></tr>
<tr><td>10.</td><td>Flexible Exchange Rate System
[Status: Ongoing]</td><td>ECG had been using a fixed exchange rate for payments over six months, which ignored market fluctuations. We recommended an adoption of a flexible system that updated periodically with central bank data, ensuring payments reflected current conditions and reducing financial imbalances.</td><td>CWM allocations are now fully made in Ghana cedis. Any payments to beneficiaries are transferred to BoG and paid in the relevant foreign currency to the beneficiaries from the Central Bank. Additionally, over the 2025 Q1 and Q2 period forex pressure eased due to cedi appreciation.

Even though the observed disparities were relatively reduced in the 2025 review, reconciliation differences persist due to USD-denominated contracts and the impact of bank charges from transfers.</td></tr>
</table>

No.	Thematic Area/ Status	Key Observations and Recommendations from 2023 and 2024 Reviews	Key Observations from 2025 Q1 & Q2 Review
11.	Data Freeze on Pre-paid Data [Status: **Ongoing**]	The PwC team could not reliably ascertain electricity charges attributable to specific periods because subsequent changes in the MMS data altered previously reported figures. This lack of a data freeze meant historical records were not preserved, leading to inconsistencies between the MMS system and management reports. PwC recommended that ECG implement a data freeze process for prepaid data in the MMS system, similar to the approach previously used in the Adora system.	ECG has yet to fully implement a secure data freeze in MMS. While extracted data is now largely consistent with ICT support, minor discrepancies were still observed due to delayed updates from card purchases, tariff changes requiring manual adjustments, and occasional re-computations. As a result, historical data may vary slightly between extracts, indicating the freeze is not yet fully reliable.

We have noted that the steps taken by PURC, ECG, the Ministry and other stakeholders such as The World Bank have been instrumental in driving the observed improvements in the revenue collection ecosystem backing the CWM. Although the improvements have been relatively significant as of our 2025 Q1 and Q2 review, there is room for improvement. We have provided a detailed analysis in Appendix 16[1] of this report.

[1] Appendix 16- ECG Responses (including updates on Our Observations) to the Status of our Recommendations from the 2023 and 2024 review

Section 2: Review of the Cash Waterfall Mechanism

Our objective and methodology for the review of the CWM in line with the Terms of Reference (ToR) is summarised as follows:

- **Our Objective**: Review the CWM allocation determination process, including the methodologies used and the inputs considered.
- **Our Methodology**: We obtained copies of the CWM from ECG for review (covering the January to June 2025 period). We also reviewed the PURC Cash Waterfall Mechanism Validation Reports for the period. Additionally, documentation was provided by ECG and PURC provided directives that were issued over the period to inform measures to help enhance the operationalisation of the CWM process.

CWM Directives

In our review of the CWM Directives issued within the review period of 2025 Q1 and Q2, we have grouped the documentation on the directives into 3 main categories:

- CWM operational directives: This category of directives were issued requesting specific processes to be followed in the use and application of the CWM in terms of collections, declaration and payment of beneficiaries.
- Fuel directives: This category of directives were issued in connection with fuel supply payments and related instructions.
- CWM approval directives: This category covers official communication confirming approved declaration for payment to the CWM beneficiaries.

Our Key Observations and Issues Identified

The following are some key observations we made during our review of the CWM models and the CWM directives that we received from ECG and PURC over the period.

Table B: Key Observations and Issues Identified from CWM Model Review

No.	Thematic Area	Recommendation Details
1.	CWM Model - Use of an unprotected Microsoft Excel spreadsheet (Data Integrity and Model Security)	We observed that most of the submitted CWM models still have unprotected sheets containing critical formulas. It is important for the CWM model to incorporate protected cells to limit users' ability to interfere with allocation formulas either intentionally or by error. To promote the process of transparency and efficient management of the mechanism, the integrity of the data entered into the spreadsheet must be safeguarded. Key cells must be locked with control access features and

No.	Thematic Area	Recommendation Details
		enhanced access log features programmed into the spreadsheet to track any attempted changes to the inputs in the model.
2.	CWM Directives- Formalisation of CWM Exception and Deferment Processes	There is a recurring pattern of ad hoc requests to defer revenue declarations, release funds urgently, or temporarily withhold allocations under the Cash Waterfall Mechanism (CWM). We recommend the formalisation of a clearly documented exception-handling framework within the CWM. This framework should define permissible circumstances for deferments, emergency releases, and interim payments, including approval thresholds, required documentation, timelines for reconciliation, and disclosure requirements.
3.	CWM Directives- Strengthening Reconciliation and Disclosure of Interim Payments	A few directives requested ECG to make upfront payments (e.g., for gas supply and liquid fuel procurement) with assurances that these amounts will later be reconciled under the CWM. We recommend that ECG and the CWM Committee implement a standard reconciliation protocol that clearly tracks such interim payments, shows how and when they are netted off against CWM allocations. This will support the process of ensuring that they are transparently reflected in monthly CWM schedules shared with stakeholders. This would address current gaps in understanding how reconciliations are performed and reduce the risk of double funding or misstatement.
4.	CWM Directives- Clarification of Fuel Funding Responsibilities and Avoidance of Duplication	The directives establishing a Liquid Fuel Account funded through Level A allocations, as well as the requirement for VRA to retain 30% of non-power gas sales proceeds for fuel purchases, create alternative funding streams for fuel. We recommend a review to clearly delineate funding responsibilities between ECG and VRA for fuel procurement. Where dedicated fuel funding mechanisms exist, ECG should not be required to pre-finance fuel purchases unless explicitly justified and approved within the CWM framework. This will help prevent duplication and ensure alignment with the intended design of the CWM.
5.	CWM Directives- Reassessment and Documentation of Allocation Methodology Changes	Certain directives, such as performance-based conditions attached to Distribution Service Charge (DSC1) allocations, the inclusion of Early Power Limited (EPL) in Tier 1, and revised IPP payment instructions, represent substantive changes to the structure and operation of the CWM. We recommend that PURC and the CWM Committee formally document all changes to allocation logic, tiering, and payment priorities, with effective dates and approvals clearly stated. This would address inconsistencies between assertions that the model has not changed and evidence that shows that it has evolved materially.
6.	CWM Directives- Improved Governance,	There are timing inconsistencies between when revised CWM practices were implemented, when Cabinet approval was granted, and when formal

No.	Thematic Area	Recommendation Details
	Timing Alignment, and Authorisation Trail	directives were issued. We recommend strengthening governance by ensuring that no material changes to the CWM are implemented prior to formal approval and communication. Additionally, all monthly CWM allocations should be supported by a clear authorisation trail, from the CWM Committee through National Energy Security Committee (NESC) approval (if required), to enhance accountability and regulatory confidence.
7.	CWM Directives-Enhanced Transparency Around Surpluses and Exchange Rate Gains	Letters approving the use of exchange rate gains and identifying surpluses (e.g., amounts earmarked for ECG maintenance) lack clarity on the basis of the requests and allocation. We recommend clearer disclosure requirements around surplus identification, approval, and utilisation, including the party requesting such treatment and how it aligns with CWM principles. This would improve transparency and mitigate perceptions of discretionary treatment.
8.	CWM Directives-Completeness and Reliability of Regulatory Information	The absence of certain approval directives from the information provided by PURC and ECG raises concerns about completeness of the official approval communication. We recommend the establishment of a centralised, authoritative repository of all CWM-related directives and approvals, jointly maintained by PURC and the CWM Committee. This would ensure consistency of information across reviews and strengthen regulatory oversight. More importantly, we believe that it will be useful for CWM committee to maintain an official communication of CWM approvals to its stakeholders to enhance the transparency and strengthen the governance of the CWM.

Table 2 of the section **2.3 CWM Directives** summarises the directives received including a short description that provides context. It also includes some requests and confirmations linked to the directives.

Section 3: Review of ECG's Billing and Invoicing Procedures

In this part of our assessment, we reviewed the processes and steps for ECG's billing and invoicing for both postpaid and prepaid customers. We detailed the process walkthrough, highlighting the systems, computations and customer categorisation details that inform customer billing and invoicing from ECG.

Our approach for this review considered:

- **Our objective**: Our primary objective for this task aligns with the second requirement item per the Terms of Reference for the Project. In line with this, our assessment seeks to review and assess ECG's billing and invoicing procedures, including the accuracy of metering, tariff application and customer billing.

- **Our methodology**: We initiated our approach with a process walk through discussion with representatives from ECG's Customer Service Directorate (CSD) and Revenue Assurance Department. Based on this, we developed a process map aligning the process walk through with ECG systems and calculations. Using this, we prepared the relevant narrative around the billing and invoicing procedures at ECG and outlined our key observations and recommendations.

Our Key findings, observations and recommendations from this task include the following:

Based on our assessment of ECG's billing and invoicing systems, we noted that there are 20 prepaid systems, i.e., 19 legacy systems (non-MMS compliant systems) and one Meter Management System (MMS).

To streamline the billing and invoicing process, we recommend that ECG's management take steps to expedite the shift of meters from the legacy systems to MMS to have a central database of all meters and prepaid configurations. This will enable ECG to have a single point oversight and management of all its meters. As part of our work and our data requirements, we received aggregated sales data from the 19 Legacy systems instead of individual customer billing data.

We informed ECG about this gap in the data and requested for individual sales data from the legacy systems (non-MMS) to enable us to perform an accuracy test. ECG could not provide the requested data as they indicated that the data sits with a third-party and they do not have access to the source data. See Appendix 3A and 3B for analysis on what percentage of unit supplied and sales is covered by legacy systems.

Using the aggregated sales data - a monthly breakdown of billings/sales for non-MMS and MMS systems - we compared the summaries to the sales report to confirm that the total billings in the prepayment systems had reflected on the sales report. However, we noted variances in the completeness test, and this was communicated to ECG on 29th October 2025 as an exception.

We obtained the detailed MMS Billing source data from January to June 2025. We compared the units consumed (KWh) and number of MMS pre-paid customers in the source data to the aggregated MMS Billing data that feeds into the Power BI dashboard (for reporting) for the same period. We noted variances in our accuracy test.

We recomputed the postpaid customer billings for a sample of customers from the Zeus system to verify the accuracy and application of tariffs. Our analysis showed discrepancies in the system's data computations for industrial customers.

Additionally, we obtained the detailed monthly pre-paid Power App transactions and pre-paid vending quota deposits. We compared our summaries to the Power App and vending quota collections for the period. We noted no variances from our completeness test. Please refer to the Appendix 5 and 6 for the details of our analysis.

We were unable to compare postpaid system payments to the CWM as we did not obtain these payments from Zeus (Polymorph) for postpaid customers during the period (January to June 2025). ECG explained that the reporting interface to extract payment is still being developed by the vendor.

We have included key recommendations, in this review (see Section 5 of this report) to help improve the operationalisation of ECG’s invoicing and billing systems.

Section 4: General Observations and Specific Key Issues Identified

The following table highlights our objective for each task executed per the ToR and the relevant approach and methodology we applied for our assessment.

Table C: ToR scope of work, our objective, approach and methodology

No.	Scope of Work /Task Objective	Our Approach and Methodology
1.	Review the CWM allocation determination process, including the methodologies used and the inputs considered, all revenues collected against electricity received from generators by ECG and delivered to customers, corresponding bills issued and collected, and transferred into a single collection account for declaration by ECG to the CWM including all payment instructions issued to ECG by the CWM for disbursement under CWM guidelines and also all disbursements made out of the single collection account	The first section of this scope relating to the determination process, methodology and inputs review has been completed in Section 2 of this report. We assessed the directives that were issued in connection with the CWM operations. Other aspects of this scope of work were handled as part of the work done summarised in this table. They include items 5, 12,13 and 14 in this table.
2.	Review and assess ECG's billing and invoicing procedures, including the accuracy of metering, tariff application, and customer billing.	The following methodology was adopted: *1.Understanding ECG's Billing and Invoicing Process:* We conducted inquiries with representatives of the Revenue & Billing Department of ECG, to understand ECG's billing and invoicing processes. Through walkthroughs and discussions, we designed a detailed flowchart of the processes. After completing this, we compared it with ECG's accounting procedure manual. Additionally, our analysis included assessing the computed kWh consumption and tariffs used for both the postpaid (Zeus) and the prepaid (MMS) systems. 2.*Review of Metering Data Accuracy:* We examined ECG's procedures for recording and maintaining customer meter readings. We also performed a walkthrough of the metering process to assess how readings are captured and subsequently used for billing customers. This assessment was important as it has a direct impact on ECG's revenue collection. Using the metering data, we recomputed the total revenue for the Zeus system, incorporating the kWh consumption and applicable tariffs monthly. This approach enabled us to verify the accuracy of the metering data and its impact on revenue generation. Furthermore, we analysed data from the MMS system in assessing ECG revenue and collections.
3.	Review and assess ECG's revenue collection and accounts receivables management.	Our approach for this assessment is summarised as follows: *1.Summary Revenue Sheets Comparison:*

No.	Scope of Work /Task Objective	Our Approach and Methodology
		We obtained the summary of the revenue sheets and compared them with PwC's recomputed revenue figures derived from ECG's IT systems. This comparative analysis focused on data from ECG's Zeus and MMS systems. *2.Revenue Collection Reconciliation:* As part of this exercise, we used the revenue collection summaries (provided by ECG) and compared this against the independently verified bank statement sweeps conducted by PwC to assess the accuracy of the amounts. *3.Revenue and Receivables Validation:* We proceeded to validate and confirm the revenues recorded by ECG. We then aligned this with the cash payments received and the outstanding receivables reported within the period.
4.	Validate that all revenues received by ECG for the reporting period are in alignment with the electricity received and distributed by ECG along with corresponding billing and collections, and amounts declared by ECG to the electricity value chain entities and note any discrepancies.	Our approach for this task is summarised as follows: *1.Invoice and power delivered validation:* We obtained ledger details and copies of invoices to support the documentation of transactions within the January to June 2025 period. The details of each invoice (including the energy delivered [kWh] on that invoice, were documented and compared to the amounts billed by IPPs. We also compared these against what was recorded in ECG's ledger to give rise to the liabilities that ECG owes the individual IPPs. Following this step, we then collated the total kWh received by ECG from each IPP and compared it to the kWh distributed by ECG to its customers. *2.Revenue received:* We validated the revenue received by ECG by obtaining bank statements supplied by ECG's banks. We reviewed these statements to confirm that sweeps from various accounts were made into the Head Office collection accounts. All transactions were analysed, and credits received were investigated accordingly to help establish any discrepancies.

<table>
<tr><th>No.</th><th>Scope of Work /Task Objective</th><th>Our Approach and Methodology</th></tr>
<tr><td>5.</td><td>Validate that ECG has made timely payment to the electricity value chain entities in accordance with the payment instructions issued to ECG by the CWM and note any discrepancies;</td><td>To satisfy the requirements for this task:

• We obtained the CWM models and ledger details for each month within the January to June 2025 period. We also obtained payment vouchers to enable us to trace all payments per the ledger to the respective bank statements.
• We agreed the payments made for each IPP per the bank statements and reconciled the total payments to the amounts per the CWM. Variances noted were investigated and explained to be either incomplete payments or bank charges.

We also reviewed the dates of payments for each IPP, regulatory bodies and other beneficiaries, in each month, to validate and confirm that payments were made in accordance with the guidelines per the CWM.</td></tr>
<tr><td>6.</td><td>Identify all accounts into which customer cash collections are transferred</td><td rowspan="4">Our approach is summarised as follows:

• We obtained the bank statements for ECG accounts.
• We reviewed all receipts and payments records as well as general ledger details to identify each bank account from which payments or receipts have occurred in order to obtain the relevant bank statement for analysis.
• After confirmation, we then used our technology enabled solutions to convert, organise and structure the statements to facilitate our detailed transaction analysis.
• We analysed the data to assess the relevant requirements for ToR items 6,7,8 and 9.
• We captured our observations and liaised with ECG to offer any clarification on flagged items that were unclear or required documentary confirmation on what they related to.
• The analysis was further summarised into visualisations to support our observations.</td></tr>
<tr><td>7.</td><td>Check that all revenues received at each collection point were transferred in full to the relevant district collection/revenue accounts;</td></tr>
<tr><td>8.</td><td>Check that the daily banked receipts were swept in full into the Head Office Single collection/revenue account;</td></tr>
<tr><td>9.</td><td>Identify any revenue accounts utilised by ECG which are not swept into the district collection accounts and head office Single Collection account;</td></tr>
<tr><td>10.</td><td>Check the inflows into all the operational accounts to determine the sources of such revenue.</td><td>Our approach for this task included the following steps:

• We reviewed ECG’s bank accounts to identify the accounts used for operational activities.
• We reviewed all transactions in the bank accounts and aggregated the revenue inflows per the bank statements into Energy Collections (including prepaid meters, non-SLT, Online quotas, set-offs, SLT and swift payments) and Non-</td></tr>
</table>

No.	Scope of Work /Task Objective	Our Approach and Methodology
		Energy Collections (including card and meter replacement fee, reconnection fee) based on the description per the bank statements. • The ability to fully execute this task was constrained because ECG did not provide all their operational accounts. Only the main operational account, regional operational accounts and a few non-energy revenue accounts were made available.
11.	Check the disbursement from the revenue/collection accounts to the other beneficiaries;	Following Task item 5, we compared the amounts per the CWM with the actual amounts paid to the CWM beneficiaries including the IPPs. Any variances identified were investigated to establish the sources/reason for the observed discrepancies.
12.	Determine whether the disbursements by ECG were in accordance with the CWM allocation percentages per the payment instructions issued by the CWM to ECG;	We reviewed the CWM models for the period to establish the relevant allocations and we compared it with the payments/disbursement data to confirm if there were any variances. We investigated further to understand the reason for the variances over the period.
13.	Confirm the amounts declared weekly as non-tariff revenues (i.e., any revenues not declared by ECG to the CWM);	We compared the ECG's non-tariff revenue report with the breakdown of the items that make up the non-tariff revenue from the PowerApp report for the period under review and conducted a variance analysis.
14.	Confirm the payment of the statutory deductions declared by ECG have been disbursed to the various authorities in a timely manner;	Our approach for executing this task included the following steps: • Statutory payments were computed based on payments made to the Ghana Revenue Authority (GRA) in respect of VAT, National Electrification Scheme, and Street Lighting Fund. According to the CWM guidelines, 12.5% of total revenue collections, after deducting payments to Tier 1 (IPPs), is allocated for statutory payments. To assess compliance with this guideline, we recalculated the required statutory payment allocations. • We conducted a 100% test of payments made towards the National Electrification Scheme, GRA, and Street Lighting Fund. Any variances noted were investigated.
15.	Check whether ECG is using a single collection account as per MoF directive of June 21, 2023, effective July 1, 2023.	Our approach here was to observe if the bank account operations by ECG reflected this directive or not based on the sweeps and disbursement transactions. We also flagged any discrepancies or items that did not align with this directive.

No.	Scope of Work /Task Objective	Our Approach and Methodology
16.	Undertake a comprehensive assessment of the adequacy, transparency and effectiveness of accounting and overall internal control systems for the revenue collections, transfer, and disbursement mechanisms;	We considered all our observations made during the execution of our scope of work for this period (from task item 1 to task item 15).
17.	Recommend and advise the GOG on how to strengthen internal controls and GOG oversight over ECG's revenue and disbursement structure under the CWM	• We identified some weaknesses and areas of improvement that will help enhance the role of CWM in promoting transparency and strengthening the power sector value chain. • We summarised our recommendations as part of our conclusion in this report. • Our recommendations also highlighted the relevant stakeholders expected to take the suggestions forward including ECG.
18.	Confirm that key findings and recommendations from the 1 October 2023 – 31 December 2024, have been satisfactorily addressed.	We note that ECG is yet to implement some of our recommendations per our 1 October 2023 – 31 December 2024 review. However, we obtained an update on our recommendations in connection with the observed issues on ECG's cybersecurity and data protection (See Appendix 8). We have included the updates from our follow-up procedures and discussions with ECG management in our conclusion and next steps in this report.

Table D: Our Key Issues and Observations

No.	Key Finding	Details of findings	Conclusion/Recommendation
1.	Net Underpayment to CWM Beneficiaries Compared to Approved Allocations	As part of our assessment of ECG's compliance with the Cash Waterfall Mechanism (CWM), we examined the payment ledger, transfer advices, and supporting bank statements for the period January to June 2025. The objective was to confirm whether payments to CWM beneficiaries aligned with the monthly allocations approved under the mechanism. Our analysis identified discrepancies between the amounts allocated and the amounts actually paid to beneficiaries. For the period under review: • Total CWM allocations to beneficiaries amounted to GHS 5.98 billion. • Total payments made to beneficiaries totalled GHS 5.94 billion. • This resulted in a cumulative net underpayment of GHS 33.31 million, that largely occurred in January 2025. This represents approximately 0.56% of the total allocation to CWM beneficiaries. These discrepancies indicate that beneficiaries did not receive the full amounts approved for disbursement, and no supporting documentation or explanations were provided during the review to justify the differences. Further details of these findings are presented in Appendix 11A and 11B.	ECG should put in place measures to pay the CWM beneficiaries the amounts stipulated in the CWM for each month to ensure compliance with the CWM guidelines and minimise the build-up of debt to the sector players. ***Refer to Appendix 21 for ECG's response to the matter raised.***
2.	Discrepancies Between CWM and ECG Cash Settlement Platform Collection Amounts	We identified that the amounts recorded as collections in the CWM were lower than the amounts per the ECG Cash Settlement Platform Report. The amount per CWM is GHS 7,866,940,785 while the amount per the ECG	ECG should implement a monthly reconciliation process as a control to understand and manage any discrepancies observed.

No.	Key Finding	Details of findings	Conclusion/Recommendation
		Cash Settlement Platform Report for the January to June 2025 period is GHS 8,459,334,255. In summary, the net difference in collections between CWM and the ECG Cash Settlement Platform Report for the 6-month period under review is GHS 592.39 million, which represents 7.53% of the total declarations per the CWM. It is noteworthy that the variance largely occurred in the month of January 2025. See Appendix 9 for details.	***Refer to Appendix 21 for ECG's response to the matter raised.***
3.	Absence of Defined Payment Timelines in the CWM Leading to Delays in Disbursement to CWM Beneficiaries	Our review of the Cash Waterfall Mechanism (CWM) guidelines noted that no specific timelines have been established regarding when payments must be made to CWM Beneficiaries after allocations are approved. Under the current process, CWM allocations are approved on the 27th of each month, after which ECG prepares and issues bank letters to enable disbursements. Based on the work performed, we observed that actual payments to CWM Beneficiaries generally occur between 1 and 14 days after the CWM allocation approval date, indicating inconsistent and sometimes lengthy processing times. From our procedures performed, we observed that some delays in disbursements were directly attributable to the banks through which payments were made. The absence of defined timelines introduces uncertainty, creates potential liquidity strain for CWM Beneficiaries, and increases the risk of delayed settlement of obligations under the CWM framework.	To help strengthen accountability and provide clarity in the CWM, we propose that PURC includes clear guidelines on timelines by which payments to CWM Beneficiaries are supposed to be made. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
4.	Incomplete Submission of Bank Accounts for Validation.	ECG provided a list of 37 bank accounts. These accounts included 11 bank accounts (comprising 10 Regional Bank Accounts that sweep into a single collection account) which were used exclusively for revenue collection. The other 26 accounts, according to ECG, were for other operational purposes. As part of our procedures, we performed a reconciliation between ECG's accounting records (trial balance and general ledger) and the bank accounts submitted. During this exercise, we identified more than 50 additional bank accounts maintained with various financial institutions, including Absa, ARB Apex Bank, Agricultural Development Bank, Bank of Africa, CalBank, Ecobank, First Atlantic Bank, and Ghana Consolidated Bank. ECG indicated that these accounts were non-tariff revenue accounts and therefore were out of scope for the engagement.	We recommend that ECG provides a comprehensive list and full disclosure of all bank accounts related to revenue collection, including both tariff and non-tariff revenue accounts, active and inactive accounts, and any other related operational accounts. This will enhance completeness, improve oversight, and reduce the risk of omitted financial information. ***Refer to Appendix 21 for ECG's response to the matter raised.***
5.	Variance between Statutory Payments declared in CWM and actual bank payments	As part of our work on statutory disbursements under the Cash Waterfall Mechanism (CWM), we assessed the allocations made for the first half of 2025 and compared them to the corresponding payments processed through the bank. The CWM allocated a total of GHS 426,351,173 towards statutory payments for the period January to June 2025. However, during our verification of bank transactions, we noted that payments totalling GHS 421,821,535, described as statutory deductions, had been made. The statutory payments recorded through the bank differed from the CWM allocation by GHS 4,529,638 which occurred in January 2025. This variance represents 1.06% of the CWM allocation.	ECG should take steps to ensure that statutory allocations declared in CWM are paid in full to avoid the build-up of debt to Government of Ghana (GOG) institutions. Clarity should be provided as to the level at which the statutory deduction rate should be applied in order to avoid a mismatch between allocations per CWM and GRA. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		Further details of these variances are presented in Appendix 10. In addition, our procedures indicated that the statutory deduction rate of 12.5% allocated in the CWM is applied after payments to Level A IPPs (Tier 1) are made. However, the Ghana Revenue Authority (GRA) computes the applicable levies on the gross amounts. This results in a mismatch of what GRA expects ECG to remit as statutory payments and the CWM allocation.	
6.	Gaps in Estimation Methodologies for Estimating Nonpurchase Prepaid Sales and Prepayment Recoveries	We observed that management relies on estimation methods to determine monthly nonpurchase prepaid sales and prepayment recoveries within the period under consideration. Specifically, for prepayment recoveries, ECG estimated values for the months of March to June 2025 using a moving average approach based on actual figures recorded in January and February 2025. During the course of our fieldwork in October and November 2025, ECG did not provide us with a documented procedures or formal guidelines guiding estimation methodologies. Subsequent to the completion of fieldwork, ECG shared a Standard Operating Procedure (SOP) document which was approved on 18th March 2026. A review of the SOP revealed that it was not comprehensive enough to cover basis, rationale, and steps involved in generating these estimates. There were also inconsistencies between the guidance in the SOP and how the estimates are actually carried out.	ECG should take steps to update the SOPs to make it more rigors to coming up with the estimates. In addition to what is included in the SOP, the SOPs should cover: • The scope of systems to be included (Commercial billing systems and relevant third-party systems). • Escalation and Exception Management. • Specific factors used in the estimation (Confidence levels). ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		For the period January to June 2025, the estimated nonpurchase prepaid sales totalled GHS1.08 billion, while prepayment recoveries amounted to GHS72.62 million according to the sales data provide.	
7.	Inadequate Standard Operating Procedures for Estimating Postpaid Sales / Billing Figures	We observed that management relies on estimation methods to determine monthly post-paid sales and billing figures for the period under review. These estimated billing figures are reported internally and externally. Although the Zeus system has been used to generate monthly bills for post-paid customers since April 2025, the billing data from the system is not officially used in the reporting process, as the system is still being fine-tuned and the figures generated may not be reliable. During the course of our fieldwork in October and November 2025, ECG did not provide us with a documented procedures or formal guidelines guiding estimation methodologies. Subsequent to the completion of fieldwork, ECG shared a Standard Operating Procedure (SOP) document which was approved on 18th March 2026. A review of the SOP revealed that it was not comprehensive enough to cover basis, rationale, formula and steps involved in generating these estimates. There were also inconsistencies between the guidance in the SOP and how the estimates are actually carried out. For example, the methodology applied is inconsistent, as a 7-year period was used to calculate the actual Customer Active Growth Rate (CAGR) rate instead of the stated 5 years in the SOP.	ECG should take steps to update the SOPs to make it more rigors to coming up with the estimates. In addition to what is included in the SOP, the SOPs should cover: **A. Estimation Factors.** • The number of years used for historical sales analysis. • CAGR is neither defined nor presented. • CAGR estimation period in the SOP should be consistent with the actual computation. • A clear definition of customer population dynamics. **B. Process.** • A clear method for calculating baseline sales. • A clearly defined approach for adjusting customer population changes. • A clear definition for the methodology of deriving seasonal coefficients.

No.	Key Finding	Details of findings	Conclusion/Recommendation
		According to the sales data provided, total postpaid sales/billing for the period January to June 2025 amounted to GHS6.52 billion. Given the significance of this amount, the absence of standardised documentation increases the risk of inconsistencies and errors in the estimation process.	***Refer to Appendix 21 for ECG's response to the matter raised.***
8.	Variance between MMS Billing Data and Power BI Reporting Data	In the course of our work, we obtained the detailed MMS billing source data for the period January to June 2025. We compared the units consumed (GWh) and the number of MMS prepaid customers in the source data against the aggregated MMS billing information used in the Power BI dashboard for reporting. Our analysis showed that while the MMS billing source data reported total units consumed of 1,401 GWh, the Power BI reporting data reflected 1,325 GWh for the same period. This resulted in an unexplained variance of 76 GWh. These inconsistencies indicate that the data used for reporting does not fully align with the underlying system of record. See Appendix 2 for details.	ECG should ensure that there is a reconciliation process conducted each time MMS billing data is spooled. The reconciliation should be performed between the MMS source billing data spooled by the IT Team and MMS billing data received by MIS team on Power BI. ***Refer to Appendix 21 for ECG's response to the matter raised.***
9.	MMS and non-MMS systems versus sales data analysis	We obtained the detailed monthly prepaid billings for MMS and non-MMS systems for the period January to June 2025. We compared our analysis to the sales data to confirm whether the total MMS and non-MMS billings are consistent with the total billings reported in the sales data. For the total charge, whilst the MMS and non-MMS Systems showed total billing to be GHS 3.278 billion, the sales data showed total billings as GHS 3.277 billion. This	ECG should implement a data freeze for all pre-paid data. This will ensure that historical data remains unchanged and enables ECG to accurately agree the data in the prepayment platforms to the reports generated for management and stakeholders. Additionally, ECG should establish and implement a defined threshold for acceptable variances between meter readings received on their servers at the end

No.	Key Finding	Details of findings	Conclusion/Recommendation
		resulted in a difference of GHS 0.59 million for the period under review. Based on our work and discussions with ECG, the variances noted were as a result of data from some of the prepayment platforms not being frozen at period ends. The platforms are live platforms where entries made after period end get updated and reflected in preceding periods. This issue stems from some prepaid meters on field not communicating back with ECG system servers as and when consumption happens leading to a data lag. See Appendix 3A and 3B for details.	of each period and the subsequent spool of that data at later dates. This will facilitate consistent detection and investigation of significant discrepancies, thereby enhancing the accuracy and reliability of metering and billing information. ***Refer to Appendix 21 for ECG's response to the matter raised.***
10.	Delay in the application of VAT and Levies to an Exempt Industrial Customer	Industrial customers granted exemptions by the GRA are not required to pay VAT, GETFund Levy, or NHIL as part of their monthly electricity bills. As part of our review of billing accuracy across customer categories, we selected a sample of postpaid bills for Quarter 2 of 2025. During the review, we noted that one Free Zone entity, classified as industrial and subject to a Power Factor Surcharge, was incorrectly billed VAT, GETFund, and NHIL totalling GHS 258,578.92 in May 2025. This occurred despite ECG having received the customer's GRA exemption letter in February 2025, confirming the customer's eligibility for VAT and levy exemption. In the subsequent bill for June 2025, the VAT and levies were no longer charged, indicating that the exemption was eventually applied. However, ECG informed us that the VAT and levies charged in May 2025 were to be refunded through	ECG should strengthen controls around the implementation of tax and levy exemptions for industrial customers by ensuring all GRA exemption letters are immediately captured in the billing system to prevent erroneous charges. ECG should also implement automated validation checks by configuring the billing platform to flag or prevent the application of VAT, GETFund, and NHIL on exempt customer categories. A formal tracking mechanism including periodic reconciliations should be implemented to ensure all overcharges are refunded promptly and any inconsistencies detected and corrected early. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		subsequent bills. As of 17 March 2026, no evidence of the refund had been provided for verification. See Appendix 7B for details.	
11.	Absence of Data Ownership Clauses in ECG-Polymorph Contract and Lack of Contractual Documentation for Beacon Services (Adora)	Our review of the ECG–Polymorph (Zeus) contract indicates that it lacks a clear provision on data ownership. As a result, it is not evident whether ECG or Polymorph holds ownership rights over the data. This ambiguity poses a material risk of disputes regarding data control, use, and intellectual property rights, with potential operational and legal implications. ECG also confirmed that no formal contract exists with Beacon Services (Adora). Instead, a proof-of-concept agreement was signed by a Hubtel-led consortium that included Adora and Polymorph, which ECG has not yet provided to PwC. The absence of formal agreements with these third-party vendors increases the risk of data loss during system transitions. This risk materialised during the review period, when Adora was phased out and replaced by Zeus, and ECG was unable to access hosted Adora data needed for postpaid billing.	ECG should engage with the vendor to ensure that contractual terms clearly state that all customer data is owned and hosted by ECG. ECG should also ensure they have a valid contract with all vendors. This will ensure that ECG retains full access and control over customer data enabling a smooth transition and continued operations in the event of a vendor change or contract termination. ***Refer to Appendix 21 for ECG's response to the matter raised.***
12.	Mixing of Tariff Revenue Collections With Operational Expenditures	As part of our work on tariff revenue flows, we assessed the bank accounts used for the collection and transfer of revenue during the period. Our examination revealed that one revenue account (ending 2768) was used to both receive tariff revenue and settle operational expenses. During the January to June 2025 period, the account:	ECG should strictly segregate revenue accounts from operational expense accounts and prohibit the use of revenue accounts for operational expenditures, as this practice could result in the understatement of revenues declared to CWM due to the spending of some revenue before transferring the remainder to the single collection account.

No.	Key Finding	Details of findings	Conclusion/Recommendation
		• Received GHS 100 million in tariff revenue from TextGenesys and additional revenue of GHS 17,345,801, primarily from Ghana Airports Company Ltd. • Incurred operational expenditures amounting to GHS 20,767,196. • Transferred GHS 80 million to the designated single collection account. Using the same account for dual purposes i.e. operational payments and revenue collection, compromises the integrity of revenue reporting and obscures the transparency of tariff revenue flows. This practice also increases the risk of misallocation, unauthorised use of collections, and incomplete reconciliation.	***Refer to Appendix 21 for ECG's response to the matter raised.***
13.	Inconsistent Sweeping of Tariff Revenue to the Single Collection Account	As part of our assessment of ECG's revenue management processes, we examined the flow of tariff revenue from customer payments into designated accounts. The Terms of Reference require that all tariff revenue be deposited into and fully swept from operational or intermediary revenue accounts into the single collection account to ensure completeness, traceability, and transparency. We noted that tariff revenue was being deposited into and retained within operational accounts, contrary to established procedures. Instead of being swept promptly into the single collection account, portions of the revenue remained in the operational accounts for extended periods. Further analysis showed that: • Two operational accounts (ending 8316 and 2950) swept approximately GHS 1.2 million into the head office operational account instead of transferring	ECG should correct and standardise the sweeping process to ensure that all tariff revenue is fully and consistently transferred into the single collection account. Management, should furthermore strengthen controls over revenue sweeping, identify and disclose all accounts that receive tariff revenue and implement monitoring mechanisms, facilitating completeness and integrity across all accounts. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		these funds to the single collection account during the reporting period, January to June 2025. • As a result, the tariff revenue was not captured through the prescribed collection pathway. ECG explained that transfers from revenue bank accounts to the Single Collection Account are automatically configured by GCB Bank. Furthermore, ECG indicated that they will draw the bank's attention to the issue to ensure that it is rectified, and that funds are directed to the Single Collection Account instead of Account 1277.	
14.	No allocation made for bank charges under the CWM Framework	Under the Cash Waterfall Mechanism (CWM), an allocation is required to be made and transfers effected on all revenue collected in accordance with the approved disbursement schedule. As part of this process, payments to some Independent Power Producers (IPPs) are made through the Bank of Ghana (BoG). ECG therefore transfers the amounts allocated by the CWM to BoG for subsequent disbursement to the IPPs. From our review we noted that this arrangement results in underpayment due to the bank transfer fees charged by BOG. Our analysis noted that: • Payments made by ECG in some instances exceed the CWM allocated amounts by 0.75%, reflecting the bank charges incurred when transferring funds to BoG. • We identified bank charges totalling GHS 2,896,697 on some transactions. • Where ECG does not absorb these charges, they effectively reduced the amounts ultimately reaching	ECG should strictly align disbursements with CWM-stated figures unless deviations are pre-approved. The CWM guidelines should be made clear on who bears the cost of these charges or gross up the amount payable to IPPs to include the charges. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		the IPPs, resulting in underpayments relative to the expected disbursements under the CWM. This issue indicates a structural misalignment between the CWM allocation process and the practical costs associated with executing the transfers, which compromises the accuracy of disbursements.	
15.	Electricity distribution losses between energy delivered and energy sold	While validating the energy delivered to ECG as per IPPs invoices against the energy sold as per the Sales and Levies Report for the period January to June 2025, we identified variances of 2.374GWh representing a 25.62% loss. Refer to Appendix 14 for details.	ECG should put in place measures to ensure energy losses are reduced. ***Refer to Appendix 21 for ECG's response to the matter raised.***
16.	Overstatement of Receivables Balance Due to Use of Estimated Sales Data in Trial Balance	We independently recomputed the receivables position of ECG as at June 2025 using the underlying sales and collection data. Our re-computation identified a variance of GHS260,040,687, indicating an overstatement in the receivables amount reported in ECG's trial balance. During subsequent discussions with management, ECG explained that the sales data used to prepare the trial balance at June 2025 contained estimated figures, as final sales data had not yet been fully validated. The finalisation of the sales data occurred in September 2025, which resulted in the variance observed between the recomputed receivables and the amount reported in the June 2025 trial balance. Further details supporting this finding are provided in Appendix 15.	ECG should perform receivables reconciliation on a monthly basis to ensure that variances are addressed on a timely basis. ***Refer to Appendix 21 for ECG's response to the matter raised.***

Section 6: Conclusion and Next Steps

This section summarises our responses to recommendations from previous validation exercises, sets out our current recommendations, and outlines the key next steps to address identified issues and support ongoing improvement.

Responses to our recommendations from our last two reviews (2023 and 2024)

In Appendix 16, we have set out the responses from ECG on the implementation of our recommendations from the last two reviews. As highlighted in our inception report for this project, the responses are based on a workshop held with ECG's Management Team on 7 October 2025. Following our review of ECG's responses, we have included comments highlighted as updates in Table C.

Based on our analysis of the data and information that was made available to us by ECG within the relevant scope of work set out in the Terms of Reference for the validation exercise, we have identified the following key recommendations for the attention of ECG, Ministry of Energy, PURC and other relevant stakeholders.

Our key recommendations from our assessment include the following:

Table E: Our Recommendations

No.	Thematic Area	Recommendation details
1.	Data Estimates and Documentation	ECG should ensure that all estimates, including monthly non-purchase prepaid sales, prepayment recoveries, and post-paid sales figures, are supported by verifiable data and accompanied by appropriate documentation that details the methodology used in deriving these estimates. Additionally, ECG should establish clearly defined thresholds for acceptable variances between meter readings received at the end of each period and subsequent data spools, to facilitate the consistent detection and investigation of discrepancies. The development of an Application Programming Interface (API) should be expedited to enable direct access to postpaid billing data for accurate billing and reporting.
2.	Systems Data freeze	To preserve historical data integrity, ECG should implement a data freeze for all prepaid data, which will allow accurate

No.	Thematic Area	Recommendation details
		reconciliation of prepayment platform data with management reports. Periodic reconciliations of MMS billing data should be performed between the source data spooled by the IT Team and the data received by the MIS Team in Power BI, while monthly receivables reconciliations should also be conducted to ensure that any variances are promptly addressed.
3.	Billing and Tariff Compliance	ECG should ensure that Industrial Freezone customers are refunded the taxes and levies (VAT, NHIL and GETFund) that have been previously charged when they receive the exemption letter from GRA. This would ensure that customers are not overcharged unduly.
4.	Timelines for Payments to IPPs	ECG should collaborate closely with the Ministry of Energy, the CWM Committee, and PURC to establish clear timelines for payments to Independent Power Producers (IPPs) and determine provisions for unavoidable transactional charges, thereby supporting consistent compliance with sector guidelines.
5.	Customer Data Management and Vendor Oversight	ECG must ensure that all customer data is fully owned by the company, with contractual agreements clearly reflecting this arrangement. Valid contracts should be maintained with all vendors to guarantee uninterrupted access and control over customer data in the event of a vendor change. In addition, ECG should maintain comprehensive backups of all customer billing data to support operational continuity and enable smooth transitions should vendor contracts terminate. These measures will safeguard data integrity and ensure that operations can continue without disruption.
6.	Revenue and Cash Management	ECG should maintain a complete and verified list of all operational and customer cash collection accounts, including written confirmation of closure for any accounts designated as inactive / closed, either through formal instruction from ECG to the bank or written confirmation from the bank that the account has been closed. Disbursements should be strictly aligned with CWM-stated figures, except where deviations are formally approved, and revenue accounts should be strictly segregated from operational expense accounts.

No.	Thematic Area	Recommendation details
		Sweeping processes should be corrected, with full disclosure of all accounts receiving tariff revenue, to ensure the integrity of cash flow management.

The immediate next steps for us, is the engagement of the Ministry of Energy, PURC and the relevant stakeholders to discuss the key findings from our assessment to inform the relevant action points to be taken forward.

We will also look forward to discussing our recommendations for this review as PURC, GERSP and the other stakeholders take steps to implement them. We emphasise that the issues raised so far are critical to help improve the transparency, strengthen the confidence of stakeholders in the use and objectives of the CWM.

We would like to extend our appreciation to ECG for their continued support on this engagement, their willingness to share information/data and offer clarifications as and when required. There was a significant improvement and buy in from ECG towards the activities of this exercise compared to the last review. However, there were some minor delays and approvals that did not make all the data/information available in good time.

We would appreciate their continued support and quick turn around on requests to help ensure that our work is completed within time.

Introduction and Background

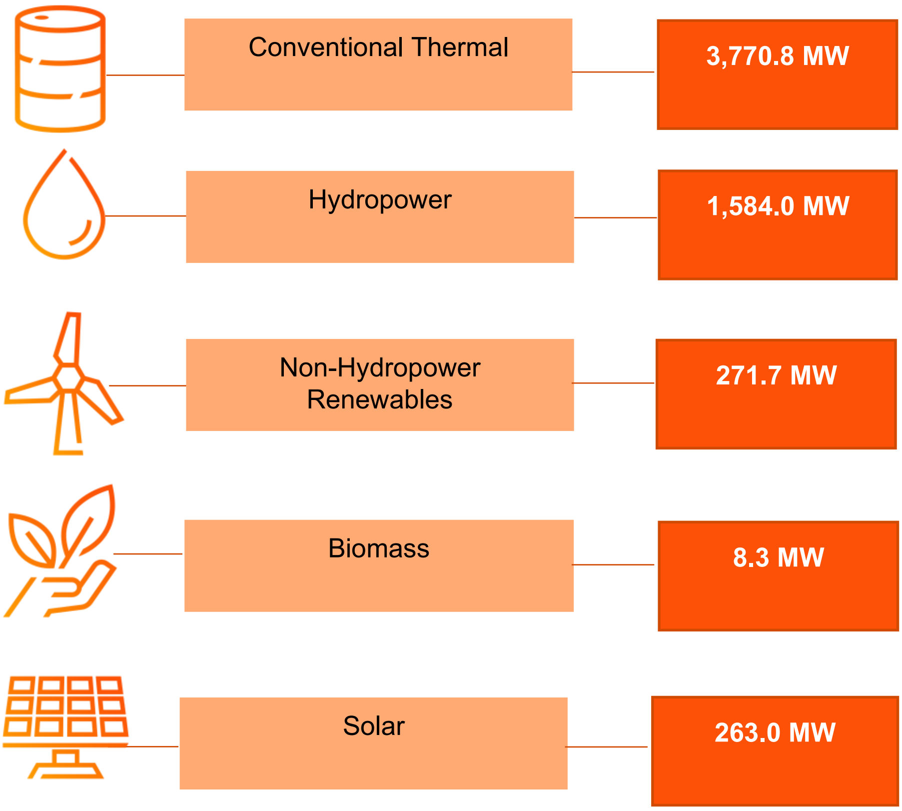
1. Introduction and Background

1.1 Introduction

1.1.1 An Overview of Ghana's Power Sector

Ghana has approximately 5,627 MW[2] of installed power generation capacity which is made up of the following sources of power as shown in Figure 1.

Figure 1: Summary of Ghana's Power Generation Capacity



Source: BMI estimate for 2024, US Energy Information Administration (EIA), International Renewable Energy Agency (IRENA), BMI (Fitch Solutions).

Ghana's power sector can broadly be segregated into three major areas: generation, transmission and distribution. The power generation mix in Ghana is supplied from Volta River Authority (VRA), Bui Power Authority (BPA) and Independent Power Producers (IPPs).

[2] Ghana Power & Renewables Report Q3 2025 Report | BMI (a FitchSolutions Company)

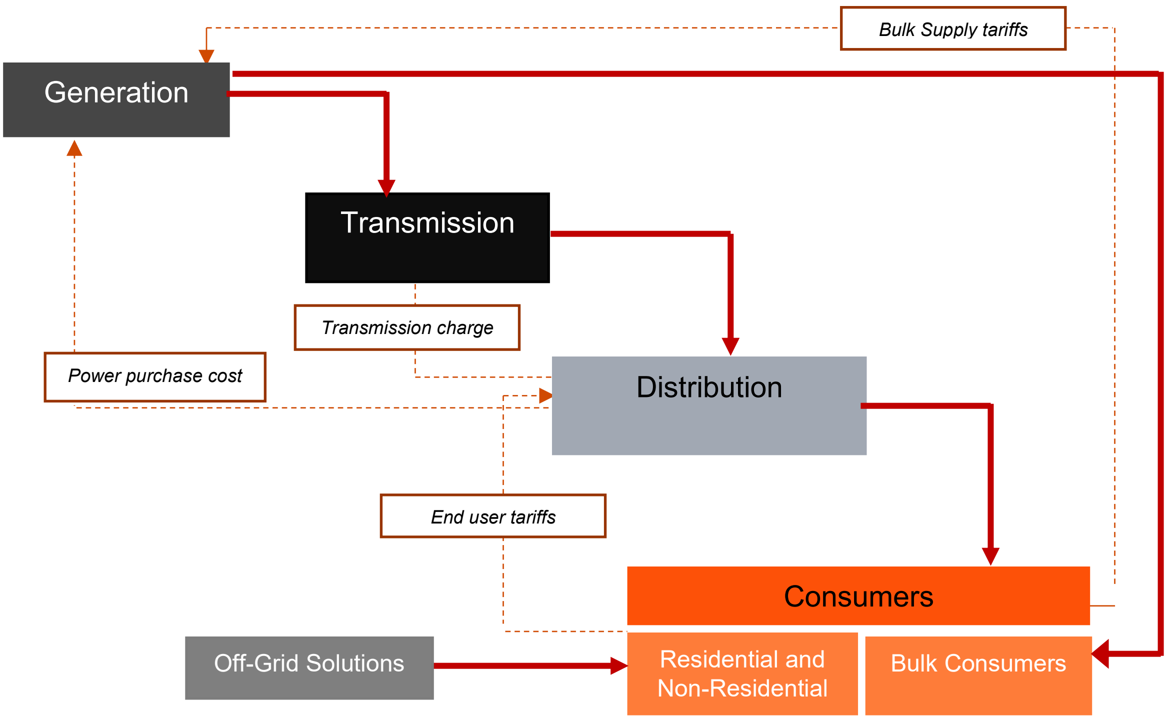
Energy produced from the generating stations is transmitted by the state-owned Ghana Grid Company (GRIDCo) throughout the entire country to VRA power sale customers i.e. the distribution and service connections companies, through an interconnected transmission network at 69 Kilovolts (kV), 161kV and 225kV voltage levels.

The transmission grid comprises a matrix of substations and transmission lines. It includes over 4,000 kilometres of high voltage transmission lines operating at 161kV and 69kV and includes an interconnection to Cote d'Ivoire at 225kV.

Distribution in Ghana is carried out by three main distribution utilities, two state-owned (Electricity Company of Ghana [ECG] and Northern Electricity Distribution Company [NEDCO]) and one private sector operator (Enclave Power Company)3.

Ghana is noted to have achieved one of the highest electrification rates in sub-Saharan Africa of more than 88.9%4.

Figure 2: Ghana's Power Sector Structure (Tariff/Charges Flow and Flow of Power)



KEY	
→	Flow of power (supply and consumption)
- - - →	Tariffs/Charges

Source: Ghana Investment Promotion Centre (GIPC) and PwC Analysis

[3] Ministry of Energy| Overview of The Ghana Power Sector
[4] International Energy Agency (IEA)| Share of population with access to electricity data – Ghana (2023). LINK: https://www.iea.org/reports/sdg7-data-and-projections/access-to-electricity

1.1.2 The Public Utilities Regulatory Commission (PURC) and its Role

PURC is a state entity and regulator for the electricity utility services, water utility services and the transportation of natural gas services in Ghana. The PURC under its establishing act (Public Utilities Regulatory Commission Act, 1997 (Act 538) is an independent body and is not subject to the control of any authority in the performance of its function. The PURC's role covers the following functions:

- Examination and approval of utility rates in Ghana;
- Provision of guidelines for rates to be charged for the provision of utility services in Ghana;
- Receive, investigate and settle complaints relating to utility services
- Promotion of fair competition among public entities in Ghana;
- Provision of advice to any person or authority in relation to any public utility in Ghana;
- Protection of the interest of consumers and providers of utility services in Ghana;
- Monitoring and enforcement of standards of performance for the provision of utility services in Ghana;
- Review of reasonableness of pricing under Ghana's Power Purchase Agreements and monitoring their quality of service; and
- Regulation of other public entities in Ghana's power generation sub-sector by approving the Bulk Generation Tariffs.

The following entities all fall within the remit of PURC's regulation:

- Electricity Company of Ghana (ECG);
- Northern Electricity Distribution Company (NEDCO);
- Enclave Power Company Limited;
- Ghana Grid Company (GRIDCO);
- Ghana National Gas Company Limited (GNGC); and
- Ghana Water Company Limited (GWCL).

Under the amended Energy Sector Recovery Programme (June 2023), the following items highlight steps taken to help strengthen PURC's role as regulator in Ghana's power sector:

- Operationalisation of a regulatory financial reporting framework;

- Installation of prepaid meters for non-strategic MDAs in Ghana by ECG and NEDCO;
- Institute regulations and tariffs for full recovery of street lighting costs;
- Completion of periodic adjustment of revenue requirement for ECG and NEDCO (as per quarterly adjustment);
- Review non-residential block tariff structure; and
- Commission regular audit of collections and disbursements of ECG and NEDCO.

1.1.3 The Energy Sector Recovery Programme (ESRP)

The Energy Sector Recovery Programme (ESRP) was launched in May 2019 by the Government of Ghana (GoG) as a roadmap to bring the energy sector into financial balance by 2023. It comprised of an original set of 30 reform actions or Action Items (AIs), split across 3 Phases, that would simultaneously reduce cost and increase revenues while improving the operational performance of sector State Owned Enterprises (SOEs). During the ESRP implementation period of 2019 to 2023, the GoG also committed to annual budgetary transfers (Stabilisation Payments) to cover prevailing sector revenue shortfalls to prevent further accumulation of legacy arrears.

The second phase of the AIs consisted of 21 AIs which were to be initiated within the first twelve months after the approval of the ESRP, by May 2020. The adoption of the Cash Waterfall or other appropriate mechanism to increase payment transparency was item 24 (in Phase II) of the ESRP AIs.

In April 2020, the ESRP established the Cash Waterfall Mechanism (CWM) to facilitate a transparent, equitable and timely process of payments to Ghana’s power sector value chain from revenues billed and collected by ECG. The core objectives of implementing the CWM were to:

- Create a mechanism that ensures that the revenue collected from the regulated electricity market in Ghana is allocated across the electricity value chain in an equitable and transparent manner.
- Facilitate the process of clearly and comprehensively establishing the gap between the cost of electricity supply and the revenue collected.
- To ensure transparent, efficient and equitable disbursement of ECG’s collections to the power sector players in Ghana.

The scope of the ESRP has since been amended to allow the completion of uncompleted AIs and the implementation of its new AIs (additional 12 AIs) due to the change in circumstances, particularly, higher than expected exchange rate fluctuation, worse than expected State Owned Enterprise performance, increased power generation and operations costs, all of which contributed to a higher than anticipated sector shortfall of approximately US$ 8 billion). The amendment (instituted in June 2023) has led to the extension of the ESRP by two and a half years (to 2025). Some of the key AIs largely relevant to the scope of this engagement include:

- Implement mechanisms for enforcing the guidelines of the CWM and NGC.
- PURC to commission regular audit of collections and disbursements of ECG and NEDCo.
- PURC to complete periodic adjustment of revenue requirement for ECG and NEDCo (as per quarterly adjustment).
- PURC to operationalise a regulatory financial reporting framework.
- Develop and institutionalise a framework for inter-utility debt reconciliation and settlement.

1.2 Engagement Background

As part of achieving financial sustainability in Ghana’s energy utilities and value chain, the Government of Ghana (GoG) initiated the Energy Sector Recovery Program (ESRP) in May 2019. The ESRP is a comprehensive recovery program that sets out the roadmap of policies and actions required for the financial recovery in the energy sector.

The ESRP implemented a payment mechanism in April 2020, the Cash Waterfall Mechanism (CWM), to ensure transparency, equitable and timely payment of all revenues billed and collected by the Electricity Company of Ghana (ECG) on behalf of the entire electricity generation value chain.

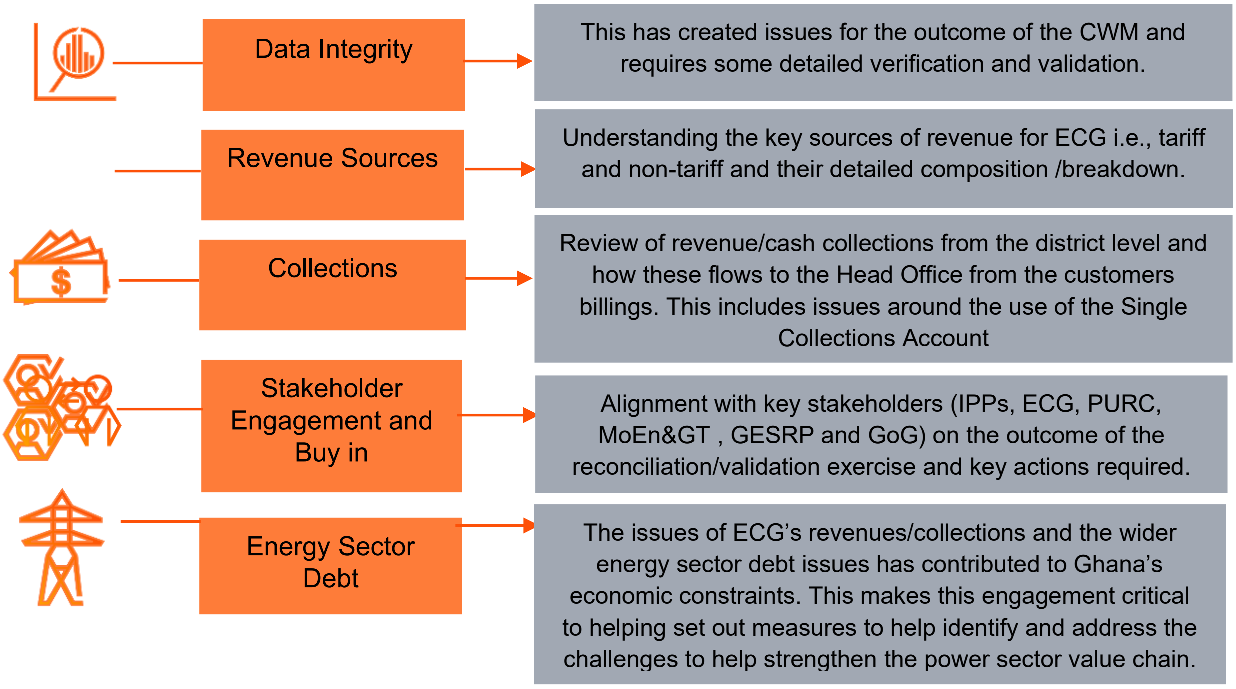
The CWM and the Natural Gas Clearinghouse (NGC) mechanisms were put in place to ensure equity and transparency in the disbursement of energy revenues, i.e. equitable allocation of tariff revenue collected by the Electricity Company of Ghana to all parties in the energy value chain.

In June 2023, a presidential directive was issued to GESRP to address the challenges with ECG’s compliance with the CWM guidelines. In summary, the objective of the directive sought to improve the financial sustainability of Ghana’s energy sector by restructuring the payment mechanism going forward. We have reviewed the details of the directive in the next section of our report.

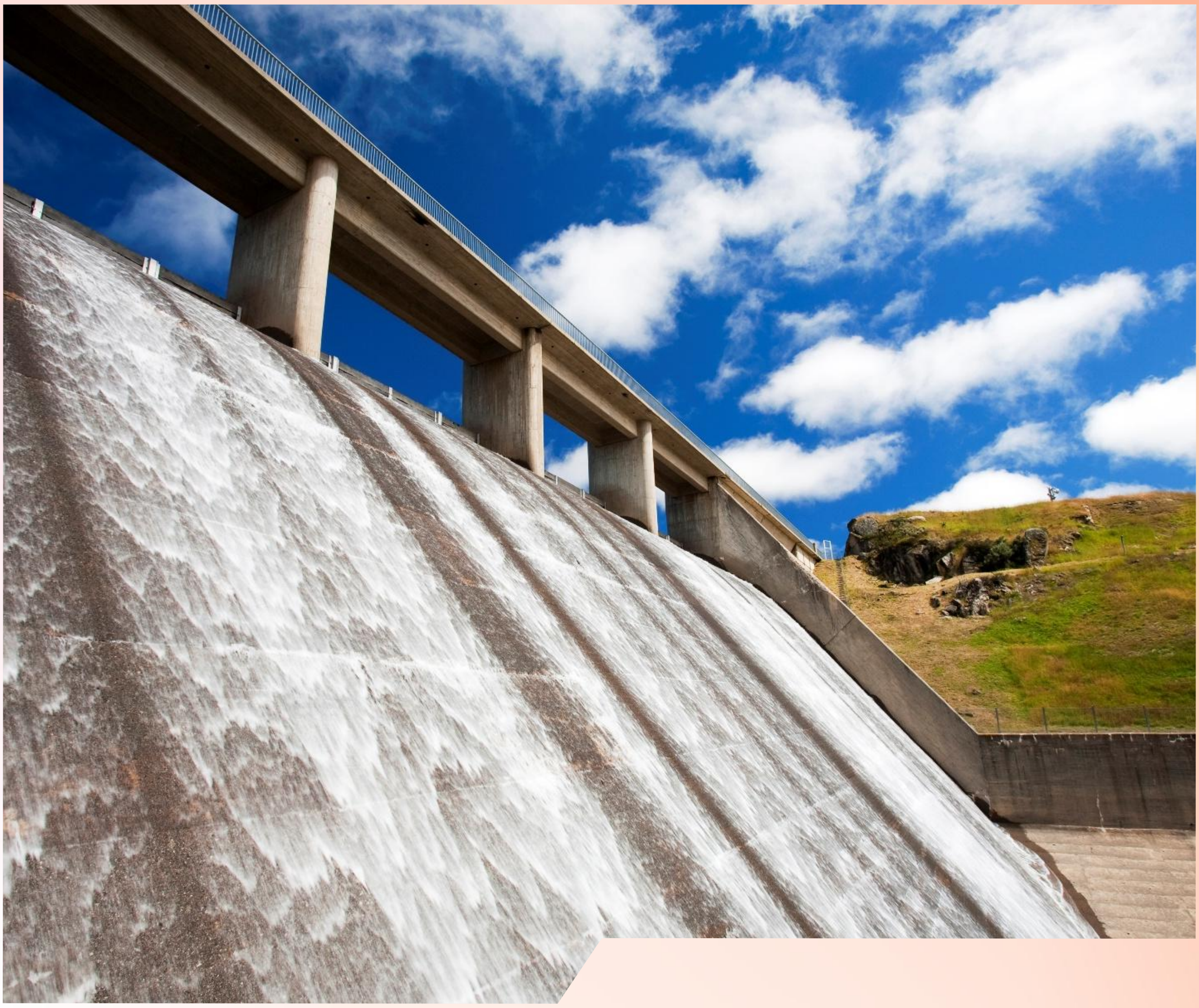
This engagement seeks to validate electricity sales in terms of kWh and amount billed and collected by ECG over a defined period to confirm if these sales, billings and collections align with the requirements and outcomes of the Cash Waterfall Mechanism and its related payments. The assessment will also validate the cycle of power delivered, corresponding billing and collection as well as the full transfer of these collected funds from the regional and/or district collection accounts into the Single Collections account.

The assessment covers the period of 1 January 2025 to 30 June 2025.

The following are some of the key challenges in Ghana's power sector that we believe has informed the importance and urgency for this engagement:



As part of the assessment for this engagement, this report's scope, covers the 1 January 2025 to 30 June 2025 (6 months) period.



Review of the Cash Waterfall Mechanism

2. Review of the Cash Waterfall Mechanism

2.1 Introduction

Our primary objective and methodology for this aspect of our assessment, in line with the ToR is summarised as followed:

- **Our Objective**: Review the CWM allocation determination process, including the methodologies used and the inputs considered.
- **Our Methodology**: We obtained copies of the CWM from ECG for review (covering the January to June 2025 period). We also reviewed the PURC Cash Waterfall Mechanism Validation Reports for the period. Additionally, documentation was provided by ECG and PURC on directives that were issued over the period to inform measures to help enhance the operationalisation of the CWM process.

The Cash Waterfall Mechanism (CWM) has been operational since April 2020, with a primary objective of ensuring equitable and transparent distribution of monthly revenue collections by ECG, based on the invoices submitted by the beneficiaries and the share of each beneficiary in the PURC tariff build up.

After the June 2023 directive from the President of the Republic of Ghana on the revision of the implementation of the CWM due to ECG's non-compliance with the previous guidelines, the updated model was effective from July 2023. The revised CWM prioritises monthly payments of approximately USD 43 million to IPPs (Level A), while residual collections are distributed among Level B stakeholders in line with the existing proportional framework, based on a minimum ECG collection of GHS 1 billion and excluding Sankofa gas.

On 10 February 2025, the Ministry of Energy and Green Transition (MoEn&GT) issued a new directive that reorganised the process for how the CWM is operationalised. In summary the directive highlighted the following:

- ECG instructed to submit details of all tariff collection accounts indicating the account types and closing balances of the accounts as at 31st January 2025 to MoEn&GT , MoF and PURC.

- ECG to instruct all banks with tariff collections accounts to sweep all tariff revenue funds into the Single Holding Account with signatories comprising ECG, MoEn&GT and PURC.
- Designated bank instructed to issue a bank confirmation to ECG, PURC and the MoEn&GT declaring the balance on the Single Holding Account on the 26th of every month.
- The CWM Committee to meet on 27th of every month and allocate the amount declared by the designated bank, based on the CWM approved by the Committee. The committee to be chaired by PURC and shall submit the approved Allocation Schedule to ECG with a copy to MoEn&GT immediately after the Committee's meeting.
- Within 24 hours of receipt of the approved Allocation Schedule, the signatories shall instruct the designated Bank to disburse the amount declared to the various beneficiaries according to the Allocation Schedule approved by the Cash Waterfall Committee.
- ECG instructed to copy the PURC and MoEn&GT in all correspondence and bank instructions issued in compliance with the Directive.
- ECG strongly instructed to pay statutory levies into the designated accounts in accordance with the Energy Sector Levies Act (ESLA) of 2015 (Act 899) as amended.
- Timelines in this Directive supersede those contained in the directive of January 2025 "DIRECTIVES ON COMPLIANCE WITH THE CASH WATERFALL MECHANISM"

Since the instructions for the directive were issued, we observed over the period of review that ECG had generally taken steps to comply. In section 2.3, of this report, we have conducted a review of the additional directives that have followed in connection with the operations of the CWM.

Our review was limited to the information provided to us by the PURC and ECG in connection with the directives that were issued. We have provided a summary of the documents received in this regard.

2.2 Review of model structure and mechanics

The following table sets out our review of the CWM model structure and mechanics. We reviewed the CWM model presented to us for the period. These comments are largely similar to those raised in our previous reviews as there have not been significant changes to the mechanics of the model.

Table 1: CWM model structure and mechanical review

No.	Thematic Area	Comments
1	General model structure	The model is generally structured and defines terminology applied across its sheets as well as the applicable colour coding. As suggested previously, considering general best practice, the guidelines within the model should also include a detailed description of each sheet within the model structure to present the flow of the framework and the importance of the calculations there. It will be useful if the cover page could incorporate this going forward.
2	Formulas and mechanical framework	In general, the formulas and mechanical framework of the CWM remain sound and well structured. Due to the sensitive nature of revenue allocations and tariff computations, we are still proposing that it will be more prudent for these relatively more sensitive sheets to be protected going forward. This will help limit the impact of any errors during the use of the model. We did not identify any issues with formulas with issues within the CWM model. We have noticed that the Loss Allocation sheet has still not been formatted per the model architecture framework. It will be useful for this to be updated for consistency as best practice.
3	Errors and inconsistencies	Our review of the CWM model for the period did not show any obvious errors or inconsistencies. The model remains relatively robust in the relevant formulas for the allocation analysis.
4	Model security and protection	Given the current structure of the mechanism and how it is shared, it is important for the model to be secured in terms of:

No.	Thematic Area	Comments
		• Internal computations (by PURC) establishing the allocations for generation, fuel, loss and transmission should have restricted access to avoid errors/miscalculations due to cell interference. • We suggest that any version of the model shared with any external stakeholders beyond the CWM committee should include protection measures. These may include protected sheets and password required file access. This will help preserve the data integrity of the model. • It will be useful for the CWM Committee to consider establishing the proposed access log and version control system for the CWM model. This will enable the Committee to track and confirm models that have been shared with any other stakeholders.

2.3 CWM Directives

In our review of the CWM Directives issued within the review period of 2025 Q1 and Q2, we have grouped the documentation on the directives into 3 main categories:

- CWM operational directives: This category of directives were issued requesting specific processes to be followed in the use and application of the CWM in terms of collections, declaration and payment of beneficiaries.
- Fuel directives: This category of directives was issued in connection with fuel supply payments and related instructions.
- CWM approval directives: This category covers official communication confirming approved declaration for payment to the CWM beneficiaries.

The following table summarises the directives received including a short description that provides context. It also includes some requests and confirmations linked to the directives.

Table 2: Directives Issued (Received from ECG and PURC)

No.	Date and Reference	Subject and Description	Category	Received from
1.	**DATE**: 1 October 2025 **Ref**: NESC/MT/05/2025/PURC03	**SUBJECT:** Approval of CWM Allocations- September 2025 **DESCRIPTION:** The letter indicates 5th meeting of the NESC and the payment allocations for the CWM for September 2025. The letter authorises the payment of GHS 1.52875 billion per a schedule attachment and directs the disbursement of payments.	Directive (CWM Approval)	**ECG**
2.	**DATE**: 29 September 2025 **Ref**: EY.274/274/01B	**SUBJECT:** Directive on revised payment instructions to independent power producers (IPPs)| RE: Government's Engagements with IPPs Legacy Debt Payments and Current Monthly Payment Shortfalls **DESCRIPTION:** This letter highlights a revision of payment instructions to supersede all previous directives. It provides details on the payments for each IPP per month.	Directive (CWM operations)	**ECG**
3.	**DATE**: 11 August 2025 **Ref**: ZD.112/114/01B	**SUBJECT:** Urgent Release of USD 10 million for Gas Supply Payment **DESCRIPTION:** This letter is addressed to ECG by MoEn&GT instructing ECG to release an interim amount of US$ 10 million to VRA to pay for the settlement of its outstanding gas bills. This letter includes an attachment from VRA on their request for funding.	Directive (Fuel)	**ECG**
4.	**DATE**: 11 August 2025 **Ref:** ZD.112/114/01B	**SUBJECT:** Urgent release of USD 10 million for gas supply payment. **DESCRIPTION:** This was a directive from MoEn&GT to ECG to support payment for gas for VRA. The directive also indicated that the amount will be fully reconciled and accounted for from the envisaged savings under the CWM at the end of the month (i.e. August 2025).	Directive (Fuel)	**PURC**

No.	Date and Reference	Subject and Description	Category	Received from
5.	**DATE**: 23 July 2025 **Ref**: ZD.41/127/03	**SUBJECT:** Request for allocation of GHS 50 million from the Cash Waterfall Mechanism to fund evacuation and securing of ECG containers. **DESCRIPTION:** This letter from MoEn&GT requests for an allocation of GHS 50 million to support the evacuation and safeguarding of 2,600 ECG containers that were being released from the Tema Port. The letter also indicates that the requested amount covers the cost of haulage, secured warehousing, inventory, reconciliation, logistics and operational oversight.	Directive (CWM operations)	**PURC**
6.	**DATE**: 8 July 2025 **Ref**: ZD.41/127/03	**SUBJECT:** Approval of June 2025 CWM Allocations **DESCRIPTION:** The letter grants approval for exchange rate gains to be paid to ECG using the April allocation as the base month.	Directive (CWM approval)	**PURC**
7.	**DATE**: 8 July 2025 **Ref**: ZD.41/127/03	**SUBJECT:** Approval of June 2025 CWM Allocations **DESCRIPTION:** The letter grants approval for exchange rate gains to be paid to ECG using the April allocation as the base month.	Directive (CWM Approval)	**ECG**
8.	**DATE**: No date **Ref**: DF/LET's/25/L01.1/012	**SUBJECT:** Permission to defer the collection Declaration for a day **DESCRIPTION:** In the letter ECG requested for a deferment of the declaration of the total collection into the single holding account to 27 June instead of 26 June 2025 due to matters relating to billing challenges for ECG's Special Load Tariff customers.	Request (CWM operations)	**PURC**
9.	**DATE**: 26 June 2025	**SUBJECT:** Request to defer revenue declaration in Single Holding Account. **DESCRIPTION:** In the letter ECG requested for the CWM Implementation Committee to defer the June 2025 declaration to another date to allow accumulation of funds for	Request	**PURC**

No.	Date and Reference	Subject and Description	Category	Received from
	Ref: MD/PURC/2025/V.1/016	adequate revenue allocation. This was as a result of a billing system transition leading to lower revenue flows.		
10.	**DATE**: 26 June 2025 **Ref**: ZD.41/127/03	**SUBJECT:** Urgent procurement of critical electrical items using surplus funds from CWM **DESCRIPTION:** This letter highlights concern around shortages of certain critical electrical materials needed for ECG's operations to improve the distribution system. It includes a request that seeks to use foreign exchange gains (for May and June 2025) to facilitate the disbursements of funds to procure equipment, particularly distribution transformers for ECG. The letter further requests for a status update to be provided by ECG by the end of July.	Directive (CWM operations)	**PURC**
11.	**DATE**:26 June 2025 **Ref**: Not stated	**SUBJECT:** Information of the MoEn&GT Instruction on the Single Holding Account **DESCRIPTION:** This letter references the directive from MoEn&GT dated 17 June 2025 (see item 4 in this table) and confirms that ECG made payment of US$ 4 million (equivalent of GHS 41,200,000 | at GHS/US$ rate of 10.30) for the HFO as requested.	Confirmation (CWM operations)	**PURC**
12.	**DATE:** 17 June 2025 **Ref:** ZD.112/144/01C	**SUBJECT**: Request for urgent release of funds for liquid fuel procurement. **DESCRIPTION**: This was a directive from MoEn&GT to ECG to support purchase of 10,000 metric tons of Heavy Fuel Oil valued at an amount of US$ 4 million for VRA. The letter indicates that the amount will be duly reconciled and accounted for under the CWM at the end of the month (i.e. June 2025).	Directive (Fuel)	**PURC**
13.	**DATE**: 9 June 2025 **Ref**: ZD.144/414/01A	**SUBJECT:** Directive on Pricing of Dry Natural Gas **DESCRIPTION:** The letter highlights a directive for the pricing of all dry natural gas in Ghana to be linked to PURC's Weighted Average Cost of Gas including a retrospective application of existing natural gas supply agreements. It also highlights that any	Directive (Fuel)	**PURC**

No.	Date and Reference	Subject and Description	Category	Received from
		request for discounted pricing must be submitted to the Minister for evaluation on a case-by-case basis. The letter also requested for 30% proceeds from the sale of natural gas to the non-power sector to be allocated to a dedicated fuel account held by VRA to support its fuel purchases for power generation.		
14.	**DATE**:20 May 2025 **Ref**: COS/309/F8H/06	**SUBJECT:** Cash Waterfall Implementation Framework. **DESCRIPTION:** The letter indicates a ratification of an executive approval for the extension of the mandate of the National Energy Security Committee (NESC) to include oversight of the Energy Sector Recovery Programme by Cabinet. It also highlights the following NESC directives based on the approval: I) The CWM committee shall meet not later than the 20th day of every month to consider the CWM formula and make recommendations for its implementation; II)The formula and recommendation shall be submitted to the NESC for consideration and validation before the 25th of each month; III) The decisions of the NESC shall be communicated to the committee and relevant stakeholders.	Directive (CWM operations)	**PURC**
15.	**DATE:** 19 May 2025 **Ref:** ZD. 112/144/01C	**SUBJECT:** Request for urgent release of funds for liquid fuel procurement. **DESCRIPTION:** This was a directive from MoEn&GT to ECG to support purchase of 10,000 metric tons of Heavy Fuel Oil valued at an amount of US$ 4 million for VRA. The letter indicates that the amount will be duly reconciled and accounted for under the CWM at the end of the month (i.e. May 2025).	Directive (Fuel)	**PURC**
16.	**DATE**: 28 March 2025 **Ref**: ZD 41/127/03	**SUBJECT:** Additional Directives Issued Under the Cash Waterfall Mechanism **DESCRIPTION:** In the letter, the MoEn&GT indicates additional directives to help enforce compliance to the CWM: I) The Ministry directed the VRA to open and operationalise the liquid fuel account to receive payment from the level A payment under the CWM.; II) The CWM Committee shall allocate to the Liquid Fuel Account a	Directive (CWM Operations)	**PURC and ECG**

No.	Date and Reference	Subject and Description	Category	Received from
		minimum amount of USD $2.5million per month; III) The Committee should optimise the existing Level A payment by reviewing allocations to plants that are not operating and others with reduced output.		
17.	**DATE**: 4 March 2025 **Ref**: EY.274/274/01B	**SUBJECT:** Inclusion of Eary Power Limited (EPL) in tier 1 category of IPP's under the Cash Waterfall Mechanism **DESCRIPTION:** This letter highlights a meeting with Early Power and MoEn&GT. It further indicates that the Ministry has instructed PURC to include EPL in Tier 1 of the CWM. It also mentions the fact that ECG has been directed to make a GHS 50 million payment to EPL in respect of February electricity supply bills.	Directive (CWM Operations)	**ECG**
18.	**DATE**: 1 October 2025 **Ref**: NESC/MT/05/2025/PURC03	**SUBJECT:** Approval of CWM Allocations- September 2025 **DESCRIPTION:** The letter indicates 5th meeting of the NESC and the payment allocations for the CWM for September 2025. The letter authorises the payment of GHS 1.52875 billion per a schedule attachment and directs the disbursement of payments.	Directive (CWM Approval)	**ECG**

2.4 Key Observations and issues identified

The following are some key observations we made during our review of the CWM models and the CWM directives that we received from ECG and PURC over the period:

CWM Model-Use of an unprotected Microsoft Excel spreadsheet (Data Integrity and Model Security): We observed that most of the submitted CWM models still have unprotected sheets containing critical formulas. It is important for the CWM model to incorporate protected cells to limit users' ability to interfere with allocation formulas either intentionally or by error.

To promote the process of transparency and efficient management of the mechanism, the integrity of the data entered into the spreadsheet must be safeguarded. Key cells must be locked with control access features and enhanced access log features programmed into the spreadsheet to track any attempted changes to the inputs in the model.

CWM Directives- Formalisation of CWM Exception and Deferment Processes

There is a recurring pattern of ad hoc requests to defer revenue declarations, release funds urgently, or temporarily withhold allocations under the Cash Waterfall Mechanism (CWM). We recommend the formalisation of a clearly documented exception-handling framework within the CWM. This framework should define permissible circumstances for deferments, emergency releases, and interim payments, including approval thresholds, required documentation, timelines for reconciliation, and disclosure requirements.

CWM Directives- Strengthening Reconciliation and Disclosure of Interim Payments

A few directives requested ECG to make upfront payments (e.g., for gas supply and liquid fuel procurement) with assurances that these amounts will later be reconciled under the CWM. We recommend that ECG and the CWM Committee implement a standard reconciliation protocol that clearly tracks such interim payments, shows how and when they are netted off against CWM allocations. This will support the process of ensuring that they are transparently reflected in monthly CWM schedules shared with stakeholders. This would address current gaps in understanding how reconciliations are performed and reduce the risk of double funding or misstatement.

CWM Directives- Clarification of Fuel Funding Responsibilities and Avoidance of Duplication

The directives establishing a Liquid Fuel Account funded through Level A allocations, as well as the requirement for VRA to retain 30% of non-power gas sales proceeds for fuel purchases, create alternative funding streams for fuel. We recommend a review to clearly delineate funding responsibilities between ECG and VRA for fuel procurement. Where dedicated fuel funding mechanisms exist, ECG should not be required to pre-finance fuel purchases unless explicitly justified and approved within the CWM framework. This will help prevent duplication and ensure alignment with the intended design of the CWM.

CWM Directives-Reassessment and Documentation of Allocation Methodology Changes

Certain directives, such as performance-based conditions attached to Distribution Service Charge (DSC1) allocations, the inclusion of Early Power Limited (EPL) in Tier 1, and revised IPP payment instructions, represent substantive changes to the structure and operation of the CWM. We recommend that PURC and the CWM Committee formally document all changes to allocation logic, tiering, and payment priorities, with effective dates and approvals clearly stated. This would address inconsistencies between assertions that the model has not changed and evidence that shows that it has evolved materially.

CWM Directives- Improved Governance, Timing Alignment, and Authorisation Trail

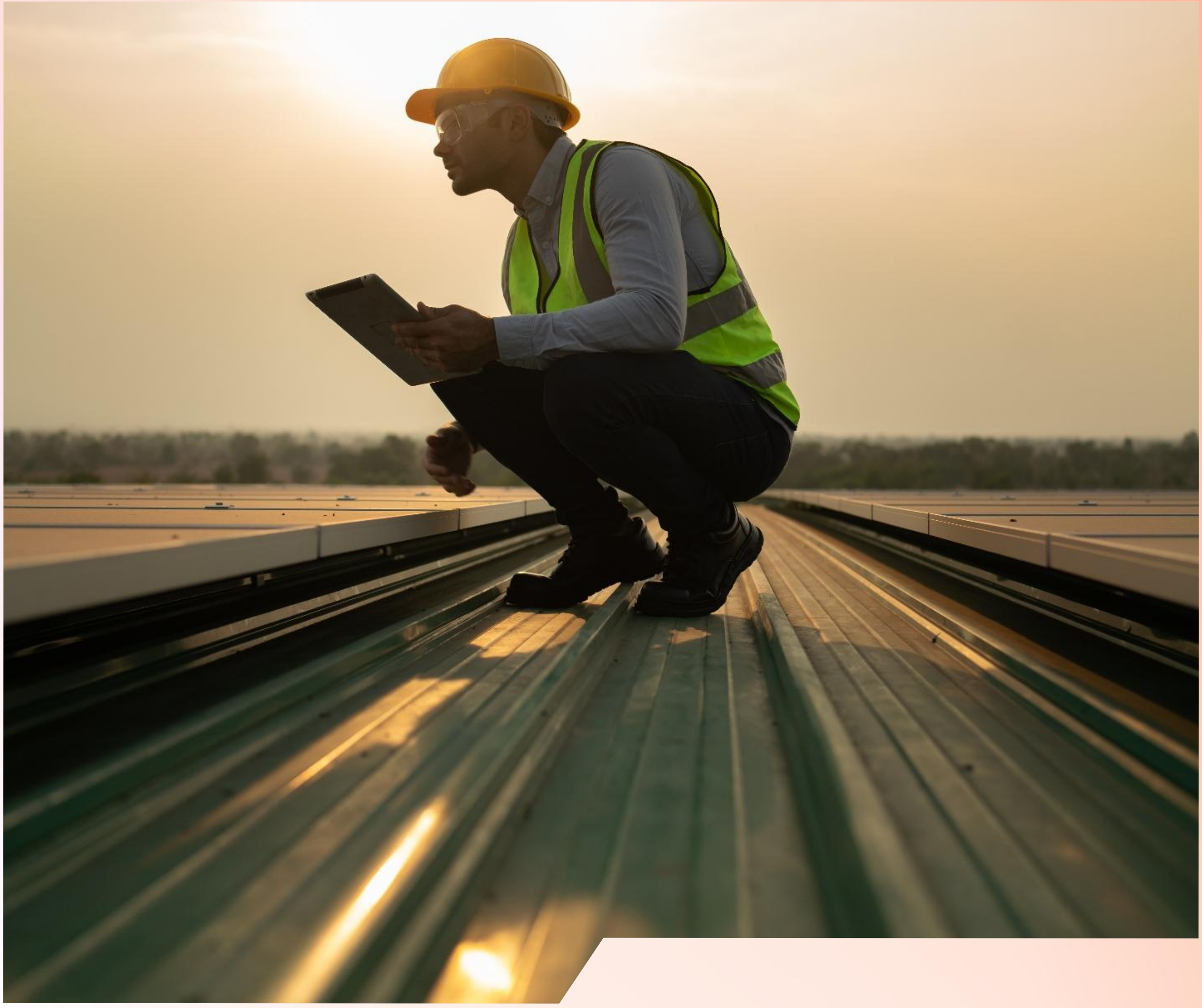
There are timing inconsistencies between when revised CWM practices were implemented, when Cabinet approval was granted, and when formal directives were issued. We recommend strengthening governance by ensuring that no material changes to the CWM are implemented prior to formal approval and communication. Additionally, all monthly CWM allocations should be supported by a clear authorisation trail, from the CWM Committee through National Energy Security Committee (NESC) approval (if required), to enhance accountability and regulatory confidence.

CWM Directives-Enhanced Transparency Around Surpluses and Exchange Rate Gains

Letters approving the use of exchange rate gains and identifying surpluses (e.g., amounts earmarked for ECG maintenance) lack clarity on the basis of the requests and allocation. We recommend clearer disclosure requirements around surplus identification, approval, and utilisation, including the party requesting such treatment and how it aligns with CWM principles. This would improve transparency and mitigate perceptions of discretionary treatment.

CWM Directives-Completeness and Reliability of Regulatory Information

The absence of certain approval directives from the information provided by PURC and ECG raises concerns about completeness of the official approval communication. We recommend the establishment of a centralised, authoritative repository of all CWM-related directives and approvals, jointly maintained by PURC and the CWM Committee. This would ensure consistency of information across reviews and strengthen regulatory oversight. More importantly, we believe that it will be useful for CWM committee to maintain an official communication of CWM approvals to its stakeholders to enhance the transparency and strengthen the governance of the CWM.



Review of ECG's Billing and Invoicing Procedures

3. Review of ECG’s Billing and Invoicing Procedures

3.1 Introduction

This section of our report outlines the processes and steps for ECG’s billing and invoicing for both postpaid and prepaid customers. We have detailed the process walkthrough, highlighting the systems, computations and customer categorisation details that inform customer billing and invoicing from ECG.

3.1.1 Our objective for this task

Our primary objective for this task aligns with the second requirement per the Terms of Reference for the Project. In line with this, our assessment seeks to review and assess ECG’s billing and invoicing procedures, including the accuracy of metering, tariff application and customer billing.

3.1.2 Our methodology for this task

We initiated our approach with a process walk through discussion with representatives from ECG’s Customer Service Directorate (CSD) and Revenue Assurance Department. Based on this, we developed a process map aligning the process walk through with ECG systems and calculations. Using this, we prepared the relevant assessment around the billing and invoicing procedures at ECG and outlined our key observations and recommendations.

3.2 Process Walkthrough

3.2.1 System Overview

ECG’s billing process starts with customer onboarding. The customer applies for grid connection and a meter installation at the customer’s premises. The customer’s data is captured by an ECG staff and shared with the ECG Cash Settlement Platform (ECSP) Vendor using the Zeus application.

The Zeus application is a workflow management system used for customer onboarding and meter readings. During onboarding, an application fee is paid. ECG then inspects and surveys the premises, signs an agreement with the customer, and provides a compliance certificate from the Energy Commission. After this, the customer pays an installation fee, either via mobile money or at the bank, before the meter is installed. Depending on the type of meter, the customer is classified as either prepaid or postpaid.

Postpaid Customers

For postpaid customers, the meter reading is captured via the Zeus application and communicated to ECSP Vendor through an interface. The bill then appears on the ECG Application and/or is sent to the customer via SMS. Payments can be made using mobile money through the ECG Application. An ECG staff member can also initiate a transaction for the customer, prompting them to enter their mobile money PIN to complete the process. Alternatively, customers can pay through banks or the "ghana.gov" platform. No physical cash is accepted at ECG offices.

When a customer makes payment, it is received by ECSP Vendor and ECG's bank account is credited accordingly. From January 2025, meter readings are no longer taken quarterly but are now taken either monthly or bi-monthly. As such bills issued to customers in months where their meters have not been read are on estimated billing basis. Any overestimation or underestimation is adjusted once the actual reading is taken. For the period under review, January 2025 to June 2025, estimates were used for billing of postpaid customers.

ECG keeps track of historical billing trends from 2017 to 2024, facilitating the calculation of annual year-on-year growth projections. To find the average month-on-month growth, the annual growth rate is divided by 12.

To estimate the expected sales for the current year in kilowatt-hours (kWh), the actual sales from the previous year are multiplied by the growth rate. This figure is then added to the previous year's total sales. The resulting expected annual sales in kWh are spread over 12 months to derive the monthly expected sales in kWh for the period.

For postpaid meters, the Adora system previously managed all transactions and computed consumer bills. However, the Adora system was phased out in March 2025 and has since been replaced by the Zeus system which now performs these functions.

Both Zeus and Adora systems are operated by third-party vendors. ECG does not have direct access to the hosted data, hence vendor transitions pose a risk of data loss, an issue that materialised when Adora was phased out.

Prepaid Customers

For prepaid customers, power is purchased prior to consumption. Customers can purchase power through the ECG PowerApp or at vending points via mobile money or physical cash. The ECG PowerApp allows customers to manage their accounts, purchase power and monitor their energy consumption in real-time. A token is received after payment via various payment channels, which is entered into the meter to reflect the power purchased. When a customer makes payment, it is received by ECSP Vendor and ECG's bank account is credited accordingly.

ECG employs a Meter Management System (MMS) to centrally manage its prepaid meters and balances, as well as to remotely update meter configurations. MMS includes a module that communicates with prepaid meters when customers make payments. However, not all meters have been integrated into MMS yet, as some of them do not meet the necessary requirements for onboarding.

Other Recoveries and Non-Purchase Prepayments

Billing estimates are used to quantify consumption and the monetary amounts arising from other recoveries provided by revenue protection activities and recoveries from non-purchase prepayments.

Non-purchase prepayments involve meters that do not communicate with ECG's servers, therefore the consumption recorded on those meters is not captured for the period. Other recoveries pertain to customers who have illegally connected to the national grid. These estimates are derived from historical trends and analysed at a regional level.

For prepaid customers, a return on monthly consumption is necessary to generate sales. The term "customer turn out" refers to the number of customers whose consumption or usage were captured by the billing system. To estimate non-purchases (customers who deposited money or purchased prepaid into their accounts, but their consumption couldn't be captured on the billing system as a result of their meters not communicating or being disconnected from the ECG servers), the percentage of customer turn out is calculated by dividing the total customer population by the customer turn out figure.

The units consumed by these customers, measured in gigawatt-hours (GWh), are converted to kilowatt-hours (kWh) and then divided by the customer turn out number to determine the average kWh per customer.

A confidence level of 96% is then applied to the difference between the total customer population and the customer turn out. This result is multiplied by the average kWh to estimate the total unit consumption used by customers whose consumption or meter readings were not captured on the billing system for the month.

ECSP Vendor's role in the collection cycle

The ECSP Vendor currently acts as a third-party service provider by offering a system that interfaces with Zeus and MMS to confirm and facilitate bill payments. Based on our understanding of the process from discussions with ECG, once a bill is paid to ECG, three reconciliation processes are initiated.

The first process is between the ECSP Vendor and ECG Revenue Assurance Team to ensure customer accounts are accurately credited. This is then followed by a process between the ECSP Vendor and ECG's Finance Department for monetary settlement. The process ends with a consolidation between ECG's Revenue Assurance Team and ECG Finance Department.

3.2.2 Tariff Application

ECG customers are categorised into two billing types: prepaid and postpaid. Prepaid customers buy electricity in advance, while postpaid customers are billed monthly based on their consumption. Both prepaid and postpaid categories include residential and non-residential customers. For tariff application, customers are divided into Special Load Tariff (solely industrial customers) and Non-Special Load Tariff (encompassing both industrial and non-industrial customers). All industrial customers fall under the postpaid category while non-industrial customers could either be prepaid or post-paid.

A. PREPAID CUSTOMERS

Computation of Prepaid Charge

For prepaid residential and non-residential tariffs, consumption thresholds are set based on the kWh consumed. The threshold limits vary between residential and non-residential customers. Consumption thresholds are divided into a graduated schedule: 0-300 kWh and over 300 kWh. The thresholds are calculated as follows:

After the first threshold has been determined, a deduction is made from the total consumption, to obtain the second threshold. The energy charge is subsequently calculated by applying the respective rates for each threshold.

To calculate the total energy charge, the following computation is applied:

Prepaid charge (in GHS) = kWh to be consumed X PURC Tariff Rate X (I + Levies)

For the period under review, quarterly changes were made to the tariff rates. See Appendix 1 for all tariff changes over the period.

Taxes and Levies (Prepaid Customers)

In connection with taxes and levies on prepaid residential customers of ECG, the electricity consumption charge is computed using an upscaled amount of 5% mark up on the total energy charge. This consists of a 2% Government Levy and a 3% Street Light Levy.

For prepaid non-residential customers of ECG, the electricity consumption charge is computed using an upscaled amount of 25% mark up on the total energy charge.

This consists of 2.5% GETFUND Levy, 15% VAT, 2.5% NHIL, 2% Government Levy and 3% Street Light Levy. Additionally, all customers are charged a mandatory monthly service charge regardless of whether electricity was consumed or not.

B. POST PAID CUSTOMERS

Residential and non-residential customers

For postpaid residential and non-residential tariffs, monthly consumption thresholds are set based on the kWh consumed. These thresholds are determined using a 'Daily Proration' algorithm. The monthly limits vary between residential and non-residential customers.

Lifeline residential customers, who consume between 0-30 kWh, are not charged. Consumption above this threshold is divided into a graduated schedule which is classified into the bands: 0-300 kWh and over 300 kWh. The thresholds are calculated as follows:

Daily Limit (in kWh) = Monthly limit (kWh) X 12 months/ 365 days**

Note: ** 366 days if a leap year

To calculate the kWh for a particular month, the Daily Limit is multiplied by the number of days in that month. The resulting value represents the upper limit for the first threshold (0-300 kWh).

For example, for January with 31 days, the calculation is: Daily limit (kWh) × 31 days. Months with 30 days or fewer will result in a lower first threshold, while months with 31 days have a higher threshold.

This method accounts for the number of days electricity is consumed in the billing process. However, the PURC sets the rates monthly without adjusting for the different number of days in each month.

After the first threshold has been determined, a deduction is made from the total monthly consumption (monthly reading), to obtain the second threshold. The monthly charge (GHS) is subsequently calculated by applying the respective rates to each threshold.

Monthly charge (GHS) = Monthly kWh Consumption X Rate

For the period under review, there was a tariff change made to the tariff rates in Quarter 2 of 2025. See Appendix 1 for both previous tariff rates (2024 Quarter 3) and new tariff rates (2025 Quarter 2) within the period under review.

Industrial customers

All industrial customers are postpaid and are billed for their power consumption at a fixed rate. Their monthly power consumption is recorded by their meters, which interface with ECG's system. Some high-consumption industrial customers have negotiated rates through agreements with PURC.

Power factor surcharge

Industrial customers must use at least 90% of the power supplied to them from the grid to be deemed efficient. Failure to meet this threshold results in a power factor surcharge being added to their energy charge. This is calculated as follows:

Power factor surcharge (kVA) = (1- (Power factor/0.9)) x Maximum demand

This method ensures that industrial customers who are inefficient in their energy consumption incur additional costs.

3.2.3 Process Workflows

In this section of our report, we have summarised the process workflows for ECG’s billing and invoicing procedures for its:

- Prepaid Customers;
- Postpaid Customers (Non-Industrial); and
- Postpaid Customers (including industrial customers).

Figure 3: ECG Billing Process – Prepaid

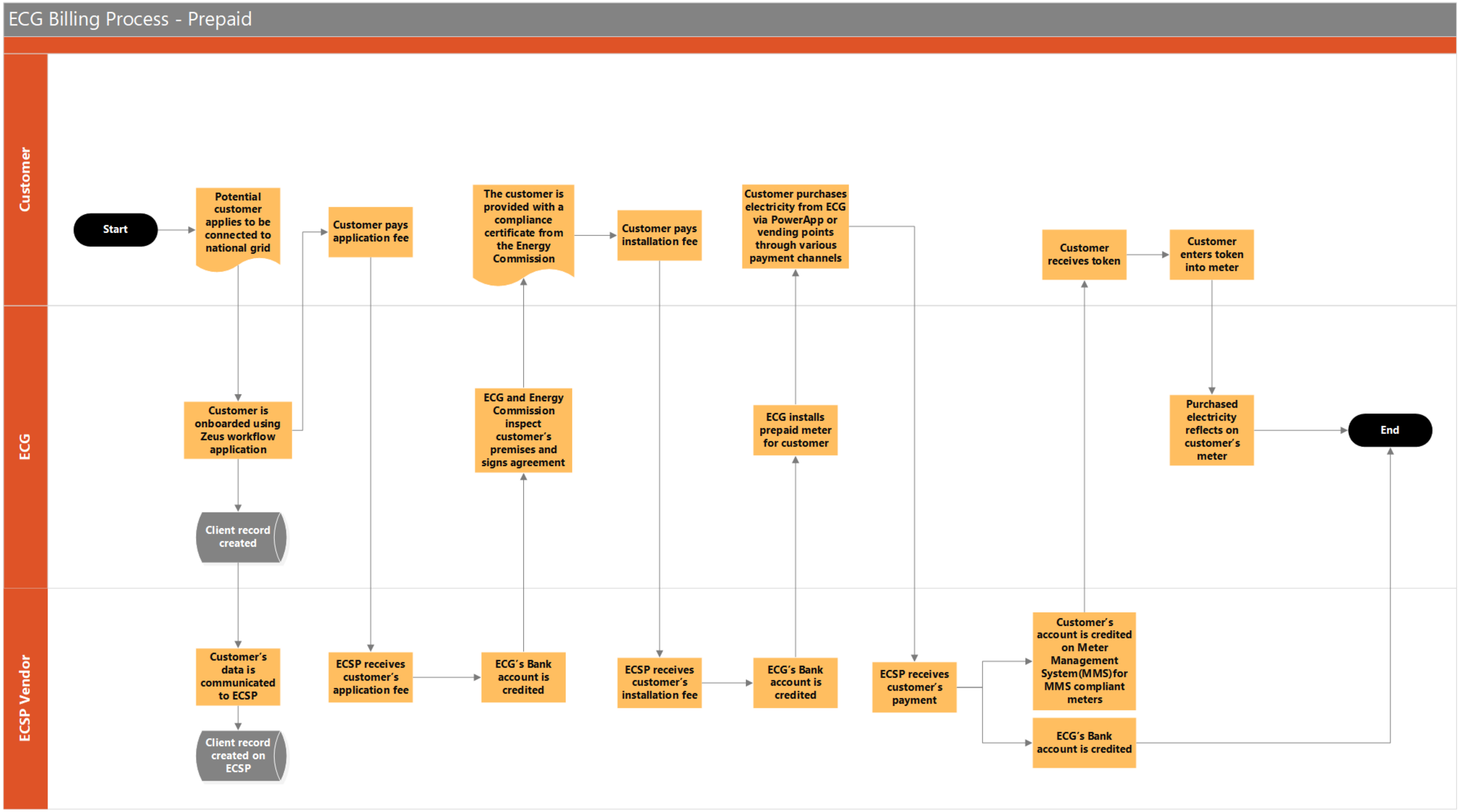


Figure 4: ECG Billing Process – Postpaid (Non-Industrial)

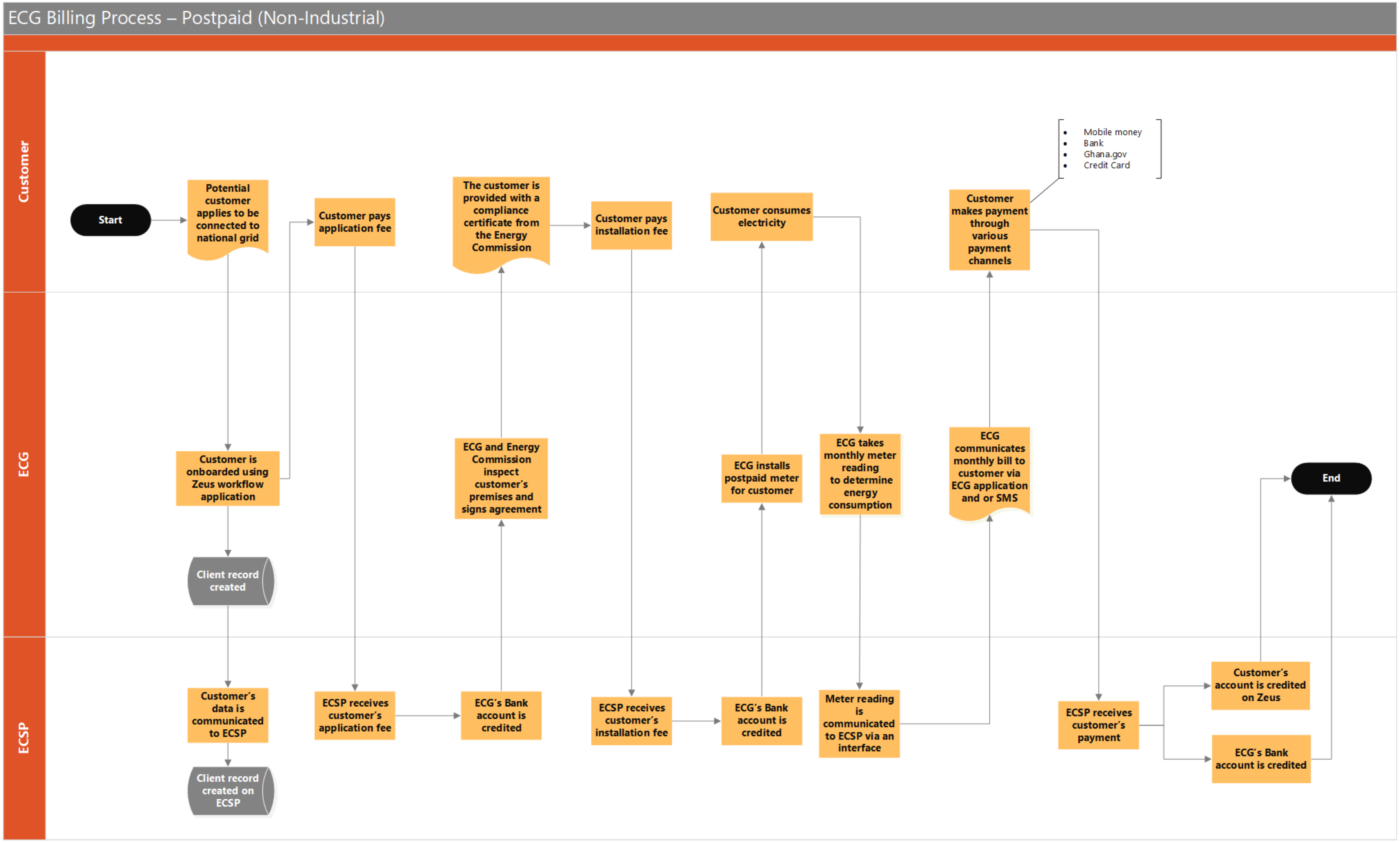
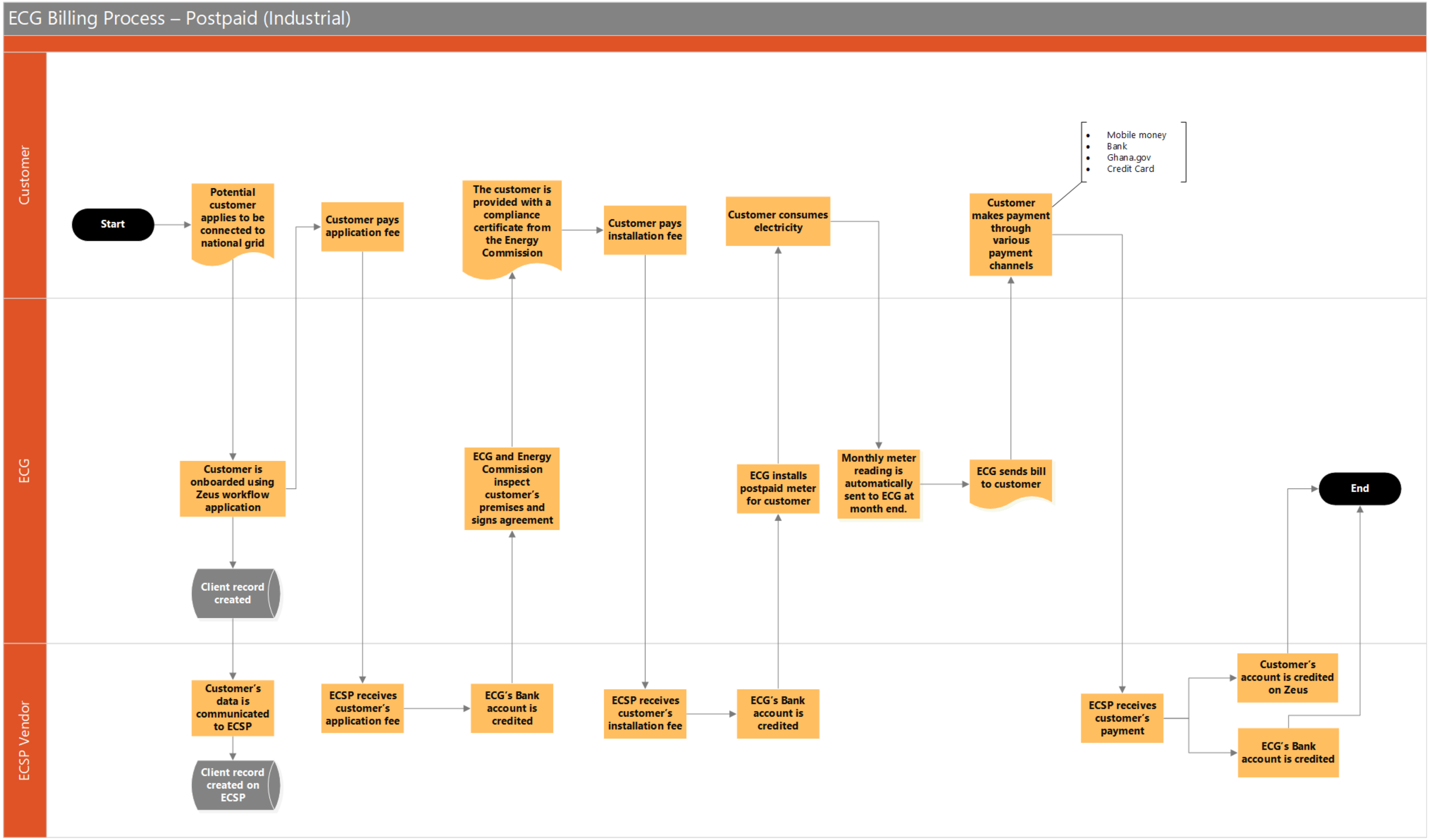


Figure 5: ECG Billing Process – Postpaid (Industrial)



3.3 Our Key Observations and Recommendations

Observation and update on cybersecurity and data protection recommendation (1 January 2025 – 30 June 2025)

As part of our follow up procedures on our prior recommendations to strengthen ECG's cyber environment we requested evidence to confirm the implementation of our recommendations (See Appendix 8). We received and reviewed the following requested documentation from ECG to confirm that they had implemented our prior cybersecurity recommendations:

- Disaster Recovery Plan
- Evidence of cybersecurity awareness and training of staff
- Third Party Policy
- Incident Response Plan
- Progress Report on ISO 27001 implementation

We noted that with the exception of the Disaster Recovery Plan, the Third-Party Policy and Incident Response Plan are draft versions and are awaiting approval from the Board. These documents are currently in use by ECG in the operation of the business. We also noted evidence of training attendance for cybersecurity awareness trainings carried out for staff in February 2025 at SU Tower and Tema Depot Training Center.

We reviewed the ISO 27001 Project Milestone report from third party consultants, Radar Lyte Services, to ECG which outlines the various milestones achieved as well as pending activities in the implementation as of August 2025. The initial deadline for the Information Security Management System (ISMS) certification was set at December 2024 but has been revised to March 2026 as the deadline was missed due to lack of stakeholder involvement. ECG should prioritise ISMS implementation activities and allocate sufficient resources to ensure timely completion of the implementation.

However, as at the time of completing this report, ECG had not provided evidence of testing of backed up data within the period as they do not host billing data and backups in house.

ECG Security Operational Center (SOC) Assessment

We conducted a visit to ECG's SOC on 8th December 2025 to verify and assess its existence and operational readiness.

ECG has set up screens for monitoring of its environment with Microsoft Sentinel -for endpoint devices- and QRadar as its Security Information and Event Management (SIEM) tools. However, we discovered that the log sources in QRadar have not yet been configured, which currently results in a lack of network visibility through this SIEM tool. The SOC operates on a three-shift basis to provide continuous monitoring capabilities, supported by a team of 12 SOC analysts. We also noted that CCTV cameras are installed on the perimeter of the building, although no cameras are present within the SOC itself.

While the SOC currently provides visibility over ECG's IT operations, it lacks oversight of the entity's Operations Technology (OT) environment. This gap in monitoring exposes the Company to significant risks, as the OT environment is crucial to the organisation's overall operational integrity and security.

We noted that ECG has a framework and plan in place to guide the SOC implementation. Our review indicated that, under a signed contract, Mienergy Ghana Limited is committed to providing ECG with a range of services that are pivotal for the SOC's operational success. These include a fully operational Security Operations Center (SOC), a Vulnerability and Patch Management System, an Anti-Ransomware Backup solution and a Forensic Lab.

Due to outstanding payments to be made by ECG to Mienergy, the SOC implementation is currently on hold.

Our Key Observations and Recommendations

Based on our assessment of ECG’s billing and invoicing systems, we noted that there are 20 prepaid systems, i.e., 19 legacy systems (non-MMS compliant systems) and a Meter Management System (MMS).

To streamline the billing and invoicing process, we recommend that ECG’s management take steps to expedite the shift of meters from the legacy systems to MMS to have a central database of all meters and prepaid configurations. This will enable ECG to have a single point oversight and management of all its meters. As part of our work and our data requirements, we received aggregated sales data from the 19 Legacy systems instead of individual customer billing data.

We informed ECG about this gap in the data and requested for individual sales data from the legacy systems (non-MMS) to enable us perform an accuracy test. ECG could not provide the requested data as they indicated that the data sits with a third-party and they do not have access to the source data. See Appendix 4A and 4B for analysis on what percentage of unit supplied and sales is covered by legacy systems.

Using the aggregated sales data - a monthly breakdown of billings/sales for non-MMS and MMS systems - we compared the summaries to the sales report to confirm that the total billings in the prepayment systems had reflected on the sales report. However, we noted variances in the completeness test, and this was communicated to ECG on 29th October 2025 as an exception.

We obtained the detailed MMS Billing source data from January to June 2025. We compared the units consumed (KWh) and number of MMS pre-paid customers in the source data to the aggregated MMS Billing data that feeds into the Power BI dashboard (for reporting) for the same period. We noted variances in our accuracy test.

We recomputed the postpaid customer billings for a sample of customers from the Zeus system to verify the accuracy and application of tariffs. Our analysis showed discrepancies in the system's data computations for industrial customers.

Additionally, we obtained the detailed monthly pre-paid Power App transactions and pre-paid vending quota deposits. We compared our summaries to the Power App and vending quota collections for the period. We noted no variances from our completeness test. Please refer to the Appendix 5 and 6 for the details of our analysis.

We were unable to compare postpaid system payments to the CWM as we did not obtain these payments from Zeus (Polymorph) for postpaid customers during the period (January to June 2025). ECG explained that the reporting interface to extract payment is still being developed by the vendor.

We have included key recommendations, in this review (see Section 5 of this report) to help improve the operationalisation of ECG's invoicing and billing systems.

General Observations and Specific Key Issues Identified from the Validation Exercise

4. General Observations, Approach and Methodology and Specific Key Issues Identified from the Validation Exercise

4.1 Introduction

This section of our report highlights the key limitations of the validation exercise as well as key issues we have identified from our review of the available documentation on the project and our recommendations.

4.2 Key documents reviewed

The following table sets out the key documents reviewed as part of our validation procedures.

Table 3: Summary of Documents Reviewed

No.	Name of document	Format of document	Description	Date received
1	Request for the validation exercise for 2025 (email)	Email	This email correspondence between ECG and CWM Committee for the approval of CWM allocation.	16/10/2025
2	ECG Client Billing Data	System generated text file	The report contains the detailed MMS customer consumption of units (KWh), the meter IDs of customers and the various bands the customers fall within per their consumption or usage.	7/11/2025
3	MMS consumption report for January - June 2025 (Screenshots of extraction process requested)	Systems Generated Report	This system-generated report details customer consumption and usage, along with the associated charges.	16/10/2025
4	Prepayment sales by prepayment system (January and June 2025)	Microsoft Excel	Prepayment sales by system - The report contains a summary of the breakdown of units (GWh) consumed and the amounts charged/billed to the customers for the various MMS compliant and MMS non-compliant meters. The breakdown of sales in the report was used to distinguish between sales from MMS compliant meters and sales from the non-MMS meters. The data from the report informed the re-computation and validation assessment.	24/10/2025 and 27/10/2025
5	ECG Client Billing Data (Postpaid) – January to June 2025	Microsoft Excel	There was no primary data available for the period under review as all postpaid bills for the period were based on estimation. However, we received the Excel document used as a basis for the postpaid estimations for the period under review. This contains details of the trend analysis performed by ECG using the year-on-year growth rate and actual sales from the prior year to arrive at the postpaid estimations.	25/11/2025
6	Prepaid vending transactions (Vending quota & Power App) for January – June 2025 (Screenshots of extraction process requested)	Microsoft Excel	The prepayment deposit data contains deposits/amounts from vending quota and power app transactions for January to June 2025.	23/10/2025

No.	Name of document	Format of document	Description	Date received
7	Hubtel Settlement Report	Microsoft Excel	This contains the listing of total collections from Hubtel and total commissions paid to Hubtel for January-June 2025.	7/10/2025
8	Approved PURC tariff for Q1 and Q2 2025	PDF	This contains the approved electricity tariffs for Q1 and Q2 2025 by PURC.	6/10/2025
9	Cashbook (GHS and USD) for January and June 2025	Microsoft Excel	This contains ledger details for GCB bank accounts held by ECG for the period January – June 2025.	8/10/2025
10	IPP reconciliation sheets as of June 2025	PDF	This contains reconciliations with IPPs for June 2025. It details invoices received, payments made to IPPs, debit and credit notes issued and the outstanding balances as at 30 June 2025.	6/10/2025
11	Fuel payment ledger	Microsoft Excel	This sheet contains a listing of payments made to Gas providers on behalf of IPPs for the period from January to June 2025. The list includes: • GNPC • NGAS • Ghana Gas	7/10/2025
12	Ledger details from January to June 2025	Microsoft Excel	This contains details of all IPP invoices received by ECG, payments made by ECG and credit notes.	8/10/2025
13	Single Collections accounts details	PDF	Details and bank statements of bank accounts used in revenue collection in January 2025.	8/10/2025
15	Invoices from IPPs for January to June 2025	PDF	These include invoices provided to ECG by the various IPPs for fuel, energy generated and transmitted. Invoices were received for the IPPs as follows: • Sunon Asogli. • CENIT. • Karpowership. • AKSA. • VRA. • Amandi. • Cenpower.	6/10/2025 8/10/2025

No.	Name of document	Format of document	Description	Date received
			• Early Power. • Bui power. • GRIDCo. • Safisana. • Meinenergy. • BXC Solar.	
15	ECG Accounting Procedures Manual	PDF	This contains the policies used by ECG in their financial reporting activities.	6/10/2025
16	Revenue collection sheet	Microsoft Excel	This contains a summary of all revenue collected by ECG for the period from January 2025 to June 2025. Collections are classified by month and by the type of revenue (tariff and non-tariff).	6/10/2025
17	Credit notes from January to June	Hardcopy	Credit notes issued by ECG to GRA, IPPs or fuel providers from January to June 2025.	8/10/2025
18	Debit notes from January to June	Hardcopy	These include debit notes issued by ECG to the various IPPs on behalf of fuel suppliers. Debit notes were received for the IPPs as follows: • CEN Power • Amandi • Karpowership • Sunon Asogli • Aksa • Early Power • CENIT • VRA • GridCo	7/10/2025
19	Payment vouchers showing payments to IPPs and fuel providers	Hardcopy	Letters issued to the banks for payments in respect of CWM allocations to the IPPs. The letters are issued when the CWM is approved by all stakeholders.	7/10/2025
20	Bank statements (from ECG) Jan –	PDF	The statements show the amounts paid into ECG's accounts and the amounts paid out to CWM beneficiaries as well as	9/10/2025

No.	Name of document	Format of document	Description	Date received
	June 2025		for other operational purposes for the period from 01 January 2025 to 30 June 2025. The bank statements received are as follows: *37 accounts received:* • 20 GCB Accounts (10 regional revenue collection • accounts, 1 main revenue single collection • account); • 1 BoG • 1 FAB (not active) • 2 BOA (not active) • 2 CAL (not active) • 1 CBG • 3 Fidelity Bank • 1 OMNI • 1 Prudential Bank • 1 Stanbic Bank • 1 UBA (not active) • 1 UMB (not active)	
21	CWM models from January to June 2025	Microsoft Excel	This captures total collections made by ECG from January to June 2025 and the expected payments to be made to the CWM beneficiaries as follows: • Sunon Asogli • CENIT. • Karpowership. • CENPOWER. • AKSA Energy. • Amandi. • Early Power. • VRA. • Bui Power. • BXC Solar. • Meinergy. • Safisana.	6/10/2025

No.	Name of document	Format of document	Description	Date received
			• WAPCo. • GNPC. • Ghana Gas. • VRA (NGAS + WAPCO). • PURC. • ECG. • GRIDCO. • Statutory payments.	
22	Trial balance as at June 30, 2025	Microsoft Excel	This contains all the account balances in ECG's financial statements.	21/10/2025
23	Payment details - January to June 2025	Microsoft Excel	This is a summary of CWM models for January to June 2025 showing payments made to IPPs and a breakdown of statutory allocations paid to the respective beneficiaries.	8/10/2025
24	CWM 2025 directives	PDF	These are directives issued by the Ministry of Energy and Green Transition on the use and effectiveness of the CWM in the energy value chain.	4/11/2025
25	Memo to Prepayment Supplier	PDF	This was a letter sent by ECG to the third party vendors that host the non-MMS prepaid billing data requesting for a spool of the data within the period under review.	24/11/2025

4.3 Summary of our Approach and Methodology

The following table highlights our objective for each task executed per the ToR and the relevant approach and methodology we applied for our assessment.

In the next section, we highlight our key observations and issues flagged in our assessment for the January to June 2025 period.

Table 4: ToR scope of work, our objective, approach and methodology

No.	Scope of Work /Task Objective	Our Approach and Methodology
1.	Review the CWM allocation determination process, including the methodologies used and the inputs considered, all revenues collected against electricity received from generators by ECG and delivered to customers, corresponding bills issued and collected, and transferred into a single collection account for declaration by ECG to the CWM including all payment instructions issued to ECG by the CWM for disbursement under CWM guidelines and also all disbursements made out of the single collection account	The first section of this scope relating to the determination process, methodology and inputs review has been completed in Section 2 of this report. We assessed the directives that were issued in connection with the CWM operations. Other aspects of this scope of work were handled as part of the work done summarised in this table. They include items 5, 12,13 and 14 in this table.
2.	Review and assess ECG's billing and invoicing procedures, including the accuracy of metering, tariff application, and customer billing.	The following methodology was adopted: *1.Understanding ECG's Billing and Invoicing Process:* We conducted inquiries with representatives of the Revenue & Billing Department of ECG, to understand ECG's billing and invoicing processes. Through walkthroughs and discussions, we designed a detailed flowchart of the processes. After completing this, we compared it with ECG's accounting procedure manual. Additionally, our analysis included assessing the computed kWh consumption and tariffs used for both the postpaid (Zeus) and the prepaid (MMS) systems. 2.*Review of Metering Data Accuracy:* We examined ECG's procedures for recording and maintaining customer meter readings. We also performed a walkthrough of the metering process to assess how readings are captured and subsequently used for billing customers. This assessment was important as it has a direct impact on ECG's revenue collection. Using the metering data, we recomputed the total revenue for the Zeus system, incorporating the kWh consumption and applicable tariffs monthly. This approach enabled us to verify the accuracy of the metering data and its impact on revenue generation. Furthermore, we analysed data from the MMS system in assessing ECG revenue and collections.
3.	Review and assess ECG's revenue collection and accounts receivables management.	Our approach for this assessment is summarised as follows: *1.Summary Revenue Sheets Comparison:*

No.	Scope of Work /Task Objective	Our Approach and Methodology
		We obtained the summary of the revenue sheets and compared them with PwC's recomputed revenue figures derived from ECG's IT systems. This comparative analysis focused on data from ECG's Zeus and MMS systems. *2.Revenue Collection Reconciliation:* As part of this exercise, we used the revenue collection summaries (provided by ECG) and compared this against the independently verified bank statement sweeps conducted by PwC to assess the accuracy of the amounts. *3.Revenue and Receivables Validation:* We proceeded to validate and confirm the revenues recorded by ECG. We then aligned this with the cash payments received and the outstanding receivables reported within the period.
4.	Validate that all revenues received by ECG for the reporting period are in alignment with the electricity received and distributed by ECG along with corresponding billing and collections, and amounts declared by ECG to the electricity value chain entities and note any discrepancies.	Our approach for this task is summarised as follows: *1.Invoice and power delivered validation:* We obtained ledger details and copies of invoices to support the documentation of transactions within the January to June 2025 period. The details of each invoice (including the energy delivered [kWh] on that invoice, were documented and compared to the amounts billed by IPPs. We also compared these against what was recorded in ECG's ledger to give rise to the liabilities that ECG owes the individual IPPs. Following this step, we then collated the total kWh received by ECG from each IPP and compared it to the kWh distributed by ECG to its customers. *2.Revenue received:* We validated the revenue received by ECG by obtaining bank statements supplied by ECG's banks. We reviewed these statements to confirm that sweeps from various accounts were made into the Head Office collection accounts. All transactions were analysed, and credits received were investigated accordingly to help establish any discrepancies.

No.	Scope of Work /Task Objective	Our Approach and Methodology
5.	Validate that ECG has made timely payment to the electricity value chain entities in accordance with the payment instructions issued to ECG by the CWM and note any discrepancies;	To satisfy the requirements for this task: • We obtained the CWM models and ledger details for each month within the January to June 2025 period. We also obtained payment vouchers to enable us to trace all payments per the ledger to the respective bank statements. • We agreed the payments made for each IPP per the bank statements and reconciled the total payments to the amounts per the CWM. Variances noted were investigated and explained to be either incomplete payments or bank charges. We also reviewed the dates of payments for each IPP, regulatory bodies and other beneficiaries, in each month, to validate and confirm that payments were made in accordance with the guidelines per the CWM.
6.	Identify all accounts into which customer cash collections are transferred	Our approach is summarised as follows: • We obtained the bank statements for ECG accounts. • We reviewed all receipts and payments records as well as general ledger details to identify each bank account from which payments or receipts have occurred in order to obtain the relevant bank statement for analysis. • After confirmation, we then used our technology enabled solutions to convert, organise and structure the statements to facilitate our detailed transaction analysis. • We analysed the data to assess the relevant requirements for ToR items 6,7,8 and 9. • We captured our observations and liaised with ECG to offer any clarification on flagged items that were unclear or required documentary confirmation on what they related to. • The analysis was further summarised into visualisations to support our observations.
7.	Check that all revenues received at each collection point were transferred in full to the relevant district collection/revenue accounts;	
8.	Check that the daily banked receipts were swept in full into the Head Office Single collection/revenue account;	
9.	Identify any revenue accounts utilised by ECG which are not swept into the district collection accounts and head office Single Collection account;	
10.	Check the inflows into all the operational accounts to determine the sources of such revenue.	Our approach for this task included the following steps: • We reviewed ECG's bank accounts to identify the accounts used for operational activities. • We reviewed all transactions in the bank accounts and aggregated the revenue inflows per the bank statements into Energy Collections (including prepaid meters, non-SLT, Online quotas, set-offs, SLT and swift payments) and Non-

No.	Scope of Work /Task Objective	Our Approach and Methodology
		Energy Collections (including card and meter replacement fee, reconnection fee) based on the description per the bank statements. • The ability to fully execute this task was constrained because ECG did not provide all their operational accounts. Only the main operational account, regional operational accounts and a few non-energy revenue accounts were made available.
11.	Check the disbursement from the revenue/collection accounts to the other beneficiaries;	Following Task item 5, we compared the amounts per the CWM with the actual amounts paid to the CWM beneficiaries including the IPPs. Any variances identified were investigated to establish the sources/reason for the observed discrepancies.
12.	Determine whether the disbursements by ECG were in accordance with the CWM allocation percentages per the payment instructions issued by the CWM to ECG;	We reviewed the CWM models for the period to establish the relevant allocations and we compared it with the payments/disbursement data to confirm if there were any variances. We investigated further to understand the reason for the variances over the period.
13.	Confirm the amounts declared weekly as non-tariff revenues (i.e., any revenues not declared by ECG to the CWM);	We compared the ECG's non-tariff revenue report with the breakdown of the items that make up the non-tariff revenue from the PowerApp report for the period under review and conducted a variance analysis.
14.	Confirm the payment of the statutory deductions declared by ECG have been disbursed to the various authorities in a timely manner;	Our approach for executing this task included the following steps: • Statutory payments were computed based on payments made to the Ghana Revenue Authority (GRA) in respect of VAT, National Electrification Scheme, and Street Lighting Fund. According to the CWM guidelines, 12.5% of total revenue collections, after deducting payments to Tier 1 (IPPs), is allocated for statutory payments. To assess compliance with this guideline, we recalculated the required statutory payment allocations. • We conducted a 100% test of payments made towards the National Electrification Scheme, GRA, and Street Lighting Fund. Any variances noted were investigated.
15.	Check whether ECG is using a single collection account as per MoF directive of June 21, 2023, effective July 1, 2023.	Our approach here was to observe if the bank account operations by ECG reflected this directive or not based on the sweeps and disbursement transactions. We also flagged any discrepancies or items that did not align with this directive.

No.	Scope of Work /Task Objective	Our Approach and Methodology
16.	Undertake a comprehensive assessment of the adequacy, transparency and effectiveness of accounting and overall internal control systems for the revenue collections, transfer, and disbursement mechanisms;	We considered all our observations made during the execution of our scope of work for this period (from task item 1 to task item 15).
17.	Recommend and advise the GOG on how to strengthen internal controls and GOG oversight over ECG's revenue and disbursement structure under the CWM	• We identified some weaknesses and areas of improvement that will help enhance the role of CWM in promoting transparency and strengthening the power sector value chain. • We summarised our recommendations as part of our conclusion in this report. • Our recommendations also highlighted the relevant stakeholders expected to take the suggestions forward including ECG.
18.	Confirm that key findings and recommendations from the 1 October 2023 – 31 December 2024, have been satisfactorily addressed.	We note that ECG is yet to implement some of our recommendations per our 1 October 2023 – 31 December 2024 review. However, we obtained an update on our recommendations in connection with the observed issues on ECG's cybersecurity and data protection (See Appendix 8). We have included the updates from our follow-up procedures and discussions with ECG management in our conclusion and next steps in this report.

4.4 Key Issues and Observations

The following table summarises our key issues and observations from our review of the available data and information covering the scope items for the review period.

Table 5: Our Key Issues and Observations

No.	Key Finding	Details of findings	Conclusion/Recommendation
1.	Net Underpayment to CWM Beneficiaries Compared to Approved Allocations	As part of our assessment of ECG's compliance with the Cash Waterfall Mechanism (CWM), we examined the payment ledger, transfer advices, and supporting bank statements for the period January to June 2025. The objective was to confirm whether payments to CWM beneficiaries aligned with the monthly allocations approved under the mechanism. Our analysis identified discrepancies between the amounts allocated and the amounts actually paid to beneficiaries. For the period under review: • Total CWM allocations to beneficiaries amounted to GHS 5.98 billion. • Total payments made to beneficiaries totalled GHS 5.94 billion. • This resulted in a cumulative net underpayment of GHS 33.31 million, that largely occurred in January 2025. This represents approximately 0.56% of the total allocation to CWM beneficiaries. These discrepancies indicate that beneficiaries did not receive the full amounts approved for disbursement, and no supporting documentation or explanations were provided during the review to justify the differences. Further details of these findings are presented in Appendix 11A and 11B.	ECG should put in place measures to pay the CWM beneficiaries the amounts stipulated in the CWM for each month to ensure compliance with the CWM guidelines and minimise the build-up of debt to the sector players. ***Refer to Appendix 21 for ECG's response to the matter raised.***
2.	Discrepancies Between CWM and ECG Cash Settlement Platform Collection Amounts	We identified that the amounts recorded as collections in the CWM were lower than the amounts per the ECG Cash Settlement Platform Report. The amount per CWM is GHS 7,866,940,785 while the amount per the ECG Cash	ECG should implement a monthly reconciliation process as a control to

No.	Key Finding	Details of findings	Conclusion/Recommendation
		Settlement Platform Report for the January to June 2025 period is GHS 8,459,334,255. In summary, the net difference in collections between CWM and the ECG Cash Settlement Platform Report for the 6-month period under review is GHS 592.39 million, which represents 7.53% of the total declarations per the CWM. It is noteworthy that the variance largely occurred in the month of January 2025. See Appendix 9 for details.	understand and manage any discrepancies observed. ***Refer to Appendix 21 for ECG's response to the matter raised.***
3.	Absence of Defined Payment Timelines in the CWM Leading to Delays in Disbursement to CWM Beneficiaries	Our review of the Cash Waterfall Mechanism (CWM) guidelines noted that no specific timelines have been established regarding when payments must be made to CWM Beneficiaries after allocations are approved. Under the current process, CWM allocations are approved on the 27th of each month, after which ECG prepares and issues bank letters to enable disbursements. Based on the work performed, we observed that actual payments to CWM Beneficiaries generally occur between 1 and 14 days after the CWM allocation approval date, indicating inconsistent and sometimes lengthy processing times. From our procedures performed, we observed that some delays in disbursements were directly attributable to the banks through which payments were made. The absence of defined timelines introduces uncertainty, creates potential liquidity strain for CWM Beneficiaries, and increases the risk of delayed settlement of obligations under the CWM framework.	To help strengthen accountability and provide clarity in the CWM, we propose that PURC includes clear guidelines on timelines by which payments to CWM Beneficiaries are supposed to be made. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
4.	Incomplete Submission of Bank Accounts for Validation.	ECG provided a list of 37 bank accounts. These accounts included 11 bank accounts (comprising 10 Regional Bank Accounts that sweep into a single collection account) which were used exclusively for revenue collection. The other 26 accounts, according to ECG, were for other operational purposes. As part of our procedures, we performed a reconciliation between ECG's accounting records (trial balance and general ledger) and the bank accounts submitted. During this exercise, we identified more than 50 additional bank accounts maintained with various financial institutions, including Absa, ARB Apex Bank, Agricultural Development Bank, Bank of Africa, CalBank, Ecobank, First Atlantic Bank, and Ghana Consolidated Bank. ECG indicated that these accounts were non-tariff revenue accounts and therefore were out of scope for the engagement.	We recommend that ECG provides a comprehensive list and full disclosure of all bank accounts related to revenue collection, including both tariff and non-tariff revenue accounts, active and inactive accounts, and any other related operational accounts. This will enhance completeness, improve oversight, and reduce the risk of omitted financial information. ***Refer to Appendix 21 for ECG's response to the matter raised.***
5.	Variance between Statutory Payments declared in CWM and actual bank payments	As part of our work on statutory disbursements under the Cash Waterfall Mechanism (CWM), we assessed the allocations made for the first half of 2025 and compared them to the corresponding payments processed through the bank. The CWM allocated a total of GHS 426,351,173 towards statutory payments for the period January to June 2025. However, during our verification of bank transactions, we noted that payments totalling GHS 421,821,535, described as statutory deductions, had been made. The statutory payments recorded through the bank differed from the CWM allocation by GHS 4,529,638 which occurred in January 2025. This variance represents 1.06% of the CWM allocation.	ECG should take steps to ensure that statutory allocations declared in CWM are paid in full to avoid the build-up of debt to Government of Ghana (GOG) institutions. Clarity should be provided as to the level at which the statutory deduction rate should be applied in order to avoid a mismatch between allocations per CWM and GRA. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		Further details of these variances are presented in Appendix 10. In addition, our procedures indicated that the statutory deduction rate of 12.5% allocated in the CWM is applied after payments to Level A IPPs (Tier 1) are made. However, the Ghana Revenue Authority (GRA) computes the applicable levies on the gross amounts. This results in a mismatch of what GRA expects ECG to remit as statutory payments and the CWM allocation.	
6.	Gaps in Estimation Methodologies for Estimating Nonpurchase Prepaid Sales and Prepayment Recoveries	We observed that management relies on estimation methods to determine monthly nonpurchase prepaid sales and prepayment recoveries within the period under consideration. Specifically, for prepayment recoveries, ECG estimated values for the months of March to June 2025 using a moving average approach based on actual figures recorded in January and February 2025. During the course of our fieldwork in October and November 2025, ECG did not provide us with a documented procedures or formal guidelines guiding estimation methodologies. Subsequent to the completion of fieldwork, ECG shared a Standard Operating Procedure (SOP) document which was approved on 18th March 2026. A review of the SOP revealed that it was not comprehensive enough to cover basis, rationale, and steps involved in generating these estimates. There were also inconsistencies between the guidance in the SOP and how the estimates are actually carried out.	ECG should take steps to update the SOPs to make it more rigors to coming up with the estimates. In addition to what is included in the SOP, the SOPs should cover: • The scope of systems to be included (Commercial billing systems and relevant third-party systems). • Escalation and Exception Management. • Specific factors used in the estimation (Confidence levels). ***Refer to Appendix 21 for ECG's response to the matter raised.***

<table>
<tr><th>No.</th><th>Key Finding</th><th>Details of findings</th><th>Conclusion/Recommendation</th></tr>
<tr><td></td><td></td><td>For the period January to June 2025, the estimated nonpurchase prepaid sales totalled GHS1.08 billion, while prepayment recoveries amounted to GHS72.62 million according to the sales data provide.</td><td></td></tr>
<tr><td>7.</td><td>Inadequate Standard Operating Procedures for Estimating Postpaid Sales / Billing Figures</td><td>We observed that management relies on estimation methods to determine monthly post-paid sales and billing figures for the period under review. These estimated billing figures are reported internally and externally. Although the Zeus system has been used to generate monthly bills for post-paid customers since April 2025, the billing data from the system is not officially used in the reporting process, as the system is still being fine-tuned and the figures generated may not be reliable.

During the course of our fieldwork in October and November 2025, ECG did not provide us with a documented procedures or formal guidelines guiding estimation methodologies. Subsequent to the completion of fieldwork, ECG shared a Standard Operating Procedure (SOP) document which was approved on 18th March 2026.

A review of the SOP revealed that it was not comprehensive enough to cover basis, rationale, formula and steps involved in generating these estimates. There were also inconsistencies between the guidance in the SOP and how the estimates are actually carried out.

For example, the methodology applied is inconsistent, as a 7-year period was used to calculate the actual Customer Active Growth Rate (CAGR) rate instead of the stated 5 years in the SOP.</td><td>ECG should take steps to update the SOPs to make it more rigors to coming up with the estimates. In addition to what is included in the SOP, the SOPs should cover:

A. Estimation Factors.

• The number of years used for historical sales analysis.
• CAGR is neither defined nor presented.
• CAGR estimation period in the SOP should be consistent with the actual computation.
• A clear definition of customer population dynamics.

B. Process.

• A clear method for calculating baseline sales.
• A clearly defined approach for adjusting customer population changes.</td></tr>
</table>

No.	Key Finding	Details of findings	Conclusion/Recommendation
		According to the sales data provided, total postpaid sales/billing for the period January to June 2025 amounted to GHS6.52 billion. Given the significance of this amount, the absence of standardised documentation increases the risk of inconsistencies and errors in the estimation process.	A clear definition for the methodology of deriving seasonal coefficients. ***Refer to Appendix 21 for ECG's response to the matter raised.***
8.	Variance between MMS Billing Data and Power BI Reporting Data	In the course of our work, we obtained the detailed MMS billing source data for the period January to June 2025. We compared the units consumed (GWh) and the number of MMS prepaid customers in the source data against the aggregated MMS billing information used in the Power BI dashboard for reporting. Our analysis showed that while the MMS billing source data reported total units consumed of 1,401 GWh, the Power BI reporting data reflected 1,325 GWh for the same period. This resulted in an unexplained variance of 76 GWh. These inconsistencies indicate that the data used for reporting does not fully align with the underlying system of record. See Appendix 2 for details.	ECG should ensure that there is a reconciliation process conducted each time MMS billing data is spooled. The reconciliation should be performed between the MMS source billing data spooled by the IT Team and MMS billing data received by MIS team on Power BI. ***Refer to Appendix 21 for ECG's response to the matter raised.***
9.	MMS and non-MMS systems versus sales data analysis	We obtained the detailed monthly prepaid billings for MMS and non-MMS systems for the period January to June 2025. We compared our analysis to the sales data to confirm whether the total MMS and non-MMS billings are consistent with the total billings reported in the sales data. For the total charge, whilst the MMS and non-MMS Systems showed total billing to be GHS 3.278 billion, the sales data	ECG should implement a data freeze for all pre-paid data. This will ensure that historical data remains unchanged and enables ECG to accurately agree the data in the prepayment platforms to the reports generated for management and stakeholders. Additionally, ECG should establish and

No.	Key Finding	Details of findings	Conclusion/Recommendation
		showed total billings as GHS 3.277 billion. This resulted in a difference of GHS 0.59 million for the period under review. Based on our work and discussions with ECG, the variances noted were as a result of data from some of the prepayment platforms not being frozen at period ends. The platforms are live platforms where entries made after period end get updated and reflected in preceding periods. This issue stems from some prepaid meters on field not communicating back with ECG system servers as and when consumption happens leading to a data lag. See Appendix 3A and 3B for details.	implement a defined threshold for acceptable variances between meter readings received on their servers at the end of each period and the subsequent spool of that data at later dates. This will facilitate consistent detection and investigation of significant discrepancies, thereby enhancing the accuracy and reliability of metering and billing information. ***Refer to Appendix 21 for ECG's response to the matter raised.***
10.	Delay in the application of VAT and Levies to an Exempt Industrial Customer	Industrial customers granted exemptions by the GRA are not required to pay VAT, GETFund Levy, or NHIL as part of their monthly electricity bills. As part of our review of billing accuracy across customer categories, we selected a sample of postpaid bills for Quarter 2 of 2025. During the review, we noted that one Free Zone entity, classified as industrial and subject to a Power Factor Surcharge, was incorrectly billed VAT, GETFund, and NHIL totalling GHS 258,578.92 in May 2025. This occurred despite ECG having received the customer's GRA exemption letter in February 2025, confirming the customer's eligibility for VAT and levy exemption. In the subsequent bill for June 2025, the VAT and levies were no longer charged, indicating that the exemption was eventually applied. However, ECG informed us that the VAT and levies charged in May 2025 were to be refunded through subsequent bills.	ECG should strengthen controls around the implementation of tax and levy exemptions for industrial customers by ensuring all GRA exemption letters are immediately captured in the billing system to prevent erroneous charges. ECG should also implement automated validation checks by configuring the billing platform to flag or prevent the application of VAT, GETFund, and NHIL on exempt customer categories. A formal tracking mechanism including periodic reconciliations should be implemented to ensure all overcharges are refunded promptly and any inconsistencies detected and corrected early.

No.	Key Finding	Details of findings	Conclusion/Recommendation
		As of 17 March 2026, no evidence of the refund had been provided for verification. See Appendix 7B for details.	***Refer to Appendix 21 for ECG's response to the matter raised.***
11.	Absence of Data Ownership Clauses in ECG-Polymorph Contract and Lack of Contractual Documentation for Beacon Services (Adora)	Our review of the ECG–Polymorph (Zeus) contract indicates that it lacks a clear provision on data ownership. As a result, it is not evident whether ECG or Polymorph holds ownership rights over the data. This ambiguity poses a material risk of disputes regarding data control, use, and intellectual property rights, with potential operational and legal implications. ECG also confirmed that no formal contract exists with Beacon Services (Adora). Instead, a proof-of-concept agreement was signed by a Hubtel-led consortium that included Adora and Polymorph, which ECG has not yet provided to PwC. The absence of formal agreements with these third-party vendors increases the risk of data loss during system transitions. This risk materialised during the review period, when Adora was phased out and replaced by Zeus, and ECG was unable to access hosted Adora data needed for postpaid billing.	ECG should engage with the vendor to ensure that contractual terms clearly state that all customer data is owned and hosted by ECG. ECG should also ensure they have a valid contract with all vendors. This will ensure that ECG retains full access and control over customer data enabling a smooth transition and continued operations in the event of a vendor change or contract termination. ***Refer to Appendix 21 for ECG's response to the matter raised.***
12.	Mixing of Tariff Revenue Collections With Operational Expenditures	As part of our work on tariff revenue flows, we assessed the bank accounts used for the collection and transfer of revenue during the period. Our examination revealed that one revenue account (ending 2768) was used to both receive tariff revenue and settle operational expenses. During the January to June 2025 period, the account:	ECG should strictly segregate revenue accounts from operational expense accounts and prohibit the use of revenue accounts for operational expenditures, as this practice could result in the understatement of revenues declared to CWM due to the spending of some revenue before transferring the remainder to the single collection account.

No.	Key Finding	Details of findings	Conclusion/Recommendation
		• Received GHS 100 million in tariff revenue from TextGenesys and additional revenue of GHS 17,345,801, primarily from Ghana Airports Company Ltd. • Incurred operational expenditures amounting to GHS 20,767,196. • Transferred GHS 80 million to the designated single collection account. Using the same account for dual purposes i.e. operational payments and revenue collection, compromises the integrity of revenue reporting and obscures the transparency of tariff revenue flows. This practice also increases the risk of misallocation, unauthorised use of collections, and incomplete reconciliation.	***Refer to Appendix 21 for ECG's response to the matter raised.***
13.	Inconsistent Sweeping of Tariff Revenue to the Single Collection Account	As part of our assessment of ECG's revenue management processes, we examined the flow of tariff revenue from customer payments into designated accounts. The Terms of Reference require that all tariff revenue be deposited into and fully swept from operational or intermediary revenue accounts into the single collection account to ensure completeness, traceability, and transparency. We noted that tariff revenue was being deposited into and retained within operational accounts, contrary to established procedures. Instead of being swept promptly into the single collection account, portions of the revenue remained in the operational accounts for extended periods. Further analysis showed that: • Two operational accounts (ending 8316 and 2950) swept approximately GHS 1.2 million into the head office operational account instead of transferring these funds to	ECG should correct and standardise the sweeping process to ensure that all tariff revenue is fully and consistently transferred into the single collection account. Management, should furthermore strengthen controls over revenue sweeping, identify and disclose all accounts that receive tariff revenue and implement monitoring mechanisms, facilitating completeness and integrity across all accounts. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		the single collection account during the reporting period, January to June 2025. • As a result, the tariff revenue was not captured through the prescribed collection pathway. ECG explained that transfers from revenue bank accounts to the Single Collection Account are automatically configured by GCB Bank. Furthermore, ECG indicated that they will draw the bank's attention to the issue to ensure that it is rectified, and that funds are directed to the Single Collection Account instead of Account 1277.	
14.	No allocation made for bank charges under the CWM Framework	Under the Cash Waterfall Mechanism (CWM), an allocation is required to be made and transfers effected on all revenue collected in accordance with the approved disbursement schedule. As part of this process, payments to some Independent Power Producers (IPPs) are made through the Bank of Ghana (BoG). ECG therefore transfers the amounts allocated by the CWM to BoG for subsequent disbursement to the IPPs. From our review we noted that this arrangement results in underpayment due to the bank transfer fees charged by BOG. Our analysis noted that: • Payments made by ECG in some instances exceed the CWM allocated amounts by 0.75%, reflecting the bank charges incurred when transferring funds to BoG. • We identified bank charges totalling GHS 2,896,697 on some transactions.	ECG should strictly align disbursements with CWM-stated figures unless deviations are pre-approved. The CWM guidelines should be made clear on who bears the cost of these charges or gross up the amount payable to IPPs to include the charges. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		• Where ECG does not absorb these charges, they effectively reduced the amounts ultimately reaching the IPPs, resulting in underpayments relative to the expected disbursements under the CWM. This issue indicates a structural misalignment between the CWM allocation process and the practical costs associated with executing the transfers, which compromises the accuracy of disbursements.	
15.	Electricity distribution losses between energy delivered and energy sold	While validating the energy delivered to ECG as per IPPs invoices against the energy sold as per the Sales and Levies Report for the period January to June 2025, we identified variances of 2.374GWh representing a 25.62% loss. Refer to Appendix 14 for details.	ECG should put in place measures to ensure energy losses are reduced. ***Refer to Appendix 21 for ECG's response to the matter raised.***
16.	Overstatement of Receivables Balance Due to Use of Estimated Sales Data in Trial Balance	We independently recomputed the receivables position of ECG as at June 2025 using the underlying sales and collection data. Our re-computation identified a variance of GHS260,040,687, indicating an overstatement in the receivables amount reported in ECG's trial balance. During subsequent discussions with management, ECG explained that the sales data used to prepare the trial balance at June 2025 contained estimated figures, as final sales data had not yet been fully validated. The finalisation of the sales data occurred in September 2025, which resulted in the variance observed between the recomputed receivables and the amount reported in the June 2025 trial balance.	ECG should perform receivables reconciliation on a monthly basis to ensure that variances are addressed on a timely basis. ***Refer to Appendix 21 for ECG's response to the matter raised.***

No.	Key Finding	Details of findings	Conclusion/Recommendation
		Further details supporting this finding are provided in Appendix 15.	

4.5 Disbursement and Cash Collection Analysis

4.5.1 Introduction

The analysis in this section of our report was based on our identification, review and analysis of the relevant bank accounts used by ECG in its operations (including for revenue collections and disbursements) during the review period.

4.5.2 Our analysis and findings

Total Revenue Validation Analysis

For the period between January to June 2025, ECG reported a revenue of GHS 7.87 billion per the CWM. However, based on information from the single collection account (SCA) analysed, we calculated a total revenue of GHS 8.51 billion resulting in a GHS 0.64 billion discrepancy between the figures reported from our analysis and those reported by ECG in the CWM.

ECG asserted that, the discrepancies between the CWM and the revenue report are primarily due to differences in the reporting periods used by ECG and PURC. ECG reports revenue on a standard calendar-month basis (1st to 31st), while the CWM reflects a non-standard cycle, typically from the 27th of one month to the 27th of the next month. Additionally, when the 27th falls on a weekend or public holiday, reporting is shifted to the next working day, creating further variation in the reported figures.

Table 6: Comparative Analysis of Single Collection Account (SCA) vs CWM Total Collections vs Revenue Report (in GHS)

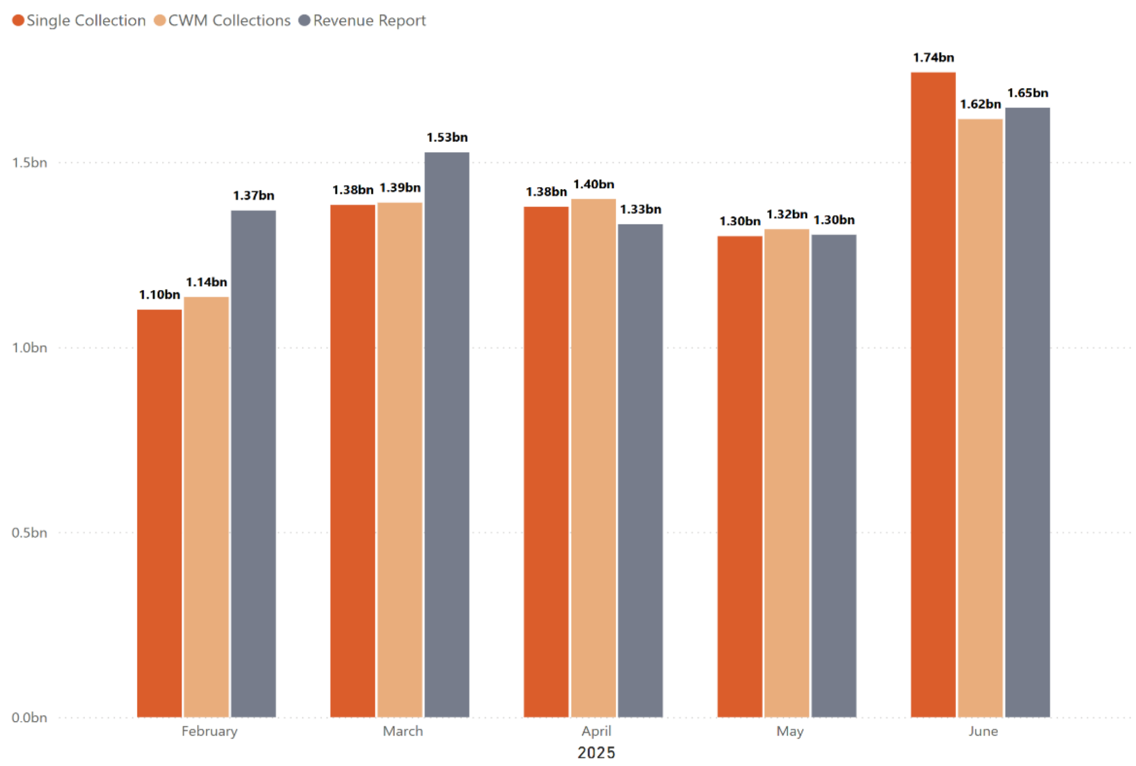
Month	Single Collection Account GHS	CWM Total Collections GHS	Revenue Report GHS
January	1,353,019,331.54 **	1,005,200,000.00	1,570,592,562.13
February	1,421,959,256.30 *	1,135,702,316.89	1,369,253,459.19
March	1,384,432,402.50	1,390,673,790.70	1,526,311,741.19
April	1,379,435,542.67	1,400,217,026.80	1,332,573,152.71
May	1,229,754,418.90	1,318,670,618.83	1,304,184,572.42
June	1,742,760,073.09	1,616,477,032.29	1,646,991,064.78
TOTAL	**8,511,361,025.00**	**7,866,940,785.51**	**8,749,906,552.41**
Difference between SCA and CWM		644,420,239.49	

**In January, the numbers reported were from the various bank accounts that constituted the single collection account as was the previous practice.

*Up until mid February 2025, revenue reported as single collection was constituted by the various bank accounts that constituted the single collection account and the currently adopted GCB single collection account.

A graph visualising the comparative revenue figures for the single collection account implemented mid-February 2025, the CWM collections and the revenue report is provided as follows.

Figure 6: Comparative revenue figures (in GHS) for single collection account, CWM and revenue report

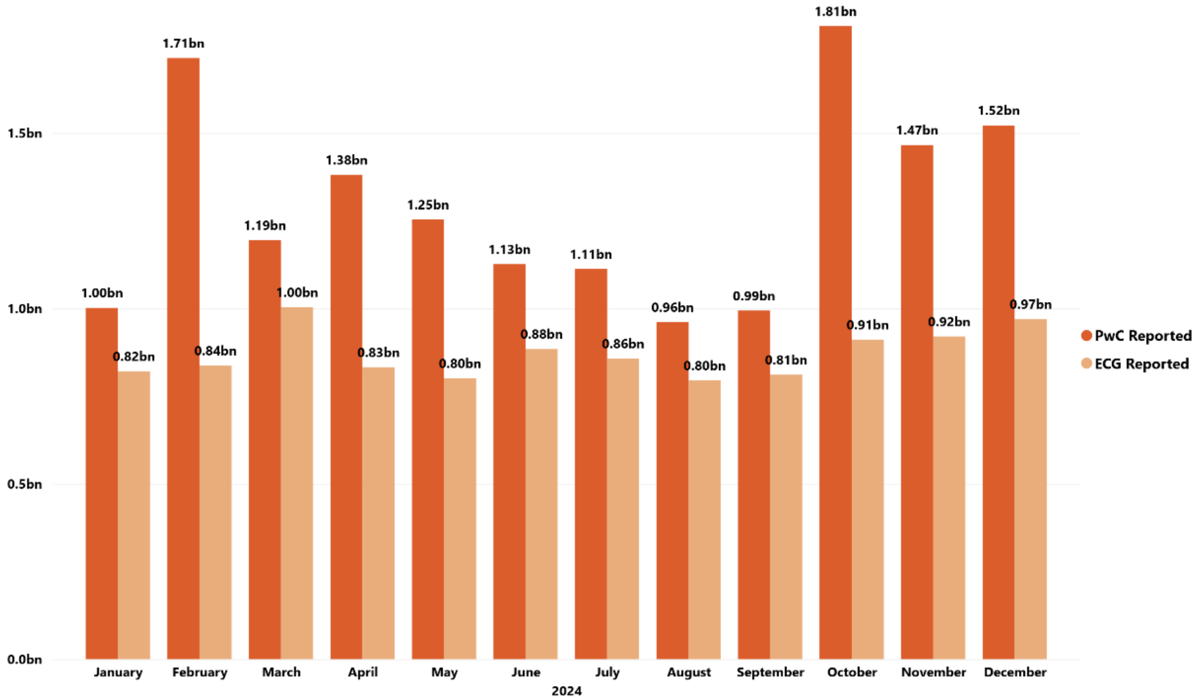


Compared to the previous review period for the year 2024, ECG reported significantly higher collections for the first half of 2025. The amounts declared by ECG for the period January to June 2025 are largely consistent with both the revenues reported and collections observed in the bank statements for the same period. This consistency suggests that the implementation of a single collection account has improved the accuracy of reported figures, providing a more reliable representation of the actual revenues collected.

As illustrated in Figure 7, the maximum variance between the collections PwC reported and those declared by ECG in the prior period (2024) was approximately

GHS 900 million, with an average discrepancy of GHS 423 million. In contrast, when the single collection account was implemented, the largest discrepancies observed when comparing bank statement collections to the CWM collections declarations were less than GHS 300 million. The average discrepancy for this period was GHS 42 million.

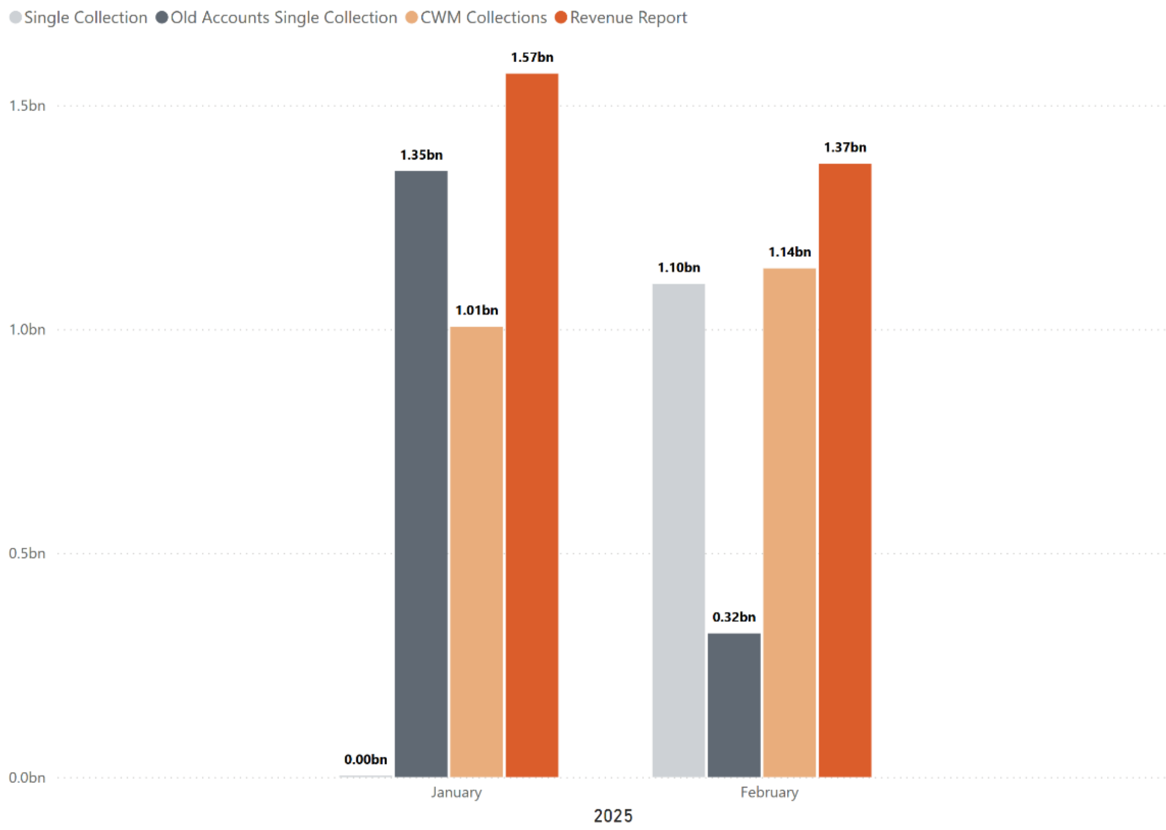
Figure 7: PwC reported collections from bank statements (in GHS) vs ECG reported collections (in GHS)



Note: PwC reported collections are based on our analysis of the relevant ECG revenue collection bank statements

Figure 8 breaks down collections during the months when multiple accounts were still receiving payments as the “single collections account”. It shows that in January, the newly implemented single collections account received no collections. In February, however, collections consisted of payments from both the new single collections account and the multiple accounts that previously comprised what is now referred to as the “single collections account.”

Figure 8: Collections and Revenue Performance Overview (in GHS)



As previously noted, the implementation of the single collection account significantly reduced discrepancies. The January bank statements reflect the largest discrepancy (approximately GHS 348 million) observed during this reporting period between the single collection revenues and the CWM collections. Additionally, February (GHS 1.42 billion)-which includes collections from both the accounts that formerly comprised the single collection system and the newly implemented single collection account-exhibited the second largest discrepancy (approximately GHS 286 million) between the amounts recorded in the bank statements and the CWM collections.

Identification of accounts into which customer cash collections are transferred

As part of our review, we assessed the accounts designated for revenue collection by reconciling the 99 accounts identified in the previous exercise with the accounts received for the 2025 Q1 and Q2 period.

Our analysis confirms that GCB Bank serves as the primary institution for revenue collection, with all customer deposits being routed into a single collection account. In addition, we identified 10 regional revenue accounts that are actively used for revenue mobilisation and routed to the designated single collection account.

Out of the original 99 accounts, a number of them were designated as revenue collection accounts, while the remaining accounts appear dormant based on the absence of statements or transactional activity during this review period.

We conducted a review of all bank statements provided to identify ECG's cash collection points. Each account that received tariff revenues was examined and verified accordingly. Operational accounts that did not receive revenue were excluded from this assessment, as they do not serve as collections points.

Verification of the Completeness of Transfers from Collection Points to Single Collection Account

Each identified cash collection point/regional revenue account was reviewed to verify that revenues were swept daily into the single collection account. The assessment revealed that most revenue accounts transferred the majority of their balances on a daily basis, leaving only minimal residual amounts to cater for bank charges and transfer charges. A limited number of accounts completed full sweeps on certain days. Overall, despite occasional partial sweeps, the entirety of revenue was eventually consolidated into the single collection account within the period under review.

Evaluation of Inflows into Operational Accounts to Establish the Legitimacy and Source of Revenues

ECG shared with us, 15 regional operations accounts. These accounts are funded by the head operations account in accordance with the cash-waterfall model. The regional operations accounts did not receive any tariff revenue during the period under review. Inflows included staff loan refunds and cash deposits from the sale of obsolete materials; these are acceptable as they constitute non-tariff revenues. The head operational account operates in overdraft and is occasionally funded by the single collection account with ECG's allocation from the CWM.

Examination of Disbursements from Revenue and Collection Accounts to Confirm Proper Allocation to Beneficiaries

Disbursements made to the IPPs were in accordance with the CWM and paid generally, in a timely manner. The only discrepancies noted came from the disbursements to IPPs paid through Bank of Ghana (BoG). These payments are made in foreign currency and come with charges. BoG sends a lower amount to the IPPs despite ECG transferring the designated CWM amount due to charges and foreign exchange rate differentials.

Confirmation of the Accuracy and Completeness of Weekly Non-Tariff Revenue Declarations

Non-tariff revenues were provided as part of a revenue report that presented amounts collected on a monthly basis. The total revenue reflected in the bank statement during the review period was lower than the average monthly non-tariff revenue reported, raising concerns about the completeness and reliability of the reported non-tariff revenue figures.

Assessment of ECG's Compliance with the Ministry of Finance Directive on the Use of a Single Collection Account (Effective 1 July 2023)

The single collection account was implemented in mid-February 2025, at which point ECG began consolidating all tariff revenues into a single GCB account. Prior to this change, ECG operated multiple revenue accounts that swept funds into 14 separate collection accounts, which collectively functioned as the single collection account. The revenue accounts discontinued sweeping funds to these previous collection accounts mid-February 2025.

Conclusion and Next Steps

5. Conclusion and Next Steps

5.1 Introduction

This section summarises our responses to recommendations from previous reviews, sets out our current recommendations, and outlines the key next steps to address identified issues and support ongoing improvement.

5.2 Responses to our recommendations from our last two reviews (2023 and 2024)

In this section of our report, we have set out the responses from ECG on the implementation of our recommendations from the last two reviews. As highlighted in our inception report for this project, the responses are based on a workshop held with ECG's Management Team on 7 October 2025. Following our review, we have included comments highlighted as updates on our observations on their responses. See Appendix 16 for details.

5.3 Our Recommendations for the Q1 and Q2 2025

Based on our analysis of the data and information that was made available to us by ECG within the relevant scope of work set out in the Terms of Reference for the January to June 2025 review period, we have identified the following key recommendations for the attention of ECG, Ministry of Energy, PURC and other relevant stakeholders.

The key recommendations for this assessment include the following:

5.3.1 Data Estimates and Documentation

ECG should ensure that all estimates, including monthly non-purchase prepaid sales, prepayment recoveries, and post-paid sales figures, are supported by verifiable data and accompanied by appropriate documentation that details the methodology used in deriving these estimates.

Additionally, ECG should establish clearly defined thresholds for acceptable variances between meter readings received at the end of each period and subsequent data spools, to facilitate the consistent detection and investigation of discrepancies. The development of an Application Programming Interface (API) should be expedited to enable direct access to postpaid billing data for accurate billing and reporting.

5.3.2 Systems Data freeze

To preserve historical data integrity, ECG should implement a data freeze for all prepaid data, which will allow accurate reconciliation of prepayment platform data with management reports. Periodic reconciliations of MMS billing data should be performed between the source data spooled by the IT Team and the data received by the MIS Team in Power BI, while monthly receivables reconciliations should also be conducted to ensure that any variances are promptly addressed.

5.3.3 Billing and Tariff Compliance

ECG should ensure that Industrial Freezone customers are refunded the taxes and levies (VAT, NHIL and GETFund) that have been previously charged when they receive the exemption letter from GRA. This would ensure that customers are not overcharged unduly.

5.3.4 Timelines for Payments to IPPs

ECG should collaborate closely with the Ministry of Energy, the CWM Committee, and PURC to establish clear timelines for payments to Independent Power Producers (IPPs) and determine provisions for unavoidable transactional charges, thereby supporting consistent compliance with sector guidelines.

5.3.5 Customer Data Management and Vendor Oversight

ECG must ensure that all customer data is fully owned by the company, with contractual agreements clearly reflecting this arrangement. Valid contracts should be maintained with all vendors to guarantee uninterrupted access and control over customer data in the event of a vendor change.

In addition, ECG should maintain comprehensive backups of all customer billing data to support operational continuity and enable smooth transitions should vendor contracts terminate. These measures will safeguard data integrity and ensure that operations can continue without disruption.

5.3.6 Revenue and Cash Management

ECG should maintain a complete and verified list of all operational and customer cash collection accounts, including written confirmation of closure for any accounts designated as inactive / closed, either through formal instruction from ECG to the bank or written confirmation from the bank that the account has been closed.

Disbursements should be strictly aligned with CWM-stated figures, except where deviations are formally approved, and revenue accounts should be strictly segregated from operational expense accounts.

Sweeping processes should be corrected, with full disclosure of all accounts receiving tariff revenue, to ensure the integrity of cash flow management.

5.3.7 Key recommendations on CWM directives and operations

We have made some key observations during our review of the CWM models and the CWM directives that we received from ECG and PURC over this review period. Kindly refer to Section 2.4 for details on these recommendations.

5.4 Our Next Steps

5.4.1 Our Immediate Next Steps

Our immediate next steps following the submission this report is to engage the Ministry of Energy, PURC and the relevant stakeholders to discuss the key findings from our assessment to inform the relevant action points to be taken forward.

We will also look forward to discussing our recommendations for this review as ECG, PURC, GESRP and the other stakeholders take steps to implement them.

We emphasise that the issues raised so far are critical to help improve the transparency and strengthen the confidence of stakeholders in the use and objectives of the CWM.

We would like to extend our appreciation to ECG for their willingness to share information/data and offer clarifications as and when required. There was a significant improvement and buy in from ECG towards the activities of this exercise compared to previous reviews. However, there were some delays and approvals that did not make all the data/information available in good time.

Appendices

Appendices

Appendix 1: Quarterly Tariff Rates

2024 Quarter 3 Tariff Rates

Tariff Category: EUT	Unit	Effective 1st October 2024 to 2nd May 2025
Residential		
0-30 (Lifeline, Exclusive)	GHp/kWh	67.6495
Service Charge: Lifeline	GHp/month	213.0000
0-300	GHp/kWh	153.2683
301+	GHp/kWh	202.5190
Service Charge: Other Residential Consumers	GHp/month	1073.0886
Non-Residential		
0-300	GHp/kWh	138.3771
301-600	GHp/kWh	171.9695
Service Charge	GHp/month	1242.8245
SLT-LV		
Energy Charge	GHp/kWh	206.5170
Service Charge	GHp/Month	50000.00
SLT-MV / HV		
Energy charge	GHp/kWh	164.8471
Service Charge	GHp/Month	50000.00
SLT-MV2		
Energy Charge	GHp/kWh	107.5529
Service Charge	GHp/Month	50000.00
SLT-HV MINES		
Energy Charge	GHp/kWh	432.1817
Service Charge	GHp/month	50000.00

NB: There was no tariff change from Quarter 3 of 2024 till Quarter 2 of 2025.

2025 Quarter 2 Tariff Rates

Tariff Category: EUT	Unit	Effective 3rd May,2025 to 30th June,2025
Residential		
0-30 (Lifeline, Exclusive)	GHp/kWh	77.6274
Service Charge: Lifeline	GHp/month	213.0000
0-300	GHp/kWh	175.8743
301+	GHp/kWh	232.3892
Service Charge: Other Residential Consumers	GHp/month	1073.0886
Non-Residential		
0-300	GHp/kWh	158.7868
301-600	GHp/kWh	197.3338
Service Charge	GHp/month	1242.8245
SLT-LV		
Energy Charge	GHp/kWh	236.9769
Service Charge	GHp/Month	50000.00
SLT-MV / HV		
Energy charge	GHp/kWh	189.1609
Service Charge	GHp/Month	50000.00
SLT-MV2		
Energy Charge	GHp/kWh	123.4162
Service Charge	GHp/Month	50000.00
SLT-HV MINES		
Energy Charge	GHp/kWh	495.9255
Service Charge	GHp/month	50000.00

Appendix 2: MMS Source Data Analysis compared with Power BI Reporting Data

Units Consumed (kWh)

Month	GWh from Detailed Source Data (A)	GWh from Aggregated Power BI Dashboard Data (B)	Variance C=B-A
January	308.82	242.43	(66.39)
February	157.29	155.45	(1.84)
March	193.96	191.66	(2.30)
April	270.80	268.90	(1.90)
May	223.18	221.45	(1.73)
June	247.62	245.40	(2.23)
Total	**1,401.67**	**1,325.29**	**76.38**

Appendix 3A: Prepayment Billing Data Recomputation – Total Charge (GHS)

Month	PwC Computed [A]	ECG Computed [B]	Variance C= B - A
January	490,283,807.03	491,872,351.91	1,588,544.88
February	467,077,165.08	463,899,619.63	(3,177,545.45)
March	533,992,407.83	534,921,473.76	929,065.93
April	520,802,364.73	520,802,136.16	(228.57)
May	660,234,986.27	660,268,583.93	33,597.66
June	606,066,160.26	606,100,017.33	33,857.07
TOTAL	**3,278,456,891.20**	**3,277,864,182.72**	**(592,708.48)**

Appendix 3B: Prepayment Billing Data Recomputation – Units (GWh)

Month	PwC Computed [A]	ECG Computed [B]	Variance C= B - A
January	324.00	324.38	0.38
February	305.00	302.41	(2.59)
March	339.00	335.97	(3.03)
April	339.00	340.06	1.06
May	362.00	361.68	(0.32)
June	340.00	345.91	5.91
TOTAL	**2,009.00**	**2,010.41**	**1.41**

Appendix 4A: Prepayment Charges

Total MMS (GHS)	2,175,532,205.49
Total non-MMS (GHS)	1,102,924,685.70
Total Charges (GHS)	3,278,456,891.19
Percentage of MMS	66%
Percentage of non-MMS	34%

Note:

- From our analysis, MMS covers the bulk of the prepayment charges.
- The 34% of total charge representing non-MMS charges remains unaccounted for

Appendix 4B: Prepayment Units Supplied

Total MMS (GWh)	1,104.68
Total non-MMS (GWh)	903.94
Total Units Supplied (GWh)	2,008.62
Percentage of MMS	55.00%
Percentage of non-MMS	45.00%

Note:

- From our analysis, MMS covers the bulk of the units consumed.
- The 45% of units consumed representing non-MMS units remains unaccounted for

Appendix 5: Prepaid PowerApp Deposits Re-Computation (GHS)

Month	PwC Computed	ECG Computed	Variance
January	348,193,148.50	348,193,148.50	-
February	313,217,811.19	313,217,811.19	-
March	342,012,100.23	342,012,100.23	-
April	320,475,505.82	320,475,505.82	-
May	324,013,463.38	324,013,463.38	-
June	277,371,156.59	277,371,156.59	-

Appendix 6: Prepaid Vending Deposits Re-Computation (GHS)

Month	PwC Computed	ECG Computed	Variance
January	293,439,742.08	293,439,742.08	-
February	288,625,672.99	288,625,672.99	-
March	337,615,115.04	337,615,115.04	-
April	328,514,857.83	328,514,857.83	-
May	357,928,173.50	357,928,173.50	-
June	308,164,056.70	308,164,056.70	-

Appendix 7A: Freezone Customer Bill Re-Computation

Period	Monthly Consumption (kWh)	Fixed Rate (GHS)	Energy Charge (GHS)	Number of Days in Month	Service Charge Rate (GHS)	Service Charge (GHS)	Government Levy (GHS)	Street Lighting (GHS)	PwC Recomputed Total Bill (GHS)	ECG Bills	Variance
	A	**B**	**C = A*B**	**D**	**E**	**F = D*E**	**G = 0.02*C**	**H = 0.03*C**	**I = C+F+G+H**		
Jun-25	19,275.00	1.8916	36,460.59	30.00	16.4384	493.15	729.21	1,093.82	38,776.77	46,167.15	(7,390.38)

The variance noted is a result of VAT, GET Fund and NHIL levies included in customer bills

Appendix 7B: Freezone with Power Factor Surcharge Customer Bill Re-computation

Period	Monthly Consumption (kWh)	Number of Days in the Month	Fixed Rate (GHS)	Energy Charge (GHS)	Service Charge Rate (GHS)	Service Charge (GHS)	Government Levy (GHS)	Street Lighting (GHS)	PwC Recomputed Total Bill (GHS)	ECG Bills (GHS)	Variance (GHS)
	A	**B**	**C**	**D = A*C**	**E**	**F=B*E**	**G=0.02*D**	**H = 0.03*D**	**M = D+F+G+H+L**		
01/03/2025-30/04/2025	494,819	61	1.6485	815,709.1215	16.4384	1,002.74	16,314.18	24,471.27	857,497.32		
01/05/2025-31/05/2025	251,466	31	1.8916	475,673.0856	16.4384	509.59	9,513.46	14,270.19	499,966.33		
Total									1,367,123.22	1,625,693.06	258,569.84

Power Factor	Maximum Demand(kVA)	Power Factor Surcharge(kVA)	Power Factor Surcharge Rate	Power Factor Surcharge Amount (GHS)
I	**J**	**K = (1-(I/0.9))*J**	**N**	**L = K*N**
0.77	1121	161.9222222	59.6556	9,659.56732

Government Levy is 2% of the energy charge
Street Lighting is 3% of the energy charge
The variance noted is a result of VAT, GET Fund and NHIL levies included in customer bills.

Appendix 8: Cybersecurity and Data Protection Recommendations

Based on our understanding of the cybersecurity incident and the contractual agreement between ECG and Hubtel Limited for business improvement, we have identified three (3) main areas for consideration:

Disaster Recovery

ECG should prioritise adopting disaster recovery (DR) system as extensively as possible. This will involve developing the necessary framework and processes to prepare for the recovery of critical applications, systems, and infrastructure after a disaster or outage.

IT systems at ECG can go offline unexpectedly due to unforeseen events or circumstances, such as natural events, power outages, cyber-attacks and security issues. From our interactions with management, we noted that there were no backups taken to recover the data which was lost during the period of the cyber incident.

This inadvertently affected ECG's ability to bill its customers using the CMS application and had to resort to estimated billing to continue operations. This further validates the need for a comprehensively documented disaster recovery and business continuity policy which should be put in place to protect data loss as well as facilitate the recovery of sensitive data and critical systems.

Management of ECG should develop a comprehensive DR plan which captures mission critical or critical applications and related infrastructure with their acceptable required recovery timelines to avoid future significant business disruption. The DR plan needs to be reviewed on a frequent basis to make sure its current with all the applications and infrastructure in the environment including their respective requirements (Recovery Time Objective (RTO) and Recovery Point Objective (RPO)).

Application and data recovery at a minimum need to be tested on an annual basis and documentation put in place to ensure preparation and response to events that threaten to impact critical IT services.

Cyber Defence

ECG suffered a cyber-attack which resulted in the disruption of its activities. From our discussion with management, the root cause of the cyber-attack has still not been determined, whether the attack was internal or external. A forensic investigation should be undertaken to find the root cause and provide the necessary recommendation to improve the IT environment and systems.

Considering ECG's size, coupled with the sensitive data and critical infrastructure it handles, it is advisable for the establishment of a robust cyber defence, with capabilities that cover all functions, including threat Intelligence, threat hunting, incident response and controls validation to ensure a timely incident response and a base level security to protect assets. The Cyber Defence program should have the ability to prevent cyber-attacks from infecting a computer system or network. The program needs to put in place processes and practices that will defend the network, its data, and nodes from unauthorised access or manipulation by implementing protective procedures such as: firewalls, network detection and response, endpoint detection and response to identify, analyse, and report incidents that occur within a network. As the threat landscape continues to increase, cyber defence strategy and tactics adopted should have a common goal, which is to prevent, avoid disruption and respond to cyber threats.

An appropriately documented and approved incident response plan needs to accompany the cyber defence program which can respond to threats. When Incident response capabilities are not established, this leads to an inability to respond as needed causing inappropriate access and exploitation of confidential and sensitive data. There needs to be a well-defined process to assign a level of importance or urgency to incidents which helps in the remediation of issues in a timely manner. The contract Service Level Agreement (SLA) between ECG and Hubtel needs to describe specific definitions of incidents (data breaches, security violations) and events (suspicious activities), the actions to be initiated by and the responsibilities of both parties. A well-defined process needs to exist to assign a level of importance or urgency to incidents, which determines the order in which they will be investigated to promote the timely remediation of issues.

ECG needs to carry out periodic incident response exercises such as tabletop and threat hunting. Cybersecurity awareness and training should be carried out periodically with employees not just IT staff to help ward off threats especially social engineering. Physical security measures need to be put in place to restrict unauthorised access to sensitive and confidential areas especially the server room.

Third Party Solutions

IT Third party management needs to be adopted by ECG to monitor and assess the risk posed by third parties who provide services to their organisation. This allows for performing a comprehensive third-party risk assessment that will help the organisation in making risk-informed decisions. Additionally, this will provide ECG a holistic view of their third-party risk and as to whether adequate controls have been implemented to mitigate or reduce those risks. For effective IT third party management, ECG needs to have a centrally governed, collaborative, and technology-enabled solution to holistically assess the risks impacted by the organisation's interactions with third parties.

With ECG's service/third party arrangement with Hubtel, it brings onboard a new risk which needs to be clearly identified and documented as part of the risk assessment process. Due to the nature and infrastructure that Hubtel provides to augment ECG's business process and activities, Hubtel has their application solution serving as a hot replacement for ECG's billing and collection processes. Management of ECG should perform adequate due diligence and a cyber risk assessment on Hubtel to obtain assurance that the vendor has considered and implemented fundamental cybersecurity best practices.

Inadequate scanning for security vulnerabilities or protecting the IT environment may lead to a breach of ECG or Hubtel's network, resulting in unauthorised data access or disruption to services rendered. There is a need to put in place adequate controls and procedures to prevent this. ECG needs to scan for vulnerabilities on a periodic basis across all relevant IT Assets including systems being managed and provided by Hubtel. The scan for vulnerabilities needs to include scanning of: Network Device Vulnerabilities, System Vulnerabilities, Server Vulnerabilities, especially API endpoints, gateways and unused ports.

Due to the three areas of consideration mentioned, we recommend that Management of ECG contract the services of a consultant to assist with the implementation of ISO/IEC 27001:2022, an international information security framework which would help establish a robust Information Security Management System (ISMS). At a minimum, the ISO/IEC 27001:2022 standard seeks to

ensure that ECG has implemented basic cybersecurity controls to ensure the security of sensitive customer information and company data.

Appendix 9- Comparison between collections per CWM and ECG Cash Settlement Platform Report (GHS)

DESCRIPTION		Total collections per CWM [A]	Total collections per ECSP [B]	ECSP commission [C]	Net amount after ECSP commission [D = B – C]	Variances E = D - A
MONTH	Jan-25	1,005,200,000	1,570,592,562	62,998,473	1,507,594,089	502,394,089
	Feb-25	1,135,702,317	1,369,253,459	48,393,960	1,320,859,499	185,157,182
	Mar-25	1,390,673,791	1,526,311,741	49,467,212	1,476,844,529	86,170,739
	Apr-25	1,400,217,027	1,332,573,152	42,104,029	1,290,469,124	(109,747,903)
	May-25	1,318,670,619	1,304,184,572	40,324,995	1,263,859,577	(54,811,041)
	Jun-25	1,616,477,032	1,646,991,064	47,283,628	1,599,707,436	(6,769,596)
TOTAL		**7,866,940,786**	**8,749,906,552**	**290,572,297**	**8,459,334,255**	**592,393,470**

All amounts in the tables above are in GHS.

Appendix 10- Reconciliation for total statutory payments

DESCRIPTION		Allocation of statutory payments amount per CWM [A]	Amount paid as VAT [B]	Amount paid as levies[C]	Total statutory payments made [D=B+C]	Variance [E=A-D]
MONTH	**Jan-25**	34,529,638	30,000,000		30,000,000	4,529,638.21
	Feb-25	34,250,373	20,550,224	13,700,149	34,250,373	0.00
	Mar-25	75,917,393	45,550,436	30,366,957	75,917,393	0.00
	Apr-25	75,667,548	45,400,529	30,267,019	75,667,548	0.00
	May-25	95,466,394	57,279,836	38,186,557	95,466,394	0.00
	Jun-25	110,519,828	66,311,897	44,207,931	110,519,828	0.00
TOTAL		**426,351,173**	**265,092,921**	**156,728,614**	**421,821,535**	**4,529,638**

Note: All amounts in the table above are in GHS.

Appendix 11A- Total Value Analysis (exclusing statutory deductions)

DESCRIPTION		Amount per CWM Level A (GHS) [A]	Amount per CWM Level B (GHS) [B]	Total Amount per CWM (GHS) C = [A] + [B]	Amount Validated as paid (GHS) D	Variance (GHS) - underpayment/(overpayment) E = C - D
MONTH	Jan-25	728,962,894	196,632,295	925,595,189	888,604,187	36,991,003
	Feb-25	861,699,336	195,041,991	1,056,741,327	1,055,154,350	1,586,976
	Mar-25	783,334,644	283,087,148	1,066,421,792	1,066,810,983	(389,191)
	Apr-25	794,876,644	279,672,835	1,074,549,479	1,073,385,172	1,164,307
	May-25	554,939,470	282,787,859	837,727,329	844,557,110	(6,829,781)
	Jun-25	603,318,408	416,228,420	1,019,546,828	1,018,764,432	782,396
TOTAL		**4,327,131,398**	**1,653,450,547**	**5,980,581,944**	**5,947,276,234**	**33,305,710**

Appendix 11A includes fuel account payments made to VRA within the period under review.

Appendix 11B – Amount declared in the CWM vs Amount paid to IPPS

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS equivalent) [B]	Amount Validated (in GHS equivalent) [C]	Variance (GHS) – underpayment / (overpayment) [D=B-C]
SUNON ASOGLI	MONTH	Jan-25	7,000,000	107,698,500	85,116,279	22,582,221
		Feb-25	7,000,000	107,698,500	107,698,500	0
		Mar-25	7,000,000	107,698,500	107,698,500	0
		Apr-25	7,000,000	107,698,500	107,698,500	0
		May-25	7,000,000	73,500,000	73,500,000	0
		Jun-25	7,000,000	72,240,000	72,240,000	0
TOTAL			**42,000,000**	**576,534,000**	**553,951,779**	**22,582,221**

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS) [B]	Amount Validated (in GHS) [C]	Variance (GHS) – underpayment / (overpayment) [D=B-C]
CENIT	MONTH	Jan-25	5,000,000	76,927,500	46,511,628	30,415,872
		Feb-25	5,000,000	76,927,500	76,927,500	0
		Mar-25	4,000,000	61,542,000	61,542,000	0
		Apr-25	5,000,000	76,927,500	76,927,500	0
		May-25	5,000,000	52,500,000	52,500,000	0
		Jun-25	5,000,000	51,600,000	51,600,000	0
TOTAL			**29,000,000**	**396,424,500**	**366,008,628**	**30,415,877**

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS equivalent) [B]	Amount Validated (in GHS) [C]	Bank charges validated (in GHS)* [D]	Variance (GHS) – underpayment / (overpayment) [E=B-C]
KARPOWERSHIP	MONTH	Jan-25	7,000,000	107,698,500	128,656,248		(20,957,748)
		Feb-25	7,000,000	107,698,500	109,650,960		(1,952,460)
		Mar-25	7,000,000	107,698,500	107,966,502		(268,002)
		Apr-25	7,000,000	107,698,500	106,896,675	801,825*	801,825
		May-25	7,000,000	73,500,000	72,952,754	547,246*	547,246
		Jun-25	7,000,000	72,240,000	71,880,592	539,204*	179,796
TOTAL			**42,000,000**	**576,534,000**	**598,003,731**	**1,888,275***	(21,469,731)
*** These are bank charges on payments made to Karpowership for the respective months**							

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS equivalent) [B]	Amount Validated (in GHS) [C]	Variance (GHS) – underpayment / (overpayment) [D=B-C]
CEN POWER	MONTH	Jan-25	10,000,000	153,855,000	123,023,256	30,831,744
		Feb-25	10,000,000	153,855,000	153,855,000	0
		Mar-25	9,000,000	138,469,500	138,469,500	0
		Apr-25	10,000,000	153,855,000	153,855,000	0
		May-25	10,000,000	105,000,000	105,000,000	0
		Jun-25	10,000,000	103,200,000	103,200,000	0
TOTAL			**59,000,000**	**808,234,500**	**777,402,756**	**30,831,744**

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS equivalent) [B]	Amount Validated (in GHS) [C]	Variance (GHS) – underpayment / (overpayment) [D=B-C]
AKSA	MONTH	Jan-25	7,000,000	107,698,500	85,116,279	22,582,221
		Feb-25	7,000,000	107,698,500	107,698,500	0
		Mar-25	7,000,000	107,698,500	107,698,500	0
		Apr-25	7,000,000	107,698,500	107,698,500	0
		May-25	7,000,000	73,500,000	73,500,000	0
		Jun-25	7,000,000	72,240,000	72,240,000	0
TOTAL			**42,000,000**	**576,534,000**	**553,951,779**	**22,582,221**

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS equivalent) [B]	Amount Validated (in GHS) [C]	Variance (GHS) – underpayment / (overpayment) [D=B-C]
AMANDI	MONTH	Jan-25	7,000,000	107,698,500	85,116,279	22,582,221
		Feb-25	7,000,000	107,698,500	107,698,500	0
		Mar-25	3,000,000	46,156,500	46,156,500	0
		Apr-25	3,000,000	46,156,500	46,156,500	0
		May-25	3,000,000	31,500,000	31,500,000	0
		Jun-25	3,000,000	30,960,000	30,960,000	0
TOTAL			**26,000,000**	**370,170,000**	**347,587,779**	**22,582,221**

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS equivalent) [B]	Amount Validated (in GHS) [C]	Bank charges validated* (in GHS) [D]	Variance (GHS) – underpayment / (overpayment) [E=B-C]
WAPCO	**MONTH**	**Jan-25**	4,379,864	67,386,394	71,125,712		(3,739,318)
		Feb-25	3,257,797	50,122,836	46,583,400		3,539,436
		Mar-25	3,164,011	48,679,894	48,801,084		(121,189)
		Apr-25	3,164,011	48,679,894	48,317,414	362,481*	362,481
		May-25	2,851,378	29,939,470	29,716,497	222,974*	222,974
		Jun-25	5,464,962	56,398,408	55,975,420	422,988*	422,988
TOTAL			**22,282,023**	**301,206,898**	**300,519,526**	**1,008,442**	**687,731**

* These are bank charges on payments made to WAPCO for the respective months.

DESCRIPTION			Amount per CWM (in GHS) [A]	Amount Validated (in GHS) [B]	Variance (GHS) – underpayment / (overpayment) [C=A-B]
VRA	**MONTH**	**Jan-25**	38,234,081	54,234,081	(16,000,000)
		Feb-25	37,556,132	37,556,132	0
		Mar-25	57,530,670	57,530,670	0
		Apr-25	62,708,230	62,708,230	0
		May-25	60,042,564	60,042,564	0
		Jun-25	80,645,827	80,645,827	0
TOTAL			***336,717,504***	***352,717,504***	**(16,000,000)**

DESCRIPTION			Amount per CWM (in GHS) [B]	Amount Validated (in GHS) [D]	Variance (GHS) – underpayment / (overpayment) [E = D – B]
BUI POWER	MONTH	Jan-25	47,204,781	47,204,781	0
		Feb-25	44,347,363	44,347,363	0
		Mar-25	72,370,653	72,370,653	0
		Apr-25	81,548,553	81,548,553	0
		May-25	88,429,904	88,429,904	0
		Jun-25	104,875,395	104,875,395	0
TOTAL			**438,776,648**	**438,776,648**	**0**

DESCRIPTION			Amount per CWM (in GHS) [A]	Amount Validated (in GHS) [B]	Variance (GHS) – underpayment / (overpayment) [C=A-B]
BXC SOLAR	MONTH	Jan-25	665,555	665,555	0
		Feb-25	1,217,052	1,217,052	0
		Mar-25	1,400,211	1,400,211	0
		Apr-25	1,437,072	1,437,072	0
		May-25	2,044,961	2,044,961	0
		Jun-25	1,848,144	1,848,144	0
TOTAL			**8,612,996**	**8,612,996**	**0**

DESCRIPTION			Amount per CWM (in GHS) [A]	Amount Validated (in GHS) [B]	Variance (GHS) – underpayment / (overpayment) [C=A-B]
MEINERGY	MONTH	Jan-25	1,017,436	1,017,436	0
		Feb-25	1,357,096	1,357,096	0
		Mar-25	1,551,599	1,551,599	0
		Apr-25	1,850,805	1,850,805	0
		May-25	2,241,142	2,241,142	0
		Jun-25	2,380,225	2,380,225	0
TOTAL			**10,398,303**	**10,398,303**	**0**

DESCRIPTION			Amount per CWM (in GHS) [A]	Amount Validated (in GHS) [B]	Variance (GHS) – underpayment / (overpayment) [C=A-B]
SAFISANA	MONTH	Jan-25	4,036	0	4,036
		Feb-25	0	0	0
		Mar-25	16,857	16,857	0
		Apr-25	46,692	46,691	1
		May-25	58,314	58,314	0
		Jun-25	60,048	60,048	0
TOTAL			**185,946**	**181,910**	**4,037**

DESCRIPTION			Amount per CWM (USD) [A]	Amount per CWM (in GHS) [B]	Amount Validated (in GHS) [C]	Variance (GHS) – underpayment / (overpayment) [D=B-C]
EARLY POWER	MONTH	Jan-25	0	13,806,033	65,116,279	(51,310,246)
		Feb-25	0	7,456,367	7,456,367	0
		Mar-25	0	111,542,000	111,542,000	0
		Apr-25	7,000,000	107,698,500	107,698,500	0
		May-25	7,000,000	73,500,000	73,500,000	0
		Jun-25	7,000,000	72,240,000	72,240,000	0
TOTAL			**21,000,000**	**386,242,900**	**437,553,146**	**(51,310,246)**

DESCRIPTION			Amount per CWM (in GHS equivalent) [A]	Amount Validated (in GHS equivalent) [B]	Variance (GHS) – underpayment / (overpayment) [C=A-B]
GHANA NATIONAL GAS	MONTH	Jan-25	40,236,778	40,236,778	0
		Feb-25	46,623,716	46,623,716	0
		Mar-25	67,310,671	67,310,671	0
		Apr-25	50,774,808	50,774,808	0
		May-25	43,758,840	43,758,840	0
		Jun-25	65,298,866	65,298,866	0
TOTAL			**314,003,679**	**314,003,679**	0

DESCRIPTION			Amount per CWM (in GHS equivalent) [A]	Amount Validated (in GHS equivalent) [B]	Variance (GHS) – underpayment / (overpayment) [C=A-B]
PURC REGULATORY LEVY - GAS + POWER	**MONTH**	**Jan-25**	19,984,960	19,984,960	0
		Feb-25	21,292,570	21,292,570	0
		Mar-25	31,430,384	31,430,384	0
		Apr-25	30,451,426	30,451,426	0
		May-25	34,790,454	34,790,454	0
		Jun-25	39,162,012	39,162,012	0
TOTAL			**177,111,805**	**177,111,805**	0

DESCRIPTION			Amount per CWM (in GHS equivalent) [A]	Amount Validated (in GHS equivalent) [B]	Variance (GHS) – underpayment / (overpayment) [C=A-B]
GRIDCO	**MONTH**	**Jan-25**	35,478,636	35,478,636	0
		Feb-25	35,191,695	35,191,695	0
		Mar-25	51,476,102	51,476,102	0
		Apr-25	50,855,249	50,855,249	0
		May-25	51,421,680	51,421,680	0
		Jun-25	65,402,318	65,402,318	0
TOTAL			**289,825,680**	**289,825,680**	0

DESCRIPTION			Amount per CWM (in GHS equivalent) [A]	Amount Validated (in GHS equivalent) [B]	Variance (GHS) – underpayment / (overpayment) [C = A – B]
ECG	MONTH	Jan-25	45,075,172	0	45,075,172
		Feb-25	44,710,618	44,710,618	0
		Mar-25	248,334,606	248,334,606	0
		Apr-25	250,000,000	250,000,000	0
		May-25	385,476,896	385,476,896	0
		Jun-25	486,410,,376	486,410,376	0
TOTAL			**1,460,007,668**	**1,414,932,496**	**45,075,172**

DESCRIPTION			Amount per CWM (in GHS equivalent) [A]	Amount Validated (in GHS equivalent) [B]	Variance (GHS) – underpayment / (overpayment) [C = A – B]
VRA (Fuel payments	MONTH	Jan-25	38,234,081	54,234,081	(16,000,000)
		Feb-25	37,556,132	37,556,132	0
		Mar-25	57,530,670	57,530,670	0
		Apr-25	62,708,230	62,708,230	0
		May-25	60,042,564	60,042,564	0
		Jun-25	80,645,827	80,645,827	0
TOTAL			**336,717,504**	**352,717,504**	**(16,000,000)**

Appendix 12- IPP Ledger Amount vs Invoice Reconciliation

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
SUNON ASOGLI	Jan-25	34,721,914	34,721,914	0	276,733,100
	Feb-25	12,812,650	12,812,650	0	143,753,200
	Mar-25	31,784,394	31,784,394	0	303,611,700
	Apr-25	33,821,444	33,821,444	0	323,527,500
	May-25	37,770,849	37,770,849	0	351,224,600
	Jun-25	36,842,276	36,842,276	0	345,068,700
TOTAL		**187,753,526**	**187,753,526**	0	**1,743,918,800**

a)

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
CENIT	Jan-25	3,200,610	3,200,610	0	10,612,000
	Feb-25	2,824,013	2,824,013	0	8,817,,300
	Mar-25	3,907,404	3,907,404	0	18,701,200
	Apr-25	5,489,681	5,489,681	0	37,655,800
	May-25	5,441,245	5,441,245	0	37,216,600
	Jun-25	4,467,873	4,467,873	0	26,641,500
TOTAL		**25,330,827**	**25,330,827**		**139,644,400**

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
KARPOWERSHIP	Jan-25	38,137,951	38,137,951	0	257,581,300
	Feb-25	40,460,696	40,460,696	0	287,609,200
	Mar-25	43,356,796	43,356,796	0	325,049,300
	Apr-25	42,619,414	42,619,414	0	315,516,600
	May-25	42,310,011	42,310,011	0	318,811,100
	Jun-25	41,414,405	41,414,405	0	306,961,800
TOTAL		**248,299,272**	**248,299,272**	0	**1,811,529,300**

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
AKSA	Jan-25	7,857,383	7,857,383	0	42,668,390
	Feb-25	6,875,832	6,875,832	0	112,152,760
	Mar-25	8,866,825	8,866,825	0	120,644,410
	Apr-25	12,385,440	12,385,440	0	110,468,880
	May-25	10,630,654	10,630,654	0	117,121,710
	Jun-25	9,021,695	9,021,695	0	74,911,872
TOTAL		**55,637,828**	**55,637,828**	0	**577,968,022**

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
AMANDI	Jan-25	11,204,180	11,204,180.	0	65,820,100
	Feb-25				(402,500)
	Mar-25				(358,700)
	Apr-25				(284,100)
	May-25				(285,200)
	Jun-25	85,682	85,682	0	65,655
TOTAL		**11,289,862**	**11,289,862**	0	**64,555,255**

DESCRIPTION		Amount per Ledger (GHS) A	Amount per invoice (GHS) B	Variance (GHS) [C=A-B]	Energy Delivered (KWh)
VRA	Jan-25	200,425,492	200,425,492	0	504,725,413
	Feb-25	190,678,143	190,678,143	0	483,676,290
	Mar-25	178,259,154	178,259,154	0	438,743,337
	Apr-25	133,614,050	133,614,050	0	315,084,886
	May-25	201,664,055	201,664,055	0	331,576,738
	Jun-25	181,554,206	181,554,205	0	304,082,461
TOTAL		**1,086,195,099**	**1,086,195,099**	0	**2,377,889,125**

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
BUI	Jan-25	19,861,879	19,861,879	0.00	187,659,633
	Feb-25	19,922,509	19,922,509	0.00	186,847,178
	Mar-25	19,691,959	19,691,959	0.00	189,407,684
	Apr-25	12,626,960	12,626,960	0.00	106,882,390
	May-25	9,862,866	9,862,866	0.00	72,861,721
	Jun-25	5,626,220	5,626,220	0.00	25,981,536
TOTAL		**87,592,393**	**87,592,393**	**0.00**	**769,640,142**

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
CEN POWER	Jan-25	24,697,008	24,697,008	0.00	190,690,260
	Feb-25	16,394,309	16,394,309	0.00	201,721,970
	Mar-25	19,219,493	19,219,493	0.00	137,482,524
	Apr-25	20,502,562	20,502,562	0.00	213,822,081
	May-25	29,439,788	29,439,788	0.00	231,965,943
	Jun-25	28,695,829	28,695,829	0.00	217,870,780
TOTAL		**138,948,989**	**138,948,989**	0.00	**1,193,553,558**

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
BXC SOLAR	**Jan-25**	382,453.4	382,453	0.00	1,899,238
	Feb-25	346,163.5	346,164	0.00	1,719,025
	Mar-25	450,322.0	450,322	0.00	2,236,270
	Apr-25	422,314.79	422,315	0.00	2,097,187
	May-25	455,450.55	455,451	0.00	2,261,737
	Jun-25	377,076.47	377,076	0.00	1,872,537
TOTAL		**2,433,781**	**2,433,781**	0.00	**12,085,994**

b)

DESCRIPTION		Amount per Ledger (GHS) A	Amount per invoice (GHS) B	Variance (GHS) [C=A-B]	Energy Delivered (KWh)
SAFISANA	**Jan-25**	62,069	62,069	0.00	26,295
	Feb-25	156,247	156,247	0.00	64,233
	Mar-25	178,861	178,861	0.00	73,337
	Apr-25	112,336	112,336	0.00	46,895
	May-25	139,590	139,590	0.00	71,412
	Jun-25	159,901	159,901	0.00	93,849
TOTAL		**809,004**	**809,004**	0.00	**376,021**

c)

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
MEINERGY	**Jan-25**	423,803.48	423,803.48	0	2,322,670
	Feb-25	445,823.96	445,823.96	0	2,443,353
	Mar-25	493,523.29	493,523	0	2,704,771
	Apr-25	388,636.82	388,637	0	2,129,937
	May-25	392,245.18	392,245	0	2,149,713
	Jun-25	413,135.82	413,136	0	2,264,205
TOTAL		**2,557,168**	**2,557,168**	0	**14,014,649**

d)

DESCRIPTION		Amount per Ledger (USD) A	Amount per invoice (USD) B	Variance (USD) [C=A-B]	Energy Delivered (KWh)
EARLY POWER	**Jan-25**	10,561,102	10,561,102	0	61,536,000
	Feb-25	7,333,070	7,333,070	0	16,372,400
	Mar-25	14,567,656	14,567,656	0	92,308,600
	Apr-25	18,210,780	18,209,680	0	130,850,000
	May-25	18,029,216	18,022,867	0	129,308,100
	Jun-25	18,155,698	18,153,352	0	131,614,100
TOTAL		**86,857,522**	**86,857,522**	0	**561,989,200**

e)

Appendix 13- Comparison between collections per ECG Collection report and Non-Energy PowerApp Report

DESCRIPTION			Amount per ECG Collections report [A]	Amount per Non-Energy PowerApp Report [B]	Variances [A-B]
NON-TARIFF COLLECTIONS (in GHS)	**MONTH**	**Jan-25**	28,702,671	28,685,261	17,410.32
		Feb-25	32,285,471	32,289,281	-3,810.80
		Mar-25	30,450,502	30,529,688	-79,185.60
		Apr-25	31,089,540	31,084,455	5,084.76
		May-25	33,967,339	33,965,685	1,653.60
		Jun-25	28,697,371	28,695,812	1,559
TOTAL			**30,865,482**	**26,517,674**	**(57,289)**

Note: All amounts in the table above are in GHS.

Appendix 14- Energy Delivered vs Energy Sold

DESCRIPTION		Energy delivered as per 2025 IPP Invoices (kWh) A	2025 Sales and levies report (GWh) B	2025 Sales and levies report (kWh) [C=B*100,0000]	Variances (kWh) [D=C-A] ***	Percentage Loss [E=D/A]
Energy delivered vs Energy sold	Jan-25	1,602,274,399	1,096.32	1,096,320,000	505,954,399	31.58%
	Feb-25	1,444,774,409	1,124.70	1,124,700,000	320,074,409	22.15%
	Mar-25	1,630,604,432	1,157.94	1,157,940,000	472,664,432	28.99%
	Apr-25	1,557,798,057	1,162.37	1,162,370,000	395,428,057	25.38%
	May-25	1,594,284,173	1,184.56	1,184,560,000	409,724,173	25.70%
	Jun-25	1,437,428,994	1,166.65	1,166,650,000	270,778,994	18.84%
Total		**9,267,164,465**	**6,892.54**	**6,892,540,000**	**2,374,624,465**	**25.62%**

Appendix 15- Differences in receivable balance per ECG Trial Balance (TB) and PwC recomputed amount

DESCRIPTION		Opening receivable balance [A]	Revenue for the period [B]	Cash collections – Energy [C]	Closing receivable balance [D=A+B-C]
Receivables reconciliation	Jan-25	9,161,270,006	1,643,910,289	-1,574,647,753	9,230,532,542
	Feb-25	9,230,532,542	1,611,909,970	-1,377,879,405	9,464,563,106
	Mar-25	9,464,563,106	1,667,696,613	-1,573,998,108	9,558,261,612
	Apr-25	9,558,261,612	1,650,884,547	-1,336,535,771	9,872,610,388
	May-25	9,872,610,388	1,917,480,391	-1,310,949,167	10,479,141,611
	Jun-25	10,479,141,611	1,869,466,095	-1,649,539,791	10,699,067,915

Note: All amounts shown in the table above are in GHS.

DESCRIPTION	Amount [GHS]
Total receivables as per ECG TB [A]	10,959,108,602
Total receivables as computed by PwC [B]	10,699,067,915
Variance [C=A-B]	**260,040,687**

f)

Appendix 16- ECG Responses (including updates on Our Observations) to the Status of our Recommendations from the 2023 and 2024 review.

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
Our recommendations from Task 1 (October 2023 – December 2023)				
1.	Use of Debit Notes and Fuel Purchases	We recommended that ECG engage in discussions with key stakeholders, including the IPPs and the PURC, Ministry of Energy, to clearly define and agree on the responsibility for procuring fuel for power generation. ECG's current practice of purchasing fuel on demand, issuing debit notes to IPPs, and, in some cases, paying full prices to non-beneficiaries of the CWM significantly impacts cash outflows, particularly for Level B beneficiaries under the CWM. Our review of the CWM Guidelines did not indicate that ECG is authorised to purchase fuel on behalf of IPPs. It is unclear why this arrangement has been established between the IPPs and ECG. Further clarification and stakeholder engagement will be necessary to address this issue.	ECG no longer procures liquid fuels directly; all liquid fuel payments are now made based on CWM allocations, and no debit notes are used since IPPs don't invoice ECG; payments are made based on accruals. Debit notes are only used for gas payments, as ECG lacks direct contracts with gas suppliers. Instead, payments are made through the CWM, with debit notes issued to the IPPs and corresponding credit notes from the gas suppliers. The previous arrangement where ECG made direct purchases has ended, following a Ministry directive influenced by findings from a prior review exercise, aligning procurement with government policy.	From our review, debit notes issued within the period constituted debit notes issued by ECG to the IPPs in respect of gas purchases. Payment to gas suppliers are included in the CWM allocations but ECG does not have direct contract with these gas suppliers NB: There were directives instructing the purchase of liquid fuels during this review period (January – June 2025). **CONCLUSION** The issue is resolved.
2.	Internal Reconciliation Mechanisms	Our assessment for this Task 1 period revealed discrepancies within ECG's records on the relevant items on revenue and collections. Specifically, there were instances where the amounts reported as collections in the ECG collections sheet differed from those declared in the CWM. We believe that these issues can be easily resolved if ECG conducts a reconciliation between its internal records and the amounts reported in the CWM.	All revenue collections are now centralised through a Single Holding Account at GCB Bank. Each of the 10 regions has a Revenue Account and an Operational Account, but only the revenue accounts receive collections. These are swept daily into the Single Holding Account for better visibility and control. The Head Office does not collect revenue and therefore has no revenue account, the Single Holding Account serves this purpose at the corporate level.	Per our review, ECG started operating the Single Collection Account from the middle of February 2025. Consequently, differences between the CWM figures and PwC validated figures were less as compared to previous periods of this validation exercise, during which ECG

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
		We anticipated that this validation exercise may be taken forward into the foreseeable future. Based on this, these mechanisms will be very useful in supporting the delivery of this engagement with minimal interruptions to ECG's regular operations by making the relevant data / information readily available through the reconciliation mechanisms.	Previously, all 92 districts had both revenue and operational accounts, but this created confusion and inefficiency. Under the new structure, districts only hold operational accounts, while all revenue is collected at the regional level and then swept to the central account. This streamlines the process and reduces the number of accounts in use. Importantly, GCB Bank, not ECG, declares the total revenue in the Single Holding Account each month to the Minister of Energy and Green Transition and the PURC Executive Secretary, who chairs the Cash Waterfall Mechanism (CWM). The CWM then allocates the funds, and ECG distributes them to the relevant beneficiaries. This approach improves transparency, accountability, and financial efficiency across the organisation.	operated multiple bank accounts as collection accounts and/or as the Single Holding Account. **CONCLUSION** The resolution of the issue is ongoing. See Issue No. *15 of* ***Section 4.4 Key Observations and Recommendations*** for details.
3.	Revenue Data from ECG Cash Settlement Platform (ECSP) Vendor	We recommended that ECG take steps to engage the ECSP Vendor to establish mechanisms to facilitate a clear distinction between tariff and non-tariff revenue collections at the points of collection. This will help ECG maintain accurate records and facilitate a process where all revenue collections are easily reconcilable with the amounts reported in the CWM. We recommended that since the fees charged by the ECSP impacts the CWM beneficiaries, it will be important, in the interest of openness and transparency for ECG to engage the relevant stakeholders on the arrangement with the ECSP vendor.	Management has successfully renegotiated the collection fees, reducing them from a range of 1.5% - 3% to a fixed 1.65%. Previously, tariff and non-tariff revenues were not clearly separated. Now, the system uses distinct codes to differentiate them. Tariff revenue is routed to a single holding account, while non-tariff revenue goes through a separate channel. This improves transparency and control. Hubtel serves as a collection platform and charges a commission for its services. However, not all revenues go through Hubtel, some customers, such as SLT, pay directly into the bank. Tech Genesis,	For the period under review, we noted that the fees was 3% with fees reduction negotiation still in progress. However, we noted that, ECG now operates a single collection account (GCB bank) through which all collections are swept into. The CWM committee and other stakeholders have real time access and oversight of the single collection account from which collections are declared monthly by the committee. Collections that go through the single collections are net of all fees and commissions to vendors and the

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
			another collection agent, also operates outside the Hubtel platform. Only revenues that pass through Hubtel incur Hubtel's commission. Tech Genesis, acting as a "super vendor" who buys in bulk and resells, also earns a commission based on the volume of power purchased. The commission structures for Hubtel and Tech Genesis are different. There were past concerns about access to Hubtel's records, but those have been addressed. Fee communication has also improved. The approved tariff structure allows for such commissions, though there is ongoing discussion about whether actual deductions fully align with the agreed terms.	CWM committee and other stakeholders are aligned with the fee deduction at source. Additionally, ECG has taken steps to delineate tariff revenue from non-tariff revenue, thereby reducing the commission fees charged by the ECSP, as non-tariff revenues are no longer collected by the ECSP and therefore does not attract commission. **CONCLUSION** The issue is resolved.
4.	Review the approach to the Single Collection Account	We recommended that ECG streamlines its banking arrangements to work with either one or, at most, two banks with extensive branch networks[5] covering all major parts of the country to align with the 2023 Ministry of Finance directive to operate a single account under the CWM arrangement. Engaging with a limited number of banks with nationwide reach will enhance operational efficiency and reduce complexities in managing collections at ECG. This approach will allow ECG to maintain a more centralised collection account with each selected bank, eliminating the current reliance on multiple	We are now primarily using a single bank for revenue collection, with GCB being the main bank due to its nationwide coverage and visibility. This has simplified daily sweeps, making the process easier than before when funds were swept from multiple banks. Currently, corporate customers (SLT) pay directly into designated regional GCB accounts by cheque or bank transfer, rather than through third-party platforms. At the end of each day, balances in these accounts are swept into a single collection account for easier reconciliation. Third-party collections also settle daily into this single holding account, so all revenue ultimately	Based on our review, ECG now uses GCB as its primary collection bank, leveraging its nationwide reach and operational efficiency, which has improved the reconciliation process. However, a few issues were noted, including operational expenses being processed through revenue accounts prior to sweeping into the Single Collection Account. Overall, the centralised revenue collection arrangement continues to deliver the expected efficiencies in

[5] ECG indicated in our discussions that the reason for using several bank accounts from various banks was to help facilitate access to a wide coverage for collections across Ghana.

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
		bank accounts with various banks across the country. A streamlined banking arrangement would bring the following benefits to ECG and improve transparency around the revenue/collections management: • Simplified verification*:* Consolidating accounts from up to two banks would make it easier to verify sweeps and reconcile collections, ensuring greater transparency and accuracy in financial reporting. • Enhanced control*:* A centralised account structure reduces the risk of errors or mismanagement associated with handling multiple accounts across various banks. • Cost efficiency*:* Working with fewer banks can lower administrative costs and banking fees. • Improved accountability and transparency*:* With a more centralised system, monitoring cash flows and conducting audits (both internal and external) becomes more efficient. Implementing this recommendation would align ECG's operations (especially in connection with revenue/collections) with the MoF directive on the CWM. Additionally, it will also help improve the efficiency, transparency, and reliability of its revenue collection process.	consolidates in one place. This aligns with previous recommendations and streamlines the overall process. This system has been in place since February. It has also reduced interest on the collection platform and lowered the capital required, as large payments go directly to their original accounts instead of multiple intermediaries. Overall, regardless of payment method, funds now flow efficiently into one centralised account, improving collection and reconciliation.	revenue collection and cash management. **CONCLUSION** The resolution of the issue is ongoing. See Issue No. 8 *of* ***Section 4.4 Key Observations and Recommendations*** for details.

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
5.	Develop a Monitoring System for Allocation	We observed that ECG allocates 12.5% of the net collections in the CWM for statutory payments. Payments made are based on the allocated amounts rather than specific payments required to settle these statutory obligations. To enhance transparency and accountability, we recommended that ECG put in place steps to implement a tracker for statutory obligations and payments. This tracker would enable ECG to monitor transactions, reconcile allocated amounts with actual payments and prevent errors or omissions Additionally, it would provide a clear audit trail and improve the accuracy of financial reporting related to statutory payments, strengthening ECG's overall financial management process.	In terms of statutory payments, the CWM process begins by applying Tier 1 deductions, after which the net amount is subjected to a 12.5% deduction to cover statutory obligations. This 12.5% is further split into 7.5% for VAT and 5% for levies, with the levy portion having its own internal breakdown which we are prepared to provide. Once the 12.5% is allocated, say GHS 20,000, you will now be able to see how that exact amount is distributed, tracked, and paid out. This level of detail was not visible in the past, as payments were recorded in bulk without direct linkage to specific statutory obligations. To improve transparency and tracking, there is now a structured process where, on the 26th of each month, standing balances in the single collection account are declared to key stakeholders. Within 24 to 48 hours of this declaration, the CWM determines the distribution, including the statutory share for GRA. Stakeholders can then reconcile the declared amounts with the monthly allocation sheet and verify payments through supporting documents such as bank instructions, payment vouchers, and VAT receipts. This replaces the previous credit note-based system and allows for real-time visibility and traceability of all statutory-related disbursements.	The current arrangement around the CWM allows for real-time visibility and traceability of all statutory-related disbursements. **CONCLUSION** The issue is resolved.
6.	Redesigning the CWM into a Cloud Based Platform	Technology enabled solutions can drive efficiency, as well as transparency and accountability in critical integrated systems involving multiple stakeholders. In the previous Task 1 report, we recommended that PURC, Ministry of Energy, GESRP and its stakeholders consider moving the CWM into a	For the sake of transparency, the Executive Secretary of PURC and the Minister of Energy both have 24/7 access to the Single Holding Account, including full visibility of all transactions, not just the balance. ECG no longer handles revenue allocations; that responsibility now lies with the Cash Waterfall Mechanism (CWM) Committee. ECG's role	Given the new directives issued on 10 February 2025 governing the operation of the CWM, and the fact that the CWM Committee has become the sole user and oversight of the CWM model (and collections accounts), we are of the view that

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
		cloud-based platform. We have included an extract of our detailed recommendation from the previous Task 1 report in Appendix 8 of this report.	is limited to disbursing funds after allocations have been made and approved. Once GCB Bank declares the revenue, the CWM Committee allocates the funds. These allocations are further subject to approval by the National Energy Security Task Committee, chaired by the Chief of Staff, before any payments are made. While the CWM formula and allocations are not currently hosted on the cloud, this responsibility falls under PURC or the CWM Committee, not ECG.	this recommendation may not be necessary at this stage if the recommendations outlined in the Section 2, *Review of the Cash Waterfall Mechanism* section, of this report are implemented. **CONCLUSION** The issue is resolved.
7.	ECG's digitalisation- Considerations for cybersecurity and data protection	Digitalising ECG's collection and revenue management is an important step to helping improve the efficiency and customer convenience. Digitalisation often opens up institutions to challenges around data breaches, data loss and cyber-attacks. This will become even more critical with the ECSP arrangement and any other similar third-party arrangement in ECG's operations. In our last Task 1 Report, we set out recommendations targeted at the following items for ECG to adopt going forward: • Strengthening of its Disaster Recovery System; • Measures to create a cyber defence system for ECGs billing and collection systems; and • Adoption of IT Third party management needs to monitor and assess the risk posed by third parties who provide services to their organisation.	Yes, concerning the protection of our systems, and by extension, our revenue, we have an Information Security Directorate. Their primary function is to safeguard our systems, data, and overall information environment. To provide more clarity, a session can be arranged with the directorate for you to understand their specific role in protecting the operational environment. In addition, our ICT Directorate has been significantly strengthened. When we assumed office, ICT had only a skeletal staff and no leadership. Now, we have a fully established structure with a Director of ICT in place. All necessary measures to secure our systems and protect revenue streams have been implemented. For further technical details, we'll rely on discussions between the IT team and PwC during the scheduled meetings.	Per our review, concerning this recommendation, ECG has taken steps to strengthen its cybersecurity and data protection environment. Documentation provided indicates the existence of a Disaster Recovery Plan, cybersecurity awareness training for staff, a Third-Party Policy, an Incident Response Plan, and ongoing implementation of ISO 27001. Cybersecurity awareness training was conducted for staff in February 2025. However, with the exception of the Disaster Recovery Plan, key policies (Third-Party Policy and Incident Response Plan) remain in draft form and are pending Board approval, although they are currently being used operationally. ISO 27001 implementation is ongoing, with the certification timeline revised from December 2024 to March 2026 due

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
				to delays. Additionally, ECG did not provide evidence of testing of backed up data within the period as they do not host billing data and backups in house. ECG has also established a Security Operations Center (SOC) with 24/7 monitoring capability and deployed security monitoring tools. While the SOC is operational, some components are not yet fully configured, and monitoring of the Operations Technology (OT) environment is not yet in place. In addition, full SOC implementation is currently on hold due to outstanding payments to the service provider. Overall, progress has been made toward addressing the recommendation, but some measures remain incomplete or are still being formalised. **CONCLUSION** The resolution of the issue is ongoing. See Issue No. of ***Section 3.3 Key Observations and Recommendations*** for details.
Our additional recommendations from Task 2 report (1 January 2024 – 31 December 2024)				
8.	Proper documentation	All payments made to IPPs, aside from the allocations specified in the CWM model,	Payments to partners or beneficiaries come from the single holding account since all the funds are	Per our review, payments to IPPs are processed through the

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
	and transparency on payments, other than payments for power generation, made to IPPs.	should be clearly defined in the bank statement. Additionally, there should be a separate section in the ledger detailing the nature of such payment. Payment vouchers should also be issued for such transactions to ensure proper documentation and transparency.	consolidated there. Although there may be separate ledger entries or records, the actual money flows from this one account to the various beneficiaries. After payments are made, banks provide statements showing the amounts paid, including any additional payments, where applicable. All payments are properly documented and there are no payments made outside this process. Again, let me add that at the CWM meeting, for instance, when we meet in July to review June collections, the next meeting will include a detailed report. This report will show how much was allocated to each beneficiary, how much was actually paid, and highlight any differences. All beneficiaries confirm receipt of their payments, and these reports will be made available to you. You can even get direct confirmation from the beneficiaries, so your work will be much easier this time.	consolidated CWM holding account and are supported by bank statements and corresponding ledger records that identify the nature of each payment. We did not identify any payments made to IPPs aside the allocations specified in the CWM. **CONCLUSION** The issue is resolved.
9.	Implement flexible exchange rate system	To address the issue of using a fixed exchange rate for payments over six months despite fluctuations, it is advisable to implement a flexible exchange rate system. This system should update the exchange rate periodically based on the latest data from the central bank. By doing so, payments will more accurately reflect the current market conditions, ensuring fairness and reducing the risk of financial imbalances.	Efforts to secure fixed exchange rates from the Bank of Ghana for planning purposes have proven difficult. Previously, there was a large gap between PURC rates and market exchange rates, but recently, they've aligned more closely due to the cedi's appreciation, easing forex pressure, especially for IPP payments. Currently, CWM allocations are made and paid in Ghana cedis. While the cedi value is fixed at the point of allocation, IPP contracts often use different exchange rates (e.g., market rate or Bloomberg plus a margin). This leads to reconciliation differences, as the cedi amount paid may not match the expected dollar value under IPP contracts.	Following the review, exchange rate pressures have eased significantly due to the appreciation of the Ghana cedi. In addition, CWM allocations are now made and disbursed fully in Ghana cedis, which has improved predictability in payments and reduced immediate foreign exchange volatility within the allocation process. The alignment between regulatory and market exchange rates has further reduced the disparity previously experienced in IPP

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
			Another concern is that CWM allocates funds down to the last cedi without accounting for bank transfer fees and charges. These costs reduce the actual amounts received by IPPs, but the full allocation is still recorded as paid, creating further mismatches during reconciliation. Still, the situation has improved compared to past years, mainly due to the stronger cedi. It was discussed that in the long term, it would be good for there to be a sinking fund accounted for in the CWM model, so ECG does not have to bear the cost of transferring funds between banks. The CWM model allocates funds based on contractual obligations, including to providers like Hubtel with higher exchange rates. However, it doesn't account for bank charges or transfer fees, so the actual amount received may be less than what was allocated. This creates reconciliation differences, with the shortfall recorded as debt on ECG's books. For capital providers, some payments are made in advance and don't show on current bank statements but still need to be reported as part of the cost of disbursement.	settlements. This has eased forex pressure, particularly in relation to payments to Independent Power Producers (IPPs). However, reconciliation differences persist. This is because several IPP contracts remain USD-denominated or indexed to market-based exchange rates (e.g., market rate or Bloomberg plus margin), while CWM allocations are fixed in cedis at the point of distribution. Additionally, bank charges and transfer fees are not incorporated into the allocation model, resulting in slight shortfalls between allocated amounts and actual sums received. Although the magnitude of discrepancies has reduced compared to previous years, structural gaps within the framework remain. **CONCLUSION** The resolution of the issue is ongoing. See ***Issue 11 in Table C: Our Key Issues and Observations*** for details.
10.	Data freeze on Pre-paid data	We recommend that ECG implements a data freeze for the pre-paid data in MMS, similar to the process adopted in Adora system since April 2024. This will ensure that historical data remains unchanged and enables ECG to accurately agree the data in the MMS system	Something has been done, and ICT has supported that. When data is extracted at a given time, it usually stays the same. However, we occasionally notice small differences. Even today, we saw slight variations after extraction. Once it's in a stream and	Per our review, ECG is yet to fully implement a data freeze for the pre-paid data in MMS. **CONCLUSION**

No.	Thematic Area	Recommendation	ECG's responses	Updates (Per our review)
		to the reports generated for management and stakeholders.	blocked, it's mostly consistent, but not 100% guaranteed. If you extract the data again later, you might still see minor discrepancies. This often relates to other systems that haven't been updated, especially those using cards for purchases. When purchases are made, the system may recompute. Tariff changes also caused issues, as some meters didn't update automatically and had to be manually adjusted in the field. Even after that, small differences in reports remain, though it's better than before. So, it's not a full freeze. If it were, we wouldn't expect any changes. There's still room for reconciliation. For example, extracting July data now may show slight differences from an earlier extract. That means the freeze isn't fully secure. We're still coordinating with ICT. When the tariffs changed, the correct time wasn't always picked, so we had to reprocess using updated algorithms. The issue isn't fully resolved, but it has improved.	The resolution of the issue is ongoing. See ***Issue 5 in Table C: Our Key Issues and Observations*** for details.

Appendix 17- Data Request List

	REQUEST	STATUS
1	Request for the validation exercise for 2025 (email)	Received
2	ECG Client Billing Data	Partially Received
3	MMS consumption report for January –June 2025 (Pls add screenshots of extraction process)	Received
4	Prepayment Sales by Prepayment system (January - June 2025)	Received
5	ECG Client Billing Data (Postpaid) – January to June 2025	Not received (Methodology of estimates obtained. Actual billing data not available)
6	Prepaid vending transactions (Vending quota & Power App) for January – June 2025 (Pls add screenshots of extraction process)	Received
7	Hubtel Settlement Report	Received
8	Approved PURC tariff for Q1 and Q2 2025	Received
9	Cashbook (GHS and USD) for January and June 2025	Received
10	IPP reconciliation sheets as of June 2025	Received
11	Fuel payment ledger	Received
12	Ledger details for January to June 2025	Received
13	Single Collections Account details (Jan 2025)	Received
14	Invoices from IPPs for January to June 2025	Received
15	ECG Accounting Procedures Manual (If updated)	No updates made
16	Revenue Collections Sheet	Received
17	Credit notes from January to June 2025	Received (Hard Copies)
18	Debit notes from January to June 2025	Received (Hard Copies)
19	Payment vouchers showing payments to IPPs and fuel providers	Received (Hard Copies)
20	Bank Statements (from ECG) Jan – June 2025	• 37 accounts received – 21 GCB Accounts (10 regional revenue collection accounts, 1 main revenue single collection account) – 1 BOG, – 1 FAB (empty), – 3 Fidelity – 2 Bank of Africa – 2 CAL Bank – 1 CBG – 1 OMNI – 1 Prudential Bank – 1 Stanbic – 2 UBA – 1 UMB • January accounts constituting the Single Collection Account received

	REQUEST	STATUS
		• Regional operational accounts received • Full List of complete ECG bank statements register outstanding
21	CWM models from January to June 2025	Received
22	Trial balance as at 30 June 2025	Received
23	CWM 2025 directives	Received

Appendix 18 - Request for Systems Information and Access

The Managing Director
Electricity Company of Ghana Ltd (ECG)
Electro Volta House
Accra, Ghana

Attn: Samuel Adu

10 October 2025

Dear Sir

Subject: Validation of ECG Revenue/Collection Accounts Assignment -Request for Systems Data and Access

Following our conclusion of the Engagement Support workshop on Tuesday, 7 October 2025, we wish to request access to ECG billing system. The IT related items in connection with ECG billing system are:

- Prepayment Sales (January - June 2025);
- MMS Consumption report/extracts (January - June 2025); and
- Prepaid Vending Transactions (January - June 2025).

Additionally, we would like to formally request for a date and time for our team to observe the data extraction process and capture the necessary screenshots as part of engagement workstream.

We thank you for your time and look forward to receiving the above information soon.

Yours sincerely,
for: PricewaterhouseCoopers (Ghana) LTD

Winfred King
Director

PricewaterhouseCoopers (Ghana) LTD
PwC Tower, A4 Rangoon Lane, Cantonments City, PMB CT 42,
Cantonments, Accra, Ghana
T: +233 (0) 302 761 500
Directors: Wyczynsky Ashiagbor, Michael Asiedu-Antwi, Maxwell Darkwa, Ayesha Bedwei Ibe, George Arhin
Nelson Opoku, Eric Nipah, Edward Gomado, Abeku Gyan-Quansah, Hayfron Aboagye, Kingsley Owusu-Ewli
Richard Ansong, Samuel Kingsford Arthur, Lydia Pwadura, Destiny Attafatsey, Dzidzedze Fiadjoe
Prince Adufutse, Clara Amarteifio, Winfred King, Sam Abu

www.pwc.com/gh

Appendix 19 - Request for ECG Bank Statements Details

The Managing Director
Electricity Company of Ghana Ltd (ECG)
Electro Volta House
Accra, Ghana

Attn: William Awuku

10 October 2025

Dear Sir

Subject: Validation of ECG Revenue/Collection Accounts Assignment - Request for a Full List of ECG Bank Accounts Details

Following our conclusion of the Engagement Support workshop on Tuesday, 7 October 2025, we wish to request for a full list of ECG's bank accounts. The list of accounts should include:

- A clear indication of whether each account is a main or regional account; and
- The purpose of each account (i.e. confirming whether it is a revenue or operational account).

We thank you for your time and look forward to hearing from you soon.

Yours sincerely,
for: PricewaterhouseCoopers (Ghana) LTD

W-King

Winfred King
Director

PricewaterhouseCoopers (Ghana) LTD
PwC Tower, A4 Rangoon Lane, Cantonments City, PMB CT 42,
Cantonments, Accra, Ghana
T: +233 (0) 302 761 500

Appendix 20 - Request for CWM Directives

pwc

The Executive Secretary
Public Utilities Regulatory Commission (PURC)
2nd Floor Olympic Committee Building
No. 53, Liberation Road, Ridge
Accra, Ghana

3 November 2025

Dear Sir,

Subject: Request for Documentation on 2025 Cash Waterfall Mechanism (CWM) Directives and Related Information

We wish to extend our appreciation to you and your team at the Public Utilities Regulatory Commission ("PURC") for your continued collaboration and support throughout the course of our ongoing engagement.

We are writing to formally request access to documentation in connection with the directives issued in 2025 on the operationalisation of the Cash Waterfall Mechanism ("CWM"). Based on our conversations at the engagement kick off meeting and our engagement support workshop with the Electricity Company of Ghana ("ECG"), we understand that these directives form part of the broader framework to implement our recommendations and to enhance the efficiency, transparency, and improved governance of the CWM operations.

As referenced during our discussion on draft Inception Report on 30 October 2025, considering our project timelines, as well as the critical role these directives and related documentation play in our assessment, we would like to request the PURC's assistance in providing access to the following documentation:

1. All directives issued in 2025 in connection with the operations and oversight of the Cash Waterfall Mechanism, including but not limited to any correspondence, circulars, or memoranda issued in alternative formats. These documents are essential for our review of the CWM scope items stipulated in our terms of reference and they will provide context to our observations and findings;
2. CWM declaration letters issued by the CWM Implementation Committee and/or the Office of National Security for each month covering the period of January 2025 to June 2025, to support our validation of CWM declarations and allocation payments; and
3. The current version of the CWM model employed by the CWM Implementation Committee, together with any supplementary operational guidelines or procedural updates that may not have been formally issued as directives. Our consultations with ECG indicate that the Committee presently oversees both the model and the allocation processes.

PricewaterhouseCoopers (Ghana) LTD
PwC Tower, A4 Rangoon Lane, Cantonments City, PMB CT 42
Cantonments, Accra, Ghana
T: +233 (0) 302 761 500

www.pwc.com/gh

Please do not hesitate to contact us should you require any further clarification in relation to this request.

Yours sincerely
for: PricewaterhouseCoopers (Ghana) LTD

Prince Adufutse
Director
prince.adufutse@pwc.com

Appendix 21 – ECG Comments and Responses to Key Observations and Recommendations from 2025 Q1 and Q2 Reviews

ELECTRICITY COMPANY OF GHANA LTD.
HEAD OFFICE - ELECTRO-VOLTA HOUSE
OFFICE OF THE MANAGING DIRECTOR

P. O. Box GP 521
Accra Ghana
+233 0 302 676 762
ecgho@ecggh.com
GA-145-7445

Our Ref: MD|PURC|2026|V.1|007 Your Ref:

13th April 2026

The Executive Secretary
Public Utilities Regulatory Commission
Head Office, 2nd Floor Olympic
Committee Building No. 53, Liberation
Road, Ridge
P.O Box CT 3095,
Cantonments, Accra

Dear Sir,

Response to Report on Consultancy Services for Validation of Electricity Company of Ghana (ECG) Revenue/Collection Accounts by PWC: 2025 (*Quarter 1 & Quarter 2*)

We refer to the PwC Report on Consultancy Services for Validation of ECG Revenue/Collection Accounts by PWC: 2025 (*Quarter 1 & Quarter 2*) emailed to ECG on 9th April 2026 and set out our comments thereon.

Preliminary Comments
During the 2025 Quarter 1 and Quarter 2 reporting period (January–June 2026), ECG largely complied with the Cash Waterfall Mechanism. The only exceptions occurred in January 2025 and the early part of February 2025, when ECG operated the CWM outside the revised framework. From February 2025 onward, ECG operated a Single Collection Account in line with Government directives and disbursed funds strictly in accordance with approved monthly CWM allocations. Accordingly, all identified infractions on the operations of the CWM relate to the January and early part of February 2025 period, when the revised CWM framework was not fully in effect.

Our responses to the significant findings raised in the Report are presented below:

Key Findings:
1.0 *Net Underpayment to CWM Beneficiaries Compared to Approved Allocations*

Response
The underpayments occurred between 1st January and early February 2025 when ECG was operating the CWM outside the revised CWM framework. Thereafter, ECG complied fully with the CWM and Government directive on the operations of CWM.

2.0 *Discrepancies Between CWM and ECG Cash Settlement Platform Collection Amounts*

Response
The discrepancies occurred between 1st January to 15 February 2025 when ECG was operating the CWM outside the revised CWM framework. Thereafter, ECG complied fully with the CWM and Government directive on the operations of CWM.

Internal

3.0 *Absence of Defined Payment Timelines in the CWM Leading to Delays in Disbursement to CWM Beneficiaries.*

Response

ECG made payments in accordance with the dates the CWM Implementation Committee approved of the amounts payable to stakeholders within 24 hours. However, some delays do occur when the bank had to secure US dollars before paying the beneficiaries. Currently, arrangements have been reached with BOG to forestall future delays.

4.0 Incomplete Submission of Bank Accounts for Validation.

Response

ECG provided the Consultants with all revenue bank accounts that sweep into the Single Collections Account, as well as all operational bank accounts at Head Office and the Regions/Districts. The accounts excluded from the submission were dormant or inactive accounts, donor-funded project accounts, and loan repayment accounts. ECG nonetheless takes note of the recommendation and will make these accounts available for future audits and verifications.

5.0 Variance between Statutory Payments declared in CWM and actual bank payments

Response

The variance arose in January 2025, when ECG operated outside the revised Cash Waterfall Mechanism (CWM) framework. From mid-February 2025 onwards, ECG has fully complied with the CWM and the relevant Government directives.

6.0 Absence of Documented Procedures for Estimating Non-Purchase Prepaid Sales and Prepayment Recoveries

Response

ECG is currently updating its operating procedures for estimating prepayment sales where deposits are received for billing. This is in line with the implementation of the Polymorph billing system to address low network connectivity challenges in smart meter areas, as well as to capture non-purchasing customers on non-smart prepayment systems.

7.0 Absence of Documented Procedures for Estimating Postpaid Sales/Billing Figures

Response

ECG is updating its operating procedures for estimating postpaid sales and billing in line with the Polymorph billing system, to address billing outliers that require further investigation in subsequent months.

8.0 Variance between MMS Billing Data and Power BI Reporting Data

Response

ECG is engaging network providers to improve connectivity in identified areas and to also optimize the interface between MMS and the Power BI reporting system to address data gaps caused by delayed transmission of real-time consumption when the smart meters go offline.

9.0 MMS and non-MMS systems versus sales data analysis

Response

The recommendation to implement a data cut-off (freeze) date is being considered to address real-time data lags between the meters and servers unto the reporting systems for both smart and non-smart prepayment platforms, pending implementation by the system providers.

10.0 Delay in the application of VAT and Levies to an Exempt Industrial Customer

Response

The issue has been resolved by the system provider, and measures are being implemented to clear the backlog.

11.0 Absence of Data Ownership Clauses in ECG-Polymorph Contract and Lack of Contractual Documentation for Beacon Services (Adora)

Response

Management acknowledges the concerns and will amend the Polymorph contract to clearly define data ownership and address related documentation gaps.

12.0 Mixing of Tariff Revenue Collections with Operational Expenditures

Response

The issue occurred between 1 January and 15 February 2025, during which ECG operated outside the revised Cash Waterfall Mechanism framework. From mid-February 2025 onward, ECG has fully complied with the CWM and the relevant Government directives.

13.0 Inconsistent Sweeping of Tariff Revenue to the Single Collection Account

Response

The inconsistency occurred between 1 January and 15 February 2025, when ECG was operating outside the revised CWM framework. From mid-February 2025 onward, ECG has fully complied with the CWM and the applicable Government directives.

14.0 No allocation made for bank charges under the CWM Framework

Response

The absence of provision for bank charges under the CWM framework is a significant concern for ECG. We therefore request that the CWM framework be amended to accommodate bank charges to enable full settlement of IPP obligations.

15.0 Electricity distribution losses between energy delivered and energy sold

Response

Electricity distribution losses are assessed on a continuous basis over the course of the year. Consequently, the data used by the Consultant is subject to change upon year-end, when final and actual figures become available.

16.0 Overstatement of Receivables Balance Due to Use of Estimated Sales Data in Trial Balance

Response
The Billing System is currently undergoing improvements to address challenges with accurate extraction of billing and receivables

We respectfully submit these observations for your consideration and recommend that they should be part of the final report for publication.

We remain committed to working with stakeholders to ensure the long-term financial sustainability of the energy sector.

Yours faithfully,

Kwame Kpekpena
AG. MANAGING DIRECTOR

Cc:
The Partner, PwC

Internal