

## Ministry of Energy

Final report - NEDCo Energy Revenue Validation

Task 2: Validation of revenue for the period July 2022 to June 2023

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29 December 2023

Dear Sir,

**Final Report - Consultancy Services for Validation of Northern Electricity Distribution Company (NEDCo) Revenue and Cash Collection**

We enclose our Final Report (the “Final Report” or the “Report”) on Task 2 as set out in the Contents on page 3. We draw your attention to the section Scope and Bases in which we refer to the scope of our work, sources of information, and the limitations of the work undertaken.

The Executive Summary Section is not intended to be exhaustive but highlights the most significant matters that have come to our attention concerning the NEDCo Revenue and Cash Collection validation engagement. It should, therefore, be read in conjunction with the whole Report and the appendices.

Our work does not constitute an audit and has therefore not been carried out per auditing or other standards and practices and accordingly should not be relied upon as if it has been carried out under those standards and practices.

It is important to note that, we have engaged management of NEDCo in obtaining the information used for our report and the necessary clarifications required to enhance our work. If you require further clarification, please contact Dennis Brown on +233 501 415 598 or [dennbrown@deloitte.com.gh](mailto:dennbrown@deloitte.com.gh) or Nii Asafoatse Abbey on +233 503 627 159 or [nabbey@deloitte.com.gh](mailto:nabbey@deloitte.com.gh) or the undersigned on 233 244 158 377 or [ylartey@deloitte.com.gh](mailto:ylartey@deloitte.com.gh).

Yours faithfully



**Yaw Appiah Lartey**  
Partner, Financial Advisory

# Contents

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
Statutory and supplier payments	30
Billing and invoicing	33
Working capital management	39
Appendices	41

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## Important Notice

This Final Report (the “Final Report” or “Report”) is strictly private and confidential to the Recipient Parties (as defined in the contract dated 10 November 2023 (the “Contract”).

Same as expressly provided for in the Contract, the Report must not be recited or referred to in any document or copied or made available (in whole or in part) to any other party.

Aside the authorised recipient of the report, no other party is entitled to rely on the report for any purpose whatsoever and we accept no responsibility or liability for its contents to any other party.

For your convenience, this report may have been made available to you in electronic and hard copy format. Multiple copies and versions of this report may, therefore, exist in different media. Only a final signed copy should be regarded as definitive.

# Scope and Bases

We have carried out the Revenue Validation Exercise as instructed in our contract dated 10 November 2023

<b>Scope</b>	<ul style="list-style-type: none"> <li>The scope of work is as detailed out in Appendix A1 of this report. Our deliverable is as follows: <ul style="list-style-type: none"> <li>Revenue Validation Report (Task 2)</li> </ul> </li> </ul>
<b>Access</b>	<ul style="list-style-type: none"> <li>Access to information was provided via a combination of e-mail exchanges and an electronic shared folder, as well as through virtual and/or physical meetings with management of NEDCo.</li> </ul>
<b>Timetable</b>	<ul style="list-style-type: none"> <li>Our work towards this Final Report was executed over an eight-week period. This is largely in line with the timeline indicated in the Contract for the assignment.</li> </ul>
<b>Information sources and discussions</b>	<ul style="list-style-type: none"> <li>The data and information used for our work was provided by the management of NEDCo. To obtain further clarification and to confirm our understanding of the data and information received from management, where feasible, we held discussions- virtual and/or physical- with the management of NEDCo. We also relied on phone calls in some instances to follow up on our information requirements.</li> <li>We engaged the following officials of NEDCo in the course of our work: <ul style="list-style-type: none"> <li>Emmanuel Lopko – Acting Director, Internal Audit</li> <li>Matinu Alhassan – Accounting Services Manager</li> <li>Hilda Jalia Alhassan – Billing and Revenue Protection Manager</li> </ul> </li> </ul>
<b>Quality of information</b>	<p>Our revenue validation exercise was mainly based on information provided by NEDCo covering the period July 2022 to June 2023. These include:</p>

<b>Quality of information</b>	<ul style="list-style-type: none"> <li>Monthly records of power received from Volta River Authority (VRA) and transmitted by the Ghana Grid Company (GRIDCo)</li> <li>Power receipts schedule signed by both NEDCo and GRIDCo</li> <li>Monthly and quarterly breakdown of power distributed to customers across Service Areas and towns</li> <li>Monthly bank reconciliation statements</li> <li>Bank statements evidencing receipts and payments</li> <li>Overall, the quality of the information provided by management for purposes of our review is reasonable. Also, we have had good access to management for purposes of obtaining the information and clarification required for our work, which has further improved the quality of the information provided for our work.</li> </ul>
<b>Outstanding information/matters</b>	<ul style="list-style-type: none"> <li>As at the time of this report, we had not received the following: <ul style="list-style-type: none"> <li>Reconciliation of difference noted between the reported cash collections and the validated cash collections</li> </ul> </li> </ul>



# Executive Summary

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
Statutory and supplier payments	30
Billing and invoicing	33
Working capital management	39
Appendices	41



# Executive Summary | Background and scope of work

The main objective of this assignment is to review and validate the revenue and cash collections of the Northern Electricity Distribution Company (NEDCo) over the period July 2022 to June 2023

## Background information

The Government of the Republic of Ghana (“GoG” or the “Government”) has received funding from the World Bank towards the cost of the Ghana Energy Sector Transformation Initiative Project (“GESTIP”) and have applied part of the proceeds for consulting services.

The Government of Ghana (“GoG”) in the effort to achieve financial sustainability of the State-Owned Energy (“SoE”) utilities and facilitate an efficient and reliable energy sector, initiated the Energy Sector Recovery Program (ESRP) in May 2019. In line with this objective, the Ministry of Energy (“MoEN” or the “Ministry”) has commissioned Deloitte to validate the reported revenue and cash collections of NEDCo covering the period July 2022 to September 2023 (the “Assignment”). Refer to Appendix A1 for an overview of the organisational structure of the NEDCo. This version of the Report is focused on the 12 months covering July 2022 to June 2023.

## Objectives of the Assignment

The objectives of the assignment are to:

- Assess and validate the accuracy and reliability of the tariff revenue recorded by NEDCo
- Evaluate the effectiveness of internal controls and processes in place to ensure proper collection of tariff revenue by NEDCo
- Assess the adequacy of systems and procedures for billing and revenue monitoring
- Additionally, validate the:
  - The electricity delivered by generators, and received by NEDCo
  - The electricity distributed by NEDCo
  - The corresponding billing by NEDCo
  - The monthly revenue collections of NEDCo
  - The corresponding transfer of collections into the Single Collections Account
  - The statutory deductions
  - Non-tariff revenue

## Scope of Services and Tasks

As detailed out in the Contract, the scope of work covers the following tasks:

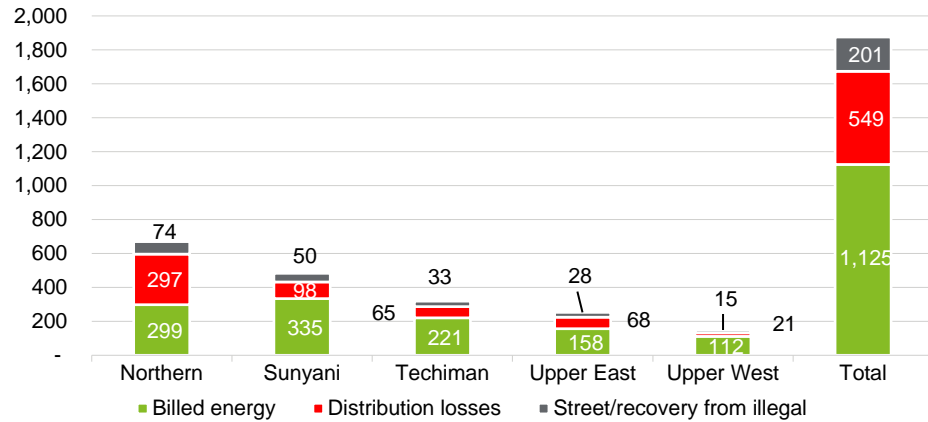
- Review and assess NEDCo’s billing and invoicing procedures, including the accuracy of metering, tariff application, and customer billing;
- Review and assess NEDCo’s revenue collection and accounts receivables management;
- Validate that all revenues received by NEDCo for the reporting period are in alignment with the electricity received and distributed by NEDCo along with corresponding billing and collections;
- Validate that NEDCo has made timely payments to their electricity suppliers;
- Identify all accounts into which customer cash collections are transferred;
- Check that all revenues received at each collection point were transferred in full to the relevant district collection/revenue accounts;
- Check that the daily banked receipts were swept in full into the Head Office Single collection/revenue account;
- Identify any revenue accounts utilised by NEDCo which are not swept into the district collection accounts and head office Single Collection account;
- Check the inflows into all the operational accounts to determine the sources of such revenue;
- Confirm the payment of statutory deductions to the relevant authorities;
- Check whether NEDCo is using a single collection account;
- High level commentary on the adequacy, transparency and effectiveness of accounting and overall internal control systems for the revenue collections, transfer, and disbursement mechanisms;
- Recommend and advise the GoG on how to strengthen internal controls and GoG oversight over NEDCo’s revenue and disbursement.



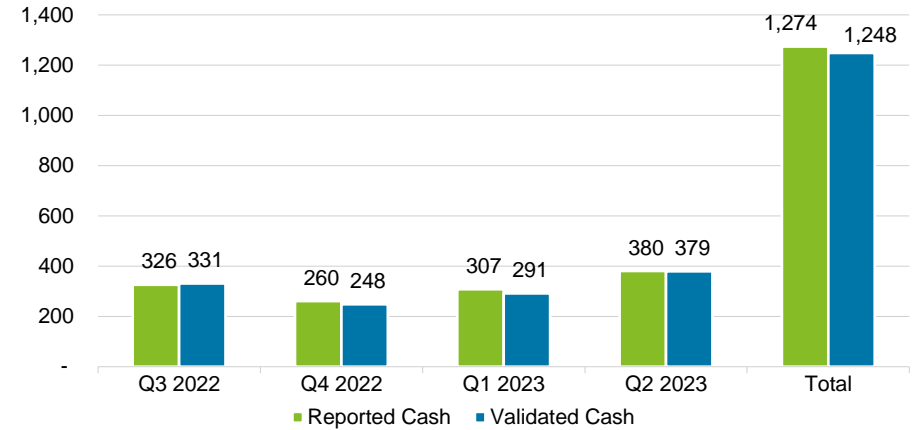
# Executive Summary | Snapshots of NEDCo's energy statistics

NEDCo reported total billed energy of 1.1 billion kWh, which represents 60% of the total Grid power purchased from VRA. This translated into revenue of GHS1.4 billion with reported cash collections amounting to GHS1.3 billion (c.90.5% of revenue) over the period Jul 2022 to Jun 2023

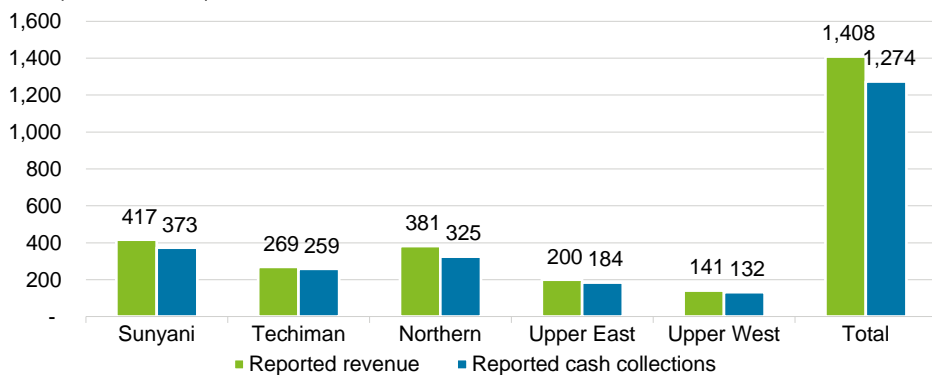
**Figure 1A: Analysis of power purchased and distributed -Jul 2022 to Jun 2023 (millions of kWh)**



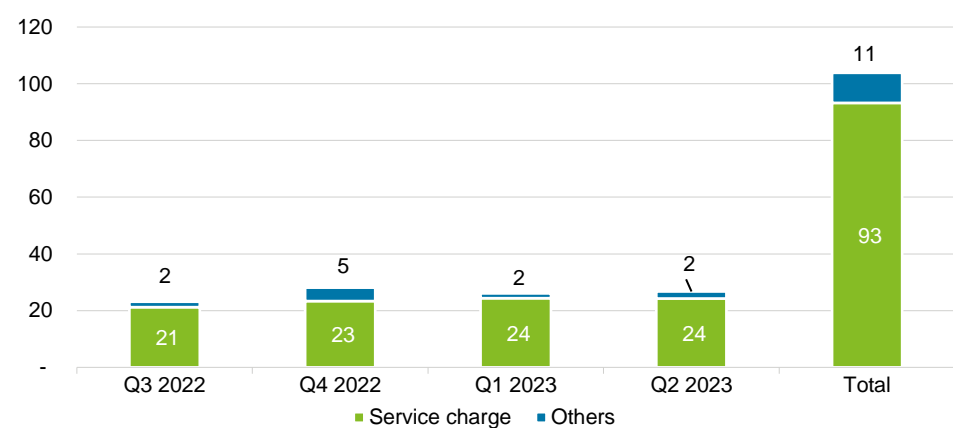
**Figure 1C: Reported vs Validated cash collection for power sales Jul 2022 to Jun 2023(GHS' millions)**



**Figure 1B: Reported revenue vs reported cash collections- Jul 2022 to Jun 2023 (GHS' millions)**



**Figure 1D: Non-tariff revenue- Jul 2022 to Jun 2023 (GHS' millions)**



Source: Management Information & Deloitte Analysis



# Executive Summary | Summary of power purchases & distribution

NEDCo reported total power purchases of 1.9 billion kWh over the period July 2022 to June 2023, out of which 29% was lost in the process of distribution. It is worth noting that among the service areas, Northern Area recorded the highest distribution loss of 44%

Table 1 : Summary of power purchases and distribution for the period Jul 2022 to Jun 2023 (kWh)

Summary of power purchases and distribution for the period Jul 2022 to Jun 2023 (kWh)							
Service Area	GRID Power Purchased		Street Lights (C)	Energy Recovery/ Illegal (D)	Accountable Power (E=B+C+D)	Distribution Losses (F=A-E)	Dist'n Loss %
	(A)	Billed Energy (B)					
Sunyani	483,677,437.31	335,029,767.55	48,367,743.73	2,091,773.90	385,489,285.18	98,188,152.13	20.3%
Techiman	319,230,886.75	221,451,781.85	31,923,088.68	851,296.27	254,226,166.80	65,004,719.96	20.4%
Northern	670,203,471.52	299,129,569.38	67,020,347.15	7,231,391.97	373,381,308.50	296,822,163.02	44.3%
Upper East	253,985,855.59	157,677,242.75	25,398,585.56	3,093,851.65	186,169,679.96	67,816,175.63	26.7%
Upper West	148,795,355.10	111,940,830.55	14,873,345.51	515,315.76	127,329,491.82	21,465,863.28	14.4%
<b>Grand total</b>	<b>1,875,893,006.27</b>	<b>1,125,229,192.08</b>	<b>187,583,110.63</b>	<b>13,783,629.55</b>	<b>1,326,595,932.26</b>	<b>549,297,074.01</b>	<b>29%</b>

Source: Management Information & Deloitte Analysis

## NEDCo's power purchases and distribution

As presented in Table 1 above, NEDCo's commercial statistic report for the period July 2022 to June 2023 indicates total power purchased and transmitted to NEDCo of 1.9 billion kWh, out of which 1.1 billion kWh was billed to customers as revenue. In addition to the billed energy, 187.5 million kWh of the power purchased was assessed as consumption for street lighting, and 13.8 million kWh was estimated as recoveries from illegal consumption. The sum of energy billed, power for street lighting, and recovery from illegal consumption is what management refers to as Accountable Power. The difference between the Accountable Power and the Total Power Purchased represents Total Distribution Losses.

Based on management's report, we noted Total Distribution Losses of 549.3 million kWh, which represents 29% of the Total Power Purchased. When analysed based on the revenue run rate for the period July 2022 to June 2023, the Total Distribution Losses translate to GHS452.3 million. NB: *The revenue run rate is calculated by dividing the billed energy in GHS by the billed energy in kWh to arrive at the billed energy per kWh, the result of which is multiplied by the total distribution loss.*

## NEDCo's power purchases and distribution (cont'd)

When analysed by Service Areas, Sunyani and Northern, together, received about 61.5% of the grid power supplied to NEDCo by VRA. These two, together, also accounted for 56.4% of the total billed energy, and 57.2% of the total accountable energy over the period July 2022 to June 2023. In terms of losses, Northern and Sunyani, together, accounted for 71.9% of the total distribution losses reported by NEDCo.

To validate NEDCo's power purchases and distribution for the period July 2022 to June 2023, we reviewed the monthly power bills/invoices submitted to NEDCo by VRA and GRIDCo. Included in the signed monthly invoices are schedules that track power receipts at various Bulk Supply Points (BSPs) (refer to Appendix A2) across the five Service Areas. We were able to fully reconcile the detailed schedules noted in the signed power bills/invoices covering the period July 2022 to June 2023 without exceptions. Please refer to the *Power Purchases and Distribution* section in the main report for a more detailed breakdown of the Power Purchases and Distribution.





# Executive Summary | Summary of power purchases & distribution

When compared to the average cost per kWh of GHS0.62, the average price per kWh of GHS1.24 indicates a mark-up of about GHS0.62 (c.101%) on each kWh of power sold by NEDCo over the period July 2022 to June 2023

Table 2 : Analysis of cost and sales per kWh of power sold by NEDCo

Analysis of cost and sales per kWh of power sold by NEDCo										
Month	Power supplied (kWh) (A)	Amount billed GHS (B)	Cost per kWh GHS (C=B/A)	TSC* (GHS) (D)	TSC per kWh (GHS) (E = D/A)	Total cost per kWh (GHS) (F=C+E)	Total Sales kWh (G)	Total Sales (GHS) (H)	Average price per kWh (I =H/G)	Mark-up on Cost
Jul-22	146,233,364	51,533,369	0.35	10,446,723	0.07	0.42	90,810,983	78,941,061	0.87	105%
Aug-22	139,878,942	49,294,039	0.35	9,992,723	0.07	0.42	91,144,953	82,006,554	0.90	112%
Sep-22	156,043,697	80,736,255	0.52	14,157,232	0.09	0.61	81,706,808	81,821,667	1.00	65%
Oct-22	151,973,579	78,610,917	0.52	16,130,058	0.11	0.62	91,442,781	107,404,114	1.17	88%
Nov-22	156,043,697	80,716,255	0.52	16,562,119	0.11	0.62	91,183,271	105,443,466	1.16	85%
Dec-22	149,430,738	75,136,614	0.50	15,860,072	0.11	0.61	93,953,960	110,539,222	1.18	93%
Jan-23	157,933,381	76,358,105	0.48	16,113,867	0.10	0.59	90,235,878	102,966,059	1.14	95%
Feb-23	161,193,878	89,866,666	0.56	18,775,278	0.12	0.67	91,858,824	122,780,331	1.34	98%
Mar-23	186,738,334	104,154,990	0.56	21,760,448	0.12	0.67	101,137,688	150,307,249	1.49	120%
Apr-23	181,765,717	105,396,488	0.58	21,175,610	0.12	0.70	101,398,766	153,837,798	1.52	118%
May-23	178,953,450	99,505,826	0.56	20,789,127	0.12	0.67	105,130,923	160,679,633	1.53	127%
Jun-23	154,798,921	100,253,973	0.65	20,319,990	0.13	0.78	95,224,359	151,577,940	1.59	104%
<b>Total</b>	<b>1,920,987,698</b>	<b>991,563,496</b>	<b>0.51</b>	<b>202,083,246</b>	<b>0.10</b>	<b>0.62</b>	<b>1,125,229,192</b>	<b>1,408,305,093</b>	<b>1.24</b>	<b>101%</b>

Refer to Appendix A7 for breakdown of the TSC into its various component

Source: Management Information & Deloitte Analysis

## Cost per kWh of power purchased

As shown in the table 2 above, the total cost of power to NEDCo is composed of the amounts billed to NEDCo by VRA for power supplied to the various bulk supply points and the amounts billed to NEDCo by GRIDCo for transmission of same power to the bulk supply points across the 5 Service Areas under NEDCo.

For the 12-month period covering July 2022 to June 2023, NEDCo received 1.92 billion kWh of power from VRA for which it was billed a total of GHS991.6 million by VRA, translating into an average cost of GHS0.51 per kWh of power supplied by VRA. Similarly, NEDCo received total bill of GHS202.1 million as transmission charges from GRIDCo, which translates into an average transmission cost of GHS0.10 per kWh of power transmitted. Together, these amounts to an average cost of GHS0.62 per kWh of power purchased and transmitted to NEDCo over the period July 2022 to June 2023.

## Price per kWh of power sold

As presented in Table 2, over the period July 2022 to June 2023, NEDCo recorded total power sales of 1.125 billion kWh at GHS1.408 million, which translates into an average price of GHS1.24 per kWh of power sold over the period.

## Mark-up on cost

When compared to the average cost per kWh of GHS0.62, the average price per kWh of GHS1.24 indicates a mark-up of about GHS0.62 on each kWh of power sold by NEDCo over the period July 2022 to June 2023. This reflects a margin of about 101% on the cost per unit of power purchased and transmitted to NEDCo over the period.

The mark-up analysed on cost suggests that NEDCo typically recovers about twice the per unit cost it incurs to procure and transmit power from VRA to its bulk supply points. This indicates that, all other things being equal, NEDCo is commercially positioned to more than adequately recover costs incurred in purchasing power and to fully settle obligations to its suppliers. This therefore suggests that NEDCo's inability to settle liabilities owed to its suppliers is largely due to a combination of its distribution losses and cash flow challenges rather than its commercial arrangements with suppliers and customers.



# Executive Summary | Summary of revenue & collection

NEDCo's total billed energy for the period July 2022 to June 2023 amounted to about 1.1 billion kWh, with Sunyani and Northern areas together accounting for 56.4% of the total billed energy over the period

Table 3: Summary of revenue and collection - NEDCo

Summary of revenue and collection - NEDCo											
Service Area	Billed to Prepaid Customers (kWh)	Billed to Post-paid Customers (kWh)	Total Billed Energy (kWh) (C=A+B)	Billed to Pre-paid Customers (GHS) (D)	Billed to Post-paid Customers (GHS) (E)	Total Billed Energy (GHS) (F=D+E)	Collection from Pre-paid Customers (GHS) (G)	Collection from Post-paid Customers (GHS) (H)	Total Collections (GHS) (I=G+H)	Collection % of billings	Consumption %
	(A)	(B)		(G)	(H)						
Sunyani	165,476,837.15	169,552,930.40	335,029,767.55	215,541,203	200,988,913	416,530,115	224,067,834.46	149,381,190.17	373,449,024.63	99.7%	31.7%
Techiman	135,272,591.01	86,179,190.84	221,451,781.85	169,480,357	99,749,320	269,229,677	175,149,839.98	84,145,175.33	259,295,015.31	96.3%	19.1%
Northern	124,281,327.98	174,848,241.40	299,129,569.38	168,755,539	212,208,485	380,964,024	188,491,086.19	136,826,827.13	325,317,913.32	85.4%	25.8%
Upper East	90,861,737.75	66,815,505.00	157,677,242.75	119,048,304	81,053,394	200,101,697	128,265,007.05	55,948,430.67	184,213,437.72	92.1%	13.6%
Upper West	72,553,024.50	39,387,806.05	111,940,830.55	90,339,382	51,140,197	141,479,579	97,699,009.96	34,254,046.69	131,953,056.65	93.3%	9.7%
<b>Grand total</b>	<b>588,445,518.39</b>	<b>536,783,673.69</b>	<b>1,125,229,192.08</b>	<b>763,164,785</b>	<b>645,140,307.90</b>	<b>1,408,305,093</b>	<b>813,672,777.64</b>	<b>460,555,669.99</b>	<b>1,274,228,447.63</b>	<b>90.5%</b>	<b>100.0%</b>

Source: Management Information & Deloitte Analysis

## NEDCo's billed energy, revenue and cash collection

As presented in Table 3 above, total billed energy by NEDCo for the period July 2022 to June 2023 amounted to about 1.1 billion kWh. Together, the Sunyani and Northern area accounted for 56.4% of the total billed energy over the period.

The total kWh of billed energy over the period July 2022 to June 2023 translated into total revenue of GHS1.4 billion with Northern and Sunyani areas accounting for 56.6% of the total revenue billed.

When analysed by customer type, prepaid customers accounted for 52.3% of power consumed and 54.2% of revenue generated, while post-paid customers accounted for 47.7% of power consumed, translating into 45.8% of the total revenue billed over the period July 2022 to June 2023. A more detailed breakdown of power consumption and billings per Service Area has been presented in Appendix 3 of this report.

In terms of cash collection, NEDCo reported total cash collection of GHS1.3 billion over the period July 2022 to June 2023, with cash collected from prepaid customers accounting for 63.9% of the total. Refer to *Table 4* for a summary of our analyses of cash collected per bank statements.

## NEDCo's billed energy, revenue and cash collection (cont'd)

When analysed by Service Areas, Sunyani accounted for the highest cash collection ratio at 99.7% of the billed revenue, whilst Upper East, Techiman and Upper West recorded cash collection to billing ratios of 92.1%, 96.3% and 93.3% respectively. The lowest ratio was recorded in Northern at 85.4%. For Sunyani and Techiman, which represent the top two areas when ranked by collection to billings ratio, we note that power billed to prepaid customers in these areas accounted for 63.0% and 46.4% respectively of total billed to these areas. This partly accounts for the relatively higher collection ratios recorded in these areas.

To validate the billed energy and revenue reported by NEDCo, we performed a walk-through test of the power billing and revenue accounting software in use at NEDCo to ascertain the accuracy of management's assertions about how the system has been configured to account for revenue. In performing the systems testing procedures, we used sample transactions to recalculate revenue data generated from the system and have noted no material exceptions. We also requested billed energy and cost to be regenerated for all the areas. Please refer to the '*Billing and Invoicing*' section and *Appendix A6* of this report for further details.



# Executive Summary | Summary of revenue & collection

Based on our review of bank statements for NEDCo's collection accounts, credit notes issued by VRA and cheques, we noted total cash collection of GHS1.25 billion, which is about 2.07% lower than the total cash collections reported by NEDCo for the period Jul 2022- Jun 2023

Table 4: Summary of revenue and collection - NEDCo

Cash validated from bank statements (GHS'000)							
Service Area	Source	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Total	Variance
Sunyani	Cash from bank statements (A)	96,715	74,826	86,074	108,323	365,938	
	Cash per management report (B)	87,015	78,140	98,353	109,941	373,449	
	<i>Difference noted (A-B)</i>	9,700	(3,314)	(12,279)	(1,618)	(7,511)	(2.01%)
Techiman	Cash from bank statements (A)	47,252	50,111	59,958	74,718	232,039	
	Cash per management report (B)	61,405	56,106	63,201	78,583	259,295	
	<i>Difference noted (A-B)</i>	(14,153)	(5,995)	(3,243)	(3,865)	(27,256)	(10.51%)
Northern	Cash from bank statements (A)	108,617	56,548	70,423	93,866	329,454	
	Cash per management report (B)	103,112	59,199	71,536	91,471	325,318	
	<i>Difference noted (A-B)</i>	5,505	(2,651)	(1,113)	2,394	4,137	1.27%
Upper East	Cash from bank statements (A)	40,395	33,957	36,171	51,259	161,780	
	Cash per management report (B)	42,074	39,600	42,837	59,703	184,213	
	<i>Difference noted (A-B)</i>	(1,680)	(5,644)	(6,666)	(8,444)	(22,433)	(12.18%)
Upper West	Cash from bank statements (A)	31,317	25,244	29,778	39,328	125,668	
	Cash per management report (B)	32,606	27,305	31,278	40,764	131,953	
	<i>Difference noted (A-B)</i>	(1,289)	(2,060)	(1,500)	(1,437)	(6,285)	(4.76%)
Mobile Money	Validated Momo (A)	2,379	4,051	4,779	7,301	18,510	n/a
Cheque Deposits	Validated Cheque deposits	4,000	3,000	3,500	4,000	14,500	n/a
Consolidated	Cash from bank statements (A)	330,676	247,738	290,683	378,794	1,247,890	
	Cash per management report (B)	326,212	260,350	307,204	380,462	1,274,228	
	<i>Difference noted (A-B)</i>	4,463	(12,612)	(16,522)	(1,668)	(26,338)	(2.07%)

Refer to Appendix A7 for breakdown of the TSC into its various component

Refer to Appendix A9 for details of cash validation for the various areas

Source: Management Information & Deloitte Analysis

## NEDCo's billed energy, revenue and cash collection (cont'd)

Table 4 summarizes the results of our cash validation work covering the period July 2022 to June 2023. Based on information provided by management and our review of same, we noted total cash collections of c.GHS1.247 billion over the period July 2022 to June 2023. This compared lower to the total reported cash collections of c.GHS1.274 billion for the same period, indicating an unreconciled difference of c.GHS26.338 million. Management indicated that the difference is likely to have resulted from timing differences between date on which the billing system records cash receipts from customers and when these cash receipts are banked. Aside the high-level explanation provided by management, management was unable to assist in reconciling the difference noted

During our validation process, we noted from discussions with management that NEDCo has an arrangement with Broad Spectrum Limited, an electronic payments service provider, for the aggregation of all mobile money payments, which are then transferred in bulk to the Company's current account at GCB Bank. These were included in our validated cash collections.

Management also indicated that organisations such as the Ghana Water Company Limited (GWCL), K-NET Ghana and Free SHS Secretariat issue cheque payments for power consumption which are directly deposited into NEDCo's Head Office SG and Ecobank accounts. We have also included these in the validated cash collections.

We noted that NEDCo does not operate a Single Collection Account where all cash collection from power sales across the five Service Areas under NEDCo are transferred. We however noted instances of bulk transfers into the Northern Area power sales account from other accounts mapped to the other Service Areas, although management confirmed that this account is not operated as a Single Collection Account. .



# Executive Summary | Summary of revenue & collection

Management's schedules for non-tariff revenue indicate total non-tariff revenue of GHS103.9 million generated over the period July 2022- June 2023. About 90% of this relate to service charges included in all customer bills

Table 5: Summary of non-tariff revenue

Schedule of non-traiff revenue: July 2022- June 2023 (GHS'000)						
Item	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Total	% of total
Service Charge (Distribution)	21,197.85	23,390.44	24,391.08	24,245.40	<b>93,224.76</b>	<b>89.7%</b>
General Miscellaneous Income	1,280.38	1,353.01	496.50	918.14	<b>4,048.02</b>	<b>3.9%</b>
Interest-Bank Deposits (Local)	3.00	2,656.97	329.50	47.87	<b>3,037.33</b>	<b>2.9%</b>
Income from Unestimated Work	255.82	221.93	509.31	736.83	<b>1,723.89</b>	<b>1.7%</b>
Reconnection Fees	117.58	208.40	104.91	272.52	<b>703.42</b>	<b>0.7%</b>
Meter Maintenance Fees	31.73	94.54	48.01	316.57	<b>490.84</b>	<b>0.5%</b>
Sale of IC Cards	101.61	76.22	88.94	107.96	<b>374.73</b>	<b>0.4%</b>
Others**	139.50	52.83	85.42	47.05	<b>324.79</b>	<b>0.3%</b>
<b>Total</b>	<b>23,127.46</b>	<b>28,054.33</b>	<b>26,053.66</b>	<b>26,692.33</b>	<b>103,927.79</b>	<b>100%</b>

Refer to Appendix A8 for full table

Source: Management Information & Deloitte Analysis

## NEDCo's non-tariff revenue for the period July 2022 to June 2023

As summarized in Table 5 above, management reported total non-tariff revenue of GHS103.9 million for the period July 2022 to June 2023. The key components of NEDCo's non-tariff revenue are summarily explained as follows:

- Service charge- This is a fee charged to all customers to cover the cost of NEDCo's services, and it's included in all customers' bills but separated from power sales and reported as a component of non-tariff revenue. This amounted to a total of GHS93.2 million over the period July 2022 - June 2023 and constituted c.89.7% of the total non-tariff revenue reported for the quarter.
- General miscellaneous income- This, according to management, mainly includes income that can not be classified or charged to a specific ledger account. An example of such is the penalty for illegal connection. This amounted to a total of GHS4 million over the period reviewed and constituted c.3.9% of the total non-tariff revenue.
- Interest on local bank deposits- This relates to interest earnings on cash deposited in NEDCo's local bank accounts. This amounted to GHS3.03 million over the period July 2022 – June 2023 and constituted c.2.9% of the total non-tariff revenue reported for the review period.

## NEDCo's non-tariff revenue for the period July 2022 to June 2023 (cont'd)

- Income from 'unestimated work'- Reported in management schedules as "income from unestimated" work, this relates to payment made by customers found to have performed illegal connection on their meters. Customers who have performed illegal connection are required to make payment for the power they consumed. This amounted to a total of GHS1.72 million over the period July 2022 – June 2023 and constituted c.1.7% of the total non-tariff revenue reported for the quarter.
- Reconnection fees- This relate to fees charged to customers for reconnection after being disconnected for various reasons, including illegal connection and non-payment of bills. These amounted to a total of GHS703.42 thousand over the period reviewed and constituted c.0.7% of the total non-tariff revenue.
- Meter maintenance fees- This is also charged to customers as a flat fee and included in all customer power bills for purposes of covering the cost of maintenance works done periodically on the meters. These amounted to a total of GHS490.8 thousand over the period reviewed and constituted c.0.5% of the total non-tariff revenue



# Executive Summary | Summary of payments to suppliers and regulators

NEDCo's payables due to its suppliers (VRA and GRIDCo) stood at GHS2.4 billion as of 30 June 2023, representing about 24 months' worth of power bills and transmission charges received from VRA and GRIDCo

Table 6 : Summary of validated supplier and regulatory payments – Jul 2022 to June 2023

Summary of validated supplier and regulatory payments - Jul 2022 to Jun 2023								
Entities	Bills	Payments	Pmt. % of Bills	Outstanding debts (GHS'm)			Months Outstanding	
				Bal b/f	Change	Bal c/f	AMB* (GHS'm)	Indicative Months
<b>Power suppliers:</b>								
VRA	975.84	366.00	38%	1,257.78	609.84	1,867.62	81.32	22.97
GRIDCO	202.07	78.00	39%	410.15	124.07	534.21	16.84	31.73
<b>Subtotal-power suppliers</b>	<b>1,177.90</b>	<b>444.00</b>	<b>38%</b>	<b>1,667.92</b>	<b>733.90</b>	<b>2,401.83</b>	<b>98.16</b>	<b>24.47</b>
<b>Regulatory entities:</b>								
MOE	42.25	1.54	4%	-	40.70	40.70	3.52	11.56
NEF	28.17	2.06	7%	-	26.11	26.11	2.35	11.12
PURC	-	-	n/a	-	-	-	-	n/a
Energy Commission	-	-	n/a	-	-	-	-	n/a
<b>Subtotal- Regulatory</b>	<b>70.42</b>	<b>3.60</b>	<b>5%</b>	<b>-</b>	<b>66.81</b>	<b>66.81</b>	<b>5.87</b>	<b>11.39</b>
<b>Grand total</b>	<b>1,248.32</b>	<b>447.60</b>	<b>36%</b>	<b>1,667.92</b>	<b>800.72</b>	<b>2,468.64</b>	<b>104.03</b>	<b>23.73</b>

\*Average Monthly Bill

Source: Management Information & Deloitte Analysis

## Supplier and statutory bills and payments

Table 6 above is a summary of supplier and statutory bills for NEDCo, and payments made towards reducing these liabilities. These have been validated using copies of bills and payment receipts provided by NEDCo for our review.

**Supplier bills and payments:** As shown Table 6 above, NEDCo's suppliers include VRA and GRIDCo for the supply and transmission of power, respectively. In total, NEDCo received power bills amounting to GHS1.2 billion over the period July 2022 to June 2023 and made payments amounting to GHS444.0 million over the same period. The payments made represent only about 37.7% of the total power bills received from VRA and GRIDCo. The shortfall recorded for the period (c.GHS733.9 million) adds up to the opening balance of outstanding bills amounting to GHS1.7 billion to leave a closing balance of GHS2.4 billion as of 30 Jun 2023. Comparing this balance to the average monthly bill of GHS98.2 million recorded over the period July 2022 to June 2023 indicates that supplier payments, as of 30 Jun 2023, reflects a payable period of 25 months and suggests poor timeliness of settling supplier bills.

## Supplier and regulatory bills and payments (cont'd)

**Regulatory bills and payments:** Table 6 also presents a summary of amounts required to be paid to some statutory bodies, including the Ministry of Energy (MOE), National Electrification Fund (NEF), Public Utilities Regulatory Commission (PURC), and Energy Commission (EC).

In total, we estimated statutory bills amounting to GHS70.4 million over the period Jul 2022 to Jun 2023 and validated payments made by NEDCo amounting to GHS3.6 million over the same period. The payments made represent about 5.1% of the total bills assessed on NEDCo over the period Jul 2022 to Jun 2023.

As of the date of finalising our report, we had not received information on the outstanding balance of statutory payments as of 30 Jun 2023. We were, thus, unable to assess the total balance of outstanding payments as of 30 Jun 2023 and the indicative number of months of payments this translates into.

For MOE and NEF, the regulatory payments required of NEDCo have been specified in the Energy Sector Levies (Amendment) Act (Act 946). The Act directs that NEDCo should pay MOE and NEF 3% and 2%, respectively, of the price per kWh of electricity charged to customers. Although management asserts that the payments are done on cash collected basis, we have reflected the actual bills as prescribed by the Act for purposes of our validation exercise.

For PURC and Energy Commission, there were no specific requirements in the Act that obligates NEDCo to make any statutory payments. We also did not sight any invoices for statutory payments from PURC and/or EC to NEDCo for the period July 2022 to June 2023.

The bills received from GRIDCo are made up of the Transmission Service Charges (TSC1), TSC 2 and Regulatory Levy. According to management, the Regulatory Levy component of the fee is supposed to be paid to PURC by GRIDCo. The Regulatory Levy component of the GRIDCo bills for the period July 2022 to June 2023 amounted to GHS14.74m. See *Appendix A7* for a breakdown of the monthly GRIDCo bills.



# Executive Summary | Summary of issues and recommendations

Based on our review, we have noted and risk-rated the issues below, along with our recommendations for your consideration (1/4)

Issue	Risk rating	Observation	Recommendation
Manual data collection and entry for post-paid customers prone to human error		We noted from our discussions with management that, for the post-paid meters, the Company deploys field agents, also known as “meter readers”, to go around and read the meters of post-paid customers for power consumed every month. This data is currently collected manually using meter reading forms and subsequently entered manually into the revenue accounting system for processing. The information collected and manually typed into the system is then processed into monthly bills which are sent to the customers for payment. Aside from the security risk that this arrangement poses to the field agents, such a manual approach to collecting data on consumption is prone to human error, which can translate into misstatement of billed energy and revenue. In addition, it provides room for unscrupulous field agents and customers to conspire to defraud the company.	<i>As hinted by management, NEDCo should fast-track the procurement of hand-held meter reading devices that can automatically record consumption information from the post-paid meters and report this data to the billing and revenue accounting system without manual intervention. In the interim, NEDCo should work towards moving more customers onto its prepaid meters to reduce the extent to which manual intervention may be required in collecting and processing consumption data.</i>
Low cash collection from post-paid customers		Aside Techiman, which recorded a cash collection to billing ratio of 84.4% for post-paid customers, all the other areas recorded ratios less than 60% with 59% in Sunyani, 29% in Northern, 37% in Upper West, and 45% in Upper East. Indications are that the Company is having a tough time collecting cash for power consumed by post-paid customers and this is materially affecting its cash flows and by extension, its capacity to meet its obligations to suppliers and other parties as they fall due. To put this in perspective, our analysis indicates that, as of 30 September 2023, the Company had accumulated about GHS2.6 billion in payables due to VRA and GRIDCo and this translates into about 22 months of payable period when compared to the average monthly bills received from these two suppliers over the period July to September 2023.	<i>The implementation of a fully prepaid metering system across all Service Areas should resolve this issue. We, however, acknowledge that this will require some amount of work to prepare the ground for the implementation of such a project. In the interim and until such a time when resources are made available and all potential impediments are cleared to make way for implementation, management must ensure they perform regular revenue mobilisation exercises to collect revenue due NEDCo from post-paid customers.</i>
Loss of revenue due to high distribution losses		Over the period July to September 2023, about 30% of the power purchased and transmitted to NEDCo for distribution to customers was lost in the distribution process with no indication that these losses would be recovered at all. Based on the total revenue of GHS459.7 million reported for the period July to September 2023, the distribution losses recorded translate to about GHS233.0 million. According to management, the distribution losses are composed of both technical and commercial losses although management was unable to separate the losses into the two components.	<i>Management should consider putting together a team of technical and commercial experts with a mandate to produce effective and implementable measures to improve distribution efficiency and significantly reduce losses, thereby making available more power for sale to customers to boost revenue.</i>

Risk rating/impact on revenue and cash collection >>>



High



Medium



Low

# Executive Summary | Summary of issues and recommendations

Based on our review, we have noted and risk-rated the issues below, along with our recommendations for your consideration (2/4)

Issue	Risk rating	Observation	Recommendation
Significant build up of supplier payables due to distribution losses and cash flow deficiencies		NEDCo was able to settle only about 44% of the supplier bills it received from VRA and GRIDCo. This resulted in a shortfall of GHS195.9 million when the total payments made over the July to September 2023 period were matched to the total bills received for the same period. With an opening balance of GHS2.4 billion in payables due to these suppliers as of 30 Jun 2023, we estimated the resulting payables as of 30 September 2023 to be GHS2.6 billion. This, based on the average monthly bills computed for the period Jul- Sep 2023, reflects about 22 months worth of outstanding payables due to suppliers. This continuous build-up in outstanding payables is likely to have a significant toll on the cash flows of VRA and GRIDCo, which are strategic assets of Ghana. We noted that this situation has resulted mainly from the combination of high distribution losses and challenges with recovering cash from post-paid customers.	<p><i>Management may consider the following as measures to improve cash flows and significantly reduce and manage NEDCo's obligations to its suppliers:</i></p> <ul style="list-style-type: none"> <li><i>Institute measures to improve distribution efficiency and significantly reduce losses, thereby making available more power for sale to customers and to generate additional cash to settle suppliers.</i></li> <li><i>Work towards moving more post-paid customers onto pre-paid meters to cut down on commercial losses resulting from customers' inability or unwillingness to pay for power consumed. This should improve cash flows and help reduce NEDCo's obligation to its suppliers.</i></li> </ul>
Need to fund working capital shortfall		We noted from our review of management's schedules that NEDCo's payables due to VRA and GRIDCo, together, stood at about GHS2.6 billion as at 30 Sep 2023. However, its receivables due from customers stood at a total of about GHS1.5 billion as at 30 Sep 2023. This implies that, NEDCo will be unable to fully meet its obligations to its suppliers even if it were to recover its receivables fully in cash for purposes of settling debts owed to its suppliers. NEDCo's working capital position as at 30 Sep 2023 indicate a shortfall of more than GHS1.0 billion, which may have to be funded from external sources.	<p><i>As noted above, taking steps to improve distribution efficiency and cut down on the losses will help generate more revenue and improve cash flows, thereby improving NEDCo's capacity to settle its liabilities.</i></p> <p><i>Additionally, as it stands now, there is a shortfall of about GHS1.0 billion which must be funded if NEDCo is to meet its obligation to suppliers. Management should conduct cost-benefit analysis of the funding options available to decide on the most viable option for funding the shortfall.</i></p>
Unreconciled difference in the cash collections reported versus those noted from our review of the various bank accounts and other cash collection channels		Based on the information provided for our review, we validated total cash collections amounting to GHS1.61 billion over the period July 2022 to September 2023, as against the total reported cash collections of GHS1.64 billion over the same period. The difference of GHS27.6 million represents less cash validated when compared to the amount reported over the period reviewed. Although management indicated that the unreconciled difference is likely to be the result of timing differences between when cash is paid by customers and recorded by the billing system and when same cash is deposited in NEDCo's accounts, we were unable to reconcile the difference noted. Notwithstanding management's explanations, we noted that the lack of monthly and/or quarterly cash reconciliations poses risk of misreporting and potential mishandling of cash.	<p><i>We recommend for management to institute a monthly and/or quarterly cash reconciliation exercise and assign this to the finance department as part of their core responsibilities. This will allow for the differences noted in the cash collections reported as against those banked to be regularly reconciled and for any issues relating to misreporting or mishandling of cash to be detected and resolved in a timely manner.</i></p>

Risk rating/impact on revenue and cash collection >>>



High



Medium



Low

# Executive Summary | Summary of issues and recommendations

Based on our review, we have noted and risk-rated the issues below, along with our recommendations for your consideration (3/4)

Issue	Risk rating	Observation	Recommendation
No monitoring to identify meters that have been tampered with.		<p>Until an illegal connection is reported by someone or detected during normal routine checks by a NEDCo officer, there is no other way for it to be detected. Meters that have been tampered with by customers to avoid payment for energy consumed have their readings indicated as zeros or negative numbers in the Hexing system. However, this is not flagged automatically. The NEDCo officer must manually query a meter number before identifying if a meter has zero or negative readings.</p> <p>This poses the risk of NEDCo losing potential revenue since customers who have tampered with their meters or have performed illegal connections make no payment for power consumed. This also contributes to the increased percentage of distribution losses since energy consumed is not billed and hence can not be accounted for.</p>	<p><i>The Loss Control Unit of NEDCo should be enabled to generate periodic reports of meters with zero or negative readings in the Hexing system and further investigate or follow up on these meters or customers to ascertain if these readings are due to faulty meters or illegal connections.</i></p> <p><i>Hexing should be configured to automatically prompt NEDCo officers when a specific meter has been reading zeros or negatives over a certain period for further follow ups by officers.</i></p>
Absence of a Single Collection Account		<p>Although we noted from our cash validation work instances where cash collected in accounts mapped to the various Service Areas were transferred to the Northern Area Power Sales Account, management confirmed that NEDCo does not operate a Single Collection Account into which all collections across the five Service Areas are swept. The lack of a Single Collection Account makes it more difficult to track and validate collections from power sales.</p>	<p><i>NEDCo should set up a Single Collection Account into which cash collections from all the Service Areas are transferred and properly reconciled to the cash collection reported in the Commercial Statistics Report on monthly basis. This will allow for effective tracking of cash collections and timely decision-making regarding payments that are linked to the cash collections.</i></p> <p><i>They should also establish clear and well-defined procedures for cash collections and a standardised process for transferring funds to the Single Collection Account.</i></p>

Risk rating/impact on revenue and cash collection >>>



High



Medium



Low



# Executive Summary | Summary of issues and recommendations

Based on our review, we have noted and risk-rated the issues below, along with our recommendations for your consideration (4/4)

Issue	Risk rating	Observation	Recommendation
No automation between Hexing billing system and Oracle E-business Suites		<p>We observed that the Assistant Area Finance Officer manually copies and pastes data from the Hexing Billing system to an Excel template before uploading it onto the Oracle E-Business Suite.</p> <p>The manual data transfer from the Hexing Billing System to the Oracle E-business Suites poses the risk of human error during the transfer process, leading to inaccurate journal entries and potential revenue loss.</p>	<i>NEDCo should implement an automated data transfer system that directly connects the Hexing Billing system to the Oracle E-business Suite. This will help reduce the reliance on manual inputting of customer sales report into the Oracle Billing system. In the interim, there should be regular training sessions for finance officers to emphasize the importance of accurate customer sales data transfer.</i>
Revenue recognition from non-smart pre-paid customers inconsistent with standard accounting practices		<p>We noted from management discussions that, for customers on the non-smart prepaid customers, all payments received from customers for the purchase of power are immediately recognised as revenue as the system has not been configured to calculate revenue based on actual consumption within a month. Since cash received from non-smart prepaid customers are prepayments for power yet to be consumed, recognising the payments immediately as revenue instead of recognising only the portion that relates to actual consumption is indicative of overstatement of revenue generated from non-smart prepaid customers.</p>	<i>Where internal capacity exists, management should resource its internal IT team to reconfigure the non-smart prepaid metering system to include the functionality that allows it to compute revenue based on actual consumption. Alternatively, subject to an assessment of costs, management should consider changing all non-smart prepaid meters to smart prepaid meters to resolve this issue.</i>

Risk rating/impact on revenue and cash collection >>>



High



Medium



Low



# Power purchases and distribution

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
Statutory and supplier payments	30
Billing and invoicing	33
Working capital management	39
Appendices	41



## Power purchases and distribution

Based on our review of power supply bills from VRA and the schedule of power supplied to various Bulk Supply Points, we were able to reconcile NEDCo's reported power purchases of 1.9 billion kWh over the period July 2022 to June 2023 with no material exceptions noted

Table 7 : Summary of power purchases and distribution for the period Jul 2022 to Jun 2023 (kWh)

Summary of power purchases and distribution for the period Jul 2022 to Jun 2023 (kWh)								
Service Area	Bulk Supply Point	GRID Power Purchased		Street Lights (C)	Energy Recovery/Illegal (D)	Accountable Power (E=B+C+D)	Distribution Losses (F=A-E)	Dist'n Loss %
		(A)	Billed Energy (B)					
Sunyani	Sunyani	158,051,261.31	121,446,121.95	15,805,126.13	1,768,200.90	139,019,448.98	19,031,812.33	12%
	Berekum	116,599,400.00	95,204,340.00	11,659,940.00	119,762.00	106,984,042.00	9,615,358.00	8%
	Mim	158,432,900.00	97,827,705.80	15,843,290.00	148,575.00	113,819,570.80	44,613,329.20	28%
	Bechem	50,593,876.00	20,551,599.80	5,059,387.60	55,236.00	25,666,223.40	24,927,652.60	49%
<b>Subtotal- Sunyani</b>		<b>483,677,437.31</b>	<b>335,029,767.55</b>	<b>48,367,743.73</b>	<b>2,091,773.90</b>	<b>385,489,285.18</b>	<b>98,188,152.13</b>	<b>20%</b>
Techiman	Techiman	231,462,366.75	161,750,842.20	23,146,236.68	668,302.43	185,565,381.31	45,896,985.45	20%
	Kintampo	87,768,520.00	59,700,939.65	8,776,852.00	182,993.84	68,660,785.49	19,107,734.51	22%
<b>Subtotal- Techiman</b>		<b>319,230,886.75</b>	<b>221,451,781.85</b>	<b>31,923,088.68</b>	<b>851,296.27</b>	<b>254,226,166.80</b>	<b>65,004,719.96</b>	<b>20%</b>
Northern	Tamale	468,953,981.52	199,528,137.38	46,895,398.15	7,231,391.97	253,654,927.50	215,299,054.02	46%
	Yendi	175,138,400.00	81,410,375.40	17,513,840.00	-	98,924,215.40	76,214,184.60	44%
	Buiepe/Yapei	12,491,490.00	8,990,195.10	1,249,149.00	-	10,239,344.10	2,252,145.90	18%
	Damango	13,619,600.00	9,200,861.50	1,361,960.00	-	10,562,821.50	3,056,778.50	22%
<b>Subtotal- Northern</b>		<b>670,203,471.52</b>	<b>299,129,569.38</b>	<b>67,020,347.15</b>	<b>7,231,391.97</b>	<b>373,381,308.50</b>	<b>296,822,163.02</b>	<b>44%</b>
Upper East	Bolga	111,974,285.91	75,038,579.42	11,197,428.59	3,093,851.65	89,329,859.66	22,644,426.25	20%
	Bawku	77,152,106.00	41,042,265.03	7,715,210.60	-	48,757,475.63	28,394,630.37	37%
	Navrongo	51,342,833.68	32,083,528.20	5,134,283.37	-	37,217,811.57	14,125,022.11	28%
	Zebilla	13,516,630.00	9,512,870.10	1,351,663.00	-	10,864,533.10	2,652,096.90	20%
<b>Subtotal- Upper East</b>		<b>253,985,855.59</b>	<b>157,677,242.75</b>	<b>25,398,585.56</b>	<b>3,093,851.65</b>	<b>186,169,679.96</b>	<b>67,816,175.63</b>	<b>27%</b>
Upper West	Wa	111,328,966.00	85,743,194.15	11,132,896.60	479,754.96	97,355,845.71	13,973,120.29	13%
	Tumu	16,695,650.00	10,033,491.10	1,669,565.00	12,700.80	11,715,756.90	4,979,893.10	30%
	Sawla	20,708,839.10	16,102,245.30	2,070,883.91	22,860.00	18,195,989.21	2,512,849.89	12%
	Chache	61,900.00	61,900.00	-	-	61,900.00	-	-
<b>Subtotal- Upper West</b>		<b>148,795,355.10</b>	<b>111,940,830.55</b>	<b>14,873,345.51</b>	<b>515,315.76</b>	<b>127,329,491.82</b>	<b>21,465,863.28</b>	<b>14%</b>
<b>Grand total</b>		<b>1,875,893,006.27</b>	<b>1,125,229,192.08</b>	<b>187,583,110.63</b>	<b>13,783,629.55</b>	<b>1,326,595,932.26</b>	<b>549,297,074.01</b>	<b>29%</b>



## Power purchases and distribution

Out of the total power purchased over the period reviewed Jul 2022 to Jun 2023, NEDCo reported billed energy of 1.1 billion kWh, which represents 60.0% of the total power purchased from VRA

### Overview

NEDCo currently purchases power solely from VRA. At the end of each month, VRA issues a power supply bill to NEDCo indicating the total cost and volume of power supplied to NEDCo. Also attached to the power supply bills are schedules that track power supplied to various Bulk Supply Points (BSPs) across each Service Area (see Table 7 in the previous slide).

To validate the reported power purchased over the period reviewed, we obtained and reviewed signed original copies of the monthly VRA power bills to verify the volume of power purchased by NEDCo for every month covered within our review period. As indicated above, each power bill or invoice contains a schedule that provides a breakdown of the power supplied into the bulk amounts received at the various designated BSPs across each Service Area. Overall, based on supply data included in the power bills reviewed, we noted total power supplied by VRA to NEDCo of 1.71 billion kWh, which is about 0.1% (1.62 million kWh) lower than the 1.88 billion kWh reported by NEDCo for the period July 2022 to June 2023. Please refer to Appendix A2 for a detailed schedule of power supplied to each of the BSPs across the Service Areas for every month covered in our review period.

### Accountable energy and distribution losses

Out of the reported total power purchased of 1.88 billion kWh, management reports indicate that NEDCo was able to account for only 1.3 billion kWh as either billed energy, power consumption for street/public lighting or recoveries from illegal consumption, which together, represents what management refers to as Accountable Power. The Accountable Power represents 71% of the total power purchased, with distribution losses accounting for the remaining 29%. Our analysis indicates that the Northern Service Area, which accounted for the highest proportion of the bulk power receipts from VRA at 35.7%, also recorded the highest distribution loss ratio at 44%.

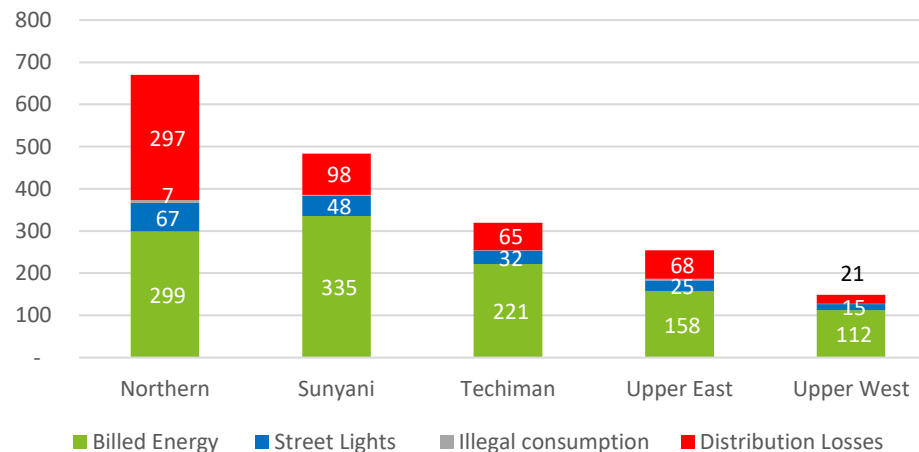
Figure 2 depicts the total power supplied to each Service Area and analysis of same into various components (billed energy, streetlights, recoveries from illegal consumption and distribution losses)

### Accountable energy and distribution losses (cont'd)

According to management, the distribution losses are made up of technical and commercial losses, although management was unable to split the distribution losses reported into the technical and commercial components. Technical losses occur during the distribution of power from NEDCo to customers, while commercial losses relate to power distributed to customers that is not recovered. Commercial losses may be occasioned by several factors, including illegal connections, faulty meters, customers' inability or unwillingness to pay for power consumed etc.

Out of the total power purchased over the period reviewed, NEDCo reported billed energy of 1.1 billion kWh, which represents 60.0% of the total power purchased from VRA. Power consumption due to public/street lighting and recoveries from illegal consumption accounted for 10.0% and 0.7% of the total power purchased, respectively.

**Figure 2: Analysis of Power purchases by Service Area (millions of kWh)**



Source: Management Information & Deloitte Analysis

This written communication is solely for Ministry of Energy's benefit, and is not intended to be relied upon by any other person or entity.



# Revenue and cash collection

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
Statutory and supplier payments	30
Billing and invoicing	33
Working capital management	39
Appendices	41



# Revenue and cash collection | Overview

For the period July 2022 to June 2023, NEDCo reported total revenue of GHS1.4 billion as against cash collections of GHS1.3 billion, representing 90.5% of the total revenue

Table 8: Summary of revenue and collection - NEDCo

Summary of revenue and collection - NEDCo											
Service Area	Billed to Prepaid Customers (kWh)	Billed to Post-paid Customers (kWh)	Total Billed Energy (kWh) (C=A+B)	Billed to Pre-paid Customers (GHS)	Billed to Post-paid Customers (GHS)	Total Billed Energy (GHS) (F=D+E)	Collection from Pre-paid Customers (GHS)	Collection from Post-paid Customers (GHS)	Total Collections (GHS) (I=G+H)	Collection % of billings	Consumption %
	(A)	(B)		(D)	(E)		(G)	(H)			
Sunyani	165,476,837.15	169,552,930.40	335,029,767.55	215,541,203	200,988,913	416,530,115	224,067,834.46	149,381,190.17	373,449,024.63	99.7%	31.7%
Techiman	135,272,591.01	86,179,190.84	221,451,781.85	169,480,357	99,749,320	269,229,677	175,149,839.98	84,145,175.33	259,295,015.31	96.3%	19.1%
Northern	124,281,327.98	174,848,241.40	299,129,569.38	168,755,539	212,208,485	380,964,024	188,491,086.19	136,826,827.13	325,317,913.32	85.4%	25.8%
Upper East	90,861,737.75	66,815,505.00	157,677,242.75	119,048,304	81,053,394	200,101,697	128,265,007.05	55,948,430.67	184,213,437.72	92.1%	13.6%
Upper West	72,553,024.50	39,387,806.05	111,940,830.55	90,339,382	51,140,197	141,479,579	97,699,009.96	34,254,046.69	131,953,056.65	93.3%	9.7%
<b>Grand total</b>	<b>588,445,518.39</b>	<b>536,783,673.69</b>	<b>1,125,229,192.08</b>	<b>763,164,785</b>	<b>645,140,307.90</b>	<b>1,408,305,093</b>	<b>813,672,777.64</b>	<b>460,555,669.99</b>	<b>1,274,228,447.63</b>	<b>90.5%</b>	<b>100.0%</b>

Source: Management Information & Deloitte Analysis

## NEDCo's billed energy, revenue and cash collection

As presented in Table 8 above, NEDCo total billed energy for the period July 2022 to June 2023 amounted to about 1.1 billion kWh, with Sunyani and Northern areas, together, accounting for 56.4% of the total billed energy over the period.

The total kWh of billed energy over the period July 2022 to June 2023 translated into total revenue of GHS1.4 billion with Northern and Sunyani areas accounting for 56.6% of the total revenue billed.

When analysed by customer type, prepaid customers accounted for 52.3% of power consumed and 54.2% of revenue generated, while post-paid customers accounted for 47.7% of power consumed, translating into 45.8% of the total revenue billed over the period July 2022 to June 2023. A more detailed breakdown of power consumption and billings per Service Area has been presented in *Appendix A3* of this report.

In terms of cash collection, NEDCo reported total cash collection of GHS1.3 billion over the period July 2022 to June 2023, with cash collected from prepaid customers accounting for 63.9% of the total.

## NEDCo's billed energy, revenue and cash collection (cont'd)

When analysed by Service Areas, Sunyani accounted for the highest cash collection ratio at 99.7% of the billed revenue, whilst Upper East, Techiman, and Upper West recorded cash collection to billings ratios of 92.1%, 96.3%, and 93.3% respectively. The lowest ratio was recorded in Northern at 85.4%. For Sunyani and Techiman, which represent the top two areas when ranked by collection to billing ratio, we note that power billed to prepaid customers in these areas accounted for 51.7% and 63.0% respectively of total billed to these areas. This partly accounts for the relatively higher collection ratios recorded in these areas.

To validate the billed energy and revenue reported by NEDCo, we performed a walk-through test of the power billing and revenue accounting software in use at NEDCo to ascertain the accuracy of management's assertions about how the system has been configured to account for revenue. In performing the systems testing procedures, we used sample transactions to recalculate revenue data generated from the system and noted no material exceptions. Refer to the tables in *Appendix A3* for detailed breakdown of the billed power (in both kWh and GHS) and cash collections for each of the five Service Areas noted in Table 8 above.



# Revenue and cash collection | Overview

Based on our review of bank statements for collection accounts provided by management of NEDCo, we noted total cash collection of GHS1.247 billion, which is about 2.07% lower than the total cash collections reported by NEDCo for the period Jul 2022- Jun 2023

Table 9: Summary of validated cash collection - NEDCo

Cash validated from bank statements (GHS'000)							
Service Area	Source	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Total	Variance
Sunyani	Cash from bank statements (A)	96,715	74,826	86,074	108,323	<b>365,938</b>	
	Cash per management report (B)	87,015	78,140	98,353	109,941	<b>373,449</b>	
	<i>Difference noted (A-B)</i>	<i>9,700</i>	<i>(3,314)</i>	<i>(12,279)</i>	<i>(1,618)</i>	<i>(7,511)</i>	<b>(2.01%)</b>
Techiman	Cash from bank statements (A)	47,252	50,111	59,958	74,718	<b>232,039</b>	
	Cash per management report (B)	61,405	56,106	63,201	78,583	<b>259,295</b>	
	<i>Difference noted (A-B)</i>	<i>(14,153)</i>	<i>(5,995)</i>	<i>(3,243)</i>	<i>(3,865)</i>	<i>(27,256)</i>	<b>(10.51%)</b>
Northern	Cash from bank statements (A)	108,617	56,548	70,423	93,866	<b>329,454</b>	
	Cash per management report (B)	103,112	59,199	71,536	91,471	<b>325,318</b>	
	<i>Difference noted (A-B)</i>	<i>5,505</i>	<i>(2,651)</i>	<i>(1,113)</i>	<i>2,394</i>	<i>4,137</i>	<b>1.27%</b>
Upper East	Cash from bank statements (A)	40,395	33,957	36,171	51,259	<b>161,780</b>	
	Cash per management report (B)	42,074	39,600	42,837	59,703	<b>184,213</b>	
	<i>Difference noted (A-B)</i>	<i>(1,680)</i>	<i>(5,644)</i>	<i>(6,666)</i>	<i>(8,444)</i>	<i>(22,433)</i>	<b>(12.18%)</b>
Upper West	Cash from bank statements (A)	31,317	25,244	29,778	39,328	<b>125,668</b>	
	Cash per management report (B)	32,606	27,305	31,278	40,764	<b>131,953</b>	
	<i>Difference noted (A-B)</i>	<i>(1,289)</i>	<i>(2,060)</i>	<i>(1,500)</i>	<i>(1,437)</i>	<i>(6,285)</i>	<b>(4.76%)</b>
Mobile Money	Validated Momo (A)	2,379	4,051	4,779	7,301	<b>18,510</b>	<i>n/a</i>
Cheque Deposits	Validated Cheque deposits	4,000	3,000	3,500	4,000	<b>14,500</b>	<i>n/a</i>
Consolidated	Cash from bank statements (A)	330,676	247,738	290,683	378,794	<b>1,247,890</b>	
	Cash per management report (B)	326,212	260,350	307,204	380,462	<b>1,274,228</b>	
	<i>Difference noted (A-B)</i>	<i>4,463</i>	<i>(12,612)</i>	<i>(16,522)</i>	<i>(1,668)</i>	<i>(26,338)</i>	<b>(2.07%)</b>

Refer to Appendix A7 for breakdown of the TSC into its various component

Refer to Appendix A9 for details of cash validation for the various areas

Source: Management Information & Deloitte Analysis

## Validation of NEDCo's cash collections

- Table 9 summarizes the results of our cash validation work covering the period July 2022 to June 2023. Based on the information provided by management and our review of same, we noted total cash collections of c.GHS1.247 billion over the period July 2022 to June 2023. This compared lower to the total reported cash collections of c.GHS1.274 billion reported for the same period, indicating an unreconciled difference of c.GHS26.388 million. Management indicated that the difference is likely to have resulted from timing differences between date on which the billing system records cash receipts from customers and when these cash receipts are banked. Aside the high-level explanation provided by management, management was unable to assist in reconciling the difference noted
- When analyzed by Service Areas, the Upper East Area recorded the largest negative variance at 12.36%, whilst Techiman, Upper West and Sunyani recorded variances of 10.51%, 4.76% and 2.01% respectively. Northern Area had a positive variance of 1.27%.
- During our validation process, we noted from discussions with management that NEDCo has an arrangement with Broad Spectrum Limited, an electronic payments service provider, for the aggregation of all mobile money payments, which are then transferred in bulk to the Company's current account at GCB Bank. These were included in our validated cash collections.
- Management also indicated that some organisations issue cheques as payment for power which are paid directly into the NEDCo Head Office SG and Ecobank account. These organisations are Ghana Water Company Limited (GWCL), K-NET Ghana and Free SHS Secretariat. We have included this in our validated cash collections.
- We noted that NEDCo does not operate a Single Collection Account where all cash collection from power sales across the five Service Areas under NEDCo are transferred. We however noted instances of bulk transfers into the Northern Area power sales account from other accounts mapped to the other Service Areas, although management confirmed that this account is not operated as a Single Collection Account. .



# Revenue and cash collection | Sunyani

For the period Jul 2022-Jun 2023, NEDCo reported revenue of GHS416.5 million for the Sunyani Area, which represents 29.6% of its total revenue. The corresponding cash collection amounted to GHS373.4 million (c.89.7% of revenue)

Table 10: Summary of revenue and collection – Sunyani Service Area

Summary of revenue and collection - Sunyani Service Area											
Sunyani	Billed to Prepaid Customers (kWh)	Billed to Post-paid Customers (kWh)	Total Billed Energy (kWh) (C=A+B)	Billed to Pre-paid Customers (GHS)	Billed to Post-paid Customers (GHS)	Total Billed Energy (GHS) (F=D+E)	Collection from Pre-paid Customers (GHS)	Collection from Post-paid Customers (GHS)	Total Collections (GHS) (I=G+H)	Collection % of billings	Consumption %
	(A)	(B)		(D)	(E)		(G)	(H)			
Sunyani	92,824,099.35	28,622,022.60	121,446,121.95	114,640,995.54	37,924,670.57	152,565,666.10	116,370,663.91	32,227,227.24	148,597,891.15	97.4%	36.2%
Berekum	24,315,729.60	12,684,316.00	37,000,045.60	32,676,638.02	14,838,205.27	47,514,843.29	33,858,882.00	10,164,204.62	44,023,086.62	92.7%	11.0%
Dormaa	5,111,757.40	13,102,825.80	18,214,583.20	7,174,331.27	14,563,165.77	21,737,497.04	7,967,463.65	11,428,803.85	19,396,267.49	89.2%	5.4%
Tepa	4,001,212.70	13,168,484.00	17,169,696.70	5,365,514.39	16,698,528.58	22,064,042.97	5,542,353.46	7,315,732.90	12,858,086.36	58.3%	5.1%
Hwidiem	6,923,362.60	14,924,257.00	21,847,619.60	10,153,914.86	18,984,629.65	29,138,544.51	10,655,812.69	16,930,219.26	27,586,031.94	94.7%	6.5%
Mim	2,796,709.80	16,356,422.00	19,153,131.80	3,952,483.28	18,685,278.46	22,637,761.74	4,288,698.78	15,858,324.02	20,147,022.80	89.0%	5.7%
Goaso	10,215,582.80	8,201,294.00	18,416,876.80	14,041,413.44	9,994,738.70	24,036,152.14	15,702,597.62	8,349,931.15	24,052,528.77	100.1%	5.5%
Duayaw Nkwanta	3,380,757.20	8,558,909.00	11,939,666.20	4,704,957.30	9,587,284.18	14,292,241.47	4,964,107.63	8,004,343.18	12,968,450.81	90.7%	3.6%
Bechem	2,219,307.60	6,392,626.00	8,611,933.60	3,020,332.26	6,968,748.32	9,989,080.59	3,132,181.11	5,296,981.43	8,429,162.54	84.4%	2.6%
Drobo	1,680,085.90	10,171,117.00	11,851,202.90	2,490,917.67	11,106,390.75	13,597,308.42	2,780,077.67	7,525,667.27	10,305,744.93	75.8%	3.5%
Sampa	1,746,353.80	10,400,951.60	12,147,305.40	2,732,100.33	11,356,584.73	14,088,685.05	3,208,502.85	8,410,778.74	11,619,281.58	82.5%	3.6%
Wamfie	1,428,511.10	8,476,583.40	9,905,094.50	2,002,387.87	9,609,122.98	11,611,510.84	2,169,235.23	5,237,837.25	7,407,072.48	63.8%	3.0%
Kukuom	1,295,180.20	7,208,685.00	8,503,865.20	2,461,401.26	8,167,823.80	10,629,225.06	2,582,323.24	3,758,276.83	6,340,600.07	59.7%	2.5%
Nkrankwanta	1,333,504.40	4,752,604.00	6,086,108.40	2,041,817.44	5,328,478.40	7,370,295.84	2,322,065.29	4,044,153.58	6,366,218.88	86.4%	1.8%
Kenyasi	6,204,682.70	6,531,833.00	12,736,515.70	8,081,997.60	7,175,262.57	15,257,260.16	8,522,869.34	4,828,708.87	13,351,578.21	87.5%	3.8%
<b>Grand total</b>	<b>165,476,837.15</b>	<b>169,552,930.40</b>	<b>335,029,767.55</b>	<b>215,541,202.52</b>	<b>200,988,912.72</b>	<b>416,530,115.24</b>	<b>224,067,834.46</b>	<b>149,381,190.17</b>	<b>373,449,024.63</b>	<b>89.7%</b>	<b>100.0%</b>

Source: Management Information & Deloitte Analysis

## Sunyani Area revenue and cash collection

In total, the Sunyani Service Area accounted for 335.0 million kWh of power consumed by NEDCo's customers. This represents 29.8% of the total energy billed by NEDCo over the period July 2022 to June 2023. Out of a total of 15 service stations in the Sunyani catchment area, two towns – Sunyani and Berekum – together, accounted for 47.3% of the total power consumed within the Sunyani Service Area. This suggests that power consumption within the Sunyani Service Area is significantly concentrated in these two towns.

For the Sunyani Service Area, total power billed to post-paid customers amounted to 169.6 million kWh over the period July 2022 to June 2023. This represents 50.6% of the total billed energy for the Sunyani Service Area. In terms of revenue, the post-paid customers accounted for GHS201.0 million over the same period, which represents 48.3% of the total revenue.

## Sunyani Area revenue and cash collection (cont'd)

In terms of cash collections, the Sunyani Service Area accounted for a total of GHS373.4 million, which represents 29.3% of the total cash collections over the period July 2022 to June 2023. Although pre-paid customers accounted for only 49.4% of the total billed energy in kWh, cash collected from pre-paid customers amounted to GHS224.1 million and constituted 60.0% of the total cash collections within the Sunyani Service Area.

Overall, total cash collections as a % of billed revenue for the Sunyani Service Area was 89.7% over the period July 2022 to June 2023. When ranked based on the ratio of cash collection to billed revenue, Goaso and Sunyani recorded the two highest ratios at 100.1% and 97.4% respectively. At the bottom of the rank Tepa and Kukuom towns with 58.3% and 59.7% respectively. Please refer to Table 20 in *Appendix A3* for a more detailed breakdown of revenue and cash collections for the Sunyani Area.





# Revenue and cash collection | Techiman

For the period Jul 2022 – Jun 2023, NEDCo reported revenue of GHS269.2 million for the Techiman Area, which represents 19.1% of its total revenue. The corresponding cash collection amounted to GHS259.3 million (c.96.3% of revenue)

Table 11: Summary of revenue and collection – Techiman Service Area

Summary of revenue and collection - Techiman											
Techiman	Billed to Prepaid Customers (kWh)	Billed to Post-paid Customers (kWh)	Total Billed Energy (kWh) (C=A+B)	Billed to Pre-paid Customers (GHS) (D)	Billed to Post-paid Customers (GHS) (E)	Total Billed Energy (GHS) (F=D+E)	Collection from Pre-paid Customers (GHS) (G)	Collection from Post-paid Customers (GHS) (H)	Total Collections (GHS) (I=G+H)	Collection % of billings	Consumption %
	(A)	(B)		(G)	(H)						
Techiman	57,645,311	18,316,875	75,962,186	71,320,065	21,449,047	92,769,112	73,875,277	20,408,982	94,284,260	101.6%	34.3%
Wenchi	14,172,449	5,198,332	19,370,781	17,782,043	6,016,251	23,798,293	18,288,149	7,383,705	25,671,854	107.9%	8.7%
Kintampo	12,554,036	6,577,702	19,131,738	15,858,869	8,126,201	23,985,070	16,376,792	8,286,426	24,663,218	102.8%	8.6%
Akumadan	5,057,135	4,305,531	9,362,666	6,338,892	5,057,068	11,395,961	6,526,747	5,885,190	12,411,937	108.9%	4.2%
Nkoranza	5,778,580	9,625,660	15,404,240	7,547,222	10,671,047	18,218,270	7,880,813	8,005,102	15,885,915	87.2%	7.0%
Ejura	12,894,461	5,695,554	18,590,015	16,045,670	6,673,717	22,719,388	16,718,616	5,633,934	22,352,550	98.4%	8.4%
Atebubu	6,369,748	8,737,995	15,107,743	8,022,305	9,785,910	17,808,215	8,243,761	7,153,001	15,396,762	86.5%	6.8%
Kwame Danso	1,927,462	4,481,525	6,408,987	2,513,062	5,088,603	7,601,665	2,604,960	3,081,317	5,686,277	74.8%	2.9%
Yeji	4,455,264	5,710,700	10,165,964	5,533,655	6,359,570	11,893,224	5,677,194	6,290,172	11,967,366	100.6%	4.6%
Nsawkaw	2,137,905	7,312,834	9,450,739	2,833,202	9,427,342	12,260,545	2,876,974	3,496,577	6,373,550	52.0%	4.3%
Bamboi	3,718,648	1,027,093	4,745,741	5,008,886	1,074,875	6,083,762	5,117,536	693,907	5,811,443	95.5%	2.1%
Jema	2,717,925	2,965,559	5,683,484	3,506,579	3,163,477	6,670,056	3,571,713	2,440,745	6,012,458	90.1%	2.6%
Busunya	854,137	2,052,391	2,906,528	908,979	2,249,888	3,158,867	934,001	1,633,997	2,567,998	81.3%	1.3%
Sekyre-Dumase	1,341,769	3,161,187	4,502,956	1,732,675	3,434,406	5,167,081	1,784,794	2,739,961	4,524,755	87.6%	2.0%
Abofour	3,647,763	1,010,253	4,658,016	4,528,252	1,171,917	5,700,169	4,672,513	1,012,160	5,684,673	99.7%	2.1%
<b>Grand total</b>	<b>135,272,591</b>	<b>86,179,191</b>	<b>221,451,782</b>	<b>169,480,357</b>	<b>99,749,320</b>	<b>269,229,677</b>	<b>175,149,840</b>	<b>84,145,175</b>	<b>259,295,015</b>	<b>96.3%</b>	<b>100.0%</b>

Source: Management Information & Deloitte Analysis

## Techiman Area revenue and cash collection

The Techiman Service Area accounted for 221.5 million kWh of power consumed by NEDCo's customers. This represents 19.7% of the total energy billed by NEDCo over the period July 2022 to June 2023. Out of a total of 15 service stations in the Techiman catchment area, the Techiman township accounted for 34% of the total power consumed within the Techiman Service Area. This suggests that power consumption within the Techiman Service Area is significantly concentrated in Techiman.

For the Techiman Service Area, total power billed to post-paid customers amounted to 86.2 million kWh over the period July 2022 to June 2023. This represents 38.9% of the total billed energy for the Techiman Service Area. In terms of revenue, the post-paid customers accounted for GHS99.7 million over the same period, which represents 37% of the total revenue.

## Techiman Area revenue and cash collection (cont'd)

In terms of cash collections, the Techiman Service Area accounted for a total of GHS259.3 million, which represents 20.3% of the total cash collections over the period July 2022 to June 2023. Pre-paid customers accounted for 61.1% of the total billed energy in kWh and cash collected from pre-paid customers constituted 67.5% of the total cash collections within the Techiman Service Area.

Overall, total cash collections as a % of billed revenue for the Techiman Service Area was 96.3% over the period July 2022 to June 2023. When ranked based on the ratio of cash collection to billed revenue, Akumadan and Wenchi towns recorded the two highest ratios at 108.9% and 107.9% respectively. At the bottom of the rank are Nsawkaw and Kwame Danso towns with 52.0% and 74.8% respectively. Please refer to Table 21 in *Appendix A3* for a more detailed breakdown of revenue and cash collections for the Techiman Area.



# Revenue and cash collection | Northern

For the period Jul- Jun 2023, NEDCo reported revenue of GHS381.0 million for the Northern Area, which represents 27.1% of its total revenue. The corresponding cash collection amounted to GHS325.3 million (c.85.4% of revenue).

Table 12: Summary of revenue and collection – Northern Service Area

Summary of revenue and collection - Northern Area											
Northern Area	Billed to Prepaid Customers (kWh)	Billed to Post-paid Customers (kWh)	Total Billed Energy (kWh) (C=A+B)	Billed to Pre-paid Customers (GHS)	Billed to Post-paid Customers (GHS) (E)	Total Billed Energy (GHS) (F=D+E)	Collection from Pre-paid Customers (GHS)	Collection from Post-paid Customers (GHS)	Total Collections (GHS) (I=G+H)	Collection % of	
	(A)	(B)		(D)	(E)		(G)	(H)		billings	Consumption %
Tamale	92,837,066.38	85,334,458.00	178,171,524.38	124,177,760.76	106,413,483.31	230,591,244.07	137,627,065.76	91,078,208.09	228,705,273.84	99.2%	59.6%
Yendi	5,990,439.80	8,901,217.00	14,891,656.80	8,491,858.66	10,356,592.07	18,848,450.72	9,303,081.13	5,718,365.81	15,021,446.94	79.7%	5.0%
Pong-Tamale/Savelugu	2,453,594.50	9,040,954.00	11,494,548.50	3,468,948.38	13,555,816.91	17,024,765.29	4,225,233.21	4,637,457.97	8,862,691.18	52.1%	3.8%
Buipe/Yapei	4,348,373.70	4,641,821.40	8,990,195.10	5,609,352.98	5,535,897.73	11,145,250.71	6,280,102.96	2,176,840.14	8,456,943.10	75.9%	3.0%
Salaga	1,545,355.90	6,627,709.00	8,173,064.90	1,986,333.42	7,784,426.25	9,770,759.67	2,275,618.56	4,414,963.61	6,690,582.17	68.5%	2.7%
Damango	5,164,890.50	4,035,971.00	9,200,861.50	6,424,817.65	5,329,248.24	11,754,065.88	7,140,447.13	1,652,612.15	8,793,059.28	74.8%	3.1%
Gusheigu/Karaga	2,250,180.90	8,180,206.00	10,430,386.90	3,486,200.88	9,022,031.53	12,508,232.41	4,343,762.81	3,483,380.84	7,827,143.65	62.6%	3.5%
Zabzugu/Tatale	1,663,087.80	4,634,753.00	6,297,840.80	2,573,510.44	5,164,696.46	7,738,206.90	2,982,374.24	2,093,190.05	5,075,564.29	65.6%	2.1%
Saboba	1,014,523.60	2,074,444.00	3,088,967.60	1,521,314.80	2,435,979.77	3,957,294.57	1,762,107.23	1,256,523.22	3,018,630.45	76.3%	1.0%
Bimbilla	1,456,058.40	10,270,269.00	11,726,327.40	2,392,000.59	11,516,864.64	13,908,865.22	2,534,315.28	3,634,621.18	6,168,936.46	44.4%	3.9%
Kete-Krachi	349,998.00	4,744,673.00	5,094,671.00	565,592.20	5,575,560.48	6,141,152.67	646,820.77	3,355,265.78	4,002,086.55	65.2%	1.7%
Tolon/Nyankpala/Kumbung	1,879,994.50	7,982,070.00	9,862,064.50	2,784,791.30	9,211,838.75	11,996,630.05	3,140,374.34	4,665,696.57	7,806,070.91	65.1%	3.3%
Kpassa	922,327.00	6,361,531.00	7,283,858.00	1,444,426.02	7,109,622.44	8,554,048.47	1,770,184.05	2,666,091.35	4,436,275.39	51.9%	2.4%
Kpandai	411,676.60	5,038,388.00	5,450,064.60	600,859.41	5,590,892.55	6,191,751.96	836,751.59	2,512,788.57	3,349,540.16	54.1%	1.8%
Chereponi	698,156.40	3,229,391.00	3,927,547.40	1,113,860.09	3,661,220.48	4,775,080.57	1,350,604.41	1,421,684.90	2,772,289.31	58.1%	1.3%
Chinderi	1,295,604.00	3,750,386.00	5,045,990.00	2,113,911.43	3,944,312.93	6,058,224.36	2,272,242.73	2,059,136.91	4,331,379.64	71.5%	1.7%
<b>Grand total</b>	<b>124,281,327.98</b>	<b>174,848,241.40</b>	<b>299,129,569.38</b>	<b>168,755,538.98</b>	<b>212,208,484.54</b>	<b>380,964,023.53</b>	<b>188,491,086.19</b>	<b>136,826,827.13</b>	<b>325,317,913.32</b>	<b>85.4%</b>	<b>100.0%</b>

Source: Management Information & Deloitte Analysis

## Northern Area revenue and cash collection

In total, the Northern Service Area accounted for about 299.1 million kWh of power consumed by NEDCo's customers. This represents 26.6% of the total energy billed by NEDCo over the period July 2022 to June 2023. Out of a total of 16 service stations in the Northern area, Tamale service station accounted for 59.6% of the total power consumed within the Northern Service Area. This suggests that power consumption within the Northern Service Area is significantly concentrated in Tamale.

For the Northern Service Area, total power billed to post-paid customers amounted to 174.8 million kWh over the period July 2022 to June 2023. This represents 58.5% of the total billed energy for the Northern Service Area. In terms of revenue, the post-paid customers accounted for GHS212.2 million over the same period, which represents 55.7 % of the total revenue.

## Northern Area revenue and cash collection (cont'd)

For cash collections, the Northern Service Area accounted for a total of GHS 325.3 million, which represents 25.5% of the total cash collections over the period July 2022 to July 2023. Although pre-paid customers accounted for only 41.5% of the total billed energy in kWh, cash collected from pre-paid customers amounted to GHS188.5 million and constituted 57.9% of the total cash collections within the Northern Service Area.

Overall, total cash collections as a % of billed revenue for the Northern Service Area was 85.4% over the period July 2022 to June 2023. When ranked based on the ratio of cash collection to billed revenue, Tamale and Yendi towns recorded the two highest ratios at 99.2% and 79.7% respectively. At the bottom of the rank are Bimbila and Tolon/Nyankpala/Kunbunu towns with 44.4 % and 51.9% respectively. Please refer to Table 22 in *Appendix A3* for a more detailed breakdown of revenue and cash collections for the Northern Area.



# Revenue and cash collection | Upper East

For the period Jul 2022 - June 2023, NEDCo reported revenue of GHS200.1 million for the Upper East Area, which represents 14.2% of its total revenue. The corresponding cash collection amounted to GHS184.2 million (c.92.1% of revenue)

Table 13: Summary of revenue and collection – Upper East Service Area

Summary of revenue and collection - Upper East Service Area											
	Billed to Prepaid Customers (kWh)	Billed to Post-paid Customers (kWh)	Total Billed Energy (kWh) (C=A+B)	Billed to Pre-paid Customers (GHS) (D)	Billed to Post-paid Customers (GHS) (E)	Total Billed Energy (GHS) (F=D+E)	Collection from Pre-paid Customers (GHS) (G)	Collection from Post-paid Customers (GHS) (H)	Total Collections (GHS) (I=G+H)	Collection % of billings	Consumption %
Upper West	(A)	(B)	(C=A+B)	(D)	(E)	(F=D+E)	(G)	(H)	(I=G+H)	(I/F)	(I/F)
Bolga	40,006,862.32	15,009,986.00	55,016,848.32	51,675,261.90	19,336,186.47	71,011,448.36	55,414,383.06	14,278,245.30	69,692,628.36	98.1%	34.9%
Bawku	9,352,287.60	7,170,876.00	16,523,163.60	12,165,645.45	8,686,126.18	20,851,771.63	12,837,106.39	5,448,828.27	18,285,934.66	87.7%	10.5%
Navrongo	11,983,988.20	9,680,950.00	21,664,938.20	15,298,685.06	12,759,625.35	28,058,310.40	16,805,925.10	9,361,736.51	26,167,661.61	93.3%	13.7%
Zebilla	4,922,791.10	4,590,079.00	9,512,870.10	6,765,101.11	5,407,295.43	12,172,396.53	7,321,857.03	4,017,149.08	11,339,006.12	93.2%	6.0%
Garu	3,261,326.70	2,508,509.00	5,769,835.70	4,452,420.59	2,865,204.70	7,317,625.29	4,621,467.58	1,496,565.85	6,118,033.43	83.6%	3.7%
Walewale	5,905,060.50	6,651,602.00	12,556,662.50	7,856,581.45	7,313,832.06	15,170,413.50	8,702,351.65	5,920,669.49	14,623,021.14	96.4%	8.0%
Sandema	3,702,712.10	3,024,623.00	6,727,335.10	4,915,500.77	3,614,757.78	8,530,258.56	5,346,177.88	2,388,047.56	7,734,225.44	90.7%	4.3%
Chiana	14,816.80	531,723.00	546,539.80	20,237.84	637,465.28	657,703.12	42,220.50	379,254.89	421,475.38	64.1%	0.3%
Gambaga	4,461,761.50	6,451,667.00	10,913,428.50	5,983,988.09	7,757,867.35	13,741,855.44	6,444,304.08	5,105,623.53	11,549,927.61	84.0%	6.9%
Bunkprugu	2,329,509.23	1,978,460.00	4,307,969.23	3,018,922.11	2,075,904.09	5,094,826.20	3,254,435.92	1,295,377.73	4,549,813.65	89.3%	2.7%
Yagaba	788,102.10	2,356,613.00	3,144,715.10	1,172,717.08	2,597,088.31	3,769,805.39	1,262,808.26	1,629,697.19	2,892,505.45	76.7%	2.0%
Bongo	2,828,438.60	4,636,630.00	7,465,068.60	3,831,552.86	5,268,476.07	9,100,028.93	4,206,078.37	2,885,617.39	7,091,695.77	77.9%	4.7%
Pusiga	1,304,081.00	2,223,787.00	3,527,868.00	1,891,689.40	2,733,564.71	4,625,254.11	2,005,891.22	1,741,617.88	3,747,509.10	81.0%	2.2%
<b>Grand total</b>	<b>90,861,737.75</b>	<b>66,815,505.00</b>	<b>157,677,242.75</b>	<b>119,048,303.70</b>	<b>81,053,393.78</b>	<b>200,101,697.48</b>	<b>128,265,007.05</b>	<b>55,948,430.67</b>	<b>184,213,437.72</b>	<b>92.1%</b>	<b>100.0%</b>

Source: Management Information & Deloitte Analysis

## Upper East Area revenue and cash collection

In total, the Upper East Service Area accounted for 157.7 million kWh of power consumed by NEDCo's customers. This represents 14.0% of the total energy billed by NEDCo over the period July 2022 to June 2023. Out of a total of 13 service stations in the Upper East catchment area, three towns – Bolgatanga, Bawku and Navrongo – together, accounted for 59.1% of the total power consumed within the Upper East Service Area. This suggests that power consumption within the Upper East area is significantly concentrated in these three towns.

For the Upper East Service Area, total power billed to post-paid customers amounted to 66.8 million kWh over the period July to June 2023. This represents 42.4% of the total billed energy for the Area. In terms of revenue, the post-paid customers accounted for GHS81.1 million over the same period, which represents 40.5% of the total revenue.

## Upper East Area revenue and cash collection (cont'd)

In terms of cash collections, the Upper East Service Area accounted for a total of GHS184.2 million, which represents 14.5% of NEDCo's total cash collections over the period July to June 2023. Although pre-paid customers accounted for only 57.6% of the total billed energy in kWh, cash collected from pre-paid customers amounted to GHS128.3 million and constituted 69.6% of the total cash collections within the Upper East area.

Overall, total cash collections as a percentage of billed revenue for the Upper East Service Area was 92.1% over the period July to June 2023. When ranked based on the ratio of cash collection to billed revenue, Bolgatanga, Walewale, Navrongo, Zebilla and Sandema towns recorded the five highest ratios at 98.1%, 96.4%, 93.3%, 93.2% and 90.7% respectively. At the bottom of the rank are Bongo, Yagaba and Chiana towns with 77.9%, 76.7 and 64.1% respectively. Please refer to Table 23 Appendix A3 for a more detailed breakdown of revenue and cash collections for the Upper East Area.



# Revenue and cash collection | Upper West

For the period Jul 2022 - Jun 2023, NEDCo reported revenue of GHS141.5 million for the Upper West Area, which represents 10.0% of its total revenue. The corresponding cash collection amounted to GHS132.0 million (c.93.3% of revenue)

Table 14: Summary of revenue and collection – Upper West Service Area

Summary of revenue and collection - Upper West Service Area											
Upper West	Billed to Prepaid Customers (kWh) (A)	Billed to Post-paid Customers (kWh) (B)	Total Billed Energy (kWh) (C=A+B)	Billed to Pre-paid Customers (GHS) (D)	Billed to Post-paid Customers (GHS) (E)	Total Billed Energy (GHS) (F=D+E)	Collection from Pre-paid Customers (GHS) (G)	Collection from Post-paid Customers (GHS) (H)	Total Collections (GHS) (I=G+H)	Collection % of billings	Consumption %
Wa	42,088,686.70	19,979,238.05	62,067,924.75	52,151,661.10	26,900,006.08	79,051,667.19	54,843,591.52	16,175,794.31	71,019,385.83	89.8%	55.4%
Lawra	2,989,049.00	836,217.00	3,825,266.00	3,593,920.34	1,128,168.37	4,722,088.71	3,867,500.73	1,186,174.01	5,053,674.74	107.0%	3.4%
Tumu	5,867,563.10	4,165,928.00	10,033,491.10	7,541,412.04	4,714,690.31	12,256,102.36	8,254,753.84	3,098,039.36	11,352,793.19	92.6%	9.0%
Jirapa	3,094,672.50	1,757,402.00	4,852,074.50	3,726,090.73	2,671,768.44	6,397,859.17	3,999,851.73	2,616,589.04	6,616,440.77	103.4%	4.3%
Nadowli	2,320,198.10	2,247,362.00	4,567,560.10	2,907,992.17	2,664,417.45	5,572,409.62	3,124,477.02	2,249,156.47	5,373,633.49	96.4%	4.1%
Bole	9,790,253.30	3,304,521.00	13,094,774.30	12,310,324.32	4,659,771.76	16,970,096.08	13,034,221.59	2,606,908.99	15,641,130.58	92.2%	11.7%
Nandom	4,387,198.40	2,476,447.00	6,863,645.40	5,570,745.44	3,104,589.48	8,675,334.91	6,561,808.60	2,483,858.39	9,045,666.99	104.3%	6.1%
Han	931,578.10	986,866.00	1,918,444.10	1,236,719.77	1,162,360.18	2,399,079.95	2,253,960.05	1,463,086.98	3,717,047.03	154.9%	1.7%
Issa	546,597.30	1,101,682.00	1,648,279.30	618,348.89	1,222,087.32	1,840,436.21	946,001.73	709,390.76	1,655,392.48	89.9%	1.5%
Sawla	537,228.00	2,470,243.00	3,007,471.00	682,167.62	2,912,337.57	3,594,505.19	812,842.15	1,665,048.38	2,477,890.53	68.9%	2.7%
Chache	-	61,900.00	61,900.00	-	-	-	1.00	-	1.00	-	-
<b>Grand total</b>	<b>72,553,024.50</b>	<b>39,387,806.05</b>	<b>111,940,830.55</b>	<b>90,339,382.43</b>	<b>51,140,196.96</b>	<b>141,479,579.39</b>	<b>97,699,009.96</b>	<b>34,254,046.69</b>	<b>131,953,056.65</b>	<b>93.3%</b>	<b>99.9%</b>

Source: Management Information & Deloitte Analysis

## Upper West Area revenue and cash collection

The Upper West Service Area accounted for about 111.9 million kWh of power consumed by NEDCo's customers. This represents 9.9% of the total energy billed by NEDCo over the period July 2022 to June 2023. The Upper West area has 11 total service stations, with the Wa town accounting for 55% of the total power consumed within the Upper West Service Area. Bole and Tumu are the next closest towns, accounting for 12% and 9% of the total power consumed, respectively.

For the Upper West Service Area, total power billed to post-paid customers amounted to 39.4 million kWh over the period July 2022 to June 2023. This represents 35.2% of the total billed energy for the Upper West Service Area. Similarly, the post-paid customers accounted for GHS51.1 million over the same period, which represents 36.1% of the total revenue.

## Upper West Area revenue and cash collection (cont'd)

For cash collections, the Upper West Service Area accounted for a total of about GHS132.0 million, which represents 10.0% of the total cash collections over the period July 2022 to June 2023. Pre-paid customers accounted for 74.0% of the total cash collected, amounting to GHS98.0 million. Wa town constituted 56.1% of the total cash collections within the Upper West Service Area.

Overall, total cash collections as a % of billed revenue for the Upper West Service Area was 93.3% over the period July 2022 to June 2023. When ranked based on the ratio of cash collection to billed revenue, Han and Lawra towns recorded the two highest ratios at 154.9% and 107.0% respectively. At the bottom of the rank is Sawla town with 68.9%. Please refer to Table 24 Appendix A3 for a more detailed breakdown of revenue and cash collections for the Upper West Area.



## Revenue and cash collection | Non-tariff revenue

Management's schedules for non-tariff revenue indicate total non-tariff revenue of GHS103.9 million generated over the period July 2022- June 2023. About 90% of this relate to service charges included in all customer bills

Table 15: Summary of Non-tariff revenue

Schedule of non-traiff revenue: July 2022- June 2023 (GHS'000)														
Item	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total	% of total
Service Charge (Distribution)	4,967.87	4,964.12	11,265.86	7,596.69	6,985.57	8,808.18	7,892.39	8,068.97	8,429.73	7,396.75	8,964.56	7,884.08	<b>93,224.76</b>	89.7%
General Miscellaneous Income	132.41	150.19	997.78	1,113.43	116.74	122.84	230.32	91.11	175.06	208.25	148.30	561.59	<b>4,048.02</b>	3.9%
Interest-Bank Deposits (Local)	2.99	0.00	-	443.73	0.25	2,212.99	0.64	19.25	309.60	21.32	13.25	13.30	<b>3,037.33</b>	2.9%
Income from Unestimated Work	155.95	40.15	59.72	39.73	92.48	89.71	117.98	254.72	136.61	392.23	186.63	157.97	<b>1,723.89</b>	1.7%
Reconnection Fees	37.92	57.22	22.45	45.79	94.56	68.05	38.04	11.71	55.16	82.90	108.39	81.23	<b>703.42</b>	0.7%
Meter Maintenance Fees	13.48	18.25	-	18.87	35.53	40.14	27.37	13.01	7.63	174.26	19.21	123.09	<b>490.84</b>	0.5%
Sale of IC Cards	60.47	37.94	3.20	19.53	26.44	30.25	18.03	38.27	32.64	19.73	43.19	45.04	<b>374.73</b>	0.4%
Others**	6.22	7.06	126.22	11.24	9.68	31.90	39.77	20.96	24.69	8.66	16.38	22.00	<b>324.79</b>	0.3%
<b>Total</b>	<b>5,377.31</b>	<b>5,274.94</b>	<b>12,475.22</b>	<b>9,289.01</b>	<b>7,361.26</b>	<b>11,404.06</b>	<b>8,364.54</b>	<b>8,517.99</b>	<b>9,171.13</b>	<b>8,304.11</b>	<b>9,499.91</b>	<b>8,888.31</b>	<b>103,927.79</b>	<b>100%</b>

\*\* Refer to Appendix A8 for full table

### NEDCo's non-tariff revenue for the period July 2023 to June 2023

As summarized in table 15, management reported total non-tariff revenue of GHS103.9 million for the period July 2022 to June 2023. The key components of NEDCo's non-tariff revenue are summarily explained as follows:

- Service charge- This is a fee charged to all customers to cover the cost of NEDCo's services, and it's included in all customers' bills but separated from power sales and reported as a component of non-tariff revenue. This amounted to a total of GHS93.2 million over the period July 2022 - June 2023 and constituted c.89.7% of the total non-tariff revenue reported for the quarter.
- General miscellaneous income- This, according to management, mainly includes income that cannot be classified or charged to a specific ledger account. An example of such is the penalty for illegal connection. This amounted to a total of GHS4 million over the period reviewed and constituted c.3.9% of the total non-tariff revenue.
- Interest on local bank deposits- This relates to interest earnings on cash deposited in NEDCo's local bank accounts. This amounted to GHS3.03 million over the period July 2022 – June 2023 and constituted c.2.9% of the total non-tariff revenue reported for the review period.

### NEDCo's non-tariff revenue for the period July 2022 to June 2023 (cont'd)

- Income from 'unestimated work'- Reported in management schedules as "income from unestimated" work, this relates to payment made by customers found to have performed illegal connection on their meters. Customers who have performed illegal connection are required to make payment for the power they consumed. This amounted to a total of GHS1.72 million over the period July 2022 – June 2023 and constituted c.1.7% of the total non-tariff revenue reported for the quarter.
- Reconnection fees- This relate to fees charged to customers for reconnection after being disconnected for various reasons, including illegal connection and non-payment of bills. These amounted to a total of GHS703.42 thousand over the period reviewed and constituted c.0.7% of the total non-tariff revenue.
- Meter maintenance fees- This is also charged to customers as a flat fee and included in all customer power bills for purposes of covering the cost of maintenance works done periodically on the meters. These amounted to a total of GHS490.8 thousand over the period reviewed and constituted c.0.5% of the total non-tariff revenue



# Statutory and supplier payments

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
<b>Statutory and supplier payments</b>	<b>30</b>
Billing and invoicing	33
Working capital management	39
Appendices	41



## Statutory and supplier payments | Supplier payments

Over the period July 2022 to June 2023, NEDCo made payments to VRA and GRIDCo totaling GHS444.0 million, which represents 37.7% of the total bills received from the two suppliers over the same period

Table 16: Supplier and regulatory payments – Jul 2022 to Jun 2023

Supplier and regulatory payments- Jul 2022 to Jun 2023																
Entities	Power Purchases/Regulatory Bills (GHS'm)					Payments (GHS'm)					Pmt. % of Bills	Outstanding debts (GHS'm)			Months Outstanding	
	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Total	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Total		Bal b/f	Change	Bal c/f	AMB* (GHS'm)	Indicative Months
<i>Power suppliers:</i>																
VRA	169.44	231.40	272.02	302.97	975.84	81.00	78.00	92.00	115.00	366.00	38%	1,257.78	609.84	1,867.62	81.32	22.97
GRIDCO	34.58	48.55	56.65	62.28	202.07	18.00	17.00	25.00	18.00	78.00	39%	410.15	124.07	534.21	16.84	31.73
<b>Subtotal-power suppliers</b>	<b>204.02</b>	<b>279.96</b>	<b>328.67</b>	<b>365.26</b>	<b>1,177.90</b>	<b>99.00</b>	<b>95.00</b>	<b>117.00</b>	<b>133.00</b>	<b>444.00</b>	<b>38%</b>	<b>1,667.92</b>	<b>733.90</b>	<b>2,401.83</b>	<b>98.16</b>	<b>24.47</b>
<i>Regulatory entities:</i>																
MOE	7.28	9.70	11.28	13.98	42.25	-	-	1.54	-	1.54	4%	-	40.70	40.70	3.52	11.56
NEF	4.86	6.47	7.52	9.32	28.17	-	-	2.06	-	2.06	7%	-	26.11	26.11	2.35	11.12
PURC	-	-	-	-	-	-	-	-	-	-	n/a	-	-	-	-	n/a
Energy Commission	-	-	-	-	-	-	-	-	-	-	n/a	-	-	-	-	n/a
<b>Subtotal- Regulatory</b>	<b>12.14</b>	<b>16.17</b>	<b>18.80</b>	<b>23.30</b>	<b>70.42</b>	<b>-</b>	<b>-</b>	<b>3.60</b>	<b>-</b>	<b>3.60</b>	<b>5%</b>	<b>-</b>	<b>66.81</b>	<b>66.81</b>	<b>5.87</b>	<b>11.39</b>
<b>Grand total</b>	<b>216.16</b>	<b>296.13</b>	<b>347.47</b>	<b>388.56</b>	<b>1,248.32</b>	<b>99.00</b>	<b>95.00</b>	<b>120.60</b>	<b>133.00</b>	<b>447.60</b>	<b>36%</b>	<b>1,667.92</b>	<b>800.72</b>	<b>2,468.64</b>	<b>104.03</b>	<b>23.73</b>
<i>Billed revenue</i>	<i>242.77</i>	<i>323.39</i>	<i>376.05</i>	<i>466.10</i>	<i>1,408.31</i>	<i>*Average Monthly Bill</i>										

Source: Management Information & Deloitte Analysis

### Supplier bills and payments

- Table 16 above shows the bills received from NEDCo's power suppliers, which include VRA for bulk supply of power and GRIDCo for transmission of the power supplied by VRA to designated BSPs across NEDCo's operational catchment areas. For the 12 months covering July 2022 to July 2023, bills received by NEDCo for power supply amounted to a total of GHS1.2 billion, with VRA's bills accounting for 82.8% of the total, whilst bills received from GRIDCo accounted for 17.2%.
- Over the same period, NEDCo made payments to VRA and GRIDCo totaling GHS444.0 million, representing 37.7% of the total bills received from the suppliers. This resulted in a shortfall of GHS733.9 million when matched against the total bills received over the period July 2022 - June 2023. The shortfall noted adds up to an opening balance of payables due to the suppliers of GHS1.7 billion on 31 July 2022 to leave a closing balance of GHS2.4 billion due to suppliers as at 30 June 2023.

### Supplier bills and payments

- To assess the timeliness and sufficiency of payments made to suppliers over the period reviewed, we calculated the indicative payable period (in months) based on the 12-month run rate. In this regard, we computed an Average Monthly Bill (AMB) received from suppliers over the 12-month period, which is GHS49.1 million. The ratio of outstanding payables due to suppliers as at 30 June 2023 and the AMB provides an indication of the number of months of outstanding payments due to suppliers. As shown in Table 16, our analysis indicates that NEDCo, as at 30 June 2023, owed about 24 months' worth of bills payable to its suppliers, with c.78.0% due to VRA and c.22.0% due to GRIDCo.
- The fee component for GRIDCo are made up of the Transmission Service Charges (TSC1), TSC 2 and Regulatory Levy. According to management, the Regulatory Levy component of the fee is supposed to be paid to PURC by GRIDCo. The Regulatory Levy component of the GRIDCo fees for the period July 2022 to June 2023 amounted to GHS14.74m. See *Appendix A7* for a breakdown of the monthly GRIDCo fees.





## Statutory and supplier payments | Regulatory payments

For the 12-month period covering July 2022 to June 2023, the regulatory bills assessed on NEDCo amounted to a total of GHS70.4 million, with amounts payable to MOE accounting for 60% of the total

Table 16: Supplier and regulatory payments – Jul 2022 to Jun 2023 (cont'd)

Supplier and regulatory payments- Jul 2022 to Jun 2023																
Entities	Power Purchases/Regulatory Bills (GHS'm)					Payments (GHS'm)					Pmt. % of Bills	Outstanding debts (GHS'm)			Months Outstanding	
	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Total	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Total		Bal b/f	Change	Bal c/f	AMB* (GHS'm)	Indicative Months
<i>Power suppliers:</i>																
VRA	169.44	231.40	272.02	302.97	975.84	81.00	78.00	92.00	115.00	366.00	38%	1,257.78	609.84	1,867.62	81.32	22.97
GRIDCO	34.58	48.55	56.65	62.28	202.07	18.00	17.00	25.00	18.00	78.00	39%	410.15	124.07	534.21	16.84	31.73
<b>Subtotal-power suppliers</b>	<b>204.02</b>	<b>279.96</b>	<b>328.67</b>	<b>365.26</b>	<b>1,177.90</b>	<b>99.00</b>	<b>95.00</b>	<b>117.00</b>	<b>133.00</b>	<b>444.00</b>	<b>38%</b>	<b>1,667.92</b>	<b>733.90</b>	<b>2,401.83</b>	<b>98.16</b>	<b>24.47</b>
<i>Regulatory entities:</i>																
MOE	7.28	9.70	11.28	13.98	42.25	-	-	1.54	-	1.54	4%	-	40.70	40.70	3.52	11.56
NEF	4.86	6.47	7.52	9.32	28.17	-	-	2.06	-	2.06	7%	-	26.11	26.11	2.35	11.12
PURC	-	-	-	-	-	-	-	-	-	-	n/a	-	-	-	-	n/a
Energy Commission	-	-	-	-	-	-	-	-	-	-	n/a	-	-	-	-	n/a
<b>Subtotal- Regulatory</b>	<b>12.14</b>	<b>16.17</b>	<b>18.80</b>	<b>23.30</b>	<b>70.42</b>	<b>-</b>	<b>-</b>	<b>3.60</b>	<b>-</b>	<b>3.60</b>	<b>5%</b>	<b>-</b>	<b>66.81</b>	<b>66.81</b>	<b>5.87</b>	<b>11.39</b>
<b>Grand total</b>	<b>216.16</b>	<b>296.13</b>	<b>347.47</b>	<b>388.56</b>	<b>1,248.32</b>	<b>99.00</b>	<b>95.00</b>	<b>120.60</b>	<b>133.00</b>	<b>447.60</b>	<b>36%</b>	<b>1,667.92</b>	<b>800.72</b>	<b>2,468.64</b>	<b>104.03</b>	<b>23.73</b>
<i>Billed revenue</i>	<i>242.77</i>	<i>323.39</i>	<i>376.05</i>	<i>466.10</i>	<i>1,408.31</i>	<i>*Average Monthly Bill</i>										

Source: Management Information & Deloitte Analysis

### Statutory bills and payments

Table 16 above shows the statutory bills assessed on NEDCo over the period July 2022 to June 2023. These include bills payable to the Ministry of Energy (MOE), National Electrification Fund (NEF), Public Utilities Regulatory Commission (PURC), and Energy Commission (EC).

For the payables due to MOE and the NEF, these are prescribed in the Energy Sector Levies (Amendment) Act (Act 946). Per the Act, NEDCo is required to pay 3% and 2% of its power sales to customers to MOE and NEF, respectively.

For PURC and Energy Commission, there were no specific requirements in the Act that obligate NEDCo to make any statutory payments. We also did not sight any invoices for statutory payments from PURC and/or EC to NEDCo for the period July 2022 to June 2023.

### Statutory bills and payments (cont'd)

For the 12 months covering July 2022 to June 2023, the statutory bills assessed on NEDCo amounted to a total of GHS70.4 million, with amounts payable to MOE accounting for 60% of the total. Over the same period, NEDCo made regulatory payments totaling GHS3.6 million representing 5.1% of the total regulatory bills. This resulted in a shortfall of GHS66.8 million when matched against the total bills received over the period July 2022 to June 2023.

As of the date of finalising our report, we had not received information on the outstanding balance of regulatory payments as of 30 June 2023. We were, thus, unable to assess the total balance of outstanding statutory payments as of 30 June 2023 and the indicative number of months of payments this translates into.





# Billing and invoicing

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
Statutory and supplier payments	30
<b>Billing and invoicing</b>	<b>33</b>
Working capital management	39
Appendices	41



# Billing and invoicing | Overview

NEDCo introduced an upgraded version of the Hexing billing system in 2019 to meet the changing demands as smart meters were introduced.

## Overview of NEDCo's billing system

NEDCo currently uses the Hexing billing system for its billing and invoicing operations. Prior to 2020, they used the Customer Base Management System (CBMS) system for processing non-smart prepaid meters and post-paid meters.

The Hexing billing system was introduced in 2020 to meet the changing demands as smart prepaid meters were introduced. Data from CBMS were migrated to Hexing. The CBMS currently serves only as a database for post-paid customers.

The current Hexing system can serve and onboard all meter types, rotate meters (convert details of post-paid meters replaced with either prepaid or smart meters), vend power to prepaid and postpaid users and monitor and validate all transactions.

## Types of Metering Systems

There are three types of meters issued by NEDCo to its customers. The billing process for each meter type is summarized below. See *Appendix A5* for a process flowchart for each meter type billing.

- **Postpaid** – Meter readers are required to take meter readings to be inputted into the Hexing system. The Hexing system then computes and generates a bill which is sent to the customer.
- **Non-smart Prepaid** – Non-smart meter users buy power upfront using a prepaid card. The prepaid card is loaded with the kWh of power purchased and a receipt is generated for the customer. The power is either bought at the NEDCo office or at the third-party vendor.
- **Smart Prepaid** – Smart meter users also buy power upfront. These users can buy power using the NEDCo mobile application or a mobile short code. They can also buy power at the NEDCo office or at the third-party vendor using only their meter numbers. The power bought is remotely transferred to their meters and a receipt is generated for them.

## Payment types

NEDCo allows its customers the flexibility of making payments through various methods. The various methods are explained as follows. See *Appendix A5* for a process flowchart for each payment method.

- **Payment at NEDCo's offices or to third party vendors** - Smart and non-smart meter users can buy power from either the NEDCo office or at a third-party vendor. Post paid meter users can also pay their outstanding bills at the NEDCo office or to a third-party vendor.
- **Payment using the mobile app or short code**: Payment of power bills using the mobile app or short code \*914# is for only postpaid and smart prepaid customers.
- **Local Mobilisation**: NEDCo sends cashiers to remote areas where they do not have access to any of the payment methods to receive payments from customers.

## Recoveries from Illegal Connections

NEDCo's loss control unit is responsible for handling illegal connections and recoveries. Illegal connection occurs when customers temper with their meters to avoid paying for energy consumed. Upon detection of illegal connection, NEDCo officials estimate the bill for the illegal power consumed based on the devices and gadgets identified on the premises the illegal connection was performed. The calculation of the power energy is done with a maximum 12-month period irrespective of how long the consumer has been using the power for free. See *Appendix A5* for a process flowchart of illegal connection power recovery process.

## Powers sales revenue reporting

The Billing & Revenue Protection Section (BRPS) of the system generates monthly consumption reports and forwards it to the Area Finance Officer. The Area Finance Officer after review of the report then sends it to the Assistant Area Finance Officer to be uploaded into the Oracle E-business Suites and subsequently posted to the various ledger accounts. See *Appendix A5* for a process flowchart

## Tariff application

PURC published only one tariff change in 2022 which took effect from 1 September 2022. In 2023 they published three tariff changes with effective dates as 1 February 2023, 1 June 2023 and 1 September 2023. We selected 10 samples and recomputed the billed energy to confirm if the right PURC tariffs were applied. Our samples cut across the 3 customer types (Residential, non-residential and SLT) and the 3 meter types (postpaid, non-smart prepaid and smart prepaid) within the period under review. For all the samples selected the right PURC published tariffs were applied. See *Appendix A6* for details of samples and tariffs applied.



# Billing and Invoicing System and Process

The table below summarizes the issues identified from our review of NEDCo's billing and invoicing system, along with our comments (1/4)

Table 17: Control gaps and recommendations

N	Issue	Observation	Deloitte comments
1	No proof of meter readings	Meter readers are instructed to go to the field, pick meter readings, and record them on the meter reading sheet. There is nothing to prove that they actually did the fieldwork to record the right readings displayed on the customer meters. There is room for the meter readers to connive with customers to underreport or misreport meter readings. The fact that meter readers are paid based on coverage area is an incentive to dishonestly fill the reading sheets to receive more pay.	<i>NEDCo should fast track the procurement of hand-held meter reading devices that automatically capture the meter readings and transmit this information to the Hexing system without any human intervention. This will reflect the true readings and prevent manipulation. We understand this has already been piloted with satisfactory outcomes and is therefore ready for implementation.</i>
2	No evidence of reviewed meter readings	We observed that meter readers are only given printed reading sheets for their field readings to record same in ink. These readings are brought to the NEDCo office and captured onto the Hexing system by the data entry clerks. After the data is inputted into Hexing, it is reviewed by the Supervisor.  However, there is no evidence of the review performed as Supervisors just review the reading in Hexing and submit it to the next stage for the bills to be calculated. This does not ensure accountability as it will be difficult to determine who reviewed and when the meter readings were reviewed.	<i>In the interim, meter reading sheets should be signed, approved and dated by the supervisors after the review of the meter reading is performed in the Hexing system.  In the long run, NEDCo should expedite the procurement of hand-held meter reading devices that will automatically capture the meter readings and transmit this information to the Hexing system without human intervention.</i>
3	Potential abuse of Data Editing Rights assigned to Supervisors	After meter readings are captured in Hexing by the data entry clerks, it then moves to the supervisors to review in Hexing. They do this by comparing the meter reading sheet to what has been captured in Hexing.  Supervisors have the rights in Hexing to edit meter readings found to have been captured wrongly or flagged by the Hexing system. There could be a potential abuse of this edit access right as supervisors can also connive with customers to manipulate the readings.	<i>Errors identified on suspicion of abnormal readings should be flagged and sent to a third party or person to make the corrections before being sent back to the supervisors for another review.  There should be a column section for comments by the supervisor for flagged consumption to guide meter readers and the data entry clerks about the issue at hand for necessary corrections.</i>
4	No oversight role in the billing process in the case of SLT customer	We understand the billing process for Special Load Tariff (SLT) customers is handled only by one staff at the billing department. A staff member of the billing department conducts the reading and the review processes – reviews of the inputted readings and the auto-computed bill generated by the Hexing system. The lack of segregation of duties for this process could facilitate collusion to misquote or misrepresent readings and reviews.	<i>Segregation of this process among members of the billings department is necessary to minimize chances of collusion.  Also, the technology earmarked to be used in the readings should be given the earliest consideration to limit the manual approach in the reading phase.</i>

# Billing and Invoicing System and Process

The table below summarizes the issues identified from our review of NEDCo's billing and invoicing system, along with our comments (2/4)

Table 17: Control gaps and recommendations (cont'd)

No	Issue	Observation	Deloitte comments
5	Need to increase frequency of intermittent checks to identify meters that have been tampered with.	<p>Until an illegal connection is reported by someone or detected during normal routine checks by a NEDCo officer, there is no other way for it to be detected. Meters that have been tampered with by customers to avoid payment for energy consumed have their readings indicated as zeros or negative numbers in the Hexing system. However, this is not flagged automatically. The NEDCo officer must manually query a meter number before identifying if a meter has zero or negative readings.</p> <p>This poses the risk of NEDCo losing potential revenue since customers who have tampered with their meters or have performed illegal connections make no payment for power consumed. This also contributes to the increased percentage of distribution losses since energy consumed is not billed and hence cannot be accounted for.</p>	<p><i>The Loss Control Unit of NEDCo should be enabled to generate periodic reports of meters with zero or negative readings in the Hexing system and further investigate or follow up on these meters or customers to ascertain if these readings are due to faulty meters or illegal connections.</i></p> <p><i>Hexing should be configured to automatically prompt NEDCo officers when a specific meter has been reading zeros or negatives over a certain period for further follow ups by officers.</i></p>
6	No mechanism to validate the reasonableness or accuracy of the bills charged to customers found to be consuming power illegally.	<p>Customers who are identified to have tampered with their meters to avoid paying for power consumed are charged based on the type and number of electrical appliances and gadgets in the household or the premises on which the illegal connection has been perpetuated.</p> <p>Officials of NEDCo, in identifying the type and number of electrical appliances situated on the premises where the free power is being consumed, may connive with the customers to understate the number of electrical appliances.</p>	<p><i>Aside recording the appliances on paper, NEDCo officials should also provide pictorial evidence of the gadgets recorded, and pictures and videos of the entire premises.</i></p> <p><i>Provide training to officials on professional ethics and the importance of accurate data collection. This can help raise awareness of the risks of collusion and the need to report accurate information.</i></p> <p><i>The Loss control Unit should analyse the previous monthly billed energy for the customer to determine if the number of appliances being recorded conforms or aligns with previous billed energy for the customer.</i></p>
7	Unsatisfactory level of monitoring and follow-up to ensure amounts billed to illegal consumers under an installment arrangement are fully settled by these consumers.	<p>Customers found to have performed an illegal connection on their meters are disconnected from the power grid. They are required to make full payment of the charged amount before they are connected back to the power grid. However, on selected occasions, NEDCo agrees with these customers to make an initial payment, and the outstanding payments are made in installments. After the initial payment, the meter of the customer is reconnected to the power grid. Based on our assessment, the follow-ups and monitoring done to ensure the outstanding balances are paid in full by the customer are not satisfactory. This causes NEDCo to lose monies owed them.</p>	<p><i>Send reminders to customers to make payment of outstanding fees or risk their power being disconnected again. If the deadline for the installment payment is missed the customer's meter should be disconnected.</i></p> <p><i>Convert all such instances to prepaid meters and until outstanding debts are settled the system should be configured in a way not to allow such customer to purchase power.</i></p>



# Billing and Invoicing System and Process

The table below summarizes the issues identified from our review of NEDCo's billing and invoicing system, along with our comments (3/4)

Table 17: Control gaps and recommendations (cont'd)

No	Issue	Observation	Deloitte comments
8	No mechanism to check if all illegal connections cases identified are reported	The current process for detecting an illegal connection is manual. The Loss Control Unit would have to receive a report from someone or detect it during their normal routine checks. There is the risk that illegal connections detected by any of the officers will not be officially reported to the Loss Control Unit and that NEDCo officials may collude with the customers to make a settlement without the knowledge of NEDCo.	<i>The system for detecting illegal connections should be automated. The Hexing system should generate a report on meters with zero or negative readings for further follow-ups by the Loss Control Unit. Provide training to officials on professional ethics and the importance of accurate data collection. This can help raise awareness of the risks of collusion and the need to report accurate information.</i>
9	No automation between Hexing billing system and Oracle E-business Suites	We observed that the Assistant Area Finance Officer manually copies and pastes data from the Hexing Billing system to an Excel template before uploading it onto the Oracle E-Business Suite. The manual data transfer from the Hexing Billing System to the Oracle E-business Suites poses the risk of human error such as overlooking and misplacing figures during the transfer process leading to inaccurate journal entries and potential revenue loss.	<i>NEDCo should implement automated data transfer system that directly connects the Hexing Billing system to the Oracle E-business Suite. This will help reduce the reliance on manual inputting of customer sales report into the Oracle Billing system. In the interim, there should be regular training sessions for finance officers to emphasize the importance of accurate customer sales data transfer.</i>
10	Limited validation checks during and after customer sales data upload	We noted that the Area Finance Officer is the only one that reviews the printed spreadsheet used to capture the customer data sales and compares it with the customer data captured in Oracle E-Business Suite before posting the journal entries. This process lacks robust validation checks which increases the vulnerability to inaccurate or incomplete data being uploaded into the Oracle E-business Suite.	<i>NEDCo should introduce validation procedures to check for data accuracy, completeness and adherence to predefined formats before proceeding with uploads. NEDCo should establish a validation checklist to ensure that customer sales data is accurately captured, this should be done by an independent officer who understands the Hexing Billing system and the Oracle E-business suite.</i>
11	Inadequate revenue mobilization techniques in remote areas	We noted that NEDCo periodically sends staff to remote areas to collect revenue from postpaid customers who lack access to NEDCo offices and vending points. This approach is inconvenient for customers and makes revenue collection challenging. The inconvenience of this approach can lead to late or missed payments, resulting in revenue losses for NEDCo. Also, it can create discrepancies and inaccuracies in billing, leading to disputes and potential revenue leakage.	<i>NEDCo should setup mobile vending points in these remote areas to provide customers with more convenient access to payment of their bills. Also, NEDCo should educate the customers on how to use Mobile Short Code (*914#) in paying the bills.</i>



## Billing and Invoicing System and Process

The table below summarizes the issues identified from our review of NEDCo's billing and invoicing system, along with our comments (4/4)

Table 17: Control gaps and recommendations (cont'd)

No	Issue	Observation	Deloitte comments
12	Manual verification and crediting of postpaid customers who are in remote areas.	<p>We noted that Management Information System (MIS) officers manually credit the account of postpaid customers who paid their bills through the periodic local revenue mobilization exercises NEDCo undergoes. The Oracle E-business suite do not have the capability to directly credit postpaid customers account in the Hexing Billing system. Therefore, NEDCo relies on the MIS officers to credit customers who have paid their bills after reconciliation.</p> <p>Manual data entry and processing are prone to human error, which can lead to inaccurate customer balances, double billing, or missed payments. These errors will not only impact revenue collection but also cause customer frustration and dissatisfaction. Also, the manual nature of the crediting process can increase the risk of fraud, such as manipulation of payment records.</p>	<p><i>NEDCo should implement seamless automated systems that directly update customer accounts with the payments made to reduce outstanding bills, thereby reducing reliance on manual data entry. NEDCo should perform regular audits and cross verification procedures to detect and rectify errors promptly.</i></p>



# Working capital management

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
Statutory and supplier payments	30
Billing and invoicing	33
<b>Working capital management</b>	<b>39</b>
Appendices	41



# Working capital management | Overview

At the centre of NEDCo's working capital challenges are its distribution losses and under-recovery from its post-paid customers, the combination of which has resulted in severe cash flow constraints and build-up of payables due to its suppliers

## Overview of NEDCo's working capital management process

- We noted from discussions with management and our review of the Retail Service Manual that NEDCo largely follows a monthly cycle in managing its working capital, which is typically composed of payables due to its suppliers- VRA and GRIDCo- and receivables due from its post-paid customers.
- In line with its working capital cycle, NEDCo's power billing/invoicing system is designed to bill customers for power consumed on monthly basis, with post-paid customers expected to settle their bills within 14 days from date of receiving their monthly bills from NEDCo. For prepaid customers, the bills for monthly consumption are offset against the prepaid amounts to reduce the credit accrued in their accounts and as payment for power consumed within the month. The system is also designed to automatically disconnect prepaid customers from NEDCo's power supply once the customer's credit run out, ensuring that customers recharge their accounts to regain access to power supply from NEDCo.
- We noted from management discussions that, for **post-paid customers** in particular, the billing and receivables collection process is fraught with some challenges due to the manual interventions required at key points in the working capital management process for these customers. The manual interventions noted in this regard include the following:
  - Use of field agents or meter readers to go round homes and other customer outlets to read and record power consumption data on monthly basis
  - Data collected from post-paid meters by the field agents are entered manually into the billing system for onward processing into printed monthly bills which are physically delivered to homes and other customer outlets for payment
  - Significant human effort in pursuing outstanding bills from post-paid customers, including cashiers going round to homes and other customer outlets for collection and submission of letters demanding payment from customers
- Aside being costly to the Company, the above manual interventions provides room for unscrupulous persons (both customers and NEDCo agents/staff) to engage in corrupt practices that results in commercial losses to NEDCo. Beyond this, such physical engagements with customers pose security risks to the field agents and cashiers involved. To address the cash flow challenges associated with the post-paid customers, management resorts to the following measures:

## Overview of NEDCo's working capital management process (cont'd)

- Disconnecting customers from the power grid
- Radio announcements across towns to remind customers to settle bills
- Cashiers going round to customer outlets to request for payments
- Sending letters to some customers to demand payment
- Negotiating payment terms with customers that are willing to pay under more flexible payment terms
- Prosecuting overly difficult customers who may be unwilling to settle their bills
- For **prepaid customers**, as explained earlier, the cash for power consumed is collected in advance and booked as credit in customer's account, which then runs down automatically as customer consume the power. In this regard, there are no challenges with cash collection from prepaid customers generally. However, we noted some revenue recognition challenge with a segment of the prepaid customers, which is explained as follows.
- There are currently two types of meters for prepaid customers. These are the **Smart Prepaid Meters** and the **Non-Smart Prepaid Customers**. The Smart Meters have been configured to accurately bill customers for the exact amount of power consumed regardless of how much customers prepay to credit their accounts. This is consistent with revenue recognition principles per standard accounting practice. For the **Non-Smart Meters** however, the amount prepaid by customers are immediately and fully billed as revenue for NEDCo regardless of actual customer consumption for the month. This results in overstatement of revenue for a particular month as portions of the amounts prepaid by customers may typically be deferred for consumption in subsequent months.
- We further noted that, due to a combination of working capital management challenges and distribution losses, NEDCo is unable to make adequate recoveries from the sale of power to allow for full settlement of amounts owed to its suppliers. About 82% of NEDCo's customers are residential customers with about 44% of these residential customers being on the lifeline tariffs. This, together with the post-paid collection challenges has resulted in significant build up of payables due to its suppliers as of 30 Sep 2023 (c.GHS2.6 billion due to VRA & GRIDCo). This, we note, should be very concerning to VRA and GRIDCo as these two strategic assets may suffer severe cash flow constraints if this situation persist. Moreover, NEDCo's receivables from power sales stood at about GHS1.5 billion as of 30 Sep 2023, indicating a shortfall of more than GHS1.0 billion when matched against the payables.





# Appendices

Executive Summary	5
Power purchases and distribution	18
Revenue and cash collection	21
Statutory and supplier payments	30
Billing and invoicing	33
Working capital management	39
Appendices	41



# Appendices | A1: NEDCo overview and structure

Northern Electricity Distribution Company (NEDCo) is a wholly owned subsidiary of Volta River Authority (VRA)

## Company background

Northern Electricity Distribution Company (NEDCo), formerly known as Northern Electricity Department (NED) of the Volta River Authority (VRA), was established in 1987 to supply safe and reliable electricity to homes and businesses in northern Ghana and neighbouring countries. In 1997, it was registered as NEDCo, a wholly owned subsidiary of VRA.

NEDCo's operations cover about 64% of the geographical area of Ghana and had about 1.2 million customers across Ghana as of September 2023.

## Customer Segmentation class

NEDCo's customers are segmented into the following:

- Residential customers:** This customer group uses power for household purposes and are billed under a residential rate which is relatively lower. NEDCo's customers are predominantly residential (c. 83.75%) and these attracts subsidised tariffs for power consumed. According to management, the tariffs charged to residential customers are below NEDCo's average operating cost per unit.
- Non-Residential customers:** This category consist of commercial consumers and small businesses.
- Special Load Tariff (SLT):** This Group is made up of industrial consumers, categorised into the following power voltage based on their consumption: Low-Voltage; Medium Voltage and High Voltage.

## Customer Segmentation by meter type

NEDCo's customers are also categorised depending on the type of meter assigned to each customer. Currently, NEDCo deploys the following three (3) types of customer meters:

- Postpaid meters:** Customers on this meter are allowed to consume power on credit and pay later. Meter readers, also known as field agents, are deployed to go and record power consumed by these customers at the end of every month for purposes of billing the customers. NEDCo therefore records receivables in respect of these customers.
- Smart prepaid meters:** Customers on this meter prepay for power consumed. Payments options include electronic platforms and use of certified vendors. The meters are configured to compute and recognise in revenue the exact power consumed by customers for the month regardless of how much was prepaid for, and this is consistent with the standard accounting principles of revenue recognition.
- Non-smart prepaid meters:** Like the smart prepaid meters, customers on this meter are allowed to prepay for power consumed, except that the system is currently configured to recognise, immediately and fully, customer prepayments for power as revenue regardless of actual consumption over the period. This is inconsistent with standard accounting principles and leads to overstatement of revenue.

## Power supply, transmission and distribution

NEDCo currently buys power in bulk solely from VRA, its parent company. The power supplied by VRA is transmitted by the Ghana Grid Company (GRIDCo) to designated Bulk Supply Points (BSPs) across five (5) Service Areas, which makes up the operational area for NEDCo. The 5 Service Areas include: Northern, Techiman, Sunyani, Upper East and Upper West. Each of these areas encompasses a cluster of service stations installed to serve designated towns within a Service Area.

Figure 3 on the next slide shows the operational structure of NEDCo.

Table 18 : Customer Segregation Class

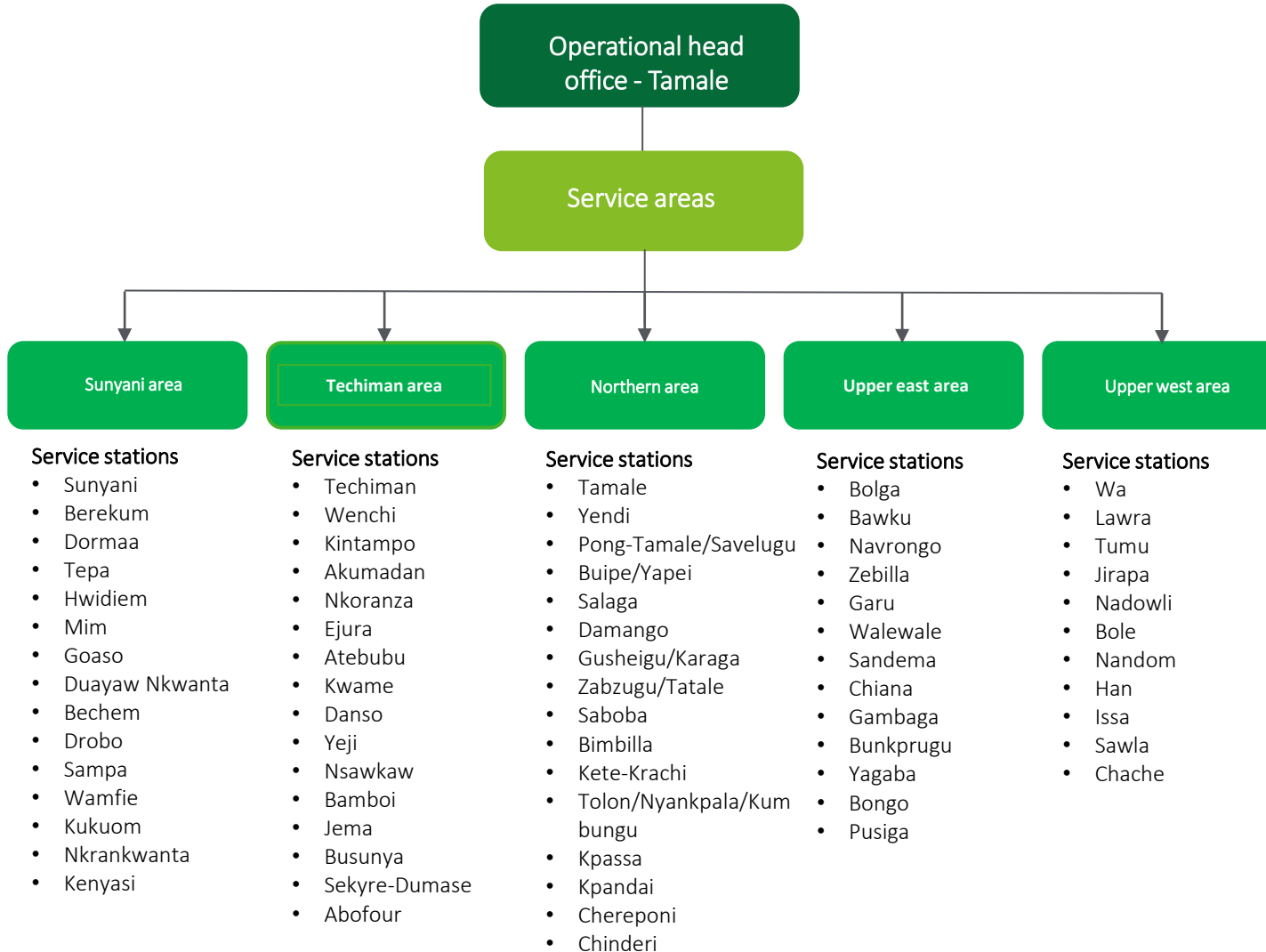
Customer type	Percentage	YTD Sep Revenue Contribution (%)
Residential customers	83.75%	57.3%
Non-Residential customers	16.25%	33.6%
Special Load Tariff (SLT)	0.01%	9.0%

Source: Management Information & Deloitte Analysis

# Appendices | A1: NEDCo overview and structure

NEDCo distributes power to five operational areas across the northern part of the country

Figure 3: Operational areas across the northern part of the country



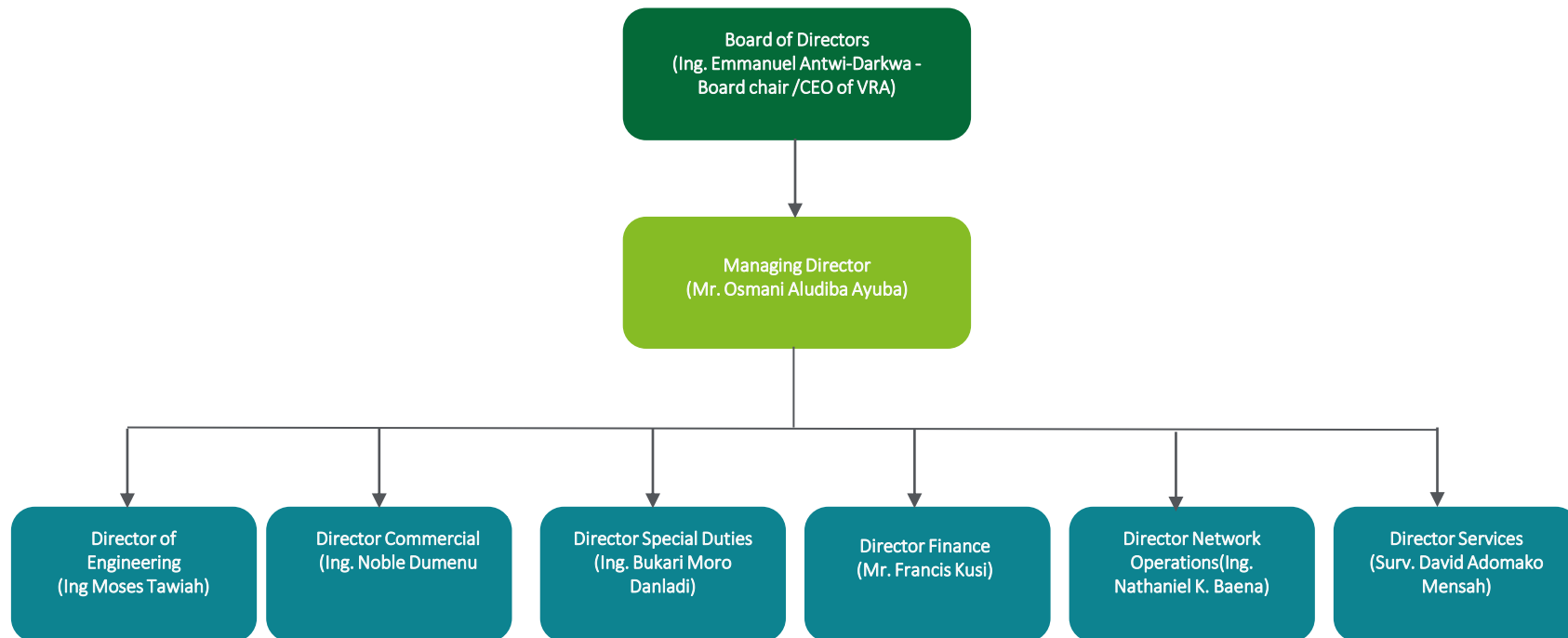
- NEDCo's operations in the regions are managed through five Regional Offices designated as Service Areas in the following cities:
  - Sunyani
  - Techiman
  - Tamale
  - Wa
  - Bolgatanga
- The head office of NEDCo is strategically located in Tamale, the Capital of the Northern Region.
- Each Area is headed by a Manager supported by an Engineer, Finance Officer, Commercial Officer, IT Officer, and a Human Resource Officer.
- NEDCo has service stations under each area that directly serve customers in designated towns.

Source: Management Information

# Appendices | A1: NEDCo overview and structure

NEDCo operates a vertical organisational structure whereby the Board of Directors, chaired by the Chief Executive Officer (CEO) of VRA, provides supervision and strategic direction to the Executive Management Team

Figure 4: Management structure



Source: Management Information



# Appendices | A2: Power purchases & distribution tables

Power receipts (as noted from schedules attached to signed official invoices) at designated BSPs across the 5 Service Areas

Table 19: Review of VRA invoices for volumes of power purchased

Review of VRA invoices for volumes of power purchased													
Area/Feeder	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
<b>TECHIMAN</b>													
Techiman	18,681.49	17,594.46	17,166.74	18,417.78	19,809.75	19,862.36	19,967.40	19,330.17	21,291.70	20,236.74	20,701.19	18,402.59	<b>231,462.37</b>
Kintampo	7,025.30	6,794.66	6,302.54	6,992.17	7,515.64	7,437.12	7,183.89	7,384.78	8,209.92	8,009.40	7,758.72	7,151.38	<b>87,765.52</b>
<b>SUNYANI</b>													
Sunyani	15,285.03	15,499.92	15,641.71	16,965.33	17,728.24	17,828.56	17,887.23	17,174.42	19,248.08	18,767.98	19,488.79	17,129.86	<b>208,645.14</b>
Berekum	9,506.60	9,066.40	8,887.10	9,777.80	9,846.90	9,192.10	9,471.90	9,214.90	10,524.80	10,470.20	10,896.80	9,743.90	<b>116,599.40</b>
Mim	14,119.50	12,594.70	11,541.40	12,732.20	13,290.90	13,310.30	13,373.20	13,065.20	14,057.80	13,292.50	14,244.70	12,810.50	<b>158,432.90</b>
Bechem	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHERN</b>													
Tamale	29,746.60	28,482.38	27,048.33	31,966.48	32,164.96	29,641.47	30,212.81	32,122.33	39,281.71	37,608.26	36,243.76	32,876.38	<b>387,395.47</b>
Yendi	13,071.41	13,036.12	11,679.00	13,863.52	15,578.69	14,158.03	14,747.50	15,302.68	16,445.62	17,589.16	15,576.52	14,090.15	<b>175,138.40</b>
Buipe/Yapei	967.69	915.01	909.68	939.76	958.03	947.64	968.18	1,092.16	1,303.97	1,237.63	1,189.13	1,062.61	<b>12,491.49</b>
Damango	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>UPPER EAST</b>													
Bolga	8,531.56	8,190.83	8,104.23	9,466.64	8,917.69	8,419.16	8,476.33	9,111.15	11,272.15	11,235.22	10,826.93	9,592.66	<b>112,144.55</b>
Bawku	6,233.07	5,735.84	5,515.95	6,608.64	6,401.00	5,871.87	6,027.24	6,283.90	7,620.92	7,173.72	6,773.19	6,906.77	<b>77,152.11</b>
Navrongo	3,801.16	3,663.65	3,249.55	3,916.57	3,985.65	4,183.54	4,273.77	4,437.38	5,386.21	5,159.32	4,652.39	4,204.01	<b>50,913.21</b>
Zebilla	1,085.16	1,000.81	925.00	1,091.49	1,084.27	1,057.10	1,067.65	1,098.08	1,330.85	1,288.43	1,301.12	1,185.67	<b>13,515.63</b>
<b>UPPER WEST</b>													
Wa	8,202.29	7,780.98	7,351.60	8,681.12	8,288.70	7,827.37	8,024.02	8,323.40	10,292.88	9,794.02	9,439.02	8,425.37	<b>102,430.79</b>
Tumu	1,300.71	1,240.17	1,207.68	1,413.45	1,277.64	1,328.17	1,294.10	1,330.61	1,724.11	1,635.84	1,629.49	1,313.68	<b>16,695.65</b>
Sawla	2,629.52	2,477.19	2,411.41	2,890.83	2,794.93	2,675.50	2,795.97	2,928.14	3,451.35	3,253.20	3,215.67	2,866.62	<b>34,390.34</b>
Adubiyili	6,254.07	5,990.35	5,443.39	6,469.58	6,397.71	5,923.39	6,329.99	7,009.79	8,422.18	8,266.63	7,874.54	7,176.89	<b>81,558.51</b>
Lawra Solar	682.56	714.07	-	699.34	-	664.32	732.45	664.13	855.64	860.24	918.12	750.49	<b>7,541.37</b>
<b>Grand total</b>	<b>147,123.73</b>	<b>140,777.54</b>	<b>133,385.31</b>	<b>152,892.72</b>	<b>156,040.70</b>	<b>150,328.00</b>	<b>152,833.63</b>	<b>155,873.23</b>	<b>180,719.90</b>	<b>175,878.49</b>	<b>172,730.06</b>	<b>155,689.53</b>	<b>1,874,272.83</b>

Source: Management Information & Deloitte Analysis



# Appendices | A3: Revenue & cash collection tables

Table 20: Sunyani Service Area

Total billed energy (kWh'000) for Sunyani - Jul 2022 to Jun 2023													
Service stations	Total billed energy (kWh)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Sunyani	10,371	10,270	8,835	9,241	9,718	10,560	10,102	10,020	10,522	10,944	11,092	9,770	121,446
Berekum	3,023	2,874	2,970	2,926	2,916	3,112	3,106	3,171	3,103	3,489	3,238	3,071	37,000
Dormaa	1,540	1,398	1,490	1,366	1,429	1,554	1,539	1,544	1,615	1,486	1,729	1,524	18,215
Tepa	1,373	1,289	1,164	1,300	1,324	1,407	1,430	1,346	1,357	1,283	2,419	1,477	17,170
Hwidiem	1,819	1,850	1,677	2,057	1,787	1,610	1,740	1,731	1,838	1,926	1,976	1,836	21,848
Mim	1,681	1,676	1,459	1,471	1,596	1,658	1,624	1,648	1,734	1,433	1,504	1,668	19,153
Goaso	1,659	1,501	1,428	1,527	1,451	1,657	1,560	1,577	1,625	1,539	1,500	1,396	18,417
Duayaw Nkwanta	948	981	850	923	943	1,109	1,017	1,029	992	1,080	1,056	1,010	11,940
Bechem	769	704	655	693	699	743	729	705	714	711	761	728	8,612
Drobo	1,047	1,041	957	839	1,049	1,042	1,019	949	918	1,041	969	980	11,851
Sampa	1,032	980	1,019	896	1,002	1,031	985	906	1,077	1,077	1,162	981	12,147
Wamfie	733	815	786	749	799	821	820	721	757	766	874	1,264	9,905
Kukuom	686	615	725	785	728	785	737	696	693	670	732	654	8,504
Nkrankwanta	511	440	456	451	499	553	479	515	549	551	543	540	6,086
Kenyasi	992	1,028	944	1,105	1,234	1,109	1,100	966	1,160	961	1,204	934	12,737
<b>Grand total</b>	<b>28,183</b>	<b>27,460</b>	<b>25,415</b>	<b>26,329</b>	<b>27,174</b>	<b>28,752</b>	<b>27,987</b>	<b>27,526</b>	<b>28,653</b>	<b>28,956</b>	<b>30,760</b>	<b>27,833</b>	<b>335,030</b>

Total billed energy (GHS'000) for Sunyani area - Jul 2022 to Jun 2023													
Service stations	Total billed energy (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Sunyani	9,290	9,113	9,575	10,566	11,133	12,299	11,537	14,023	15,377	16,704	16,787	16,162	152,566
Berekum	2,968	2,684	3,084	3,404	3,316	3,625	3,554	4,490	4,636	5,590	5,104	5,062	47,515
Dormaa	1,324	1,112	1,326	1,526	1,604	1,791	1,711	1,935	2,351	2,183	2,568	2,306	21,737
Tepa	1,298	1,182	1,085	1,599	1,592	1,700	1,672	1,716	2,045	1,900	3,946	2,327	22,064
Hwidiem	1,764	1,843	1,755	2,675	2,215	1,988	2,150	2,358	2,946	3,156	3,222	3,066	29,139
Mim	1,448	1,452	1,273	1,684	1,809	1,902	1,843	1,970	2,497	2,088	2,207	2,464	22,638
Goaso	1,572	1,536	1,481	1,828	1,724	2,019	1,843	2,214	2,497	2,540	2,469	2,314	24,036
Duayaw Nkwanta	779	809	744	1,056	1,066	1,279	1,138	1,293	1,446	1,602	1,562	1,519	14,292
Bechem	655	548	552	801	779	833	796	848	1,001	1,011	1,078	1,086	9,989
Drobo	876	824	774	943	1,153	1,197	1,111	1,160	1,309	1,493	1,359	1,397	13,597
Sampa	832	768	819	1,001	1,121	1,160	1,102	1,054	1,555	1,580	1,671	1,423	14,089
Wamfie	589	616	622	846	885	930	898	836	1,069	1,095	1,238	1,988	11,612
Kukuom	572	474	650	973	847	923	870	878	1,066	1,099	1,210	1,066	10,629
Nkrankwanta	431	371	389	513	570	641	545	639	791	831	816	833	7,370
Kenyasi	803	823	884	1,310	1,437	1,248	1,212	1,215	1,669	1,423	1,763	1,470	15,257
<b>Grand total</b>	<b>25,201</b>	<b>24,155</b>	<b>25,014</b>	<b>30,725</b>	<b>31,252</b>	<b>33,537</b>	<b>31,982</b>	<b>36,630</b>	<b>42,255</b>	<b>44,295</b>	<b>47,001</b>	<b>44,484</b>	<b>416,530</b>

Source: Management Information & Deloitte Analysis  
Project Power – Final Report - 29 December 2023



# Appendices | A3: Revenue & cash collection tables

Table 20: Sunyani Service Area (cont'd)

Total Collection (GHS'000) for Sunyani area - Jul 2022 to Jun 2023													
Service stations	Total Collection(GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Sunyani	23,508	8,904	9,103	9,551	9,934	10,244	10,738	13,541	12,728	12,433	14,133	13,780	<b>148,598</b>
Berekum	4,644	2,649	2,841	2,826	2,821	3,615	3,017	4,050	3,877	5,139	4,217	4,329	<b>44,023</b>
Dormaa	2,153	1,143	1,279	1,187	1,218	1,376	1,419	1,669	5,270	(1,278)	2,098	1,863	<b>19,396</b>
Tepa	810	790	694	950	944	1,024	1,087	1,241	1,063	1,265	1,701	1,289	<b>12,858</b>
Hwidiem	2,137	1,781	1,890	2,434	2,079	1,835	1,987	2,136	2,588	3,148	2,872	2,700	<b>27,586</b>
Mim	1,027	1,025	1,437	1,343	1,591	1,438	1,748	1,633	2,282	2,295	2,313	2,014	<b>20,147</b>
Goaso	2,279	1,407	1,392	1,398	2,644	1,108	1,620	2,038	2,189	3,337	2,473	2,167	<b>24,053</b>
Duayaw Nkwanta	1,514	1,091	658	557	849	1,079	879	1,277	990	1,375	1,395	1,305	<b>12,968</b>
Bechem	550	595	476	550	646	728	566	709	787	896	1,057	870	<b>8,429</b>
Drobo	769	367	520	411	801	792	728	937	1,745	1,139	1,003	1,092	<b>10,306</b>
Sampa	578	815	628	482	608	856	783	1,277	1,633	1,538	1,207	1,214	<b>11,619</b>
Wamfie	367	446	474	557	575	622	596	591	685	891	918	685	<b>7,407</b>
Kukuom	248	170	405	514	407	640	443	476	576	847	797	817	<b>6,341</b>
Nkrankwanta	508	278	308	214	514	808	400	482	393	828	959	675	<b>6,366</b>
Kenyasi	733	856	770	1,174	1,201	998	1,063	1,065	1,349	1,290	1,512	1,341	<b>13,352</b>
<b>Grand total</b>	<b>41,826</b>	<b>22,316</b>	<b>22,873</b>	<b>24,146</b>	<b>26,831</b>	<b>27,163</b>	<b>27,076</b>	<b>33,122</b>	<b>38,155</b>	<b>35,144</b>	<b>38,655</b>	<b>36,141</b>	<b>373,449</b>



# Appendices | A3: Revenue & cash collection tables

Table 21: Techiman Service Area

Total billed energy (kWh'000) for Techiman - Jul 2022 to Jun 2023													
Service stations	Total billed energy (kWh)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Techiman	6,557	6,522	5,614	6,142	6,128	6,632	6,431	5,838	7,114	6,308	6,927	5,748	75,962
Wenchi	1,648	1,589	1,470	1,542	1,573	1,712	1,640	1,609	1,750	1,738	1,702	1,397	19,371
Kintampo	1,543	1,496	1,564	1,527	1,572	1,548	1,506	1,530	1,774	1,793	1,721	1,557	19,132
Akumadan	683	852	677	677	805	769	750	824	838	801	889	797	9,363
Nkoranza	1,209	1,279	1,220	1,216	1,225	1,331	1,285	1,208	1,366	1,326	1,367	1,372	15,404
Ejura	1,518	1,425	1,399	1,456	1,558	1,620	1,639	1,571	1,655	1,636	1,655	1,458	18,590
Atebubu	1,210	1,184	1,138	1,185	1,285	1,397	1,296	1,239	1,336	1,294	1,300	1,244	15,108
Kwame Danso	488	553	475	456	455	525	504	481	598	569	603	703	6,409
Yeji	806	841	745	801	817	840	866	776	938	903	978	853	10,166
Nsawkaw	699	726	705	689	734	811	785	808	889	924	901	779	9,451
Bamboi	367	374	297	361	356	374	345	366	486	446	475	499	4,746
Jema	457	449	448	420	460	468	458	445	516	522	551	490	5,683
Busunya	214	188	247	218	215	237	227	231	253	257	377	243	2,907
Sekyre-Dumase	354	370	333	326	414	368	396	386	382	372	406	395	4,503
Abofour	370	380	329	378	401	390	384	377	407	417	450	375	4,658
<b>Grand total</b>	<b>18,125</b>	<b>18,228</b>	<b>16,661</b>	<b>17,395</b>	<b>17,998</b>	<b>19,021</b>	<b>18,513</b>	<b>17,690</b>	<b>20,303</b>	<b>19,307</b>	<b>20,303</b>	<b>17,908</b>	<b>221,452</b>

Total billed energy (GHS'000) for Techiman - Jul 2022 to Jun 2023													
Service stations	Total billed energy (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Techiman	5,599	5,837	5,950	7,035	6,776	7,496	7,118	7,841	10,450	8,972	10,531	9,163	92,769
Wenchi	1,346	1,330	1,581	1,754	1,774	1,992	1,849	2,275	2,535	2,578	2,517	2,269	23,798
Kintampo	1,224	1,474	1,631	1,757	1,810	1,792	1,691	2,048	2,639	2,667	2,735	2,516	23,985
Akumadan	559	728	686	754	915	892	848	1,065	1,201	1,157	1,337	1,254	11,396
Nkoranza	969	1,053	1,114	1,357	1,363	1,503	1,434	1,496	1,975	1,896	1,990	2,069	18,218
Ejura	1,234	1,396	1,457	1,621	1,742	1,820	1,830	2,075	2,358	2,308	2,568	2,310	22,719
Atebubu	953	953	1,024	1,331	1,429	1,578	1,453	1,538	1,961	1,832	1,886	1,869	17,808
Kwame Danso	377	450	405	508	500	592	561	579	886	810	878	1,055	7,602
Yeji	618	650	668	901	906	934	961	957	1,334	1,266	1,423	1,277	11,893
Nsawkaw	587	606	677	847	903	1,033	954	1,078	1,423	1,483	1,419	1,252	12,261
Bamboi	329	343	308	416	402	435	390	514	756	680	764	746	6,084
Jema	336	390	412	462	507	513	496	549	731	717	819	737	6,670
Busunya	151	144	203	240	231	259	245	265	361	351	364	345	3,159
Sekyre-Dumase	274	293	285	351	463	411	429	469	528	516	574	576	5,167
Abofour	294	370	351	421	451	434	420	517	574	590	687	591	5,700
<b>Grand total</b>	<b>14,850</b>	<b>16,017</b>	<b>16,751</b>	<b>19,755</b>	<b>20,170</b>	<b>21,684</b>	<b>20,679</b>	<b>23,265</b>	<b>29,712</b>	<b>27,823</b>	<b>30,493</b>	<b>28,031</b>	<b>269,230</b>

Source: Management Information & Deloitte Analysis

Project Power – Final Report - 29 December 2023

This written communication is solely for Ministry of Energy's benefit, and is not intended to be relied upon by any other person or entity.





## Appendices | A3: Revenue & cash collection tables

Table 21: Techiman Service Area (Cont'd)

Total collections (GHS'000) for Techiman - Jul 2022 to Jun 2023													
Service stations	Total Collections (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Techiman	9,568	5,862	5,644	7,570	6,600	7,916	6,088	7,433	9,569	8,393	10,423	9,219	<b>94,284</b>
Wenchi	4,499	1,101	1,482	1,778	1,631	1,738	1,816	2,101	2,206	2,791	2,398	2,131	<b>25,672</b>
Kintampo	4,056	1,330	1,408	1,465	1,603	1,479	1,400	1,860	2,284	2,482	2,896	2,399	<b>24,663</b>
Akumadan	2,090	1,556	766	806	847	763	686	782	1,078	903	1,088	1,050	<b>12,412</b>
Nkoranza	1,021	756	1,033	1,278	1,007	1,183	1,178	1,369	1,809	1,512	1,940	1,801	<b>15,886</b>
Ejura	2,570	1,229	1,491	1,318	1,540	1,686	1,897	2,005	1,954	2,201	2,437	2,025	<b>22,353</b>
Atebubu	1,973	724	868	980	1,278	1,179	1,004	1,195	1,361	1,667	1,827	1,342	<b>15,397</b>
Kwame Danso	278	387	296	355	562	533	410	470	642	536	649	568	<b>5,686</b>
Yeji	2,586	564	705	732	845	661	677	757	1,050	1,066	1,330	993	<b>11,967</b>
Nsawkaw	414	241	404	381	499	531	428	679	642	809	654	690	<b>6,374</b>
Bamboi	319	311	330	409	391	399	373	484	725	621	727	721	<b>5,811</b>
Jema	392	341	454	420	503	378	417	488	473	640	820	685	<b>6,012</b>
Busunya	119	123	149	152	212	183	223	237	306	278	284	302	<b>2,568</b>
Sekyre-Dumase	306	260	272	271	372	357	333	400	453	441	558	503	<b>4,525</b>
Abofour	343	406	379	403	450	462	443	496	520	496	689	598	<b>5,685</b>
<b>Grand total</b>	<b>30,533</b>	<b>15,191</b>	<b>15,681</b>	<b>18,319</b>	<b>18,340</b>	<b>19,447</b>	<b>17,372</b>	<b>20,756</b>	<b>25,073</b>	<b>24,837</b>	<b>28,718</b>	<b>25,027</b>	<b>259,295</b>



# Appendices | A3: Revenue & cash collection tables

Table 22: Northern Service Area

Total billed energy (kWh'000) for Northern area - Jul 2022 to Jun 2023													
Service stations	Total billed energy (kWh)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Tamale	13,606	14,096	12,060	14,876	13,931	14,063	13,933	15,174	16,942	16,564	17,134	15,793	178,172
Yendi	1,087	1,234	1,100	1,227	1,376	1,358	1,063	1,336	1,208	1,267	1,344	1,291	14,892
Pong-Tamale/Savelugu	796	853	730	850	946	938	874	900	954	1,229	1,222	1,202	11,495
Buipe/Yapei	678	697	565	716	739	695	623	986	801	780	866	844	8,990
Salaga	502	705	592	638	1,164	694	628	618	615	661	689	667	8,173
Damango	684	696	609	810	745	732	731	797	918	848	860	769	9,201
Gusheigu/Karaga	830	828	865	1,002	930	932	769	849	853	789	903	881	10,430
Zabzugu/Tatale	483	463	411	478	473	510	470	476	577	640	651	664	6,298
Saboba	225	242	211	282	245	270	231	228	263	320	284	288	3,089
Bimbilla	1,282	883	923	946	851	1,003	892	912	957	1,022	1,021	1,034	11,726
Kete-Krachi	328	381	423	405	424	453	456	438	480	414	444	449	5,095
Tolon/Nyankpala/Kumbungu	781	723	668	949	848	818	748	878	852	847	864	887	9,862
Kpassa	464	534	527	661	751	593	659	577	681	718	558	560	7,284
Kpandai	373	353	393	381	530	402	817	429	459	435	441	436	5,450
Chereponi	380	341	301	439	309	273	255	276	265	401	338	351	3,928
Chinderi	635	763	347	394	360	346	384	375	360	324	379	380	5,046
<b>Grand total</b>	<b>23,135</b>	<b>23,791</b>	<b>20,726</b>	<b>25,054</b>	<b>24,622</b>	<b>24,079</b>	<b>23,532</b>	<b>25,250</b>	<b>27,187</b>	<b>27,259</b>	<b>27,997</b>	<b>26,497</b>	<b>299,130</b>

Total billed energy (GHS'000) for Northern area - Jul 2022 to Jun 2023													
Service stations	Total billed energy (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Tamale	12,275	13,311	12,825	18,337	16,873	17,464	16,259	17,654	26,259	26,944	26,882	25,508	230,591
Yendi	957	1,123	1,071	1,453	1,628	1,654	1,250	1,792	1,863	1,937	2,070	2,050	18,848
Pong-Tamale/Savelugu	579	640	569	968	1,053	1,073	955	4,524	1,337	1,878	1,886	1,562	17,025
Buipe/Yapei	563	638	554	834	850	825	712	1,335	1,166	1,180	1,282	1,205	11,145
Salaga	407	641	515	741	1,439	787	710	757	895	970	1,008	900	9,771
Damango	576	643	664	971	871	880	876	1,090	1,417	1,283	1,330	1,153	11,754
Gusheigu/Karaga	713	712	788	1,214	1,059	1,083	873	1,047	1,286	1,169	1,356	1,209	12,508
Zabzugu/Tatale	403	407	354	568	534	599	533	619	818	937	953	1,013	7,738
Saboba	192	245	197	344	293	327	263	308	384	491	445	468	3,957
Bimbilla	1,389	725	744	1,087	962	1,130	998	1,072	1,354	1,485	1,473	1,490	13,909
Kete-Krachi	283	331	368	463	488	516	523	513	741	619	661	635	6,141
Tolon/Nyankpala/Kumbungu	620	627	547	1,100	941	938	828	1,105	1,211	1,254	1,249	1,576	11,997
Kpassa	346	391	418	759	846	658	723	672	962	1,021	821	938	8,554
Kpandai	294	273	295	419	619	429	968	474	635	603	612	571	6,192
Chereponi	371	322	274	542	362	317	291	342	388	619	508	440	4,775
Chinderi	785	970	266	465	416	372	414	417	496	447	533	477	6,058
<b>Grand total</b>	<b>20,751</b>	<b>22,001</b>	<b>20,448</b>	<b>30,265</b>	<b>29,234</b>	<b>29,053</b>	<b>27,176</b>	<b>33,722</b>	<b>41,213</b>	<b>42,837</b>	<b>43,069</b>	<b>41,194</b>	<b>380,964</b>

Source: Management Information & Deloitte Analysis  
Project Power – Final Report - 29 December 2023



# Appendices | A3: Revenue & cash collection tables

Table 22: Northern Service Area (Cont'd)

Total collections (GHS'000) for Northern area - Jul 2022 to Jun 2023													
Service stations	Total Collections (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Tamale	8,234	10,708	65,553	12,331	12,270	12,257	12,326	17,475	17,432	20,041	22,203	17,874	<b>228,705</b>
Yendi	648	748	785	948	906	1,006	1,665	1,529	1,171	2,625	1,744	1,245	<b>15,021</b>
Pong-Tamale/Savelugu	237	326	399	690	1,245	785	781	771	740	811	1,331	749	<b>8,863</b>
Buipe/Yapei	455	482	540	602	611	782	752	766	721	896	972	877	<b>8,457</b>
Salaga	292	269	1,792	276	449	495	418	691	397	465	702	446	<b>6,691</b>
Damango	422	475	654	758	621	686	643	827	913	886	1,093	816	<b>8,793</b>
Gusheigu/Karaga	174	245	328	491	645	1,701	543	525	801	548	1,048	777	<b>7,827</b>
Zabzugu/Tatale	215	328	271	341	296	328	388	491	448	665	677	627	<b>5,076</b>
Saboba	115	185	115	214	221	254	219	375	253	311	402	356	<b>3,019</b>
Bimbilla	949	410	363	582	400	384	511	448	289	542	788	502	<b>6,169</b>
Kete-Krachi	133	204	258	187	277	477	319	461	305	394	585	400	<b>4,002</b>
Tolon/Nyankpala/Kumbungu	159	265	1,712	851	425	363	442	707	343	1,173	853	513	<b>7,806</b>
Kpassa	111	199	338	445	208	248	457	489	314	407	606	615	<b>4,436</b>
Kpandai	128	284	349	143	174	343	274	305	325	311	374	340	<b>3,350</b>
Chereponi	164	184	123	209	220	198	363	278	195	235	363	241	<b>2,772</b>
Chinderi	679	967	141	231	276	348	261	183	203	342	385	314	<b>4,331</b>
<b>Grand total</b>	<b>13,115</b>	<b>16,276</b>	<b>73,720</b>	<b>19,300</b>	<b>19,243</b>	<b>20,656</b>	<b>20,362</b>	<b>26,322</b>	<b>24,852</b>	<b>30,653</b>	<b>34,127</b>	<b>26,692</b>	<b>325,318</b>



# Appendices | A3: Revenue & cash collection tables

Table 23: Upper East Service Area

Total billed energy (kWh'000) for Upper East Area - Jul 2022 to Jun 2023													
Service stations	Total billed energy (kWh)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Bolga	4,456	4,419	3,780	4,616	4,362	4,469	4,003	4,284	5,163	5,515	5,279	4,670	55,017
Bawku	1,390	1,416	1,172	1,504	1,476	1,407	1,277	1,374	1,405	1,405	1,358	1,338	16,523
Navrongo	1,703	1,683	1,454	1,725	1,640	1,685	1,602	1,870	1,982	2,154	2,237	1,929	21,665
Zebilla	724	722	688	807	721	787	722	746	792	939	978	888	9,513
Garu	424	453	380	426	501	510	442	498	505	589	480	562	5,770
Walewale	998	1,055	935	1,113	1,042	1,050	932	1,067	1,047	1,162	1,115	1,042	12,557
Sandema	486	539	434	580	526	577	487	558	639	687	663	554	6,727
Chiana	47	36	36	40	45	40	43	46	47	48	74	43	547
Gambaga	819	873	938	888	826	861	789	896	946	1,042	898	1,138	10,913
Bunkprugu	336	335	296	372	355	402	361	378	392	386	358	337	4,308
Yagaba	204	225	248	289	271	243	186	298	271	305	303	301	3,145
Bongo	567	599	528	580	584	643	546	658	717	765	685	592	7,465
Pusiga	268	237	231	244	231	273	222	234	301	473	411	403	3,528
<b>Grand total</b>	<b>12,422</b>	<b>12,592</b>	<b>11,118</b>	<b>13,185</b>	<b>12,580</b>	<b>12,947</b>	<b>11,612</b>	<b>12,906</b>	<b>14,209</b>	<b>15,470</b>	<b>14,838</b>	<b>13,796</b>	<b>157,677</b>

Total billed energy (GHS'000) for Upper East area - Jul 2022 to Jun 2023													
Service stations	Total billed energy (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Bolga	3,904	4,132	4,076	5,478	5,079	5,351	4,590	6,054	7,778	8,435	8,199	7,935	71,011
Bawku	1,130	1,375	1,184	1,806	1,741	1,683	1,488	1,913	2,097	2,120	2,121	2,193	20,852
Navrongo	1,521	1,604	1,535	2,060	1,928	2,015	1,860	2,516	2,966	3,371	3,543	3,140	28,058
Zebilla	645	675	679	979	843	942	846	1,016	1,184	1,409	1,498	1,456	12,172
Garu	356	417	373	496	566	614	496	716	732	909	713	929	7,318
Walewale	797	894	856	1,300	1,184	1,213	1,055	1,382	1,513	1,721	1,620	1,636	15,170
Sandema	433	510	434	679	607	687	554	738	935	1,056	984	913	8,530
Chiana	40	32	31	47	52	46	51	49	68	69	108	64	658
Gambaga	670	800	1,040	1,038	956	1,002	882	1,165	1,353	1,553	1,315	1,967	13,742
Bunkprugu	272	277	285	420	386	451	390	485	540	546	519	524	5,095
Yagaba	167	201	217	338	316	280	212	353	356	439	444	447	3,770
Bongo	469	534	479	673	648	750	607	831	1,019	1,127	1,026	937	9,100
Pusiga	226	212	211	291	264	318	249	309	441	803	629	673	4,625
<b>Grand total</b>	<b>10,631</b>	<b>11,663</b>	<b>11,399</b>	<b>15,604</b>	<b>14,572</b>	<b>15,352</b>	<b>13,281</b>	<b>17,528</b>	<b>20,980</b>	<b>23,559</b>	<b>22,720</b>	<b>22,814</b>	<b>200,102</b>



# Appendices | A3: Revenue & cash collection tables

Table 23: Upper East Service Area (Cont'd)

Total collections (GHS'000) for Upper East area - Jul 2022 to Jun 2023													
Service stations	Total Collections (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Bolga	7,410	4,603	3,854	6,230	4,516	4,841	4,267	5,402	6,139	8,073	7,320	7,037	<b>69,693</b>
Bawku	3,883	1,133	869	1,390	1,145	1,261	879	1,550	1,448	1,605	1,628	1,495	<b>18,286</b>
Navrongo	1,932	1,440	1,733	1,588	1,686	1,806	1,705	1,957	2,286	5,167	2,422	2,446	<b>26,168</b>
Zebilla	1,330	630	657	826	724	850	819	974	1,050	1,078	1,209	1,192	<b>11,339</b>
Garu	300	399	335	477	534	503	393	574	581	795	498	729	<b>6,118</b>
Walewale	1,909	744	868	1,081	964	1,104	888	1,309	1,350	1,555	1,345	1,506	<b>14,623</b>
Sandema	682	542	415	516	491	590	515	635	811	837	754	948	<b>7,734</b>
Chiana	15	36	19	15	34	25	32	27	32	69	80	38	<b>421</b>
Gambaga	2,077	561	540	695	661	823	602	1,060	972	1,305	812	1,442	<b>11,550</b>
Bunkprugu	209	257	272	415	387	349	352	392	439	516	481	480	<b>4,550</b>
Yagaba	115	143	99	154	265	228	186	258	232	406	523	284	<b>2,893</b>
Bongo	452	542	388	539	486	632	503	596	721	858	653	722	<b>7,092</b>
Pusiga	228	233	221	235	257	275	228	332	344	415	477	503	<b>3,748</b>
<b>Grand total</b>	<b>20,541</b>	<b>11,263</b>	<b>10,270</b>	<b>14,162</b>	<b>12,152</b>	<b>13,286</b>	<b>11,369</b>	<b>15,065</b>	<b>16,403</b>	<b>22,680</b>	<b>18,201</b>	<b>18,822</b>	<b>184,213</b>



# Appendices | A3: Revenue & cash collection tables

Table 24: Upper West Service Area

Total billed energy (kWh'000) for Upper West area - Jul 2022 to Jun 2023													
Service stations	Total billed energy (kWh)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Wa	5,042	5,150	4,223	5,337	4,898	4,964	4,663	4,721	6,061	5,728	6,236	5,045	62,068
Lawra	324	322	278	340	304	298	315	265	345	346	382	304	3,825
Tumu	749	825	784	805	769	817	718	698	985	990	1,036	858	10,033
Jirapa	392	394	342	407	394	416	403	393	472	444	478	317	4,852
Nadowli	371	374	307	369	370	409	355	351	413	427	447	374	4,568
Bole	965	902	903	1,107	1,024	1,141	1,059	1,042	1,310	1,231	1,324	1,084	13,095
Nandom	558	575	503	549	532	571	557	483	594	630	679	633	6,864
Han	139	157	131	154	144	158	158	138	173	188	211	168	1,918
Issa	154	122	104	119	130	138	131	136	157	150	161	147	1,648
Sawla	252	251	213	230	243	241	233	260	276	272	277	258	3,007
Cache	-	-	-	62	-	-	0	-	-	-	-	-	62
<b>Grand total</b>	<b>8,946</b>	<b>9,073</b>	<b>7,787</b>	<b>9,479</b>	<b>8,809</b>	<b>9,154</b>	<b>8,592</b>	<b>8,487</b>	<b>10,786</b>	<b>10,407</b>	<b>11,232</b>	<b>9,189</b>	<b>111,941</b>

Total billed energy (GHS'000) for Upper West area - Jul 2022 to Jun 2023													
Service stations	Total billed energy (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Wa	4,192	4,714	4,499	6,318	5,708	5,928	5,360	6,565	9,151	8,441	9,835	8,340	79,052
Lawra	280	278	301	385	344	341	349	368	497	506	570	504	4,722
Tumu	595	719	775	927	879	975	814	908	1,456	1,416	1,572	1,220	12,256
Jirapa	361	375	385	491	472	504	473	562	721	678	744	633	6,398
Nadowli	323	337	297	426	419	482	395	456	594	611	648	584	5,572
Bole	809	786	1,026	1,293	1,195	1,389	1,235	1,454	2,007	1,858	2,077	1,841	16,970
Nandom	513	520	530	642	618	682	634	667	863	925	1,019	1,060	8,675
Han	114	138	127	179	164	186	181	176	248	296	310	280	2,399
Issa	115	89	85	128	137	149	138	166	208	200	220	207	1,840
Sawla	207	214	184	266	281	278	269	314	401	392	402	386	3,595
Cache	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Grand total</b>	<b>7,508</b>	<b>8,170</b>	<b>8,209</b>	<b>11,055</b>	<b>10,216</b>	<b>10,914</b>	<b>9,849</b>	<b>11,635</b>	<b>16,147</b>	<b>15,323</b>	<b>17,398</b>	<b>15,055</b>	<b>141,480</b>



## Appendices | A3: Revenue & cash collection tables

Table 24: Upper West Service Area (Cont'd)

Total collections (GHS'000) for Upper West area - Jul 2022 to Jun 2023													
Service stations	Total Collections (GHS)												
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Wa	10,721	3,625	3,678	5,607	4,738	4,898	4,235	5,780	7,076	6,654	7,504	6,505	<b>71,019</b>
Lawra	1,073	241	256	325	410,340	(409,677)	306	348	432	516	481	414	<b>5,054</b>
Tumu	1,004	661	567	658	953	797	754	993	1,374	1,246	1,257	1,089	<b>11,353</b>
Jirapa	1,060	454	288	416	470	399	489	448	556	613	882	541	<b>6,616</b>
Nadowli	935	268	267	312	349	410	297	392	522	527	596	500	<b>5,374</b>
Bole	1,628	823	826	1,174	1,089	1,184	979	1,281	1,728	1,484	1,873	1,571	<b>15,641</b>
Nandom	1,460	474	429	513	576	572	493	600	717	1,535	855	823	<b>9,046</b>
Han	1,012	105	135	106	147	160	125	119	212	1,220	174	203	<b>3,717</b>
Issa	63	61	67	121	97	87	137	132	148	444	147	152	<b>1,655</b>
Sawla	206	97	124	98	295	93	126	234	246	340	367	252	<b>2,478</b>
Cache	-	-	-	-	-	-	-	-	0	-	-	-	<b>0</b>
<b>Grand total</b>	<b>19,160</b>	<b>6,809</b>	<b>6,637</b>	<b>9,329</b>	<b>419,053</b>	<b>(401,078)</b>	<b>7,941</b>	<b>10,326</b>	<b>13,011</b>	<b>14,579</b>	<b>14,135</b>	<b>12,051</b>	<b>131,953</b>



# Appendices | A4: Cash validation table

Table 25: Summary of cash validated from bank statements

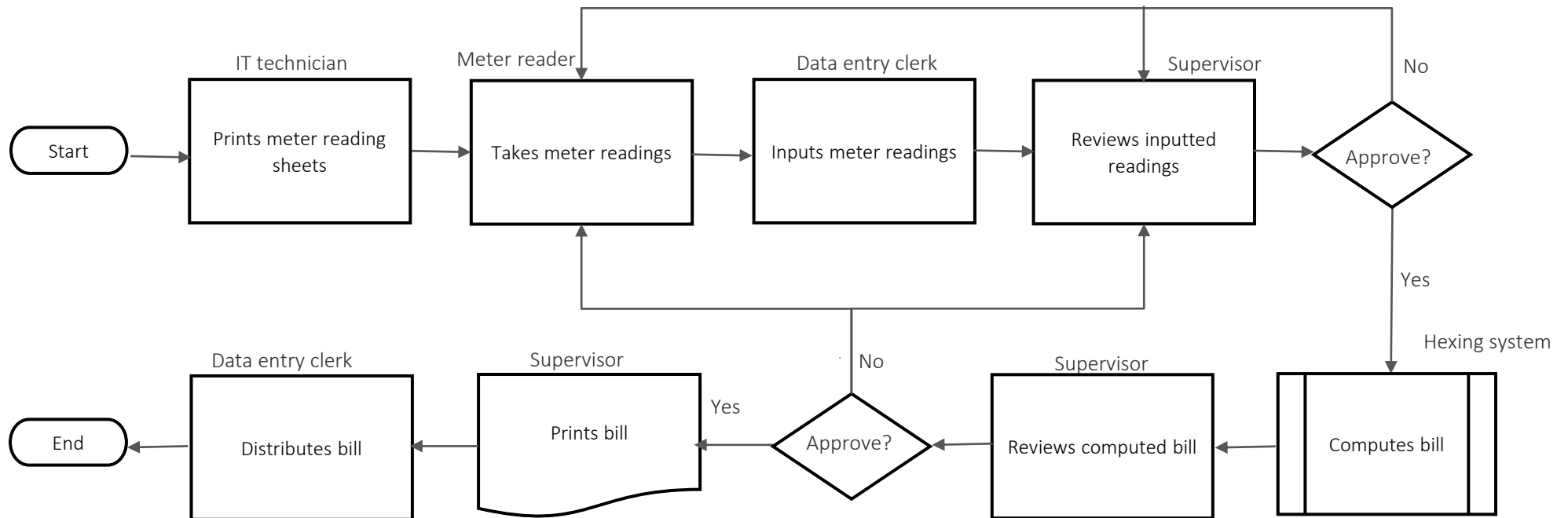
Cash validated from bank statements (GHS'000)															
Service Area	Source	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Total	Variance
Sunyani	Cash from bank statements (A)	39,191	21,187	36,337	22,706	25,471	26,650	26,239	29,260	30,576	36,926	35,995	35,401	365,938	
	Cash per management report (B)	41,826	22,316	22,873	24,146	26,831	27,163	27,076	33,122	38,155	35,144	38,655	36,141	373,449	
	<i>Difference noted (A-B)</i>	<i>(2,635)</i>	<i>(1,130)</i>	<i>13,464</i>	<i>(1,440)</i>	<i>(1,360)</i>	<i>(513)</i>	<i>(837)</i>	<i>(3,862)</i>	<i>(7,579)</i>	<i>1,782</i>	<i>(2,660)</i>	<i>(740)</i>	<i>(7,511)</i>	<i>(2.01%)</i>
Techiman	Cash from bank statements (A)	22,383	14,657	10,212	15,503	17,583	17,026	18,079	17,380	24,499	23,575	24,240	26,903	232,039	
	Cash per management report (B)	30,533	15,191	15,681	18,319	18,340	19,447	17,372	20,756	25,073	24,837	28,718	25,027	259,295	
	<i>Difference noted (A-B)</i>	<i>(8,151)</i>	<i>(534)</i>	<i>(5,469)</i>	<i>(2,817)</i>	<i>(757)</i>	<i>(2,422)</i>	<i>707</i>	<i>(3,376)</i>	<i>(574)</i>	<i>(1,263)</i>	<i>(4,478)</i>	<i>1,875</i>	<i>(27,256)</i>	<i>(10.51%)</i>
Northern	Cash from bank statements (A)	84,830	14,980	34,961	18,486	19,075	18,387	20,748	21,486	28,189	35,773	32,227	25,866	355,009	
	Cash per management report (B)	13,115	16,276	73,720	19,300	19,243	20,656	20,362	26,322	24,852	30,653	34,127	26,692	325,318	
	<i>Difference noted (A-B)</i>	<i>71,716</i>	<i>(1,296)</i>	<i>(38,760)</i>	<i>(814)</i>	<i>(168)</i>	<i>(2,269)</i>	<i>386</i>	<i>(4,836)</i>	<i>3,337</i>	<i>5,120</i>	<i>(1,900)</i>	<i>(825)</i>	<i>29,691</i>	<i>9.13%</i>
Upper East	Cash from bank statements (A)	19,483	11,813	8,755	12,086	11,231	10,639	9,822	14,726	11,623	21,215	16,402	13,642	161,437	
	Cash per management report (B)	20,541	11,263	10,270	14,162	12,152	13,286	11,369	15,065	16,403	22,680	18,201	18,822	184,213	
	<i>Difference noted (A-B)</i>	<i>(1,058)</i>	<i>550</i>	<i>(1,514)</i>	<i>(2,076)</i>	<i>(921)</i>	<i>(2,646)</i>	<i>(1,547)</i>	<i>(338)</i>	<i>(4,780)</i>	<i>(1,465)</i>	<i>(1,799)</i>	<i>(5,180)</i>	<i>(22,776)</i>	<i>(12.36%)</i>
Upper West	Cash from bank statements (A)	18,514	6,144	6,660	8,054	7,930	9,260	7,706	10,233	11,839	12,993	11,720	14,614	125,668	
	Cash per management report (B)	19,160	6,809	6,637	9,329	419,053	(401,078)	7,941	10,326	13,011	14,579	14,135	12,051	131,953	
	<i>Difference noted (A-B)</i>	<i>(646)</i>	<i>(666)</i>	<i>23</i>	<i>(1,275)</i>	<i>(411,123)</i>	<i>410,338</i>	<i>(235)</i>	<i>(93)</i>	<i>(1,172)</i>	<i>(1,585)</i>	<i>(2,414)</i>	<i>2,563</i>	<i>(6,285)</i>	<i>(4.76%)</i>
Mobile Money	Validated Momo (A)	451	912	1,016	1,012	1,282	1,757	1,288	1,814	1,677	2,479	2,313	2,509	18,510	n/a
Cheque Deposits	Validated Cheque deposits		1,500	2,500	2,000	1,000		2,500	1,000			4,000		14,500	n/a
Consolidated	Cash from bank statements (A)	184,852	71,194	100,441	79,846	83,573	83,719	86,383	95,898	108,402	132,960	126,898	118,935	1,273,101	
	Cash per management report (B)	125,175	71,857	129,181	85,257	495,619	(320,525)	84,120	105,591	117,493	127,893	133,836	118,732	1,274,228	
	<i>Difference noted (A-B)</i>	<i>59,677</i>	<i>(663)</i>	<i>(28,740)</i>	<i>(5,410)</i>	<i>(412,046)</i>	<i>404,244</i>	<i>2,263</i>	<i>(9,693)</i>	<i>(9,091)</i>	<i>5,067</i>	<i>(6,938)</i>	<i>203</i>	<i>(1,127)</i>	<i>(0.09%)</i>

Source: Management Information & Deloitte Analysis



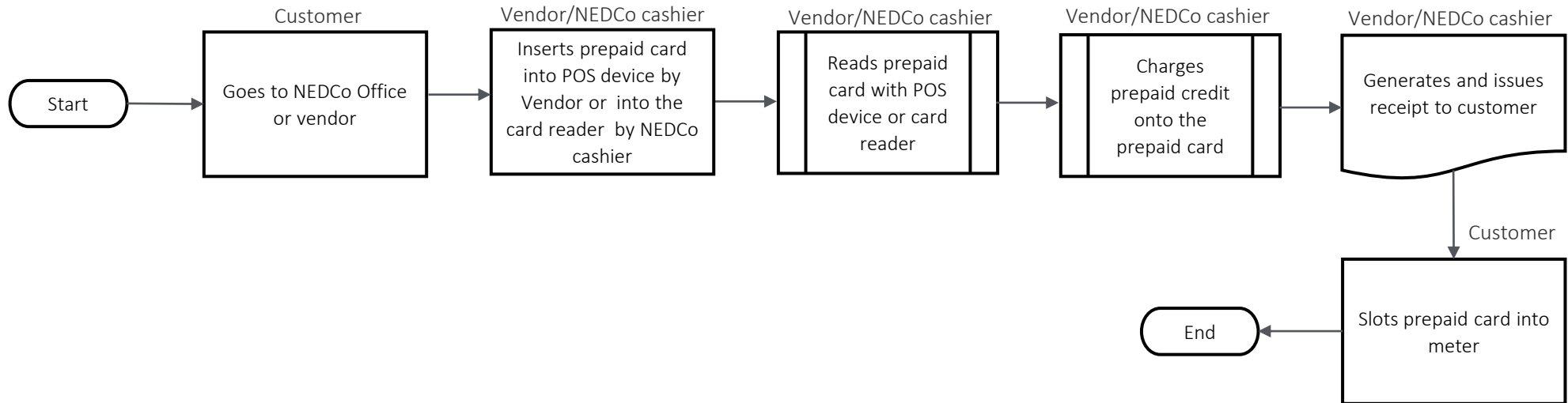
# Appendices | A5: Process Flow Chart

Process flowchart for billing of post-paid meter users

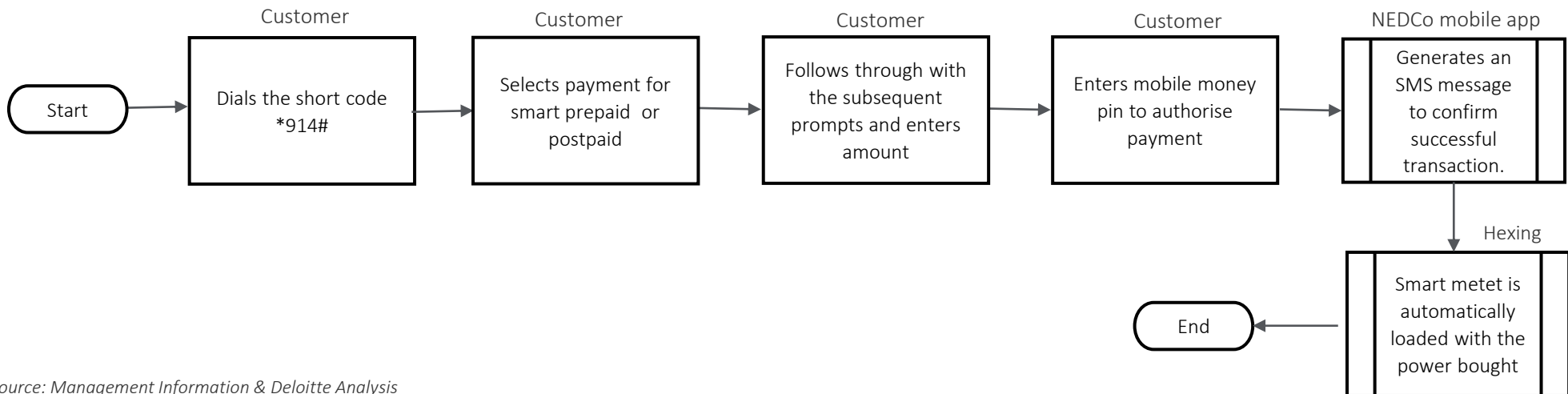


# Appendices | A5: Process Flow Chart

Process flowchart for payment by non-smart prepaid meter users at third-party vendor and at NEDCo Office

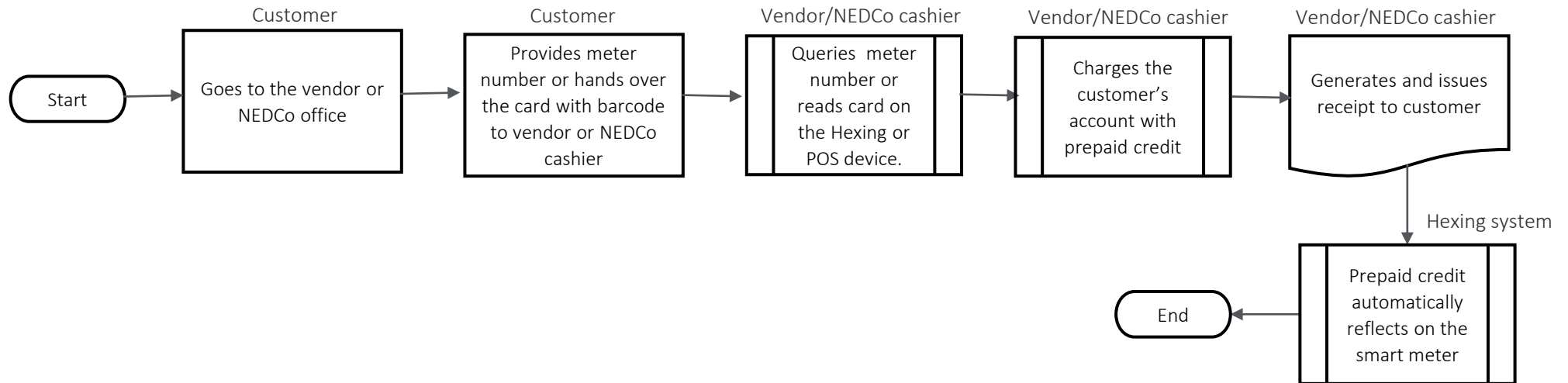


Process flowchart for payment by smart prepaid meter users and post-paid meter users using the short code \*914#



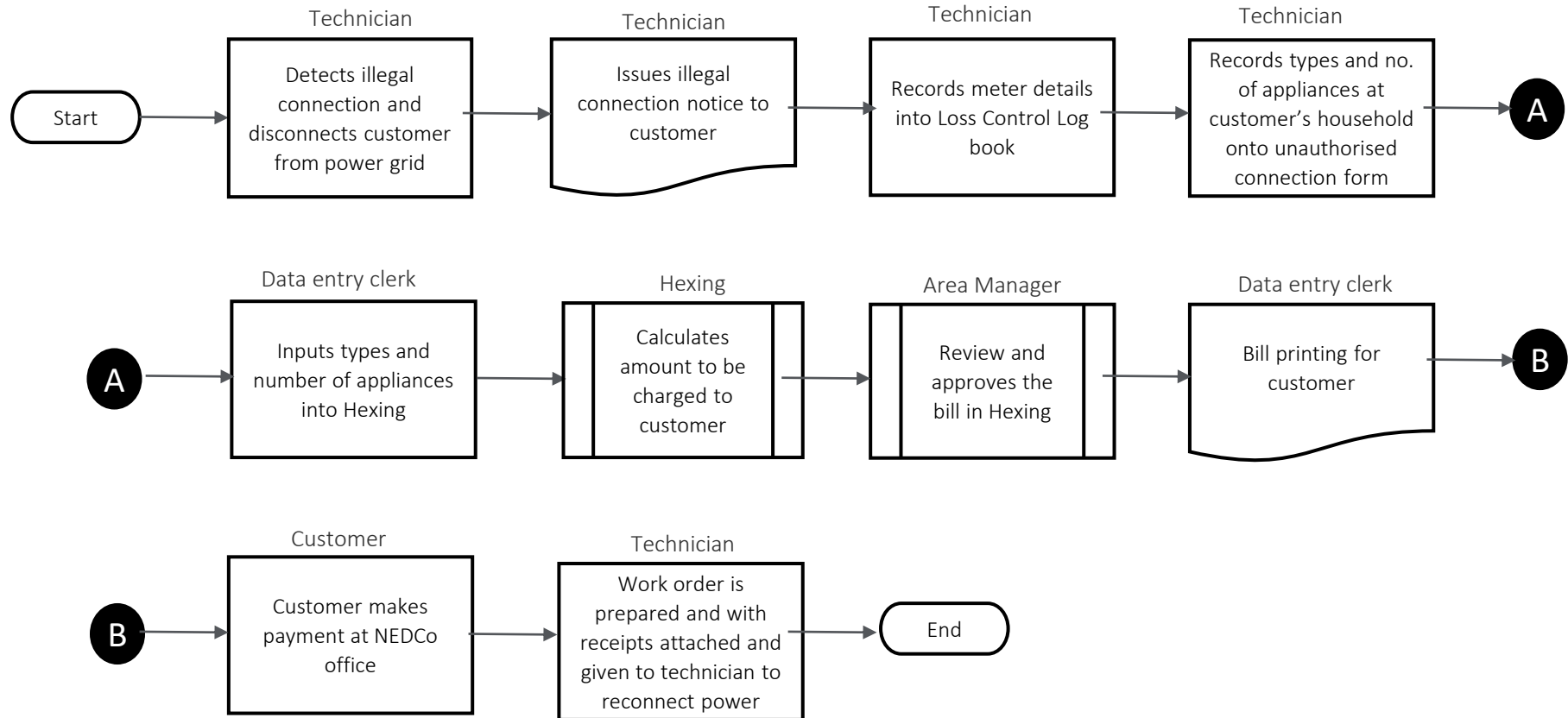
# Appendices | A5: Process Flow Chart

Process flowchart for payment by smart prepaid meter users at the third-party vendor and at NEDCo Office



# Appendices | A5: Process Flow Chart

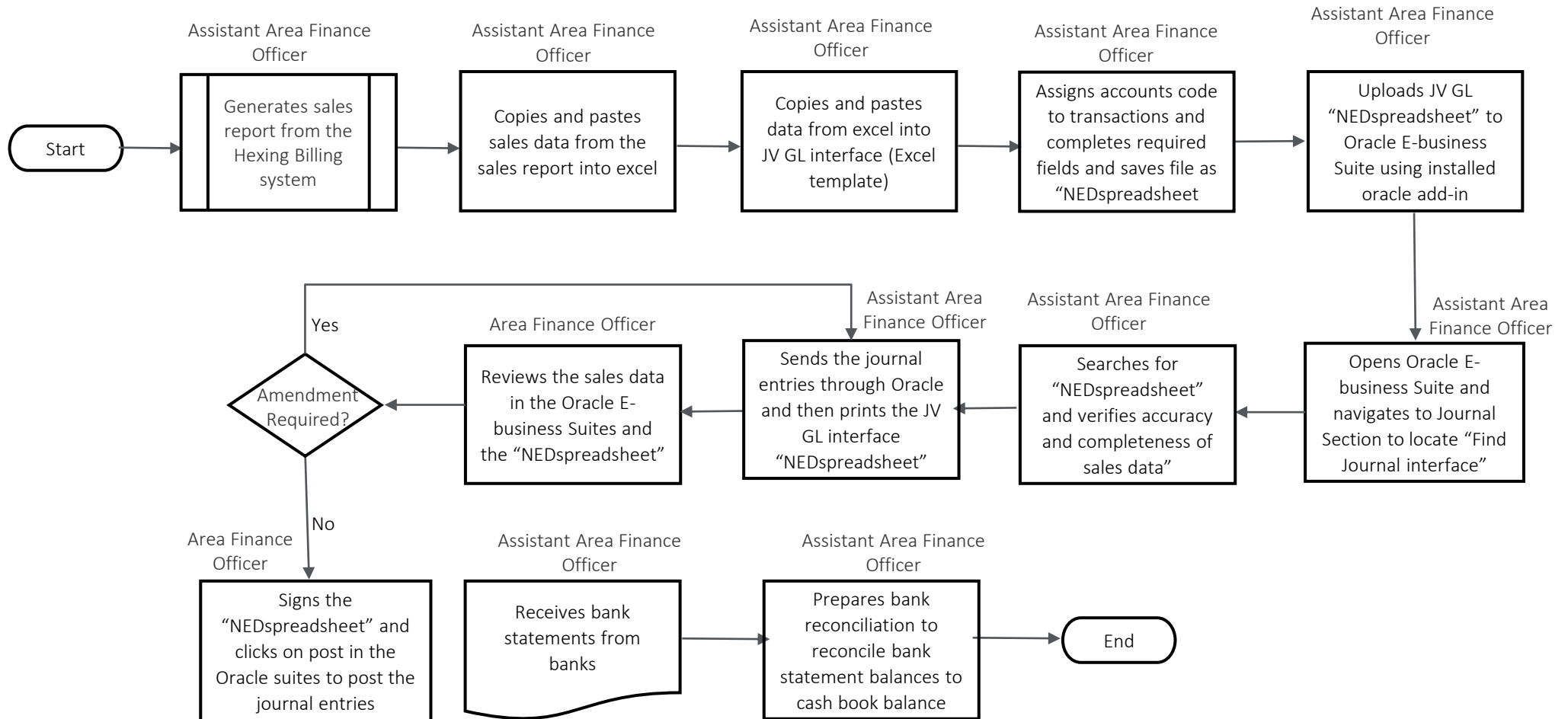
Process flowchart for recoveries for illegal connections





# Appendices | A5: Process Flow Chart

Process flowchart for power sales revenue recognition





# Appendices | A6: Tariff Application

Table 26: PURC Tariff recomputation

No	Customer type	Meter type	Account Name	Account No	Month	Billed Energy kwh	Billed amount GHS	Tariff Applied per Hexing	Is applied Tariff same as PURC published tariff?
1	Residential	prepaid non smart	Boakye Isaac Kwasi	201001893801	Mar-23	528.1	689.72	30 -300 kwh: GHS 1.1572 300 - 600 kwh: GHS 1.5018 600 + kwh : GHS 1.6687	yes
2	Residential	Postpaid	Alhassan Mohammed	201002937230	May-23	152	175.89	30 -300 kwh: GHS 1.572	yes
3	Residential	Postpaid	Laila Fadel Abu	201002353587	Jun-23	1406	2536.12	30 -300 kwh: GHS 1.3697 300 - 600 kwh: GHS 1.7776 600 + kwh: GHS 1.9751	
4	Non-Residential	prepaid non smart	Quality First Company	201001886565	Sep-22	274.1	229.64	0 - 300kwh : GHS 0.8378 300 - 600kwh : GHS 0.8916 600+kwh : GHS 1.3309	yes
5	Non-Residential	Postpaid	Crest Restaurant Annex	201002311153	Nov-22	860	864.85	0 - 300kwh : GHS 0.8378 300 - 600kwh : GHS 0.8916 600+kwh : GHS 1.3309	yes
6	Non-Residential	Prepaid Smart	DVLA Office	201002521669	Mar-23	1449	2731.12	0 - 300kwh : GHS1.0889 300 - 600kwh : GHS 1.1587 600+ kwh : GHS 1.7297	yes
7	Non-Residential	Postpaid	GNAT	201002315018	Sep-23	423	567.6648	0 - 300kwh : GHS1.288 300 - 600kwh : GHS 1.3714	yes
8	Non-Residential	Prepaid Smart	DVLA Office	201002521669	Oct-23	1449	2731.12	0 - 300kwh : GHS1.288 300 - 600kwh : GHS 1.3714 600+ kwh : GHS 2.0473	yes
9	SLT - MV	Postpaid	Dalun Headworks	201002333611	May-23	616000	806036	∞+ kwh : GHS 1.3985	yes
10	SLT - HV	Postpaid	Mordern Limited	201002000000	May-23	806036	115148	∞+ kwh : GHS 1.3085	yes



# Appendices | A7: GRIDCo fees & Cheque payments

Table 27: Breakdown of GRIDCo fees

Breakdown of GRIDCo fees for July 2022 to June 2023				
Month	Transmission service charge (TSC1) GHS	Regulatory levy GHS	TSC2 GHS	Total GRIDCo fees GHS
Jul-22	9,565,740.79	880,981.99	-	<b>10,446,722.78</b>
Aug-22	9,150,026.96	842,695.69	-	<b>9,992,722.65</b>
Sep-22	9,499,794.63	1,052,419.62	3,605,017.45	<b>14,157,231.70</b>
Oct-22	10,823,601.82	1,199,075.49	4,107,380.70	<b>16,130,058.01</b>
Nov-22	11,113,524.00	1,231,194.02	4,217,401.43	<b>16,562,119.45</b>
Dec-22	10,642,435.76	1,179,005.28	4,038,631.13	<b>15,860,072.17</b>
Jan-23	10,812,737.37	1,197,871.84	4,103,257.82	<b>16,113,867.03</b>
Feb-23	11,765,235.33	1,322,006.22	5,688,036.36	<b>18,775,277.91</b>
Mar-23	13,635,845.53	1,532,198.19	6,592,404.05	<b>21,760,447.77</b>
Apr-23	13,269,365.98	1,491,018.57	6,415,225.31	<b>21,175,609.86</b>
May-23	13,027,182.53	1,463,805.51	6,298,139.02	<b>20,789,127.06</b>
Jun-23	12,066,730.69	1,346,286.22	6,906,973.11	<b>20,319,990.02</b>

Table 28: Cheque payments

Summary of Cheque payments for power consumption				
Date of receipt	Chq. No.	Company	Validated Amount	Bank Account No. cheque was validated from
11-Aug-22	514192	GWCL	1,000,000.00	1441000318830
11-Aug-22	514193	GWCL	500,000.00	1441000318830
1-Sep-22	514259	GWCL	500,000.00	1441000318830
1-Sep-22	5142258	GWCL	1,000,000.00	37201002678-7
29-Sep-22	514416	GWCL	1,000,000.00	1441000318830
25-Oct-22	514475	GWCL	1,000,000.00	1441000318830
25-Oct-22	514476	GWCL	1,000,000.00	1441000318830
16-Nov-22	514497	GWCL	1,000,000.00	1441000318830
11-Jan-23	514722	GWCL	1,500,000.00	1441000318830
11-Jan-23	007524	K.NET	1,000,000.00	37201002678-7
23-Feb-23	514893	GWCL	1,000,000.00	1441000318830
5-May-23	514982	GWCL	1,500,000.00	37201002678-7
9-May-23	515129	GWCL	1,000,000.00	37201002678-7
5-May-23	515130	GWCL	1,500,000.00	37201002678-7
<b>Total</b>			<b>14,500,000.00</b>	

Source: Management Information & Deloitte Analysis





# Appendices | A8: Breakdown of non-tariff revenue

Table 29: Breakdown of non tariff revenue

Schedule of non-tariff revenue: July 2022- June 2023 (GHS'000)														
Item	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total	% of total
Service Charge (Distribution)	4,967.87	4,964.12	11,265.86	7,596.69	6,985.57	8,808.18	7,892.39	8,068.97	8,429.73	7,396.75	8,964.56	7,884.08	93,224.76	89.7%
General Miscellaneous Income	132.41	150.19	997.78	1,113.43	116.74	122.84	230.32	91.11	175.06	208.25	148.30	561.59	4,048.02	3.9%
Interest-Bank Deposits (Local)	2.99	0.00	-	443.73	0.25	2,212.99	0.64	19.25	309.60	21.32	13.25	13.30	3,037.33	2.9%
Income from Unestimated Work	155.95	40.15	59.72	39.73	92.48	89.71	117.98	254.72	136.61	392.23	186.63	157.97	1,723.89	1.7%
Reconnection Fees	37.92	57.22	22.45	45.79	94.56	68.05	38.04	11.71	55.16	82.90	108.39	81.23	703.42	0.7%
Meter Maintenance Fees	13.48	18.25	-	18.87	35.53	40.14	27.37	13.01	7.63	174.26	19.21	123.09	490.84	0.5%
Sale of IC Cards	60.47	37.94	3.20	19.53	26.44	30.25	18.03	38.27	32.64	19.73	43.19	45.04	374.73	0.4%
Misc Interest Income (Local)	1.07	3.66	2.61	3.48	4.96	5.04	12.88	10.75	8.75	2.78	8.11	9.71	73.82	0.1%
Sale Of Bid Forms ETC	-	-	46.29	1.80	-	2.10	6.90	0.30	-	2.70	-	-	60.09	0.1%
Sale of Service Application Form	2.40	2.35	36.06	(6.58)	(17.82)	2.05	4.30	2.20	4.04	1.30	3.50	3.75	37.55	0.0%
Swimming & Fitness Services I	-	0.23	-	3.07	5.92	7.02	5.60	4.01	2.08	-	3.50	2.38	33.78	0.0%
Equipment Rental Income	-	-	-	-	13.00	13.00	-	2.63	2.63	-	-	-	31.25	0.0%
Rent Income from property	-	-	28.43	-	-	-	-	-	-	-	-	-	28.43	0.0%
Club/Bar Sales Income	0.55	0.62	-	0.31	1.63	0.69	2.10	1.08	1.59	0.89	1.28	0.45	11.18	0.0%
Sale of Appliances	-	-	-	9.16	-	2.00	2.00	-	-	-	-	(2.00)	11.16	0.0%
Canteen Services Income	-	-	-	-	-	-	6.00	-	2.80	-	-	-	8.80	0.0%
Hire of Space, Halls, Clubhouse	2.00	-	-	-	2.00	-	-	-	2.80	1.00	-	-	7.80	0.0%
Service Charges	-	-	-	-	-	-	-	-	-	-	-	7.71	7.71	0.0%
Sale Proceeds Clearing	-	-	6.50	-	-	-	-	-	-	-	-	-	6.50	0.0%
Revenue Netting Account	-	-	4.20	-	-	-	-	-	-	-	-	-	4.20	0.0%
Guest House Services Income	-	-	2.13	-	-	-	-	-	-	-	-	-	2.13	0.0%
Income from Repair of Appliance	-	0.20	-	-	-	-	-	-	-	-	-	-	0.20	0.0%
Sale of Scrap & Old Materials	0.20	-	-	-	-	-	-	-	-	-	-	-	0.20	0.0%
Other Investment Income(Local)	-	-	-	-	-	-	-	-	-	0.00	-	-	0.00	0.0%
Rental and Hire of Vehicles	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%
<b>Total</b>	<b>5,377.31</b>	<b>5,274.94</b>	<b>12,475.22</b>	<b>9,289.01</b>	<b>7,361.26</b>	<b>11,404.06</b>	<b>8,364.54</b>	<b>8,517.99</b>	<b>9,171.13</b>	<b>8,304.11</b>	<b>9,499.91</b>	<b>8,888.31</b>	<b>103,927.79</b>	<b>100%</b>



# Appendices | A9: Cash validation tables

## Table 30: Sunyani Cash validation

Review of Bank Statements Covering Customer Collections- Jul 2022 to Jun 2023 (GHS)																
No.	Bank name	Account no.	Branch	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Total
1	GCB	7011130001678	Sunyan	17,242,599	16,804,299	34,626,264	19,601,094	20,667,158	22,898,117	23,405,957	24,017,741	27,962,209	31,394,680	32,527,602	30,115,473	301,263,192.70
2	SG	36201000477-1	Sunyan	3,061,900	4,382,678	1,710,399	3,104,600	4,803,415	3,752,103	2,832,804	5,242,146	2,613,385	5,531,293	3,467,859	5,285,755	45,788,337.70
3	Credit Note	N/A	N/A	18,886,780												18,886,780.28
<b>Total (A)</b>				<b>39,191,279</b>	<b>21,186,977</b>	<b>36,336,664</b>	<b>22,705,694</b>	<b>25,470,574</b>	<b>26,650,220</b>	<b>26,238,761</b>	<b>29,259,887</b>	<b>30,575,594</b>	<b>36,925,973</b>	<b>35,995,461</b>	<b>35,401,227</b>	<b>365,938,311</b>

## Table 31: Techiman Cash validation

Review of Bank Statements Covering Customer Collections- Jul 2022 to Jun 2023 (GHS)																
No.	Bank name	Account no.	Branch	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Total
1	TECHIMAN GCB POWER SALES ACCOUNT	7151130003864	N/A	15,122,947	14,657,411	10,212,366	15,502,549	17,583,355	17,025,547	18,079,417	17,379,518	24,498,681	23,574,779	24,240,338	26,902,700	224,779,609
2	Credit Note	N/A	N/A	7,259,608												7,259,608
<b>Total (A)</b>				<b>22,382,554</b>	<b>14,657,411</b>	<b>10,212,366</b>	<b>15,502,549</b>	<b>17,583,355</b>	<b>17,025,547</b>	<b>18,079,417</b>	<b>17,379,518</b>	<b>24,498,681</b>	<b>23,574,779</b>	<b>24,240,338</b>	<b>26,902,700</b>	<b>232,039,216</b>

## Table 32: Northern area Cash validation

Review of Bank Statements Covering Customer Collections- Jul 2022 to Jun 2023 (GHS)																
Account no.	Branch	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	TOTAL		
8011010005518	Tamale	1,418,632	1,911,499	1,943,071	2,038,863	2,269,480	2,952,367	2,633,149	3,116,969	1,808,599	3,253,605	4,247,409	2,987,627	30,581,270		
811101024132001	Tamale	2,792,746	3,282,452	3,653,328	6,272,903	5,630,809	4,556,818	5,219,046	5,185,416	6,069,281	7,317,629	7,844,967	5,651,238	63,476,632		
37201002677	Tamale	2,136,919	1,069,909	1,545,254	2,005,832	1,963,133	1,319,444	4,292,853	2,057,664	2,122,584	3,066,316	2,987,601	3,949,421	28,516,929		
37201000109	Tamale	37,565	21,165	20,855	25,385	33,112	25,176	37,736	24,834	3,550	38,883	23,760	69,591	361,612		
1122912	Tamale	6,275,267	74,796	4,567,424	4,699,906	5,693,016	6,689,315	4,570,841	6,648,408	12,579,840	6,865,274	11,077,868	8,256,679	77,998,635		
6071100259	Tamale	4,750,846	5,189,920	4,117,927	1,241,348	1,222,924	1,587,964	2,341,561	2,348,889	3,005,468	3,237,192	3,936,227	3,346,993	36,327,259		
1142061442401	Tamale	1,125,522	1,504,868	1,653,172	2,201,858	2,262,737	1,855,943	1,652,752	2,104,106	2,599,703	1,994,019	2,108,787	1,604,647	22,668,113		
		1,000,000	2,000,000								10,000,000			13,000,000		
N/A	N/A	56,523,986														
<b>Total</b>		<b>76,061,483</b>	<b>15,054,609</b>	<b>17,501,031</b>	<b>18,486,094</b>	<b>19,075,212</b>	<b>18,987,026</b>	<b>20,747,938</b>	<b>21,486,286</b>	<b>28,189,025</b>	<b>35,772,918</b>	<b>32,226,618</b>	<b>25,866,196</b>	<b>329,454,436</b>		



# Appendices | A9: Cash validation tables

Table 33: Upper East Cash validation

Review of Bank Statements Covering Customer Collections- Jul 2023 to Jun 2023 (GHS)																
No.	Bank name	Account no.	Cash Deposited													Total
			Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23		
1	SG GH POWER SALES I0382010018711		5,401,476.54	7,849,705.94	5,402,816.21	7,520,366.89	6,575,334.34	5,511,690.02	5,165,215.33	9,497,327.30	4,495,332.31	11,717,294.19	10,905,966.50	8,664,447.67		<b>88,706,973.24</b>
2	GCB POWER SALES 9011130000681		2,474,398.80	3,963,775.30	3,695,576.00	4,565,453.91	4,655,986.46	5,127,690.88	4,656,794.80	5,228,848.20	7,127,206.48	9,497,407.73	5,495,871.29	4,977,552.99		<b>61,466,562.84</b>
3	Credit Notes	N/A	11,606,842.81													<b>11,606,842.81</b>
<b>Total (A)</b>			<b>19,482,718.15</b>	<b>11,813,481.24</b>	<b>9,098,392.21</b>	<b>12,085,820.80</b>	<b>11,231,320.80</b>	<b>10,639,380.90</b>	<b>9,822,010.13</b>	<b>14,726,175.50</b>	<b>11,622,538.79</b>	<b>21,214,701.92</b>	<b>16,401,837.79</b>	<b>13,642,000.66</b>		<b>161,780,378.89</b>

Table 34: Upper West Cash validation

Review of Bank Statements Covering Customer Collections- Jul 2022 to Jun 2023 (GHS'000)																	
No.	Bank name	Account no.	Branch	Cash Deposited													Total
				Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023		
1	GCB Power Sales	0011130004885	Wa	4,832	5,226	5,485	6,775	6,629	7,834	6,383	8,595	9,667	11,187	9,495	12,519	<b>94,627</b>	
2	Societe Generale	39201001538-9	Wa	928	918	1,174	1,279	1,302	1,426	1,323	1,638	2,172	1,807	2,226	2,095	<b>18,287</b>	
3	Credit Notes	N/A	N/A	12,754												<b>12,754</b>	
<b>Total (A)</b>				<b>18,514</b>	<b>6,144</b>	<b>6,660</b>	<b>8,054</b>	<b>7,930</b>	<b>9,260</b>	<b>7,706</b>	<b>10,233</b>	<b>11,839</b>	<b>12,993</b>	<b>11,720</b>	<b>14,614</b>	<b>125,668</b>	



# Appendices | A10: Glossary

## Glossary of terms

AMB	Average Monthly Bill	PURC	Public Utilities Regulatory Commission
BSPs	Bulk Supply Points	SLT	Special Load Tariff
EC	Energy Commission	SMS	Short Message Service
ESRP	Energy Sector Recovery Program	SoE	State-Owned Energy
GHS	Ghana Cedis	TSC	Transmission Service Charge
GESTIP	Ghana Energy Sector Transformation Initiative Project	MOE	Ministry of Energy
GRIDCo	Ghana Grid Company	Q1/Q2/Q3/Q4 20XX	First/Second /Third/Fourth Quarter of the Year 20XX
GOG	Government of the Republic of Ghana	VRA	Volta River Authority
H1/H2 20XX	First Half/Second Half of the Year 202X		
kWh	Kilowatt hours		
NEDCo	Northern Electricity Distribution Company		
NEF	National Electrification Fund		

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