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Back to Basics: Understanding
the Cash Waterfall Mechanism
and Its Application in Ghana's
Electricity Sector

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KEY HIGHLIGHTS

- A Cash Waterfall Mechanism (CWM) is based on a Waterfall financial distribution model, designed to allocate cash inflows among stakeholders in an orderly manner, while prioritizing the most critical payments.
- The operationalization of the CWM in Ghana in 2020 was intended to address the payment gaps in the electricity value chain and to reduce the energy sector debts.
- Sub-Saharan African countries like Kenya, La Cote d'Ivoire, and Nigeria have also adopted the CWM in their electricity sectors which has contributed to improving their credit rating and attracting a significant number of IPPs.
- The CWM is likely to be successful in its operation with regular review and adjustment to ensure that it is in constant alignment with the goals and expectations of stakeholders. Stakeholders must also adhere strictly to the tenets of the mechanism.

1. Introduction

In this issue of the Regulatory Brief, the paper examined in details the rudiments of a Cash Waterfall Mechanism (CWM), narrowing it down to its application in Ghana's electricity sector. The brief provides an understanding on how the Mechanism operates, along with its benefits and challenges, and how it can be improved. The brief further explores the factors necessitating the implementation of a CWM in Ghana, while exposing readers to its fundamental features, pros and cons. Selected sub-Saharan African countries which operate and are benefiting from the CWM in their electricity sectors, are also highlighted in this brief

2. Background

Since the 1990s, Ghana has implemented a number of power sector reforms to improve the performance of entities in the energy sector, increase sector efficiency, create an enabling environment that would attract private capital in the sector, and establish a framework that would enable a competitive and unbundled industry structure.¹ Consequently, these reforms led to a number of outcomes, notably, the unbundling of the power sector, allowing private sector participation in the energy sector, the establishment of an economic and technical regulator of the electricity sector, among others.

Despite the successful outcomes of the reforms, the energy sector has experienced some significant financial setbacks. Primarily pervasive have been payment gaps resulting in substantial debts to key energy sector entities (Ministry of Energy, 2019). These payment gaps are due to the sector's inability to collect adequate revenue among others, to pay for power generated, supplied, and distributed (Ministry of Energy, 2023). Successive governments have made efforts to address the payment gaps through a number of interventions. One such attempt was establishing the Cross Debt Clearing House (CDCH) system, under the auspices of the Ministry of Finance to settle inter-utility and government debts resulting from payment gaps in the sector. However, concerns about the effectiveness of this system led to its suspension in 2012.²

¹ Edjekumhene, I., Amadu, M. B., & Brew-Hammond, A. (2001). Preserving and enhancing public benefits under power sector reform: The case of Ghana. *Energy for Sustainable Development*, 5(2), 39-47. [https://doi.org/10.1016/S0973-0826\(08\)60268-9](https://doi.org/10.1016/S0973-0826(08)60268-9)

² Asante, N. D. (2023). The Cash Waterfall mechanism (CWM): Part 1: The Power Sector Payment Gap – Genesis of the CWM. <https://thebftonline.com/2024/01/29/strategic-restructuring-for-efficiency/>

Consequently, sector entities had to resort to expensive external debt, as revenues could not cover sector costs due to shortfalls in revenue collected by the Electricity Company of Ghana (ECG).³ The immediate challenge arising from this was an acute shortage of financing for the sector, coupled with irregular and discretionary payments by ECG to entities in the electricity value chain. A financial analysis conducted by the Ministry of Energy in 2018, revealed that the sector was plunged into a revenue shortfall of USD 2,748 million which was projected to exceed USD 12.5 billion by 2023. This added more debts to the pile of legacy debts which had accumulated from contracts that were drawn up as part of government's efforts almost a decade ago to address erratic and irregular power supply. In a bid to stabilize the energy sector, the government, since 2019, paid an estimated USD 5.7 billion in stabilization payments to sector entities out of which, USD 4.1 billion was paid towards the 2019 – 2021 sector payment shortfalls (Ministry of Energy, 2023).

As a securitization mechanism to instill discipline in payment to entities in the sector, achieve financial sustainability, and to facilitate an efficient and reliable energy sector, the Cash Waterfall Mechanism (CWM) was proposed as a key intervention, and as part of the implementation of Ghana's Energy Sector Recovery Programme (ESRP)⁴ which was approved by Cabinet in 2019. The CWM was subsequently operationalized in 2020.⁵ The ensuing sections provide further details of Ghana's CWM.

3. Understanding the Cash Waterfall Mechanism

A Cash Waterfall payment structure or mechanism is a payment system, that allows debtors to pay higher-tiered creditors their full interest and principal before lower-tiered creditors receive their own principal and interest payment.⁶ This Mechanism is based on a waterfall financial distribution model, designed to allocate cash flows from a transaction among stakeholders to ensure that, financial inflows are distributed among stakeholders in an orderly manner, thus, prioritizing the most critical payments to permissive payments. The Mechanism derives its name "Waterfall" from its visual resemblance to a natural waterfall due to the way funds are disbursed among several creditors at different stages in order of priority.⁷

To ensure that priorities are funded in an orderly manner, Summers (2023) asserts that the Mechanism has four (4) key components that shape its operation. These are; (i) Senior Debt Service, which addresses highest-priority debts first to reduce the risk of default and improve credit standing, (ii) Operating Expenses, which covers crucial daily operational costs to ensure uninterrupted business operations, (iii) Reserve Accounts, where funds are set aside for future needs and emergencies, and (iv) Discretionary Spending where remaining funds are distributed for strategic initiatives.

The Cash Waterfall, although applicable in several sectors, is a widely used phenomenon in financial modeling due to its versatility. It was first introduced in complex financing deals like private equity and real estate, and also used in dividend distribution among shareholders, asset sales, and structured finance transactions, such as securitization.

³The World Bank, July (2018). International Development Association Project Appraisal Document On A Proposed Credit In The Amount Of SDR 14.2 Million (Us\$20.0 Million Equivalent). Ghana Energy Sector Transformation Initiative Project.

⁴The ESRP is a comprehensive recovery program identifying the policies and actions needed for financial recovery in the energy sector over a five (year) time horizon (2019-2023).

⁵Preprah, A. (2024). Strategic restructuring for efficiency. [Strategic Restructuring for Efficiency: Proposing the Division and Partial Privatization of Ghana's ECG - MyJoyOnline](#)

⁶Reporting oil and gas (2019). Energy Ministry institutes Cash Waterfall Mechanism <https://reportingoilandgas.org/energy-ministry-institutes-cash-waterfall-mechanism/>

⁷unacademy,(2024). Waterfall Mechanism for Liquidation. [Waterfall Mechanism for Liquidation \(unacademy.com\)](#)

3.1 Application of the Cash Waterfall Mechanism in Ghana's Energy Sector

In Ghana, the Cash Waterfall Mechanism (CWM) is a model for distributing in a proportionate manner, revenues from the sale of electricity, among the relevant energy sector players who are involved in the electricity supply value chain. Adoption of the CWM in the energy sector in 2020 was to address the payment gaps in the sector by ensuring the transparent allocation of power sector revenues in the electricity value chain. Hitherto 2020, Ghana's energy sector was faced with inequitable and discretionary revenue distribution among sector players as some power producers were given priority over other equally important entities in the value chain, while some were even left with little or no payments. Although the operationalization of the CWM improved to some extent, equity and predictability in the payment cycles of the sector, some challenges emerged. These challenges were mainly with respect to full compliance to the model thereby affecting the consistency and timeliness in revenue allocation to sector players. This necessitated revision of the CWM in 2023 with the sole aim of improving the model and its implementation, and to improve the financial sustainability of the energy sector.

Under the revised Mechanism, payments are made at two levels, Level A and Level B. Level A payments are payments made to Independent Power Producers (IPPs) directly by ECG, while Level B payments are made to State Owned Enterprises within the value chain and fuel suppliers (PURC, 2023). Thus, consistent with the Waterfall principle, the Mechanism ensures that senior debts are prioritized, while other debt repayments follow suit. In Ghana's instance, the level of payment priorities ensure that debts are serviced in a way such that the supply of energy would not be interrupted due to unpaid revenues.

Given the applicable Level of payments, the model allocates payment to sector players based on the prevailing Public Utilities Regulatory Commission (PURC) tariff. To ensure accountability and monitor compliance, the PURC is mandated to publish a monthly report on the disbursement of revenues under the CWM, and the Ministry of Energy is expected to top-up any outstanding payments that may arise due to inadequate revenues for disbursement.

4. Benefits of Implementing a Cash Waterfall Mechanism

Implementation of a Cash Waterfall Mechanism has various benefits. Notable among its benefits as applied to the energy sector are:

Serves as a Strategic and Structured Financial Planning Tool

As a strategic financial planning tool, a thorough understanding of the potential of a CWM can transform the way a structure handles financial inflows and disbursements among stakeholders. Thus, adoption of a CWM assists businesses in maintaining a robust financial health even amidst economic uncertainties as it follows a sequential order of payment priorities (Summers, 2023).

Reduces Sector Debts

Through the prioritization of payments, the CWM ensures that stakeholders in the energy value chain are duly paid in order of priority, through compliance with laid down principles and structure of the Mechanism. This mitigates the risk of default by paying off large debts first while reducing the risk of insolvency as cash is freed up for operations, investments, and capital expenditure.

Promotes Payment Transparency and Predictability

The Mechanism not only increases transparency in fund allocation and utilization, but it also has the potential to improve the credit ratings of energy companies, thereby attracting investment to the sector (Bernath, 2024). Following a structured model for cash distribution, and with financial transparency and discipline ensured, investors are more likely to commit funds in the sector as there is a clear and structured stipulation of cash flows. This provides potential investors with visibility and predictability of returns or debt repayment, contributing to the sector's overall growth (Bernath, 2024).

5. International Experience with Cash Waterfall Mechanism

In sub-Saharan African countries such as La Cote d'Ivoire, Kenya, and Nigeria, the CWM is used in the energy sector for financial robustness and to attract investors. The mechanism especially, has proven to be highly relevant in the energy sector of La Cote d'Ivoire, as the country is the first sub-Saharan African country to turn to IPPs to meet their energy needs. In La Cote d'Ivoire, the CWM is managed by the Compagnie Ivoirienne d'Electricité (CIE) (a private company responsible for the operation of some state-owned power plants), who also transport supplies and market electricity in the country. CIE implements the CWM in order of priority, allocates payments to stakeholders in categories (A, highest priority level to F, lowest priority level) with category A being private investors (i.e. in production and gas exploration). As a result, the country has been able to shield private operators even during political turmoil and improved their credit rating, enabling the country to attract private investments in power generation (The World Bank, 2018).

In Kenya, with about a third of its installed capacity owned and operated by IPPs, the importance of IPPs in its energy sector cannot be overlooked.⁸ The CWM is practiced through the provision of independent guaranteed financing in various forms either through an escrow account or an advance payment to IPPs propelling the successful attraction of private power producers to meet the country's power needs (Eberhard et al., 2018).

In Nigeria however, the adoption of a cash payment waterfall has aided the repayment of the Central Bank of Nigeria-Nigerian Electricity Market Stabilization Facility (CBN-NEMSF) loan, meant for the settlement of all legacy gas debts owed to the Nigeria Gas Company and other incurred debts. Though this has been successful to some extent, the Nigerian Electricity Regulatory Commission (NERC) recently issued guidelines for the establishment of a Secondary Escrow Account following constraints with the existing escrow account (Olaniwunajayi, 2023).

6. Challenges and Risks

Despite its advantages, the implementation of a CWM is obstructed by some challenges and complexities likely to impede its objectives. Generally, in implementing a CWM, collating the necessary data for revenue allocation tends to be cumbersome especially when the systems of stakeholders involved are not synchronized. This creates the avenue for data inconsistencies and technical errors leading to the misrepresentation of stakeholders' financial status.⁹

While this can be mediated through regulations, regulators themselves can be confronted with changing stakeholder priorities amidst the stringent terms of the Mechanism. As companies evolve, they may experience unexpected events and inconsistent revenue which could result in unexpected costs or delays likely making the terms of fund allocation under the Mechanism unfavorable for them (Summers, 2023).

Without regular review and adjustment of the CWM to ensure it constantly aligns with the goals and expectations of stakeholders, the Mechanism is likely to be unsuccessful in its operation (Summers, 2023). Consensus building and understanding among participating stakeholders is critical to the success of the mechanism as without it, the interpretation of revenue disbursement among stakeholders can vary resulting in different conclusions and decisions under the mechanism.¹⁰

⁸ International Trade Administration (July 5,2024). Energy-Electrical Power Systems. Kenya - Country Commercial Guide. <https://www.trade.gov/country-commercial-guides/kenya-energy-electrical-power-systems>

⁹ DealHub Experts, (July 23,2024). Revenue Waterfall. [What is a Revenue Waterfall? | DealHub](#)

¹⁰ ibid

Not only is the CWM faced with challenges, but it is also confronted by some underlying risks that threaten its efficiency. Dealing with multiple stakeholders amidst inconsistent and fluctuating revenues, payments under the CWM risk being in default or delayed among certain stakeholders thereby defeating the purpose of equitable cash distribution and financial discipline (Bernath, 2024). Additionally, once the terms of the CWM are consensually agreed upon by stakeholders, altering these terms can be difficult, thereby limiting the fund-distributing company's ability to respond to its own unexpected financial needs or opportunities (Bernath, 2024). This does not only pave the way for non-compliance with stipulated agreed terms under the Mechanism, but also paves the way for manipulation of the system as companies may strive to find ways and means around the Mechanism to address their needs.

7. Conclusion and Recommendation

The Cash Waterfall Mechanism as noted, is an essential financial model for governments aiming to instill financial discipline in various sectors, especially in the energy sector of countries such as Ghana. Moving forward, policymakers and regulators should enforce compliance to conditionalities and terms stated under the Mechanism by implementing stringent sanctions against defaulting revenue-distributing companies who do not provide any reasonable and genuine reasons or any pre-informed reports to that effect.

Furthermore, proper systems for the regular review, adjustment, and evaluation of the effectiveness of the CWM must be put in place to periodically monitor progress or otherwise make and recommend solutions. Additionally, there should be measures in place to regularly hold a comprehensive consultation with stakeholders to update them on pressing issues of the mechanism and solicit their input for the enhancement of the mechanism to effectively meet sector demands.

In essence, the CWM is more than just a financial model. It is a strategic framework that policymakers and regulators can harness to introduce financial discipline in various sectors, especially in Ghana's energy sector to forecast and plan for the industry's financial sustainability.

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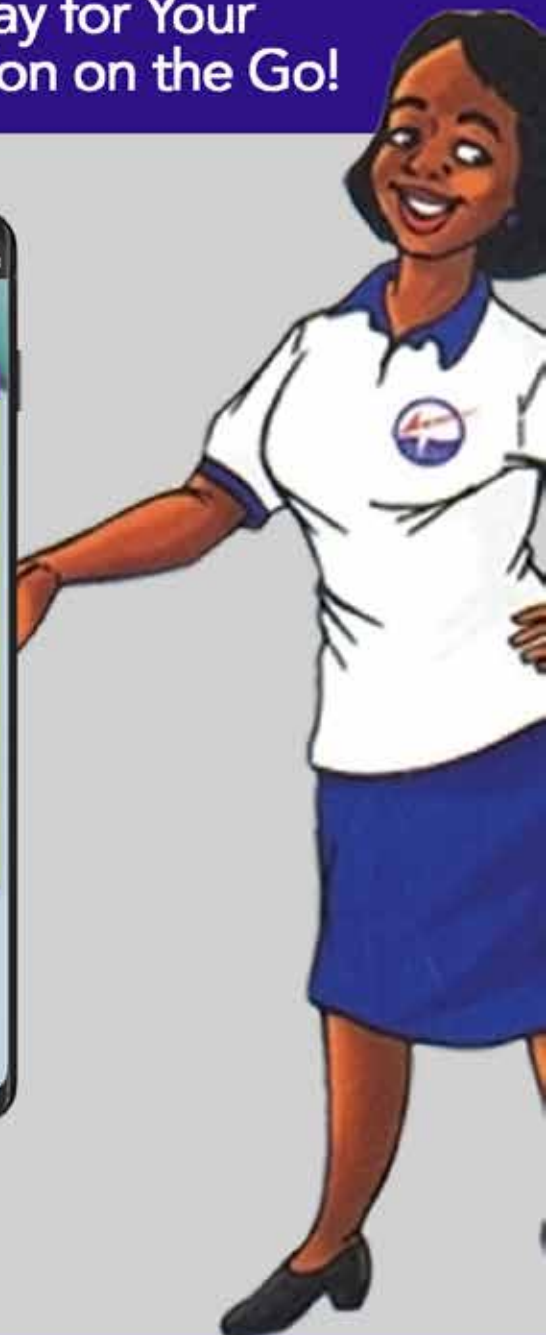
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OUR CONTACTS

HEAD OFFICE

2nd Floor Olympic Committee Building
No. 53, Liberation Road, Ridge
P. O. Box CT 3095 Cantonments, Accra
Digital Address: GA-052-9469
Tel: (233-302) 244180, 218300
WhatsApp: (233-558) 082547
Email: info@purc.com.gh
Website: <http://www.purc.com.gh>

Greater Accra Regional Office

Ground Floor, GNAT Heights
Opposite Zenith Bank, Liberation Road
Tel: (233-302) 240046
WhatsApp: (233-540) 126201

KUMASI

1st Floor Cocobod Jubilee House
P. O. Box 1001, U.S.T
Kumasi, Ashanti Region
Tel: (233-322) 037510
WhatsApp: (233-540) 126202

TAKORADI

2nd Floor, GPHA Credit Union House
Behind Bank of Ghana
P. O. Box AX 1985
Takoradi, Western Region
Tel: (233-312) 024010
WhatsApp: (233-540) 126203

TAMALE

1st Floor, NCA Building
Opposite Regional Coordinating Council,
P. O. Box TL 1870
Tamale, Northern Region
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WhatsApp: (233-540) 126204

KOFORIDUA

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Koforidua, Eastern Region
Tel: (233-342) 020770
WhatsApp: (233-540) 126205

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WhatsApp: (233-540) 126206

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