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BEDC/REG/NERC/06/23/089 **10th July 2023**

The Chairman
Nigerian Electricity Regulatory Commission
Plot 1387, Cadastral Zone A00
Off Shehu Shagari Way
Abuja, FCT, Nigeria

Attn: Musiliu O. Oseni, Ph.d (Vice Chairman)

Dear Sir,

RE: FILLING OF APPLICATION FOR RATE CASE BY BEDC

We write in response to the commission's letter dated 21st June 2023 with reference number NERC/REG/BEDC/DSPONMO/6163/T/1 on the above subject. BEDC is expected to submit updates on its customer tariffs and assumptions to the commission with an updated MYTO model and a justification for the proposed tariff changes. The letter outlines the key changes to the tariffs based on energy, load allocation, tariff weightings tariff spread, and the key projects that will be executed to support the tariff changes (This is submitted as a separate document).

By this letter, we wish to communicate our new tariffs and the corresponding justifications for the tariffs.

1. Updated Assumptions used in calculating tariffs.

To update our tariffs, we have made changes to several parameters and will highlight and discuss the key parameters in the sections below.

- **General Assumptions**

The general input assumptions used for this analysis are provided in the Table below. These assumptions have been obtained from the December 2022 MYTO Model. For the macroeconomic assumptions, local and US inflation have been held constant over the period at 22% and 5.13%, respectively. The foreign exchange rate has also been held constant over the period at the current official CBN rate in the MYTO of 639 USD/NGN

Table 1 – Macroeconomic Indices

Macroeconomics		2023	2024	2025	2026	2027	2028
Nigeria Inflation	%	22.0	22.0	22.0	22.0	22.0	22.0
US Inflation	%	5.13	5.13	5.13	5.13	5.13	5.13
Forex	Naira	639	639	639	639	639	639

- **BEDC Energy Delivered**

The energy delivery used in this justification represents a 14.6% increase from our actual energy received in 2022. The table below shows the energy delivered to BEDC and collected sales used to determine our tariffs.

Table 2 - Energy Delivered and Collected Sales

Parameter	Unit	2023	2024	2025	2026	2027	2028
Delivered to Transco	GWh	3,293	3,721	4,093	4,503	4,911	5,288
Delivered to Discos	GWh	3,055	3,461	3,817	4,210	4,592	4,944
Collected Sales	GWh	2,524	2,860	3,267	3,706	4,042	4,352

- **Load allocation**

The commission projects that 80% of the energy consumed by Disco customers should go to customers in Bands A to C. We have projected to allocate 78% of our energy to customers in bands A-C as we strive harder to ensure we get to 80%. The tables below show the breakdown of the load allocation used in the model to calculate our tariffs.

Table 3 – Service Band Energy Delivered

Category	Unit	2023	2024	2025	2026	2027	2028
Lifeline	GWh	1	1	1	1	1	1
Band A	GWh	598	678	774	878	958	1,032
Band B	GWh	767	869	993	1,127	1,229	1,323
Band C	GWh	567	643	734	833	908	978
Band D	GWh	282	320	365	414	452	486
Band E	GWh	309	350	399	453	494	532
Total	**GWh**	**2,524**	**2,860**	**3,267**	**3,706**	**4,042**	**4,352**

Table 4 – Service Band Load Allocation

	Tariff Band Breakdown	BEDC 2023 Load Allocation
A	A – Non-MD	6.0%
	A – MD1	5.0%
	A – MD2	12.7%
B	B – Non-MD	12.0%
	B – MD1	7.0%
	B – MD2	11.4%
	C – Non-MD	20.0%
C	C – MD1	2.0%
	C – MD2	0.5%
	D – Non-MD	10.2%
D	D – MD1	0.8%
	D – MD2	0.2%
E	E – Non-MD	11.7%
	E – MD1	0.4%
	E – MD2	0.1%
	Total	**100.0%**

The load allocation was also adjusted to give the non-domestic customers (MD-1 and MD-2) 40% of the total energy delivered, this is up from the 34% allocation in 2022. We expect that by giving more electricity supply and reliability to those customers we can achieve corresponding revenue improvements from these same bands. This will enable us to improve customer satisfaction, boost service delivery, increase revenues, and improve our ability to settle our market invoices.

- **Tariff Weightings**

The tariff weightings allowed BEDC to achieve higher tariffs for the maximum demand customers in relation to the non-maximum demand customers' tariffs. The table below shows the exact weightings used in calculating the tariffs.

Table 5 - BEDC Tariff Weightings

	Tariff Band Breakdown	BEDC Tariff Weightings
A	A – Non-MD	1.07
	A – MD1	1.16
	A – MD2	1.17
B	B – Non-MD	1.03
	B – MD1	1.12
	B – MD2	1.14
	C – Non-MD	0.94
C	C – MD1	0.99

	C – MD2	1.00
	D – Non-MD	0.79
D	D – MD1	0.86
	D – MD2	0.86
E	E – Non-MD	0.79
	E – MD1	0.86
	E – MD2	0.86

- **ATC&C Losses**

BEDC have adopted the MYTO ATC&C loss level in resetting the rates. The actual ATC&C loss level of 46% is very high and if adopted to sculpt tariff will lead to a massive jump in the rates. However, we have put in place strategies to ensure that our actual loss levels are reduced drastically to match the MYTO losses in the coming years. The table below shows our historical losses and the projections as benchmarked against MYTO provisions.

Parameter	Unit	2020	2021	2022	2023	2024	2025	2026	2027
MYTO	%	28.9%	21.7%	17.4%	17.4%	17.4%	14.4%	12.0%	12.0%
BEDC ACTUAL	%	48.1%	47.4%	47.4%					
BEDC PROJECTIONS	%				39.9%	36.1%	25.6%	17.9%	17.9%

CAPEX & OPEX

The MYTO CAPEX provisions and OPEX for BEDC were maintained in determining the tariffs. This is because these provisions are in line with our expected CAPEX and OPEX expenditure plan to achieve increased revenue.

Table 6 - MYTO CAPEX & CAPEX

		2023	2024	2025	2026	2027	2028
CAPEX	Nbn	7.07	7.07	7.07	7.07	7.07	7.07
OPEX	Nbn	27.87	33.70	40.81	49.47	60.02	72.9

Attachment 1 shows the historical analysis of our actual CAPEX, MYTO provisioned CAPEX, variance analysis and the reasons for the variance.

2. End-User Tariffs

Using all the key assumptions and parameters discussed above, we calculated an average tariff of N84.92 N/kWh in 2023, with the highest tariff being that of band A MD-2. These tariffs are competitive and will allow BEDC to recover its revenue required in line with the MYTO provisions.

Table 7 - End-User Tariffs

Category		2023	2024	2025	2026	2027	2028
Average Tariffs		84.92	88.03	85.41	84.34	90.96	94.22
Lifeline	N/kWh	4.00	4.00	4.00	4.00	4.00	4.00
A - Non-MD	N/kWh	90.86	94.19	91.39	90.24	97.32	100.81
A - MD1	N/kWh	98.51	102.11	99.08	97.83	105.51	109.29
A - MD2	N/kWh	99.35	102.99	99.93	98.67	106.42	110.23
B - Non-MD	N/kWh	87.04	90.23	87.55	86.45	93.23	96.57
B - MD1	N/kWh	94.94	98.42	95.49	94.29	101.69	105.33
B - MD2	N/kWh	96.81	100.35	97.37	96.14	103.69	107.41
C - Non-MD	N/kWh	79.50	82.41	79.96	78.95	85.15	88.20
C - MD1	N/kWh	84.32	87.41	84.81	83.75	90.32	93.56
C - MD2	N/kWh	85.07	88.19	85.56	84.49	91.12	94.38
D - Non-MD	N/kWh	67.09	69.54	67.47	66.63	71.86	74.43
D - MD1	N/kWh	73.03	75.71	73.45	72.53	78.22	81.03
D - MD2	N/kWh	73.03	75.71	73.45	72.53	78.22	81.03
E - Non-MD	N/kWh	67.09	69.54	67.47	66.63	71.86	74.43
E - MD1	N/kWh	73.03	75.71	73.45	72.53	78.22	81.03
E - MD2	N/kWh	73.03	75.71	73.45	72.53	78.22	81.03

3. STRATEGIC INITIATIVES TO IMPROVE PERFORMANCE & REDUCE ATC&C LOSSES

- **Metering**

One of the major components of our planned CAPEX is the metering of our customers. Currently, BEDC has a metering gap of 642,894 representing about 60% of its customer base. This implies that there is a need to cover an expansive area (to reach our unmetered customers) and a need to explore more financing options to effectively close this gap. Given the urgency, BEDC has opted to fully utilize the MAP and Vendor Finance Metering Schemes especially considering the recently extended customer reimbursement period of 10 years. Our strategy is to prioritize customers in bands A to C in the interim, to enable us quickly to curb our losses and improve performance towards further investment in metering.

The strategic turnaround plan is to improve metering coverage of non-MD post-paid customers and distribution transformers as well as reinforce energy theft prevention to drive improved billing especially in the Bands A to C market segment. The following key initiatives are proposed and are being implemented:

a) Deploy pre-paid and DT meters where economically viable to ensure accurate billing across bands (Target Date - H2 2024). Initiatives include:
   - Upgrade LT lines to prevent potential meter bypassing.
   - Roll out metering deployment plan across BEDC franchise area.

b) Deploy fraud equipment and perform targeted field inspections to effectively detect and prevent energy theft (Target Date – H3 2023). Initiatives include:
   - Identify areas with a high propensity for energy theft.
   - Roll out prepaid meter seals.

c) Reinforce customer and meter enumeration to identify and integrate uncaptured consumers into billing database. (Target Date - Continuous). Initiatives include:
   - Integrate billing and collections system.
   - Revalidate customer enumeration data and identify consumers yet to be captured in the billing system.
   - Align identified customers by tariff band and feeder/DT connectivity to detail demand forecast.
   - Integrate the new billing system with uncaptured customers based on the revalidated customer data.

d) Upgrade prime and non-MD to MD customers. (Target Date - Continuous). Initiatives include:
   - Identify potential prime and non-MD customers and ensure the need for more supply.
   - Approach and obtain customer alignment with increased tariff.
   - Ensure feeders are positioned to deliver higher power supply and install meters.
   - Roll-out prime and non-MD upgrades to MD customer initiative yearly.

Attachment 2 shows a detailed analysis of our metering gap, the strategy to cover the gap and the CAPEX involved.

- **Collections Management:**

  - **Current Plans (Quick Wins) – Enumeration**

    BEDC has embarked on the restructuring and realignment of the enumeration department using digital technology anchored on deductive reasoning. The strategy is to reveal and capture all the illegal consumers in BEDC's network by using robust GIS and remote sensing technology and an approach to enumerate all customers and consumers connected to BEDC's network by service wires and accounts. The major benefit of this approach is that it maps and references these customers to their premises, thereby identifying them by their geographic locations and mapping each customer to geotagged network infrastructure. Between October 2022 till date a total of 280,500 customers have been enumerated, and a total of 160,300 LT poles have been physically and geographically tagged.

    Impact of the Upscaled Enumeration

    The new enumeration was from the beginning designed to prioritize impacts into short-term, medium-term, and long-term categories. The short-term goal tagged as "quick-win" is to reveal and subsequently capture all illegal consumers on the network, and this would unequivocally impact the company's billing efficiency and exponentially increase revenue by reducing commercial loss. In this regard, the new enumeration has begun to impact the company's sustainability plans, especially concerning the aspect of billing and exposing illegal consumers in the network. The progress report revealed that of the 280,500 enumerated customers so far, 21,000 illegal consumers have been processed and validated. In the coming weeks, 50% of the enumerated customers will be captured in the next billing cycle.

    Improve collections by ensuring easily accessible payment tools, improving sales rep oversight, utilizing sub-franchising model and educating customers through PR and public awareness campaigns.

    - Collections channel management
    - Improved sales rep efficiency
    - Innovative sub-franchising model with 3rd party agent
    - PR and public awareness campaigns

  Collection Management Turnaround Plan

  Improve collections by ensuring easily accessible payment tools, improving sales rep oversight, utilizing sub franchising model and educating customers through public relations and public awareness campaigns. The following key initiatives are proposed and are being implemented:

  a) Collections channel management (Target Date – Continuous)
     - Enhance use of various payment options by continuous customer education via campaigns.
     - Continue to conduct campaigns to inform & train customers periodically.
     - Mandate internal and 3rd party agents adopt prefund model

b) Improved sales rep efficiency (Target Date – Q4 2023)
- Reward high performing staff and take actions against low performers.
- Continue to monitor and assess sales rep performance.
- Set up dedicated MD customer cell with best performing sales reps

c) Innovative sub-franchising model with 3rd party agent (Target Date – Q4 2024)
- Source for agent to serve as collection and disconnection agents.
- Develop and agree on contractual terms with identified 3rd party agent.
- Fully rollout franchise model

d) PR and public awareness campaigns (Target Date – Continuous)
- Develop plan for loyalty reward events (# of participants, method of selecting customers, rewards, frequency)
- Iterate and fully launch loyalty events periodically.

The above listed initiatives will require no additional CAPEX spend and based on the initiatives highlighted above, we have set the below achievable targets for BEDC.

Proposed Sustainability Plan KPIs	**2023**	**2024**	**2025**	**2026**	**2027**
Non-MD postpaid CE	35%	45%	55%	62%	71%

- **Technical Upgrade and Power Procurement**

Over the years, BEDC capacity to deliver superlative service to its customers has been severally constrained due to limitations on the network and energy allocation from the grid. Currently BEDC is entitled to about 9% of the national generation (about 200 MW) which is grossly inadequate. Based on our internal studies, we would need about 400MW to meet our current demands (without considering potential demands from future customers).

Furthermore, obsolete distribution infrastructure inherited from the defunct PHCN spread across wide geographical locations and which requires huge capital outlay that is not readily available to upgrade has also been a bane on service delivery. This is further aggravated by constraints from Transmission Company of Nigeria (TCN) interface points with BEDC network. To resolve these issues and improve performance, we have put in place strategies that will yield immediate and positive impacts. These strategies are as discussed below-

- **Energy Supply Limitation**

Our focal strategy is to increase supply to higher paying customers by reducing outages due to high vegetation, optimizing power flow through reclosers, reducing fault tracing time through mini-SCADA installation, and entering strategic alliance to procure energy via bilateral means. Attachment 3 shows a summary of our projections on load requirement over the planning horizon.

As part of BEDC Board and Management efforts towards the procurement of the targeted Embedded Generation as prescribed by the December 2022 Minor Review Order, we are at various level of discussions with partners for projects that will complement grid supply by **415MW** as highlighted below:

- Transcorp Power Ughelli to wheel 159MW to serve customers in Ughelli, PTI, Udu, Effurun and Warri areas.
- Niger Delta Power Holding Company to procure and wheel 100MV to serve Asaba, part of Benin & Ondo South District.
- Warri Refining and Petrochemical Company (WRPC) to wheel about 20MV to tackle the shortage in Warri and environs.
- SUN Africa & NDPHC as partners to finance the wheeling of 19MW from Ihovbor Power Plant. The project is also designed to de-load Egba 33KV Feeder.
- Edo State government on the possibility of wheeling 10-15MW from Ossisiomo Power Plant to cater to Benin GRA and environs.
- E.M.I Resources Ltd to wheel between 50 and 100MW for Warri.
- NAGE Westfield Oil & Gas Ltd for the generation and distribution of 1MW to feed 3 rural communities in the oil producing area. Etc.

BEDC will accordingly revert to the Commission with developments and applications for the relevant approvals at the appropriate time.

- **Network Upgrade**

Several TCN interface constraints plagued our ability to deliver service to our customers. Internally also, BEDC weakened network also bar us from improving our service delivery. We have identified projects that will solve majority of the issues and we are set to implement these in batches. A total of N59.7 billion and N2.3billion have been earmarked to upgrade our Injection Substations and feeders respectively. Due to paucity of funds, we will implement these projects in phases prioritizing high impact areas.

Attachment 3 gives details of the TCN constraints as well as breakdown of investments to upgrade our distribution infrastructure.

Funding Plan

Based on the CAPEX programs listed above, the following funding plans will be used to execute the CAPEX.

- Capital Injection**- N3.5bn**
- BEDC IGR- **N1.0bn**
- Vendor financing- **N1.5bn**
- DFI's/donors – World Bank DISREP – **N1bn**

Revenue Projection and Market Obligation settlement

Before our tariff redesign above, a review of BEDC's load allocation showed that energy allocation to commercial & industrial customers stood at 34% and 66% to non-commercial customers. This sub-optimal energy allocation mix contributes significantly to BEDC's underperformance. However, we have already

activated our plan to increase load allocation to our commercial customers whose collection efficiency is around 97% on the average.

BEDC will ramp up its efficiencies tremendously to be able to make 100% market obligation settlement with the strategies of improving load allocation to commercial customers to the above projection of 40%, reducing OPEX, source for energy at bilateral sources to be sold at a premium and franchise out high losses area to ensure 100% collection efficiencies.

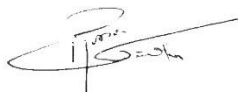
4. Conclusion

Based on the tariffs outlined in this justification letter, the presentation of the key assumptions used, and the supporting projects to enable BEDC to achieve incremental revenue and better operational efficiencies, we pray the commission approves the tariffs we have submitted.

The combination of strategic options deployed since the advent of the new management has led to improved operational efficiencies as the disco strives to sustain an upward trajectory in its collection efficiency to enable it to meet its market obligations and achieve sustainable business growth going forward.

Yours faithfully,

For BEDC Electricity PLC



Deolu Ijose
MD/CEO