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National Electricity Regulatory Commission's (NERC) Draft Net Billing Regulations, 2025

OALP Power Newsletter

INTRODUCTION

Nigeria's electricity supply has long been characterised by instability and inadequate generation, transmission and distribution capacity, resulting in frequent outages and unreliable service delivery. In response to this persistent challenge, many consumers have resorted to self-generated power solutions. While a substantial proportion rely on diesel-powered generators, a growing number have adopted large-scale Solar Home Systems (**SHS**) as a more sustainable and cost-effective alternative. However, these privately installed systems often produce electricity in excess of household consumption, leading to significant energy wastage.

This inefficiency has spurred increasing advocacy for a regulatory and technical framework that would enable the integration of surplus electricity from consumer-owned solar photovoltaic installations into the national grid. Such a framework would not only enhance Nigeria's overall generation capacity but also promote decentralised energy production and support the country's transition towards a more sustainable energy mix.

In apparent response to this growing advocacy, the Nigerian Electricity Regulatory Commission (**NERC or the Commission**) has exercised its powers under Section 226 of the Electricity Act 2023 (**the EA**) to issue the Draft Net Billing Regulations, 2025 (the **Draft Regulations**). The Draft Regulations represent a significant step towards establishing a clear and standardised framework for the integration of decentralised renewable energy systems into the national grid. Specifically, they set out the legal, technical, and commercial requirements governing grid interconnection and provide a mechanism for compensating consumers who inject surplus electricity to the grid within the Nigerian Electricity Supply Industry (**NESI**). Although still at the consultation stage, NERC's publication of the Draft Regulations and invitation for stakeholder comments underscore its commitment to finalising a comprehensive policy that supports distributed energy generation and facilitates Nigeria's transition to a more sustainable electricity market.

OBJECTIVES OF THE DRAFT REGULATIONS

The objectives of the Draft Regulations are primarily focused on establishing a safe, equitable, and efficient framework for the interconnection of renewable energy systems, particularly solar photovoltaic installations owned by customers with the national electricity distribution network. At its core, the Draft Regulations seek to empower electricity consumers, referred to as "Prosumers,"[1] to generate electricity for their own use while being permitted to inject surplus energy to the grid under a credit-based billing arrangement.

This model promotes active consumer participation in renewable energy generation and contributes to a more decentralised and resilient electricity system, while ensuring that grid stability, safety, and operational reliability are maintained.

Furthermore, the Draft Regulations aim to provide a transparent and standardised compensation mechanism for the utilisation of excess electricity produced by Prosumers and injected into the grid. This mechanism ensures that participating consumers receive fair value for the energy exported, thereby incentivising further investment in distributed renewable energy technologies.

1. *Prosumer means a User within the supply area of a Distribution Licensee who has a commissioned Net Billing Arrangement with the Distribution Licensee. Section 4 of the Draft Regulations.*

In addition, the Draft Regulations seek to ensure that the process of connecting renewable energy systems to the distribution network adheres to strict technical, safety, and operational standards. This includes measures designed to prevent grid instability, protect life and property, and preserve the integrity of distribution infrastructure.

Collectively, these objectives reflect NERC's intention to create a regulatory environment that encourages sustainable energy generation while balancing the interests of Prosumers, Distribution Licensees (**DisCos**), and other participants within the NESI.

KEY HIGHLIGHTS OF THE DRAFT REGULATIONS

Application of the Draft Regulations

It is important to highlight that the Draft Regulations shall only apply to Renewable Energy Systems (**RES**)[3] connected to a distribution network with a minimum installed capacity of 50kWp and not exceeding 5MWp per User[4] in Nigeria. This implies that the installed capacity for any User shall be a minimum of 50kWp and shall not exceed 5MWp.

Scope and Administration

The Draft Regulations requires that a DisCo shall enter into a Net Billing Arrangement (**NBA**)[5] with a User on a first come, first served and non-discriminatory basis.[6] In terms of scope, the aggregate excess capacity from the RES injected into a DisCo's network (0.4/11/33KV) by the Prosumers shall not be more than 30% of the average load of the network asset.

Application Procedure for Net Billing Arrangement

Section 7 of the Draft Regulations outlines a structured process for applying, approving, and commissioning RES under the NBA. The framework sets clear deadlines and responsibilities for both the Prosumer and the DisCo, ensuring that each stage is completed efficiently and in compliance with regulatory requirements.

The DisCos are required to publish the application procedure including eligibility criteria and the tariff structure at its offices and on its website. The procedure shall include the application form in Schedule 1 to the Draft Regulations and any other applicable requirements as prescribed in the Draft Regulations.

Any User intending to interconnect a RES to a DisCo network under the NBA shall follow the process below:

a) Submit an application to the DisCo using the application form published on the DisCo's website attaching the following supporting documents:

   I. Proof of occupying the property (e.g., utility bill);
   II. Evidence of payment of application fee as determined by the DisCo;
   III. A single line diagram of the proposed interconnection including the earthing system duly certified by a qualified Engineer;
   IV. Specification of the proposed RES, including the system capacity and average excess capacity available for export.

b) Where the RES already exists, the User shall, in addition to the requirements above, provide;

   I. Specification of the RES, including the system capacity and average excess capacity available for export;
   II. Evidence of the commissioning date of the RES;
   III. Documentation of prior approvals or permits obtained, if any;
   IV. Generation history or performance data of the system, if available;
   V. A certified inspection report by a qualified Engineer confirming the safety, operational integrity, and compliance of the system with applicable technical standards and codes.

2. *Section 5 of the Draft Regulations.*
3. *Renewable Energy System means equipment that transforms the renewable energy sources recognised under this regulation into electrical energy. Section 4 of the Draft Regulations.*
4. *User means a person supplied with electricity for personal, commercial (including Solar and Wind Interconnected Mini-Grids) or industrial use by a Distribution Licensee. Section 4 of the Draft Regulations.*
5. *Net Billing Arrangement means an arrangement under which a prosumer with a Renewable Energy System may export excess electricity to the distribution network and receive energy-based compensation for such exports (credits). These Credits are netted against the User's electricity bill (for energy imported from the utility) over a given period. Section 4 of the Draft Regulations*
6. *Section 6(1) of the Draft Regulations.*
7. *Section 6(3) of the Draft Regulations*

c) Upon receipt of the complete application, the DisCo shall evaluate the application and carry out a technical feasibility study on the distribution system and shall within ten (10) days issue a Distribution System Technical Feasibility Report as in Schedule II of the Draft Regulations to the User containing:

I. User details, including load history;
II. Capacity, peak load and average load of the affected distribution network segment;
III. Assessment of the condition and suitability of the distribution infrastructure for the proposed interconnection.

d) Where the DisCo approves the application, the User shall execute a Net Billing Agreement as in Schedule III of the Draft Regulations with the DisCo within five (5) days of receipt of the Distribution System Technical Feasibility Report, which shall contain, amongst other details, the following:

I. Capacity of RES;
II. Location of the system;
III. Interconnection voltage Level;
IV. Confirmation of compliance with applicable regulations and technical codes;
V. Injected Energy Tariff.[8]

e) Where the DisCo rejects the application, the DisCo shall provide a written notice stating the reasons for the rejection and the required modification of the application for approval.

f) The User shall apply to NERC using the prescribed form in Schedule IV of the Draft Regulations, accompanied by the Net Billing Agreement with the DisCo. NERC shall, within ten (10) days of receiving the completed application, approve and issue a registration certificate to the User.

g) Where NERC declines to issue a registration certificate, it shall provide written feedback stating the reasons for such refusal. The User may reapply for the registration certificate upon addressing the comments.

h. Upon receiving the Commission's registration certificate, the User shall:

i. pay the connectivity charge[9] within fifteen (15) days to the DisCo (where no grid upgrades are required), or thirty (30) days (where grid enhancement upgrades are required);
ii. carry out the installation of the RES and the Net Meter[10] within sixty (60) days;
iii. engage a certified engineer thereafter to prepare a Net Billing Installation Report using the format in Schedule V of the Draft Regulations.

i. Following payment of the connectivity charge, the DisCo shall carry out the necessary upgrades for the interconnection of the RES within ninety (90) calendar days. Where the required works include major reinforcement at 11/33 kV or above, the Parties may agree on a more extended period not exceeding one hundred and twenty (120) calendar days, and the DisCo shall notify NERC within five (5) days of such agreement.

j. The User shall submit the underlisted documents as part of its application to Nigeria Electricity Management Services Agency (**NEMSA**) for inspection and pre-commissioning test:

i. A copy of the NERC's registration certificate;
ii. Proof of ownership of the RES;
iii. A single line diagram;
iv. Technical Feasibility Report; and
v. Net Billing Installation Report in Schedule V of the Draft Regulations.

k. NEMSA shall conduct an inspection within ten (10) days of receipt of the application. Following the site visit, NEMSA shall either issue an inspection certificate or notify the User of any deficiencies within seven (7) days.

l. The inspection certificate, issued by NEMSA, shall include the date of successful testing and the following details:

i. The type of renewable energy technology;
ii. The type and size of all critical components (panels, inverters, etc);
iii. Total capacity of the Renewable energy system;
iv. Specifications of the installed meter (accuracy, serial number, etc.), and
v. Specifications of Anti-islanding protection device.

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8. *Injected Energy Tariff" means the tariff set by the Commission for the energy injected into the grid by a Prosumer. Section 4 of the Draft Regulations.*
9. *Connectivity Charge means the one-time fee determined by NERC and payable by a prosumer for the purpose of gaining physical access to the distribution network, covering the reasonable and necessary costs incurred by the distribution network operator in enabling, facilitating, or reinforcing grid connection. Section 4 of the Draft Regulations.*
10. *Net Meter means a bi-directional electricity meter that measures the difference between the amount of electricity a User draws from the grid and the amount of electricity they inject to the grid from their generation sources. Section 4 of the Draft Regulations.*

m) The User shall apply to the DisCo requesting the commissioning of the Renewable Energy facilities, submitting the following:

I. A copy of the NERC's registration certificate;
II. NEMSA's inspection certificate;
III. Net Billing Installation Report, to the DisCo for commissioning.

n) Upon receipt of the request for commissioning, the DisCo shall within three (3) days conduct the commissioning of the interconnection point.

Any changes in the ownership or occupancy of the premises shall require the formal transfer of the Net Billing Agreement to the new owner or occupier using the prescribed format in Schedule VI of the Draft Regulations submitted to the DisCo.[11]

Technical and Operational Standards

The Draft Regulation establishes the technical and operational standards that every RES must satisfy to qualify for connection to the distribution network. The primary objective of these technical standards is to ensure the safety, stability, and reliability of the power grid.

Interconnection and Safety

Every installation, interconnection, maintenance and operation of Net Billing Systems (**NBS**)[12] shall be executed by an Engineer certified by NEMSA in compliance with the Distribution Code and the Nigerian Electricity Supply and Installation Standards (**NESIS**) Regulations, 2015 issued by NERC.[13]

The NBS shall be designed to operate in parallel to the distribution network and deliver power at a single point of interconnection in a safe and reliable manner. The system shall include protection mechanisms against over/under-voltage and frequency deviations in accordance with applicable technical standards. The prosumer shall ensure that the voltage fluctuations at the point of interconnection do not exceed ±5% of the nominal voltage.[14]

To prevent back feeding into the distribution network during grid outages, the Prosumer is required to install both automatic and manual isolation devices. The NBS shall include anti-islanding protection and synchronisation mechanisms to ensure safe disconnection during outages and safe reconnection only when normal grid conditions are restored, in accordance with applicable technical standards.

The isolator to be connected to the NBS shall meet the following minimum criteria:[15]

a. visible indications for open/close positions;
b. accessible at all times to the Distribution Licensee's personnel without prior clearance;
c. lockable in the open position;
d. not rated for load break and does not include over-current protection; and
e. installed at a minimum height of 2.5 meters above ground level in compliance with IEC 60364.

Every NBS shall be equipped with an automatic synchronisation device unless the inverter already includes such a technical feature. The NBS is also required to have the following equipment requirements:

a. circuit breakers or interrupting equipment, which shall handle the maximum fault current as specified in NESIS 2015;
b. the design shall ensure that failure of any single component does not compromise overall safety and reliability; and
c. paralleling devices such as relays, contactors shall withstand 220% of the nominal voltage at the interconnection point in compliance with IEC 61727 standards.[16]

A power conditioning unit shall also be provided to filter harmonics and other distortions before injecting energy into the DisCo's network in accordance with the limits in the Distribution Code. It is to be noted that all technical standards for all RES interconnected for NBS shall comply with the relevant standards as specified by NERC from time to time.[17]

Metering

The Prosumer is required to provide a net meter with a revenue-grade import/export meter or dual register smart meter, and such meter shall conform to the Metering Code.

The installed meter is required to separately record the energy supplied from the DisCo and the energy exported from the RES to the DisCo network.[19] The DisCo shall be responsible for the remote reading, validation, and reconciliation of meter date for commercial settlement purposes.[20]

11. *Section 7(3) of the Draft Regulations*
12. *Net Billing System" means a Renewable Energy System equipped with a Net Meter. Section 4 of the Draft Regulations.*
13. *Section 8(1) of the Draft Regulations.*
14. *Section 8(2) of the Draft Regulations.*
15. *Section 8(3) of the Draft Regulations.*
16. *Section 8(4)(5) of the Draft Regulations.*
17. *Section 8(6)(7) of the Draft Regulations.*
18. *Section 9(1) of the Draft Regulations.*
19. *Section 9(3) of the Draft Regulations.*
20. *Section 9(4) of the Draft Regulations.*

The Commercial Arrangement

The Draft Regulations contain detailed provisions on tariff calculation and billing procedures, as well as guidelines for situations where a Prosumer vacates the premises in which the NBS is installed

Applicable Tariffs

The applicable tariff for energy supplied by the DisCo to the Prosumer shall be charged at the applicable end-user tariff approved by NERC from time to time, while in relation to the energy supplied from the Prosumer to the DisCo, the Prosumer shall be credited a tariff determined based on the following elements using the net metering tariff tool:

i. Fixed charge which shall be the average of the grid connected hydropower plant generation tariff as determined by NERC from time to time.

ii. Variable charge shall be the interconnection costs and any other costs incurred by the Prosumer excluding the RES.

These two elements make up the applicable tariff to be credited to the Prosumer for the energy supplied to the DisCo network.[21]

Billing and Settlement[22]

The DisCo shall issue monthly bills to Prosumers in accordance with NERC's approved billing cycle clearly showing the following:

i. energy imported from the DisCO network (kWh);
ii. energy exported to the DisCo network (kWh);
iii. applicable tariffs for import and export; and
iv. monetary value of the net bill.

The Draft Regulations set out various formulas for calculating tariffs to determine whether a Carried Forward Credit (**CFC**)[23] will arise. For each billing period, the DisCo shall separately record the following:

a. The amount billed to the DisCo (**ADI**), which shall be the total energy injected by the Prosumer multiplied by the Injected Energy Tariff, shall be derived using the formula below:

$Adl = Ei \times Ti$
Where: Ei = Energy Injected by Prosumer
Ti = Injected Energy Tariff

b. The amount billed to the Prosumer (ABP), which shall be the total energy consumed from the grid multiplied by the grid tariff, shall be derived using the formula below:

$Abp = Ec \times Te$
Where: Ec = Energy Consumed by Prosumer
Te = End-User Tariff

c. The net billed amount (**Nba**) after applying any CFC. The net billed amount shall be derived using the formula below:

$Nba = Abp - (Adl + Cfc)$
Where: Nba = Net Billed Amount
Abp = Amount Billed to Prosumer
Adl = Amount Billed to DisCo
Cfc = Carried-Forward Credit

Where the net billed amount is positive, the Prosumer shall make such payment shortfall to the DisCo within the settlement period. But where the net billed amount is negative, the Prosumer shall be entitled to a CFC. The CFC shall roll forward indefinitely and be applied to offset future consumption charges until fully utilised, transferred with the premises in accordance with Schedule VI of the Draft Regulations, or extinguished where the NBS is relocated or the Agreement is terminated.

The DisCos are required to maintain a designated escrow account or a segregated escrow ledger for Prosumer credits in order to effectively manage settlement liabilities.[24] Credit postings, debits, and balances are also required to be reconciled monthly and be made available to the Prosumer upon request.

Transfer of Credits and the NBS

In the event that a Prosumer vacates the premises where the NBS is installed, the accrued credits shall be transferred to the new owner or occupier, provided that the Net Billing Agreement is transferred to the new owner or occupier in accordance with the format specified in Schedule VI of the Draft Regulations.[25]

Where a Prosumer relocates the Net NBS from the premises, the credits accrued shall be zeroed, and the Prosumer shall be required to initiate a fresh application with the Distribution Licensee in accordance with section 7 of these Regulations.[26]

21. *Section 10 of the Draft Regulations.*
22. *Section 11 of the Draft Regulations*
23. *Carried-Forward Credit means the monetary value accrued to a Prosumer when the value of the energy exported to the grid exceeds the value of the energy consumed from the grid in a billing cycle.*
24. *The modalities for the escrow arrangement is not yet clear, but the Draft Regulations provides that NERC may issue further guidelines in this regard.*
25. *Section 11(3) of the Draft Regulations.*
26. *Section 11 (4) of the Draft Regulations.*

Furthermore, where a Prosumer is no longer in control or in possession of the premises in which NBS is installed, the Prosumer may upon agreement transfer the right to use the NSB and associated credits to a new User in the manner prescribed in Schedule VI of the Draft Regulations and the new User shall assume full responsibility for the operation and maintenance, thereof.[27]

It is important to note that such transfer of the use of the NBS shall be subject to the prior approval of the DisCo and compliance with all applicable laws, regulations, and requirements governing the original agreement between the Prosumer and the Distribution Licensee and the transfer shall only take effect upon written confirmation from the DisCo.[28]

Monitoring and Dispute Resolution

The DisCos are responsible for maintaining an up-to-date, publicly accessible register of all Prosumers. In addition, they are required to submit quarterly reports to NERC detailing the number of NBS installed, their capacities, and the corresponding energy flow.[29]

With respect to dispute resolution, any dispute arising under the Draft Regulations shall, in the first instance, be resolved by the parties through mutual negotiations within thirty (30) days from the date the dispute arises. Where the parties are unable to reach a resolution within this period, the matter shall be referred to NERC for final adjudication.[30]

Carbon Credits and Environmental Obligations[31]

All carbon credits accruing from the NBS shall be vested solely with the Prosumer and may be carried forward to future settlement periods unless otherwise specified by any other applicable law in Nigeria.

Furthermore, the Prosumer is required to comply with all applicable health, safety, and environmental laws of Nigeria.

OUR THOUGHTS

The Draft Regulations on Net Billing Arrangement represent a commendable step toward enabling consumers in Nigeria to inject excess power generated from RES, particularly solar into the grid. The framework is well-intentioned and detailed, providing procedural clarity on how consumers, referred to as Prosumers, can apply, obtain approvals, and connect their systems to the grid under the supervision of DisCos and NERC. However, while the Draft Regulations lay a strong foundation, a number of issues require refinement to make the framework equitable, technically sound, and investment-friendly in line with global best practices.

Eligibility Thresholds and Inclusivity

The Draft Regulations currently limit eligibility to RES installations with a minimum capacity of 50kWp and a maximum of 5MWp per user. While this range targets commercial and industrial users, it inadvertently excludes smaller residential or community-level systems that often serve as the backbone of distributed generation.

For instance, under Kenya's framework, domestic users are allowed up to 4kW for single-phase and 10kW for three-phase connections, while commercial and industrial users may install up to 1MW.[32] By contrast, Nigeria's 50kWp floor effectively sidelines individual households, schools, and small businesses actors critical to achieving energy access at scale.

To ensure inclusivity, the threshold should be tiered, allowing smaller users to participate through simplified approval processes or aggregated community schemes. This would democratise access to the NBA regime and accelerate grassroots deployment of renewable energy.

One possible rationale for the minimum threshold in the Draft Regulations is that the existing DisCo network may not be adequately equipped to accommodate a large number of small-scale RES. Allowing all small-scale players to connect directly to the distribution network could create significant operational and technical challenges, including voltage fluctuations, load balancing issues, and complexities in metering and system monitoring.

Network Capacity and Fairness

The Draft Regulations also capped the aggregate injected capacity at 30% of the average load of a DisCo's network asset, to be allocated on a first-come, first-served basis.

While this is administratively convenient, this model risks excluding later applicants irrespective of their technical readiness or geographic distribution.

A fairer approach should mirror emerging global practices by requiring DisCos to publish hosting capacity maps showing feeder-level data and to operate transparent application windows. This would ensure equitable access, prevent monopolisation of available capacity, and enable better system planning.

27. *Section 12 (1) of the Draft Regulations.*
28. *Section 12(5)(6) of the Draft Regulations.*
29. *Section 13 of the Draft Regulations.*
30. *Section 14 of the Draft Regulations.*
31. *Section 15 of the Draft Regulations.*
32. *Section 6 Energy (Net Metering) Regulations 2024 Kenya*

Timelines and Enforcement

The procedural timelines set out in the Draft Regulations, such as ten (10) days for feasibility reports and five (5) days for agreement execution, reflect an attempt to enforce efficiency. However, they are somewhat optimistic, especially in the absence of consequences for non-compliance. Without enforcement mechanisms, DisCos may delay processing applications indefinitely, undermining investor confidence.

A more balanced approach would be to retain the timelines but include provisions for consequences where the DisCo fails to act within the stipulated period. Similarly, the Draft Regulation should require written reasons for any application rejection and grant applicants a right of appeal to NERC within a defined timeframe.

Also, while the Draft Regulations requires DisCos to submit quarterly reports to NERC on NBS installations, capacities, and energy flow, it fails to specify penalties for non-compliance. To ensure data integrity and regulatory oversight, the Draft Regulations should impose sanctions or administrative penalties for failure to submit reports within the stipulated timeframe.

Costs for Upgrading the DisCo Infrastructure

The issue of cost allocation for distribution network upgrades also deserves attention. The Draft Regulations obliges DisCos to undertake grid reinforcements within specified periods but is silent on who bears the associated costs. This vagueness may lead to arbitrary charges or discourage DisCos from approving applications.

The Draft Regulation should clearly distinguish between minor, customer-specific interconnection costs which may be borne by the Prosumer and broader network reinforcements, which should be treated as regulated investments recoverable through tariffs or cost-sharing mechanisms approved by NERC. This transparency will prevent disputes and ensure that the cost of system expansion is fairly distributed.

Drawing from the Delhi model, distribution licensees cover infrastructure upgrades for installations up to 10kW, with such costs treated as pass-throughs in the Aggregate Revenue Requirement (ARR).[33]

Determination of Tariffs

The Draft Regulations propose a two-component tariff, a fixed charge based on average hydropower generation and a variable charge linked to interconnection costs. While simple in concept, this model lacks transparency and predictability.

Investors need clarity on tariff calculation methodologies, review frequency, and adjustment triggers. Introducing grandfathering provisions where existing projects retain their tariff for a defined period despite future rate changes would offer much-needed certainty and encourage long-term financing.

Treatment of CFC

The allowance for indefinite rollover of CFC is Prosumer-friendly but could strain DisCo liquidity and accounting processes. Kenya's framework provides a more balanced approach, requiring that unused credits expire at the end of the financial year.[34] Adopting a similar measure would help maintain financial discipline while preserving fairness.

Transfers of Credits

The provisions on transfer of ownership of NBS or credits also need refinement. The Draft requires prior DisCo approval before the transfer of an NBS or accumulated credits to a new occupant. While this is important for safety oversight, the lack of defined timelines and approval criteria may give DisCos excessive discretion. The Draft Regulations should instead stipulate objective approval standards and require DisCos to respond within a fixed period say fourteen (14) days, with written reasons for any refusal. This will prevent arbitrary decision-making and promote confidence in the regulatory process.

CONCLUSION

The Draft Regulations mark a crucial milestone in Nigeria's journey toward decentralised and sustainable electricity systems. However, for the framework to achieve its intended impact, it must be refined to promote inclusivity, transparency, and investment stability.

33. *Section 2.0 of Delhi Electricity Regulatory Commission (Net Metering for Renewable Energy) (First Amendment) Regulations, 2024.*
34. *Section 10(6) Energy (Net Metering) Regulations 2024 Kenya.*

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