

DEPARTMENT OF MINERAL RESOURCES AND ENERGY

NO. 6262

30 May 2025

**NET-BILLING RULES**

The Net-Billing Rules are made in terms of section 35 1 (a)(b)(c) of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) ('the ERA' or 'the Act')

An electronic copy of these Rules is available on the NERSA website at www.nersa.org.za.

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Date Approved: 17 December 2024

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Definitions

In these Rules, words and phrases shall have the same meaning as words and phrases defined in the Electricity Regulation Act, 2006 (Act No. 4 of 2006) ('the ERA' or 'the Act') unless otherwise defined herein, in which case such words will have the meanings ascribed hereunder.

Capacity means, in respect of the unit or the facility, at any time and from time to time, the output power (expressed in megawatts or MW) of such unit or the facility.

Code means the Distribution Code, the Grid Code, or any other Code approved by NERSA.

Connection agreement means an agreement detailing the conditions under which the Distributor intends to connect the Prosumer.

Cost of supply study means the NERSA standard guideline for deriving and allocating costs of supply, used for the design of tariffs.

Customer means a user of electricity (person or legal entity) that has entered into an agreement with a licensed Distributor of electricity.

Delivery point means the physical point, situated at the point of the facility, where the energy output is to be delivered by the generator.

Distributor means a licensee or its appointed representative that constructs, operates and maintains the distribution network.

Demand means the highest average demand measured in kVA at the point of supply during a 30-minute integrating period in a billing month.

Embedded generator means a legal entity that operates one or more units connected to the distribution system or desires to connect one or more units to the distribution system.

Export tariff means the rate at which energy is credited on a Prosumer's bill at the end of each billing period for every kilowatt-hour (kWh) of exported electricity to the distribution power system.

Exported electricity means the energy provided by the prosumer to the distribution system when the prosumer generates more power than it consumes.

Facility means the generation or distribution facility, as applicable, located at the plant and comprising all plants, machinery and equipment, as well as all associated

buildings and structures, roads on the site that are not national, provincial or municipal roads.

Import tariff means the rate at which imported electricity from the power system energy is charged to a Prosumer.

Imported electricity means the energy and demand provided to the prosumer by the distributor when the prosumer consumes more power than it generates.

Maximum export capacity means the maximum capacity measure in 30 minute integrating periods at the point of supply notified by the customer and accepted by the Distributor for the of electrical energy between a generator and/or distribution system.

Net-billing means a method of compensating customers when their generation is synchronised with the grid and some electricity is exported. The compensation for exported electricity is calculated using an export tariff. The customer is still charged the full tariff for energy consumed and capacity provided.

Notified maximum demand (NMD) means the maximum demand of the prosumer at the point of connection, notified in writing by the prosumer and accepted by the distributor or for the delivery of electrical energy to the prosumer.

Point of connection/supply is the electrical node on a power system where a facility is physically connected to the licensed transmitter or distributor's electricity network.

Power system means the distribution electricity network.

Prosumer means a customer that has entered into an agreement with a distributor and generates electricity on its side of the billing meter with a generation facility that is primarily intended to offset part or all of its electricity requirements. A prosumer specifically excludes parties that are not offsetting own consumption and may be wheeling or selling electricity to buyers.

Site means the property upon which the facility will be constructed and operated.

Time of use means periods and seasons during which a time-of-use tariff has different energy rates.

Time-of-use tariff means a tariff with energy rates that change during time-of-use periods and seasons.

Unit means a separate electricity-generating unit or section comprising multiple units forming part of the facility, which can generate and deliver electricity to the delivery point, and 'units' means all or a combination of them.

1. Objectives of the Net-Billing Rules

- 1.1. The Net-Billing Rules ('the Rules') are designed to empower licensed Distributors to establish tariffs and develop terms and conditions that allow Prosumers within their service areas to export any excess power back to the distribution network.
- 1.2. These Rules aim to create a robust regulatory environment that enables the National Energy Regulator of South Africa (NERSA) to effectively oversee, monitor and regulate the electricity industry.
- 1.3. The key objective of these Rules is to provide Distributors with clear pricing principles for setting sustainable prosumer export tariffs and import charges in a way that balances the interests of both Distributors and Prosumers.

2. Eligible Generation Technologies

The Distributor shall determine the types of eligible generation technologies in line with its network characteristics and environmental targets of South Africa.

3. Generation Capacity Limits and Technical Standards

- 3.1 The Distributor shall set the maximum excess of energy that a single generation facility can export and the total excess energy all facilities can export in its distribution area or in accordance with:
 - (a) the electrical infrastructure equipment ratings of the upstream of Prosumer generation facilities; and
 - (b) the limits imposed by the stability requirements of:
 - (i) the Distribution power system as determined by the technical studies; or
 - (ii) national technical guidelines or specifications in line with NRS 097.
- 3.2 The Distributor shall ensure that the generation capacity of a distributed generator does not exceed the lower of:
 - a) the customer's main electricity supply circuit breaker current rating converted to the kVA of the supply, or
 - b) 1000kVA.

3.3 Generation capacity limits shall be subject to the cumulative generation capacity limits of multiple distributed generation facilities (i.e. network hosting capacity limits), and must be determined by the Distributor in accordance with the following:

- a) Simplified connection criteria that specify parameters within which distributed generators can connect without adverse network impacts and, therefore, do not require further technical network studies, where such hosting capacity criteria have been established by the Distributor.
- b) The distribution electrical infrastructure equipment ratings and operating characteristics upstream of Prosumer generation facilities as determined by network impact studies.
- c) Limits imposed by the stability requirements of the distribution network, as determined by technical studies performed by NERSA or the Distributor, and network performance observed by the Distributor.

3.4 The Distributor shall ensure that the design, installation and operation of each generation facility connected to the grid meets the applicable technical requirements and standards stipulated in the Codes and all applicable regulations.

4. Application and Connection of a Prosumer

4.1 The Distributor shall treat all applications for connection to the distribution power system by potential Prosumers in an open and transparent manner that ensures non-discriminatory treatment for all applicants.

4.2 The Distributor may not allow a Prosumer connection to the distribution power system without:

- (a) applying to the Distributor detailing:
 - (i) the description of the applicant;
 - (ii) the proposed installed capacity;
 - (iii) the description of the proposed generation technology;
 - (iv) the continued ability to comply with all applicable legislation;
 - (v) where applicable, the duration of the connection;
 - (vi) information relating to the embedded generation facility plant data, location and capacity and standby characteristics; and
 - (vii) any other requirements specified by the Distributor.

- (b) paying the required connection charges, including recovery of meter cost after application to the Distributor (as applicable);
 - (c) signing the required billing reconciliation and connection agreement; and
 - (d) receiving written approval from the Distributor to connect.
- 4.3 The Distributor shall permit the application to be submitted when the Prosumer is lawfully represented by an authorised third party acting on their behalf. Evidence of such permission, in writing, must accompany the application. The third party shall not be considered a Prosumer.
- 4.4 Any dispute arising from a rejection of an application for connection shall follow a Distributor's internal dispute resolution process and, if not resolved, may be referred to NERSA as a dispute.
- 4.5 The Distributor shall communicate the outcome of the application to the applicant no later than 30 days from the date of receipt of the application.
- 4.6 Subject to the provisions of these Rules, the Distributor shall grant access to every application that complies with all technical standards, codes and guidelines.
- 4.7 The Distributor shall justify any rejection in writing and, where feasible, shall inform applicants of measures they can take for such connection to be compliant.
- 4.8 Should technical studies be necessary to determine connection feasibility, the Distributor shall communicate the need for such studies to the prospective Prosumer within the timeframe specified.

5. Principles for Designing Export Tariff for Prosumers

- 5.1 The export tariff principles under these Rules are in accordance with the NERSA Distribution Tariff Code and further specify the tariff design for Prosumers with embedded generation facilities.
- 5.2 The Distributor must design an export tariff for all Prosumers, subject to approval by NERSA, that provides a credit for exported energy, not more than the consumption during each time-of-use period.
- 5.3 In designing the export tariff, the Distributor must:
 - i) not discriminate or allocate disproportionate or unjustified burdens or cross-subsidies to prosumers;

- ii) not create additional disproportionate or unjustified burdens or cross-subsidies to the tariffs of customers that are not Prosumers; and
- iii) conduct a cost of supply study and provide NERSA with its cost of supply study as part of the submission for the Prosumer tariff.

5.4 A distributor that cannot implement time-of-use export tariff must provide a reason and a plan on how this can be resolved.

6. Applicable Tariff Charges for Prosumers

6.1 In line with NERSA guidelines, Distributors must undertake a cost of supply study to assist in allocating costs to electricity services. Unbundled, cost-reflective tariffs are needed to develop tariffs that reflect variable cost components (e.g. in relation to the procurement of energy) and fixed components.

6.2 After allowing the Prosumer to connect to the distribution power system, the distributor shall set a tariff based on the following elements:

(i) Variable charges (c/kWh)

- Energy and network charges for imported energy (import tariff) to recover energy costs (costs of energy purchases) and network costs associated with the demand or usage of the network on a time-of-use rate as guided by the NERSA Distribution Tariff Code.
- Energy charges for exported energy (export tariff) to credit the Prosumer must be valued at the avoided energy cost of the distributor and on a time-of-use rate.

(ii) Fixed charges (R/day or R/kVA – based on Notified Maximum Demand (NMD), as guided by the NERSA Distribution Tariff Code, such as:

- network charges to recover network capital, maintenance, returns and fixed operating costs based on NMD;
- service and administration charges to recover the retail costs associated with billing, meter reading and Prosumer service associated with the consumption of energy.

(iii) Other charges, as guided by the NERSA Distribution Tariff Code, such as:

- one-time charges to the Prosumer in the form of connection charges to recover metering and network-related costs; and

- charges related to the contribution to subsidies and other levies (could be fixed or variable).

7. Compensation and Billing

7.1 Energy exported must:

- (a) be credited to the relevant monthly billing period;
- (b) not be offset against fixed, basic or demand charges but only offset against energy exported;
- (c) not be compensated in cash by the distributor but only offset against the energy purchases; and
- (d) where export compensation exceeds the financial value of energy purchases in that billing period, be carried over to offset future electricity purchases from the distributor, provided such rollover shall not extend into the new financial year of the distributor.

7.2 The Distributor should avoid estimating the electricity consumed and exported by net-billed Prosumers during any billing period.

8. Billing System

The billing system for net-billing shall account for both imported and exported energy from/to the grid by the Prosumer as separate transactions.

9. Metering Infrastructure

9.1 Distributors shall install relevant meters for Prosumers which enable net billing.

9.2 Meters for distributed generation net billing shall:

- (a) be bi-directional – capable of measuring forward and reverse electricity flow in separate registers;
- (b) comply with any prescribed requirements of the Distributor;
- (c) comply with the relevant metering code/standard/specification;
- (d) be able to measure and record peak supply;
- (e) be capable of two-way communication; and
- (f) provide time-of-use metering.

- 9.3 The metering equipment shall be procured, installed and maintained by the distributor or by a duly authorised third party. The distributor may levy charges on the Prosumer to cover associated costs.
- 9.4 Spinning disc meters are not permitted to spin backwards or reverse in direction as a means of metering bi-directional power flow.
- 9.5 The Distributor shall modify their existing billing infrastructure to enable bi-directional metering and billing arrangements envisaged under these Rules.

10. Responsibilities of the Distributor

- 10.1 The Distributor shall provide the distributed generator non-discriminatory access to its distribution power system in accordance with section 21(3) of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) and the Grid Code, except if there are objectively justifiable and identifiable technical or other grounds that prevent such access.
- 10.2 The Distributor shall have the right to disconnect an embedded generation facility at any time in the event of threat/damage from such embedded generation facility to its power system to prevent any accident or damage without any notice. In addition, the distributor may call upon the prosumer to rectify the defect within a reasonable time.
- 10.3 The Distributor shall make available permitting process documentation, which details:
 - (a) the rights and obligations of the Prosumer and the Distributor regarding the distributed generation system;
 - (b) the connection application procedure, including Distributor's response time frames;
 - (c) the technical standards and other requirements the Prosumer must adhere to;
 - (d) how the distributed generator grid impact will be established and roles and responsibilities of the Prosumer and the Distributor in this regard, including responsibilities for network upgrades should the hosting capacity of the network be exceeded;
 - (e) the commissioning process, including requirements for signoff by competent persons;
 - (f) ongoing operation requirements for the Prosumer;

- (g) process for pre-existing installed distributed generators to comply with utility requirements and receive permission to generate; and
 - (h) any other information deemed relevant by the Distributor.
- 10.4 The Distributor shall specify the Utility Interface Standard, covering a minimum power quality and safety requirements at the point of connection, with which the distributed generator shall comply.
- 10.5 The Distributor shall make available application forms, commissioning reports and other documentation necessary for the prosumer to undertake the steps in the permitting process.
- 10.6 The Distributor shall make available the agreement to be entered into between the Prosumer and Utility/Distributor, covering both the connection and billing reconciliation aspects.
- 10.7 The Distributor must connect a Prosumer on a first-come, first-served principle or other rational strategy made explicit by the Distributor.
- 10.8 The Distributor should make all relevant information and documentation easily accessible to prospective Prosumers, such as on a website, including contact details for application submission and associated queries.

11. Monitoring, Control, Information and Reporting

- 11.1 The Distributor shall establish and maintain a register of Prosumers, in which the following shall be recorded-
- (a) The name, address and GIS location of every Prosumer
 - (b) The generation technology, rated capacity and storage capacity (if included)
 - (c) The date of approval to generate
 - (d) Estimated annual generation per Prosumer;
 - (e) Estimated annual export per Prosumer;
 - (f) Total estimated annual amount of kWh produced by Prosumers.
 - (g) Total amount of kWh exported by Prosumers.
- 11.2 The Distributor shall ensure that the register is continuously updated and submitted bi-annually to NERSA.

12. Change of Ownership

- 12.1 The Distributor shall ensure that where a Prosumer sells the distributed generator premises operating under these Rules, the new owner of the premises signs a new Agreement with the Distributor to continue operation.
- 12.2 The Distributor shall ensure that the Prosumer forfeits any credits accrued under the net-billing arrangements and is not entitled to transfer any credit amount to any other account.
- 12.3 The Prosumer shall bear all costs and expenses for the transfer of ownership of the distributed generator.

13. Termination

- 13.1 The Distributor shall allow the Prosumer to terminate the Agreement with the Distributor at any time, upon which the Prosumer shall be required to disconnect its distributed generator and notify the Distributor of such action.
- 13.2 The Distributor may terminate the agreement with the Prosumer at any time for failure to comply with these Rules or the Distributor requirements upon 14 days' written notice by the Distributor.

14. Fines

- 14.1 The following represent a breach by the Prosumer and are liable for a tampering charge/fine as per the Distributor schedule of charges or notice issued by NERSA:
- a) Connecting a distributed generator without an agreement and written permission to do so from the Distributor.
 - b) Contravening any of the conditions of the Agreement;
 - c) Doing an act or omission contrary to the provisions in the Rules.

15. Complaints, Disputes and Appeals

- 15.1 Any complaints and/or disputes under these Rules shall be referred to the distributor for resolution as the initial point of contact. If such issues remain unresolved after due process, they may be escalated to NERSA for further consideration and resolution.

16. Net-Billing for Electricity Licensed Distributors

- 16.1 These Rules will be called 'Net-Billing Rules' and shall come into operation on the date of approval and publication.
- 16.2 These Rules will be revised from time to time, and the revised version will be published accordingly after each revision.