



Wheeling of energy and net-billing policy

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1. Introduction

The South African energy landscape is evolving, with more customers generating their electricity from renewable energy sources. This emergence of distributed generation is attributable to several factors, such as generation supply constraints, competitive energy prices and carbon neutrality targets in various companies. The growing interest in private sector generation was also accelerated by the relaxation of the licensing requirements for embedded generation facilities in Schedule 2 of the Electricity Regulation Act. This then led to an increase in the number of independent power producers (IPPs) seeking to trade energy through wheeling transactions.

Third-party wheeling is a transaction where an IPP sells energy to a buyer through a power purchase agreement (PPA), but this energy is exported over the Eskom Grid and delivered to the offtaker located elsewhere on the network. Typically, there is no direct flow of electrical energy between the IPP and the offtaker in third-party wheeling. Therefore, a third-party wheeling transaction does not address the flow or tracing of electrons from the generator to the offtaker. Instead, it deals with the accounting mechanism used to reconcile the energy from a generator(s) with the energy consumed by the end-use customer(s).

An IPP may also install an on-site generator for self-consumption and export excess energy to the grid during times when the generated energy is not immediately consumed. In such cases, Eskom will facilitate a net-billing (offset) transaction, where the energy produced by the generator is reconciled and credited on the customer's bill.

This policy deals with the reconciliation of energy where there is a third-party wheeling transaction, a net-billing transaction, and an energy purchase transaction, which is a scenario where Eskom purchases the energy from an IPP, but the energy is consumed directly by the customer.

2. Policy content

2.1 Policy Statement

This policy describes the principles for adjusting Eskom's customers' accounts due to the flow (physical or through a trade) of energy between the generator and the Eskom customer.

This policy does not address the procurement of energy generated by an IPP. The purchase price paid for energy is dealt with through a bilateral agreement, e.g., a power purchase agreement (PPA) or contract (if the same legal entity) between the generator and the receiver of the energy.

2.2 Policy Principles or Rules

- **2.2.1** Eskom will allow wheeling of energy, i.e., the provision of third-party access between an IPP and a load customer. This is subject to the IPP receiving its approvals from NERSA to trade this energy and signing Eskom's Connection and Use-of-System agreement.
- **2.2.2** Wheeling of energy is allowed for Eskom customers on TOU tariffs. Customers will be required to convert to these tariffs.
- **2.2.3** Eskom will allow offset (net-billing) of own generation at the same point of supply for Eskom customers at all voltage levels on TOU tariffs.
- **2.2.4** Eskom will adjust a customer's account where energy generated by the IPP is purchased by an Eskom customer/load and is wheeled, offset or where Eskom purchases the energy from the IPP, and the energy physically flows to the customer's network.
 - **2.2.4.1** For the wheeling agreement to be approved and become effective, both the generator and the load customer must submit to Eskom a three-year forecast of wheeled energy.
 - **2.2.4.2** To avoid penalties, the actual wheeled energy volumes must remain within a ±5% threshold of the forecasted or updated projection.
 - **2.2.4.3** The penalty for failing to meet the forecasted or updated wheeled energy volumes (within a ±5% threshold) is not yet in effect. It will only be implemented once approved by NERSA.
- 2.2.5 Where there is wheeling, the IPP can nominate more than one purchaser of its energy. Energy can also be wheeled from multiple generators to one or multiple load customers. The scenario where energy is wheeled from multiple generators to multiple load customers in a portfolio is referred to as portfolio wheeling*, and each portfolio shall be limited to 10 generators and 50 load accounts. Wheeling transactions exceeding this maximum limit may be executed under virtual wheeling, which currently has no limitations on the number of generators and load accounts.
- **2.2.6** Eskom will supply the load customer with any energy not provided by the IPP, subject to the electricity supply agreement conditions.
- **2.2.7** A new service agreement will be created on the billing system at an account level for each load customer to adjust for the wheeled energy.
- **2.2.8** This policy is only applicable to South African connected loads and IPPs.
- **2.2.9** Wheeling transactions in this policy shall be allowed for customers connected at medium and high voltages. Wheeling to low-voltage connected customers is accommodated under virtual wheeling, which is a separate policy and procedure.

^{*}The portfolio wheeling scenario will be available after the successful testing and implementation of the automated system to facilitate wheeling transactions. Eskom Distribution will formally communicate the exact date.

- **2.2.10** A generator that is grid-tied to an Eskom network but not exporting energy onto the grid must apply for a legal connection with Eskom and have a valid connection agreement (CUOSA) in place, even if the MEC is zero.
- **2.2.11** Customers receiving energy from an IPP under a wheeling and/or offset transaction are not excluded from load curtailment or load shedding. The exemption for load shedding shall be dealt with in accordance with the principles in the NRS048 and not addressed in this policy.
- **2.2.12** Eskom shall not contract for wheeling or offset with customers nor generators where the electricity account is not paid in full. Where a wheeling/offset agreement already exists and the customer or generator has not settled their previous month's bills in full, no credits shall be provided on the offtaker's account.
- 2.2.13 The maximum export capacity (MEC) must reflect the maximum capacity that the generator will export on the grid, irrespective of the wheeling or offset arrangement. Should the MEC be exceeded, the credits for wheeled energy or exported energy under offset associated with the exceedance will not be provided to the customer, except where an exemption /concession is granted by Eskom for the MEC exceedance.

2.2.14 Reconciliation of energy:

- **2.2.14.1** Eskom will reconcile the account of the load customer to adjust for the energy generated by the IPP.
- **2.2.14.2** Eskom and the load customer will be required to sign an amendment agreement to the supply agreement to deal with the conditions of the reconciliation adjustment. Customers will be required to sign a new electricity supply agreement (ESA) if their existing ESA is not based on the latest updated signed proforma agreement.
- **2.2.14.3** The reconciliation of an account for the load customer will be done using the total energy summed per TOU in a month. Eskom will measure the energy produced by the IPP on a half-hourly basis. This data will be used to adjust the customer's account (the load/purchaser) as well as to bill the IPP for any UoS charges if applicable.
- **2.2.14.4** Should Eskom amend the reconciliation method from monthly TOU to hourly or half-hourly TOU, existing contracts based on the monthly method will be honoured, unless the customer opts to switch to the new approved method. All new contracts will follow the currently approved reconciliation method at the time of signing the agreement.
- **2.2.14.5** Irrespective of the tariff of the load customer, the credit to be provided to the customer will be based on the approved gen-wheeling tariff for wheeling transactions and the gen-offset tariff for net-billing (offset) transactions.
- **2.2.14.6** Where Eskom purchases the energy from the IPP and the energy physically flows to the customer's network and is consumed by the customer, Eskom shall adjust the customer's account by adding the energy purchased based on the gen-purchase tariff.

- **2.2.14.7** The total wheeled energy per TOU credited under the gen-wheeling tariff shall not be greater than the active energy (kWh) measured by Eskom in peak, standard and off-peak periods for each month.
- **2.2.14.8** The total exported energy per TOU credited under the gen-offset tariff shall not be greater than the active energy (kWh) measured by Eskom in peak, standard and off-peak periods for each month.
- 2.2.14.9 The wheeled energy shall be allocated based on the nominated allocation, which can be a nominated percentage or merit order or in a format agreed to between ESKOM and the party doing the nomination. Eskom may accommodate a request for customers to allocate a different percentage to each of the TOU periods.
- **2.2.14.10** Changes to the allocation will be allowed no later than one day (24 hours) before the billing date or as agreed between Eskom and the nominated parties. If no changes are received by Eskom by the agreed cut-off date, the previous month's allocation will be used to determine the apportionment of the wheeled energy to the nominated parties.
- **2.2.14.11** The nominated allocation of the wheeled energy shall be provided by the seller or offtaker, or third party, as set out in the CUOSA (if allocated by the seller) or in the wheeling amendment agreement (if allocated by the offtaker or third party).

2.2.15 The purchaser of energy (load customer) will pay to Eskom:

- **2.2.15.1** The full standard tariff for all the energy delivered (measured) by Eskom. Eskom will adjust the customer's bill for the energy produced by the IPP under the gen-wheeling/gen-offset/gen-purchase tariff (as applicable).
- **2.2.15.2** An administration charge based on the gen-wheeling/gen-offset /gen-purchase tariff for each transaction on the account (as applicable).
- **2.2.15.3** A service charge as per the service charge parameters of the applicable off-taker tariff and is not applied per wheeling or offset transaction.
- **2.2.15.4** Network charges on all energy delivered to the customer over Eskom's networks there is no offset or reduction of network charges.
- **2.2.15.5** The contribution to subsidies on the energy delivered on the Eskom network.
- **2.2.15.6** The ancillary service charge on energy delivered on the Eskom network.
- **2.2.15.7** The cost of losses on the energy delivered over the Eskom network at the standard tariff loss factors for wheeling transactions. Losses are not payable on offset transactions because the flow of energy occurs on the same site.
- **2.2.15.8** The legacy charge based on all energy measured at the Eskom meter at the customer's POD.
- **2.2.15.9** The generation capacity charge based on the UC per POD.

- **2.2.15.10** All reconciliation scenarios are conditional on amendment agreements to the main supply agreement being signed.
- 2.2.16 Eskom shall allow generators to pay charges associated with wheeled energy and network usage on behalf of the offtaker, subject to a mutual agreement between the generator and the offtaker. The generator must sign an agreement which will specify the apportionment of wheeling charges payable on behalf of the offtaker. Similarly, the offtaker will sign an amendment agreement to the ESA outlining the charges to be offset against their electricity account in lieu of those paid by the generator. This arrangement will not alter the applicable charges payable by generators and offtakers as stipulated in the CUOSA and ESA, respectively.
- 2.2.17 The customer shall provide Eskom with the end date for each wheeling transaction. This end date shall be recorded in the signed wheeling amendment agreement between Eskom and the customer. The start date for each wheeling transaction will be the effective date as defined in the wheeling amendment agreement.

3. Supporting clauses

3.1 Scope

3.1.1 Purpose

This policy provides the principles for the settlement of transactions where IPPs supply all or part of the energy to Eskom/municipal customers. The supply of energy may be contractual and/or physical.

This policy does not deal with:

- The purchasing of energy from the IPP.
- The settlement process between Eskom clusters, i.e., it does not address the internal settlement processes.
- The balancing mechanism, which will be addressed under a separate policy.
- Wheeling to/from other countries outside South Africa, as cross-border trading and wheeling will be addressed in a separate policy.

3.1.2 Applicability

This policy shall apply throughout Eskom Holdings SOC Ltd Divisions to all employees who perform the reconciliation of accounts and to all Eskom Holdings SOC Ltd customers on standard Eskom retail TOU tariffs that obtain energy from both Eskom and IPPs.

3.1.3 Effective date

The effective date of this policy is the date of approval by the duly authorised governance committee.

3.2 Normative/Informative references

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

3.2.1 Normative

- [1] Eskom's Schedule of Standard Prices.
- [2] 240-58853865: Connection charges for customers connected to Eskom's distribution network policy.
- [3] 240-96748696: Connection charges for customers connected to Eskom's Distribution network procedure.

3.2.2 Informative

- [1] NERSA regulatory rules on network charges for third-party wheeling of energy.
- [2] The Electricity Regulation Act, as amended.
- [3] The Distribution Licence.
- [4] The Distribution Code and the SA Grid Code.

3.3 Definitions

- **3.3.1 Buyer** means a non-Eskom purchaser of the wheeled energy that concludes a PPA with the seller. A buyer can be a municipality or an offtaker, as may be applicable.
- **3.3.2 Connection and Use-of-System Agreement:** means the connection agreement as required by the Code, entered between Eskom and the Non-Eskom generator to connect to ESKOM's Distribution or Transmission system physically and to allow the customer access to and the usage of ESKOM's Distribution or Transmission system.
- **3.3.3 Customer:** means an Eskom customer that purchases energy from Eskom and includes the terms "load", "offtaker" and "purchaser" as used throughout this document.
- **3.3.4 Distribution system:** means Eskom's network infrastructure operating at a nominal voltage of 132 kV or less, not classified as transmission transformation equipment.
- **3.3.5 Electrification and rural subsidy** means a charge transparently indicating the contribution towards socio-economic subsidies.
- **3.3.6 Independent power producer (IPP)** means any non-Eskom-owned generator (including small-scale embedded generators) that is connected and synchronised to Eskom's Distribution or Transmission network.
- **3.3.7 Licensee** means the distributor or transmitter licensed by NERSA under the Act to provide a network service and/or retail trading function.
- **3.3.8 NERSA** means the National Energy Regulator of South Africa established in terms of the National Energy Regulator Act (Act No. 4 of 2004) or its successor-in-title.
- **3.3.9 Net-billing** (also called offset) 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 the gen-offset tariff. The customer is still charged the full tariff for the amount of energy consumed and capacity provided.
- 3.3.10 Nominated allocation means the allocation of the wheeled energy to be allocated by the seller or third party or offtaker as set out in the CUOSA (if allocated by the seller) or in the wheeling amendment agreement (if allocated by the offtaker or third party).
- **3.3.11 Offtaker** means a customer that purchases and pays for the wheeled energy from a seller.
- **3.3.12 Offset** has the same meaning as net-billing.
- **3.3.13 Point of delivery (POD)** means the single point of supply or a specific group of points of supply located within a single substation, where electricity is supplied at a declared voltage and tariff by ESKOM to the customer.
- **3.3.14 Portfolio wheeling** means a scenario where energy is wheeled from multiple generators to one or multiple load customers in a portfolio.

- **3.3.15 Reliability services** means the provision of ancillary services such as frequency and voltage control, generation reserves, black start capability and emergency reserves.
- 3.3.16 Seller means an IPP that enters a PPA with an offtaker for the sale of the wheeled energy.
- **3.3.17 Third party** means a party contracted by the generator or offtaker to provide the nominated allocation.
- **3.3.18 Third-party wheeling** means a financial transaction where a private generator sells electrical energy to another party through bilateral or multilateral transactions, and where the electrical energy is wheeled through the network owned by a licensee.
- **3.3.19 Time-of-use (TOU) tariff** means a tariff with energy charges that change during different TOU periods and seasons.
- **3.3.20 Transmission system** means Eskom's electricity system consisting of all lines and substation equipment where the nominal voltage is above 132 kV or where the nominal voltage is lower than or equal to 132 kV and there are no Distribution system assets.
- **3.3.21 Transmission zone** means the geographic differentiation applicable to Transmission network charges and loss factors to indicate the costs associated with the transmission of energy over long distances.
- 3.3.22 Use of system charges means at any time, monthly charges payable by the customer as may be levied by Eskom to the customer for the use of the Transmission and/ or Distribution system as determined in accordance with the Code and approved by NERSA from time to time. Eskom's prevailing Schedule of Standard Prices at any time shall serve as prima facie evidence of the Transmission and/or Distribution Use-of-System charges applicable at that time.
- **3.3.23 Wheeling** means the delivery of electricity from a point of generator connection to a load consumption point through a network owned by a licensee.
- **3.3.24 Wheeled Energy** means the electrical energy (kWh) produced by the IPP as measured by the meter of the generator and the licensee at one site, and that is sold to a buyer for use at another site, and this electricity is delivered through a network owned by a licensee.
- **3.3.25 Controlled disclosure** means controlled disclosure to external parties (either enforced by law or discretionary).

3.4 Abbreviations

Abbreviation	Explanation
CC&B	Customer Care and Billing
CUOSA	Connection and Use of System Agreement
DET	Distribution Energy Trading
ERS	Electrification and rural subsidy
ESA	Electricity Supply Agreement
IPP	Independent Power Producer
MEC	Maximum Export Capacity
NERSA	National Energy Regulator of South Africa
NTCSA	National Transmission Company of South Africa
TOU	Time-of-use
POD	Point of delivery
PPA	Power Purchasing Agreement
UC	Utilised Capacity
UoS	Use of System