



WESTFORD BRIDGE

Electricity

Recovery Procedure

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Background

Westford Bridge Estate is updating its method for calculating electricity consumption for homeowners. While the old system, developed in 2004 served the community well, it had a bias which resulted in most homeowners subsidizing heavy peak-consumption users.

The old spreadsheet system was not documented and lacked clear procedures. It was unclear how formulas and numbers were derived, and labor-intensive to maintain and update for generating homeowners' invoices.

Now that the estate has appointed a managing agent which will be responsible for the generation of the homeowner statements, this process needs to be reviewed to be able to properly explain how the electricity recovery is done and to assist with the managing agent's billing process.

With the estate's 200kVA transformer limit, the management of electricity consumption during peak hours is critical to avoid severe penalties or even termination of service.

The new procedure is greatly simplified and has a marginal effect with an average deviation of -2.5% to +2.7% depending on the homeowner's energy profile. We continue to reward homeowners for their energy conservation efforts and penalize consumption during peak-hours, which contributes to over half of the variable costs on the Eskom bill.



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Electricity Recovery

Westford Bridge HOA is a direct customer of Eskom and receives a monthly invoice relating to the availability and consumption of electricity. A copy of the [Eskom January 2025 invoice](#) will be used in this document to explain the process.

The invoice can be broken down into the following components:

ESKOM JAN-2025 INVOICE

ESKOM JAN-2025 INVOICE				Excl. VAT		Incl. VAT				
Fixed	Basic	Administration Charge	R	1 764,52	R	2 029,20	2,8%	R 12 512,09	17,3%	17,3%
		Network Capacity Charge	R	5 310,00	R	6 108,50	8,4%			
		Service Charge	R	3 805,56	R	4 376,39	6,0%			
Variable	Demand	Network Demand Charge (kVA)	R	10 479,47	R	12 051,39	16,6%	R 31 087,01	42,9%	82,7%
		Demand Charge (kVA)	R	16 552,71	R	19 035,62	26,3%			
	Consumption	Ancillary Service (kWh)	R	160,94	R	185,08	0,3%	R 28 806,26	39,8%	
		Energy Charge (kWh)	R	24 887,98	R	28 621,18	39,5%			
AMOUNT TO RECOVER						R	72 405,36	100,0%		

1. **Basic.** Charges that must be paid regardless if electricity is consumed or not. Given that the administration charge is determined by the amount of days between invoices, this differs slightly month-on-month, but for our purposes we consider them “fixed costs”.
2. **Demand.** Is measured by the highest amount of consumption incurred during peak hours in the invoice period. Electricity meters in the estate **do not** measure max-kVA per household, but high-peak-usage results in increased demand charges. Simplified: if all electrical appliances were switched off during peak hours for the whole month, then the demand charge would be zero.
3. **Consumption.** This is measured with the installed Time-of-Use electricity meters and registers how many units (kWh) are consumed in the various periods: Peak, Standard and Off-Peak.
4. **Shared.** Streetlights, security equipment, sewage plant and borehole pumps all consume electricity but are not equipped with meters at this stage. Their consumption is assumed to be the balance between the Eskom kWh - and the homeowners total kWh.

Things to be aware of:

1. The estate is not making any profit when it distributes the Eskom costs to its homeowners.
2. The estate is not VAT registered, as such the full amount including VAT needs to be recovered from the homeowners.
3. The variable costs (kVA+kWh) represent over 80% of our Eskom invoice.
4. The demand charge, even though it is only measured during a couple of hours of the day (Peak), represents over 52% of our variable costs.



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5. We are relying on homeowners to provide electricity readings. As a result the readings come in over a period of 1-7 days, are sometimes missed, or in-accurate and thereby can introduce discrepancies.
6. The electricity tariff that Eskom charges to the estate has a low and high-season rate. During winter months the estate is charged a higher, more expensive, rate for the variable costs.
7. The maximum demand that the estate may consume is 200 kVA. Significant penalties are imposed if this limit is exceeded and may result in termination of service if consistently exceeded. The estate is currently running around 90kVA per month, but during wintertime we run up to 165kVA (82% of max. capacity)
8. The estate is not fully occupied, more households and larger family compositions may impact electricity consumption.
9. The estate has done away with the “3-year building term” policy in favor of all homeowners contributing to the shared costs.

Recovery considerations

The following considerations are implemented when recovering the electricity charges from our homeowners:

1. Energy conservation is promoted by penalizing peak consumption which is responsible for 42,9% of our total Eskom invoice.
2. Consumption that cannot be attributed to homeowner usage is shared equally among everyone as it powers shared services (security, streetlights, sewage plant, borehole pumps) which are available to all.
3. Shared consumption has an impact on demand (kVA) and therefore must be taken into consideration. The Board is looking into time switches for the borehole pumps to ensure they do not run during Peak Demand hours.
4. Eskom basic charges are equally shared among everyone.
5. Eskom invoice has to be fully recovered.

Recovery procedure

The following section describes how the Eskom charges are distributed among the homeowners.

1. An email is sent around the 9th of every month to invite the homeowner to submit the electrical meter readings using a Google Form. Once submitted the readings are automatically added to a [Google Sheet](#).



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2. A reminder will be sent to homeowners on the 14th if they have not submitted the electrical readings.
3. If homeowners have not supplied readings by the 19th an average of the previous 3 months will be used as an estimate.
4. The Eskom **basic** charges are equally distributed across all 58 homeowners.
5. The previous readings are subtracted from the current readings which will then give you **Homeowner Consumption (kWh)** for: Peak, Standard and Off Peak.
6. The total **Homeowner Consumption(kWh)** is then subtracted from the Eskom recorded kWh units, which in turn will give you the **Shared Consumption (kWh)**. In the absence of meters, the Shared consumption is allocated to the Standard rate and a zero consumption is recorded for both peak- and off-peak readings.
7. A ratio (or multiplier) is applied to the Peak, Standard and Off-Peak consumption. This is done for both homeowners and calculated shared consumption. The ratios are directly linked to the [Knysna Municipal Time-of-use TOU tariffs](#), which are roughly 3.1:1.0:0.5. In other words a kWh consumed during peak hours is charged at triple the rate, and a kWh consumed in off-peak hours is charged at half the rate.

Example based on Municipal Tariff for January 2025:

Rates Ratio = (Peak x 7,7943) + (Standard x 2,4951) + (Off-Peak x 1,4426)

8. We then express the ratio as a percentage of the total (= sum of all ratios). This percentage is applied to the Eskom **Demand** - and **Consumption** charges.

Homeowners with a high peak-consumption will automatically receive a higher ratio, which results in a larger share of the kVA and kWh charges, unless offset against off-peak consumption.

9. Lastly, the percentage calculated for the **Shared (kWh)** ratio is applied to the variable costs (kVA+kWh), which is equally distributed among all homeowners.

The above steps have a clearly defined, significantly simplified process which continues to promote energy conservation. The Homeowners Association will remain committed to exploring initiatives aimed at reducing our dependence on Eskom and promote electricity awareness among our homeowners.

Recovery example

A sample spreadsheet has been created to illustrate how the above recovery procedures are applied. It also highlights the **TOP 10** consumers and the price differences between the old and new recovery model which are marginal.



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[Electricity recovery example Jan-2025.xlsx](#)