



GEORGE MUNICIPALITY

Wheeling Guideline



71 York Street, George | PO Box 19, George, 6530



044 801 9111



www.george.gov.za



1. Introduction	3
2. Definitions.....	4
3. Scope of guideline.....	5
4. Legal and regulatory framework.....	6
5. wheeling scenarios.....	7
6. Application process.....	10
Annuxure A: Requirements of third-party energy provider	11
Annexure B: accounting.....	13

1. INTRODUCTION

This guideline describes the process and requirements for third party energy providers to wheel electrical energy on George municipalities' distribution grid. The guideline sets the requirements to explore wheeling and energy trading in George. The guideline sets the parameters of capacity allowed on the network and does not limit or restrict the number of customers. This guideline will be regularly reviewed and amended, as technical capacity is built through approved applications by third party energy providers.

2. DEFINITIONS

Electro-technical department	The Electro-technical directorate of George Municipality.
Energy regulation act (ERA)	National Energy Regulator Act, 2004 (Act 40 of 2004);
Eskom grid	The transmission or distribution system owed by Eskom.
Generator	An entity that generates electricity.
George municipalities' grid	The distribution grid in George Municipality's licenced supply area.
Grid	An electrical network used to transport electrical energy. Also referred to as network.
Off taker	A George municipality electricity customer and the purchaser of third-party electrical energy. Also referred to as end-user.
The Constitution	The Constitution of the Republic of South Africa, 1996.
Third party energy providers	Any entity generating electricity is not Eskom or George Municipality.
Trader	An entity that contracts with generators and off-takers to provide energy from the one to the other.
Wheeling	The transportation of electrical energy by an electricity supplier to a third party through a network not owned, controlled, or leased by either party.

3. SCOPE OF GUIDELINE

The guideline will cover the following:

- **Legal and regulatory framework**

In an uncertain and constantly changing energy regulatory environment, it is important to review and update the guideline to ensure compliance with national legislation.

- **Requirements to wheel energy on the George municipality distribution grid (annexure A)**

These requirements will be constantly reviewed, as technical capacity is built throughout the project.

- **Wheeling scenarios.**

The different wheeling scenarios will be explained in this section.

- **Application process.**

The application process will be explained, as well as the information requirements from third party energy providers.

4. LEGAL AND REGULATORY FRAMEWORK

The Constitution states that a municipality has the “executive authority” with respect to electricity reticulation and “has the right to administer” electricity reticulation (S156). The Constitution further states that the public administration of service should be provided “impartially, fairly and equitably and without bias” (S229).

The municipality must, however, adhere to national legislation regarding the administration. The applicable act is the Energy regulation act (ERA). The act states that “A transmission or distribution licensee must, to the extent provided for in the licence, provide non-discriminatory access to the transmission and distribution power systems to third parties” S21(3).

Furthermore, in S21(4) the act states that access must be provided on the conditions set out in the licence of the distributor as it relates to the following (not limited to):

- Access being allowed or refused.
- Compliance to rule, code or practise made by the regulator.

The licence conditions consist of financial, legal, and technical conditions. There are various technical conditions mentioned in the licence but the one specifically applicable is NRS 048 (quality of supply).

George municipality is thus obligated to allow third party energy provider access to the distribution grid but must still adhere to its license conditions. According to the ERA George municipality may grant or refuse access on the conditions of the licence. It is therefore the stated intention of George Municipality to impose additional conditions only insofar as it will ensure the quality of supply to its customer base.

The additional requirements will be mostly technical in nature. George municipality aims to develop the technical capacity with a pilot project and foresee the requirements being amended regularly. The municipality does not want to take unnecessary technical risks by exploring wheeling. The project will rely on standards already developed for small scale embedded generators SSEG’s. This will ensure minimal technical risk for George municipality and ensures compliance with all relevant technical standards.

In summary, George municipality will allow non-discriminatory access to the municipal electricity distribution grid to third party energy providers in full compliance with national legislation and the rules or codes published by the regulator. In addition, it will create requirements for third party energy providers to ensure the municipal compliance to the licence conditions.

5. WHEELING SCENARIOS

The tariff applicable and the technical requirements depend on where the generator is connected. The two options are:

1. Generator connected to the Eskom network.
2. Generator connected to the George Distribution network.

In both scenarios the off taker must be connected to George Distribution network.

Both traders and generator independently will be allowed to wheel electricity. Both must adhere to NERSA's rules and regulations in terms of licensing and registration as well as national legislation.

For the pilot a generator alone cannot wheel to more than one customer. A trading licence would be required to wheel to more than one customer.

For illustrative purpose, figures 1 to 4 was created to show the contractual agreements as well as the billing that will take place.

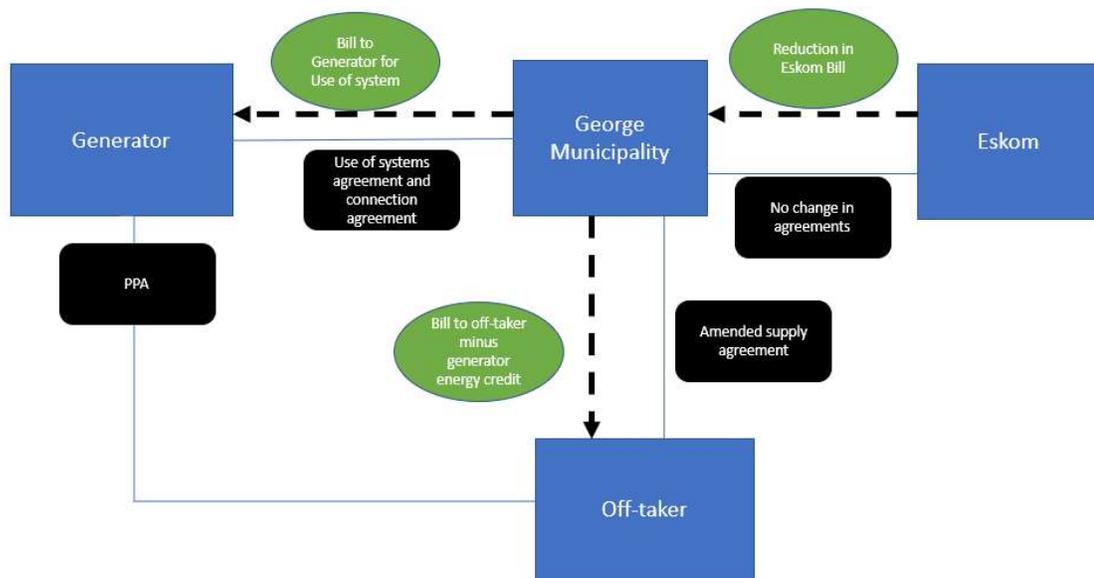


Figure 1 Generator connect to Municipality (no trader)

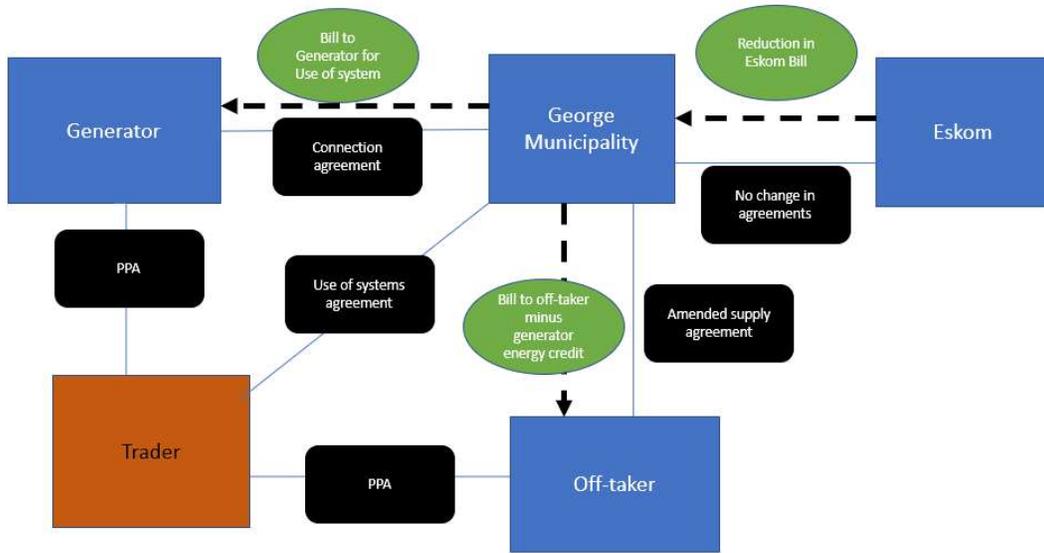


Figure 2: Generator connected to Municipality (trader)

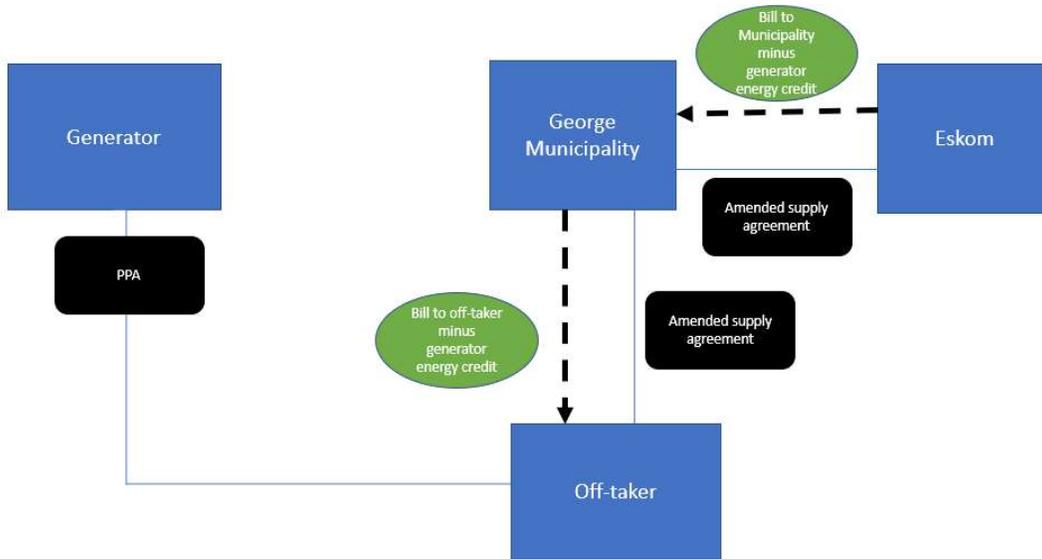


Figure 3: Generator connected to Eskom (no trader)

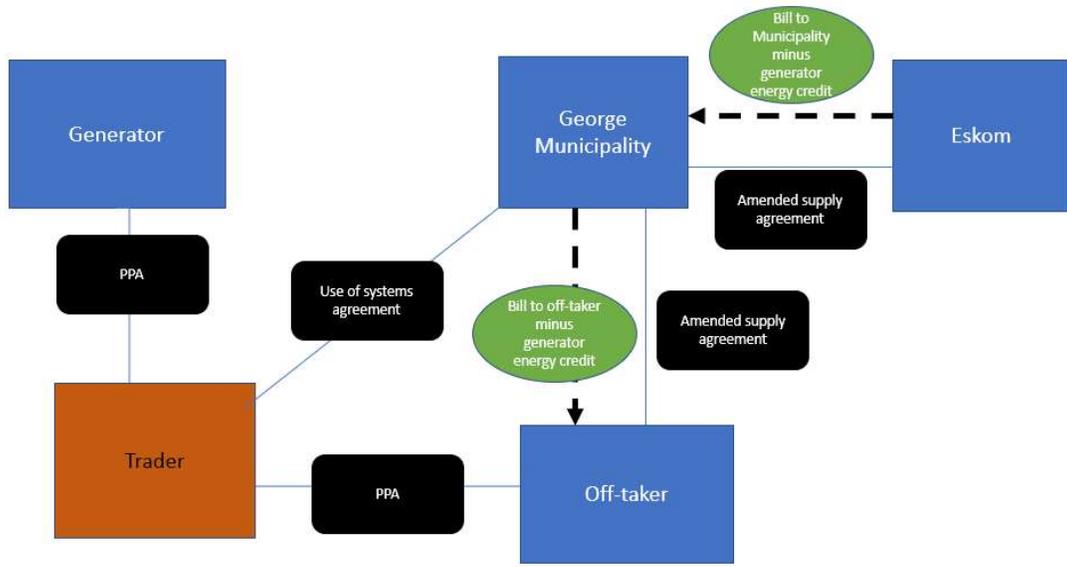


Figure 4: Generator connected to Eskom (trader)

6. APPLICATION PROCESS

The application process will be handled on a case by case basis. The applicant is to inform the Electro-technical department as soon as possible, when considering entering a wheeling arrangement. All the requirements in Annexure A should be met.

The contracts mentioned below must be signed before wheeling can take place.

1. Generator registration at municipality. The proposed generator/ current generator will need to register as an SSEG with George Municipality and comply with George Municipality SSEG requirements. The only requirement exemption given will be the “net consumer” requirements in the SSEG requirements. The generator will be responsible for the
 - Connection charges
 - Development charges
 - Tariff charges (includes all basic, capacity and demand and charges).
2. Amended supply contract with the off taker. The customer will need to amend its supply agreement with the municipality.
3. Use of systems agreement between the trader/generator and the municipality.

The above-mentioned use of system agreement must be drafted by the applicant.

ANNEXURE A: REQUIREMENTS OF THIRD-PARTY ENERGY PROVIDER

The requirements are listed in two sections. The first section is only applicable if the generator is connected to the George municipality distribution grid. The second section is applicable to all applicants.

George Municipality connected Generator.

1. Generator tariff

The generator must be on the applicable time of use tariff for consumption. Access and demand charges will apply. The applicable tariff is tariff 3C as described in the tariff booklet.

2. Generator connection agreements

The generator must adhere to the SSEG requirements for the connection of the generation facility. The only requirement exemption given will be the “net consumer” requirements in the SSEG requirements.

3. Generator must connect at 11kV or higher to the George distribution grid.

Applicable to all:

1. Only NERSA licensed / registered generators will be allowed.

Only NERSA licenced / registered generators will be allowed to wheel.

2. Limit on total capacity.

An allocation of George Municipality’s notified maximum demand (NMD) will be allocated to third party energy providers. This value is set to 10% of the NMD of 85 MVA. The total allocation will be 8.5 MVA.

3. Limit on capacity per applicant

1MVA maximum export capacity allocation will be allowed per applicant. This value cannot be larger than the total generation capacity.

4. The minimum connection size of the off taker / end user must be at least 100 kVA.

5. The off taker must be on tariff category 2B or tariff category 3.

6. Contractual agreements

The use of systems agreement will be developed on a case by case basis and must adhere to the current requirements set in the document.

7. Neutral tariff

The tariff will be surplus neutral for the municipality. Any additional charges for wheeling added by Eskom to the municipality’s account will be for the off takers account.

8. Off taker must be approved by the municipality and supply agreement must be amended.

The off taker must be approved by George municipality and the off-takers supply agreements must be amended.

9. The billing will be reconciled on an average 30-minute average consumption. No banking will be allowed.

10. Any off taker may not receive any electrical energy from more than one third party energy provider.

**11. Any electrical energy not consumed by the off taker will not be credited
i.e. no banking of energy will be allowed.**

ANNEXURE B: ACCOUNTING

Accounting for wheeling will be done as follows:

Municipal distribution grid connected Generator:

Eskom bill:

- Eskom's bill will automatically reduce because less energy will flow from Eskom to the municipality as the energy will be generated by the Generator connected after the Eskom meter.
- The amount of energy reduction in the Eskom bill will include the reduction in the losses as the flow of energy through the networks closest to the Eskom supply will reduce.
- There will however **not** be a clear adjustment in the Eskom bill, the consumption quantities will simply be less.

Generator Bill.

- The generator will be billed for the standard George applicable TOU tariff charges including Basic, Demand and Access charges in respect of the maximum capacity it wants to wheel energy and based on the actual demand wheeled.
- The generator will pay for any energy used at the standard energy charges but will not be credited for any energy wheeled.

The Off taker

- The bill at the standard tariff applicable to the customer (in time on TOU) will be the same as before the wheeling and thus firstly reflect all the energy going through the off taker meter.
- An additional Basic charge will be levied to cover the additional costs relating to transacting the wheeling energy for both the off-taker and the generator.
- An energy credit will be applied for the wheeled energy at the Eskom Megaflex energy charges as applied to George by Eskom to the network where the customer is connected including all the energy charges but not in respect of demand or access charges.

Eskom connected Generator:

Eskom bill:

- Eskom will charge an additional basic charge for wheeling.
- Eskom will credit the account by the amount of wheeled energy as provided by the generator at the TOU energy charges of the Eskom WEPS tariff but not in respect of:
 - The losses factor.
 - Ancillary service charge and electrification and rural subsidy charge.
- No adjustments in Maximum Demand or Access charges.

Generator Bill.

- Eskom will charge the Generator.

The Off taker

- The bill at the standard tariff applicable to the customer (in future on TOU) will be the same of before the wheeling and thus firstly reflect all the energy going through the off taker meter.
- Two additional Basic charges will be levied to cover the additional costs relating to the wheeling:
 - An additional fee municipal Basic charge.
 - The Eskom wheeling fee charged.
- An energy credit for the wheeled energy will be the same as that by which Eskom credits the account to George. (WEPS energy rate excluding losses)

Example situation for 2020/21 tariffs, generator connected to the George Municipality grid:

Generator connected at 11 kV in the George Municipality distribution grid. The end-user is connected to the 11 kV network. The generator will have to on the applicable TOU tariff 3C. The end-user must be on tariff 3C as well. All calculations are done for a low season scenario.

Eskom energy bill to Municipality		Municipal bill to Generator		Municipal bill to off taker	
Total (before wheeling)				Total (before wheeling)	
Ancillary service 2500000 kWh @ R0.0043	10750			Basic @ R 2187.32 per month	R 2 187.32
Electrification and rural subsidy 2500000 kWh @ R0.0917	229250				
				Demand 950 kVA @ R 70.26 per kVA	R 66 747.00
				Access 1000 KVA @ R 61.61 per kVA	R 61 610.00
Energy (Low Season)				Energy (Low season)	
Peak Energy 500000 kWh @ R1.1886	594300			Peak Energy 50000 kWh @ R1.2231	R 61 155.00
Standard Energy 1000000 kWh @ R0.8179	913900			Standard Energy 140000 kWh @ R0.936	R 131 040.00
Off-peak Energy 1000000 kWh @ R0.5189	R 614 900.00			Off-peak Energy 200000 kWh @ R0.81	R 162 000.00
	R 2 363 100.00				R 484 739.32
Total (with wheeling)		Total (with wheeling)		Total (with wheeling)	
Ancillary service 2305000 kWh @ R0.0043		Basic @ R 2187.32 per month	R 2 187.32	Basic @ R 2187.32 per month	R 2 187.32
Electrification and rural subsidy 2305000 kWh @ R0.0917	R 9 911.50			Wheeling admin @ R 500 per month	R 500.00
	R 211 368.50	Demand 580 kVA @ R 70.26 per kVA	R 40 750.80	Demand 950 kVA @ R 70.26 per kVA	R 66 747.00
		Access 600 KVA @ R 61.61 per kVA	R 36 966.00	Access 1000 KVA @ R 61.61 per kVA	R 61 610.00
Energy (Low Season)				Energy charge	
Peak Energy 475000 kWh @ R1.1886	R 564 585.00			Peak Energy 50000 kWh @ R1.2231	R 61 155.00
Standard Energy 930000 kWh @ R0.8179	R 856 647.00			Standard Energy 140000 kWh @ R0.936	R 131 040.00
Off-peak Energy 900000 kWh @ R0.5189	R 563 010.00			Off-peak Energy 200000 kWh @ R0.81	R 162 000.00
		Wheeled energy		Wheeling energy credit	
		Peak Energy 25000 kWh		Peak Energy 25000 kWh @ R1.3191	-R 32 115.00
		Standard Energy 70000 kWh		Standard Energy 70000 kWh @ R1.032	-R 63 973.00
		Off-peak Energy 100000 kWh		Off-peak Energy 100000 kWh @ R0.906	-R 61 490.00
	R 2 205 522.00		R 79 904.12	Total Bill	R 327 661.32
Change in bill (new-old)	-R 157 578.00			Change in bill (new-old)	-R 157 078.00
				Net change	R 500.00

The off taker's final bill from the municipality only can be calculated as follows:

- A: Eskom Megaflex (including electrification and rural subsidy and ancillary services charges)
- B: Energy generated by the SSEG
- C: George municipality tariff 3C
- D: Total energy consumed by off taker (total through off taker meter)
- E: Off taker final bill from municipality

$$E = (C*D)-(A*B)$$

Example situation for 2020/21 tariffs, generator connected to the Eskom grid:

Generator connected at 11 kV in the Eskom grid. The end-user is connected to the 11 kV network. The end-user must be on tariff 3C as well. All calculation is done for a low season scenario.

The off taker's final bill can be calculated as follows:

- A: Eskom WEPS (excluding electrification and rural subsidy and ancillary services charges)
- B: Energy generated (and credited from municipalities account) by the generator
- C: George municipality tariff 3C
- D: Total energy consumed by off taker (total through off taker meter)
- E: Off taker final bill from municipality

$$E = (C*D)-(A*B)$$

Note: For both examples – the off taker do not have to be on tariff 3C, this is only an example.

Eskom bill to Municipality		Municipal bill to off taker	
Total (before wheeling)		Total (before wheeling)	
Ancillary service 2500000 kWh @ R0.0043	R 10 750.00	Basic @ R 2187.32per month	R 2 187.32
Electrification and rural subsidy 2500000 kWh @ R0.0917	R 229 250.00	Demand 950 kVA @ R 70.26per kVA	R 66 747.00
		Access 1000 KVA @ R 61.61per kVA	R 61 610.00
Energy (Low Season)		Energy (Low season)	R -
Peak Energy 500000 kWh @ R1.1886	R 594 300.00	Peak Energy 50000 kWh @ R1.2231	R 61 155.00
Standard Energy 1000000 kWh @ R0.8179	R 817 900.00	Standard Energy 140000 kWh @ R0.936	R 131 040.00
Off-peak Energy 1000000 kWh @ R0.5189	R 518 900.00	Off-peak Energy 200000 kWh @ R0.81	R 162 000.00
Total	R 2 171 100.00		R 484 739.32
Total (with wheeling)		Total (with wheeling)	
Eskom admin fee @R 4272.73	R 4 272.73	Basic @ R 2187.32per month	R 2 187.32
Ancillary service 2500000 kWh @ R0.0043	R 10 750.00	Wheeling admin @ R 500per month	R 500.00
Electrification and rural subsidy 2500000 kWh @ R0.0917	R 229 250.00	Eskom admin fee @ R 4272.73per month	R 4 272.73
		Demand 950 kVA @ R 70.26per kVA	R 66 747.00
		Access 1000 KVA @ R 61.61per kVA	R 61 610.00
Energy (Low Season)		Energy (Low Season)	
Peak Energy 500000 kWh @ R1.1886	R 594 300.00	Peak Energy 50000 kWh @ R1.2231	61155
Standard Energy 1000000 kWh @ R0.8179	R 817 900.00	Standard Energy 140000 kWh @ R0.936	131040
Off-peak Energy 1000000 kWh @ R0.5189	R 518 900.00	Off-peak Energy 200000 kWh @ R0.81	162000
Wheeling charges / credits		Wheeling credits	
Eskom admin fee @R 4272.73	R 4 272.73	Eskom admin fee @R 4272.73	R 4 272.73
Peak Energy 25000 kWh @ R1.0758	-R 26 895.00	Peak Energy 25000 kWh @ R1.0758	-26895
Standard Energy 70000 kWh @ R0.744	-R 52 080.00	Standard Energy 70000 kWh @ R0.744	-52080
Off-peak Energy 100000 kWh @ R0.4697	-R 46 970.00	Off-peak Energy 100000 kWh @ R0.4697	-46970
	R 2 053 700.46		R 367 839.78
Change in bill (new-old)	-R 117 399.54	Change in bill (new-old)	-R 116 899.54
		Net change	R 500.00

For reference:

George tariff 3C and Eskom Megaflex and WEPS 2020/21 tariff

Tariffs			
Eskom megaflex tariff			
Ancillary service	0.0043		per kwh
Electrification and rural subsidy	0.09		per kwh
Energy	High season	Low season	
Peak	3.6441	1.1886	per kWh
Standard	1.1040	0.8179	per kWh
Off-peak	0.5995	0.5189	per kWh
Eskom WEPS excluding losses			
Ancillary service	0.0043		per kwh
Electrification rural	0.09		per kwh
Energy	High season	Low season	
Peak	3.2979	1.0758	per kWh
Standard	0.9991	0.744	per kWh
Off-peak	0.5425	0.4697	per kWh
George Tariff 3C			
Basic	R 2 187.32		per month
Wheeling admin	R 500.00		per month
Eskom admin fee	R 4 272.73		per month
Demand	R 70.26		per kVA
Access	R 61.61		per kVA
Energy	High	Low	
Peak	3.186	1.2231	per kWh
Standard	1.233	0.936	per kWh
Off-peak	0.864	0.81	per kWh