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SWELLENDAM ELECTRICITY: RINGFENCING, COST OF SUPPLY AND TARIFF STUDY – 2022/2023 COSTS

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1. INTRODUCTION.

Swellendam Municipality (Swellendam) sanctioned a comprehensive electricity pricing study which contains 3 main components, more than that required by NERSA:

- Ringfencing electricity. The key objective of this part of the study is to establish the true cost and revenue of electricity supply in the municipality.
- The Cost of Supply study. The objective of the cost of supply study is to know the cost of supplying customers on each tariff and to compare this with the revenue from current tariffs and thus the cross-subsidies.
- Tariff study. The final step is to analyse the structure of the tariffs and how it differs from the cost structures and identify the cross subsidies within the tariffs and then to propose new tariffs.

This paper describes the details relating to all three components of the study undertaken for Swellendam Municipality. It contains the detailed results for the whole area.

2. INITIAL ASSESMENT

This section summarises the findings in terms of the existing tariffs and related issues. This was determined through analysis of the existing tariffs and discussions with electricity staff:

Indigent.

- The Basic charge and 50 kWh is not charged.
- The Normal basic charge is high but no capacity charge is levied.
- Energy charges
 - The first 2 block rates are below the Eskom purchase costs.
 - The third and fifth blocks exceed the Eskom costs.This probably means low usage consumers are overcharged.

Domestic tariffs: Normal, conventional and PP

- Slightly different charges are levied for Conventional and prepayment meters.
- There is an alternative tariff for 30 Amp supplies with:
 - no basic or capacity
 - but higher energy rates all exceeding Eskom cost.
- The basic charges are different by:
 - single or three phase
 - and capacity but not a consistent approach.
- Energy charges
 - The first block rate is below the Eskom purchase costs.
 - The second block very close to the Eskom costs.
 - The third and fourth blocks exceed the Eskom costs.

Commercial Tariffs: Conventional and pre-paid

- Different tariffs for Conventional and prepayment meters.
- Conventional generally higher basic charge and lower energy rates.
- Fixed charges are differentiated.
 - For single and three phase
 - By capacity
 - These are understated.
- There is no clear capacity charges.
- High energy charges.

Bulk tariff

- No differentiation for supplies at LV or MV.
- Reasonable Access charge and too high demand charge.

- No reactive energy charge.
- These consumers should all be on TOU.

TOU for Bulk:

- No consumers on the tariff
- No differentiation for supplies at LV or MV.
- All charges are reasonable.

Municipal use:

- Bulk users on standard tariff.
- Small users on tariff with no basic charge
- Streetlight tariff with no fixed charge to cover maintenance costs.

Special tariffs:

- For sports
- For Sportsground
- For schools
- Water mill

Availability:

- ????

SSEG tariff.

- No provision

Wheeling charges

- No provision

3. METHODOLOGY SUMMARY

The NERSA cost of supply Framework describes the steps as shown in **Figure 1**. It is considered to be an oversimplification and does not cover all aspects.

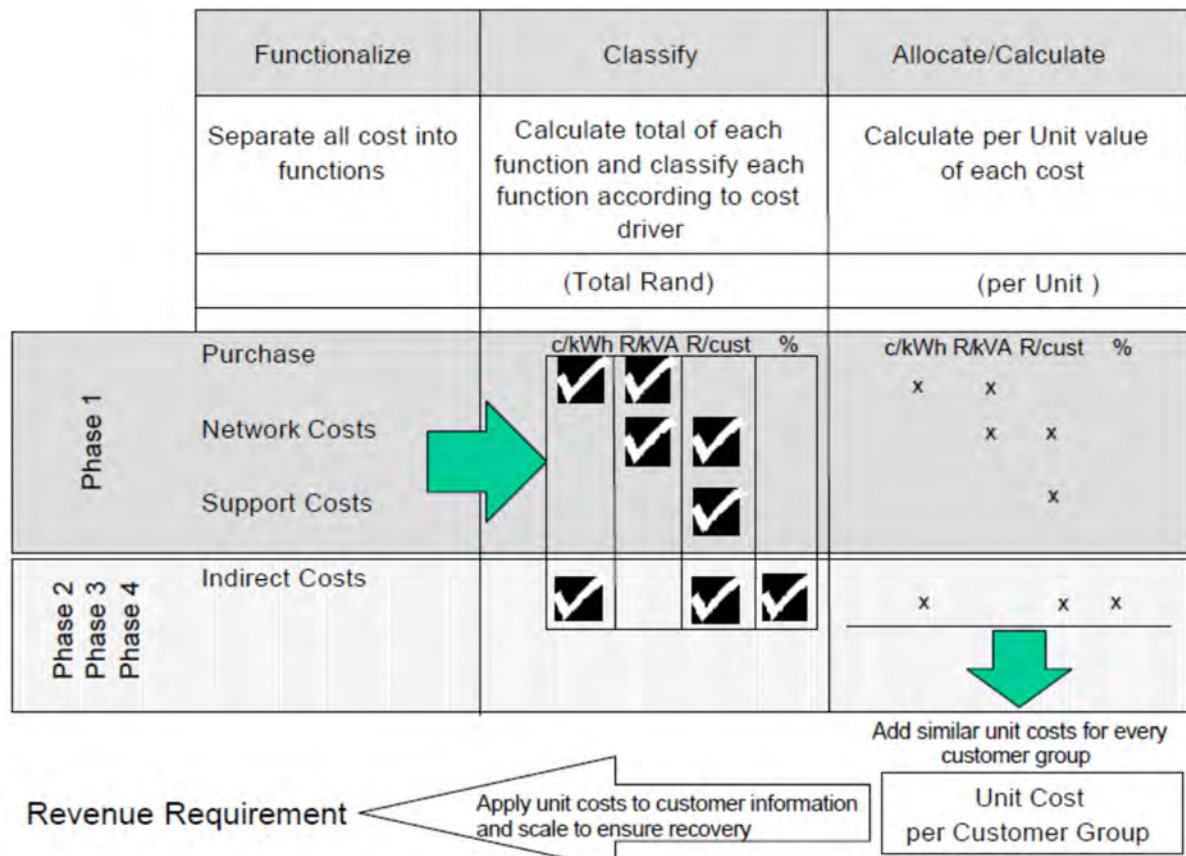
Figure 1



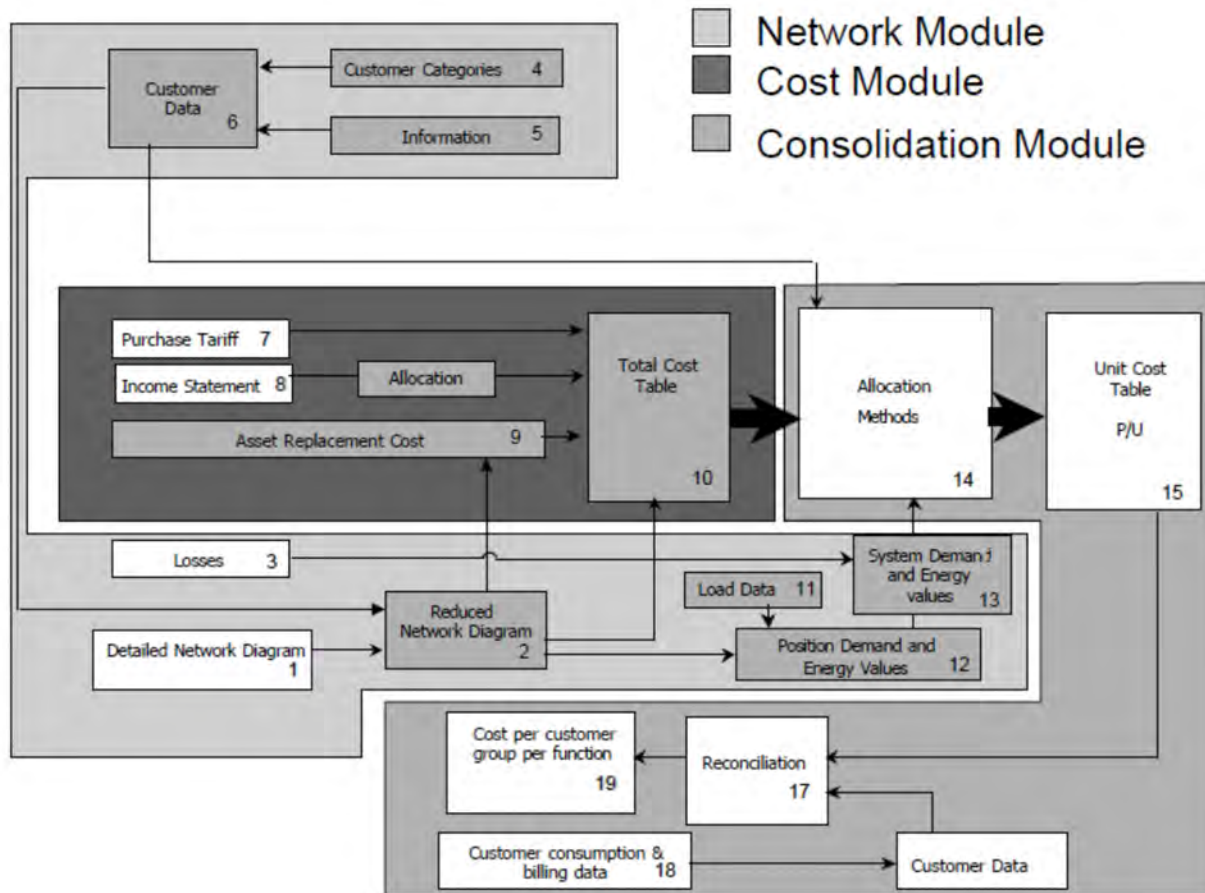
NRS058, the National Standard Specification “Cost of Supply Methodology for application in the Electrical Distribution Industry”, which was developed many years ago but never received final approval due to a legal dispute, shows the framework as in the

Figure 2.

Figure 2



Later in the NRS058 standard, a procedure diagram is provided as is shown in **Figure 3**. The NERSA framework does not feature any of these very important steps.

Figure 3

This report will thus follow the NERSA framework, but it must be realised that it is an over implication of a much more complex process and thus feature many more steps. It must also be remembered that NRS058 was developed largely by an Eskom employee who only undertook cost of supply in Eskom. The issues of ring-fencing of electricity from the rest of the municipality do thus not feature in NRS058. For a proper study, Ringfencing must be done.

It is however proposed that anybody who really wants to appreciate the complexity of this cost of supply study should read the Interim NRS058 before reading this report.

Before starting with the ringfencing study, some background calculations need to be done as detailed in the next few sections.

4. ESKOM ANALYSIS.

Swellendam receives its electricity from Eskom from 3 points of supply. These are shown in **Table 2** as well as the tariff and the % on TOU.

Table 1

These actual kWh and Rand values are summarised to represent the total purchase costs for Swellendam as shown in **Error! Reference source not found.**

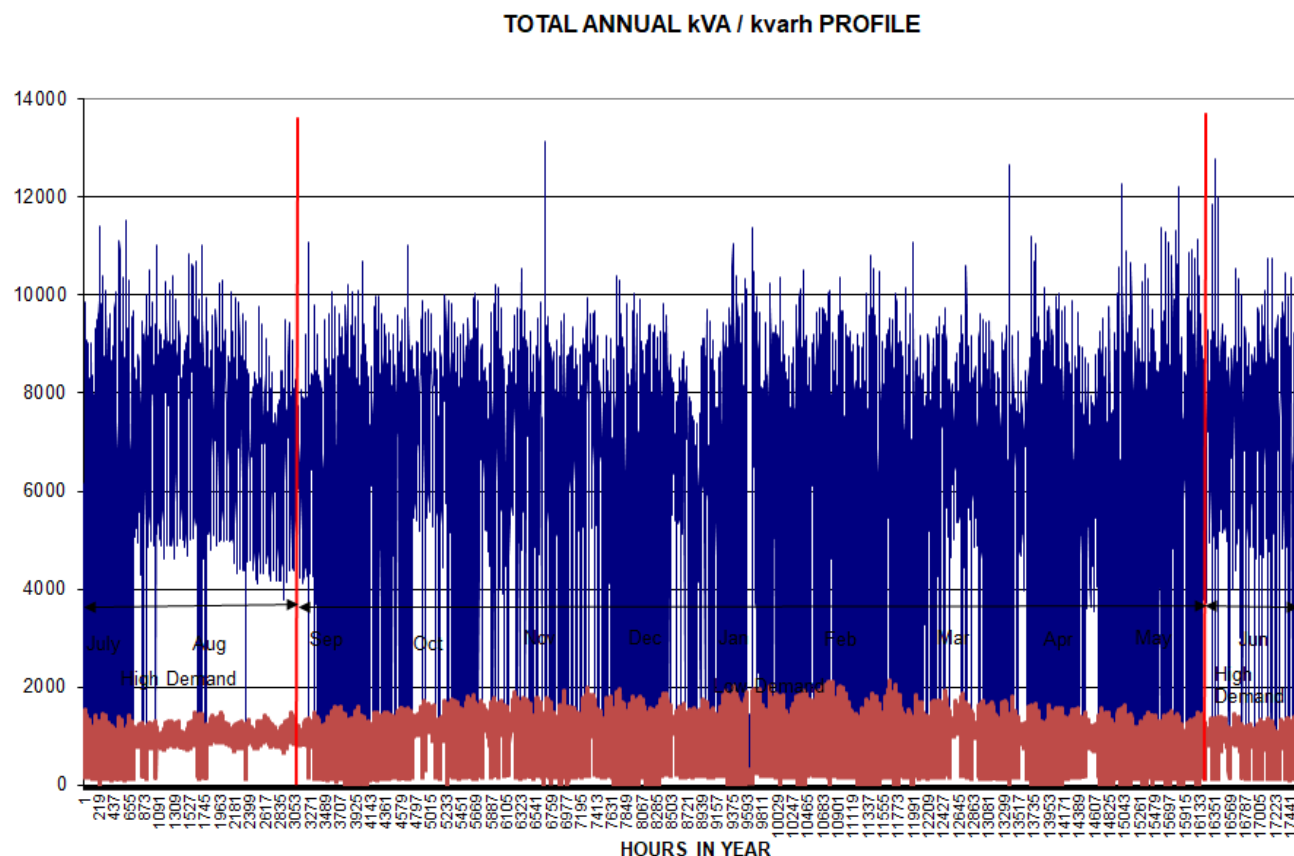
Still awaiting supply of editable bills.

Table 2

Next is to analyse the load profiles of the supplies from Eskom. The ½ hourly profiles for the last financial year were obtained from Eskom for each of the points of supply.

Figure 4 shows the total ½ hourly KVA purchases (Y-Axis) for Swellendam over the 12 months (X-Axis).

Figure 4

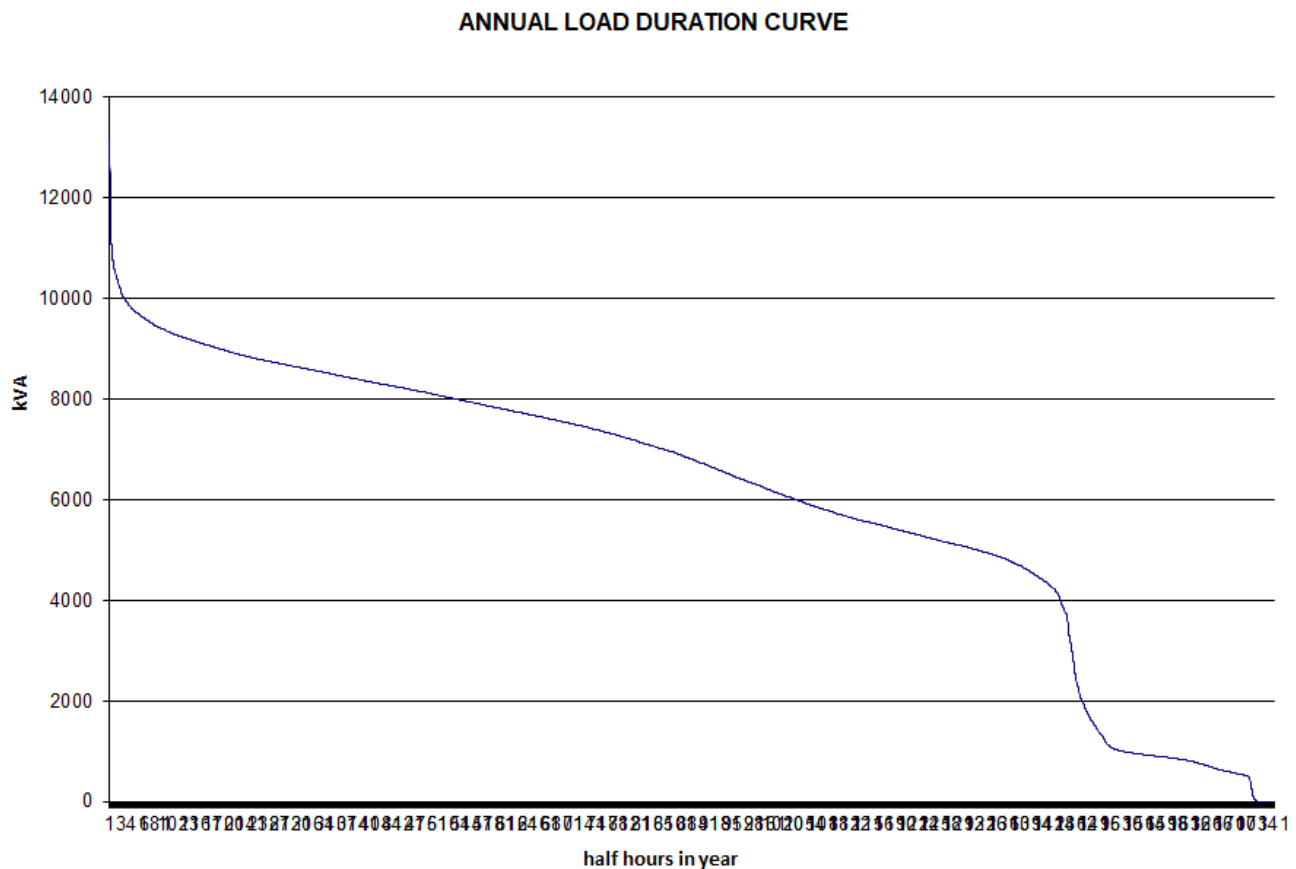


The following observations can be made from this:

- The municipality has a generally flat load throughout the year.
- It shows very sharp peaks which probably could be accounted to the cold load pickup after load shedding.

Figure 5 shows the annual load duration curve. This shows the highest to the lowest $\frac{1}{2}$ hourly kVA (Y-axis) for all the $\frac{1}{2}$ hours of the year (x-axis) and gives an indication of the potential to reduce the peak demand.

Final

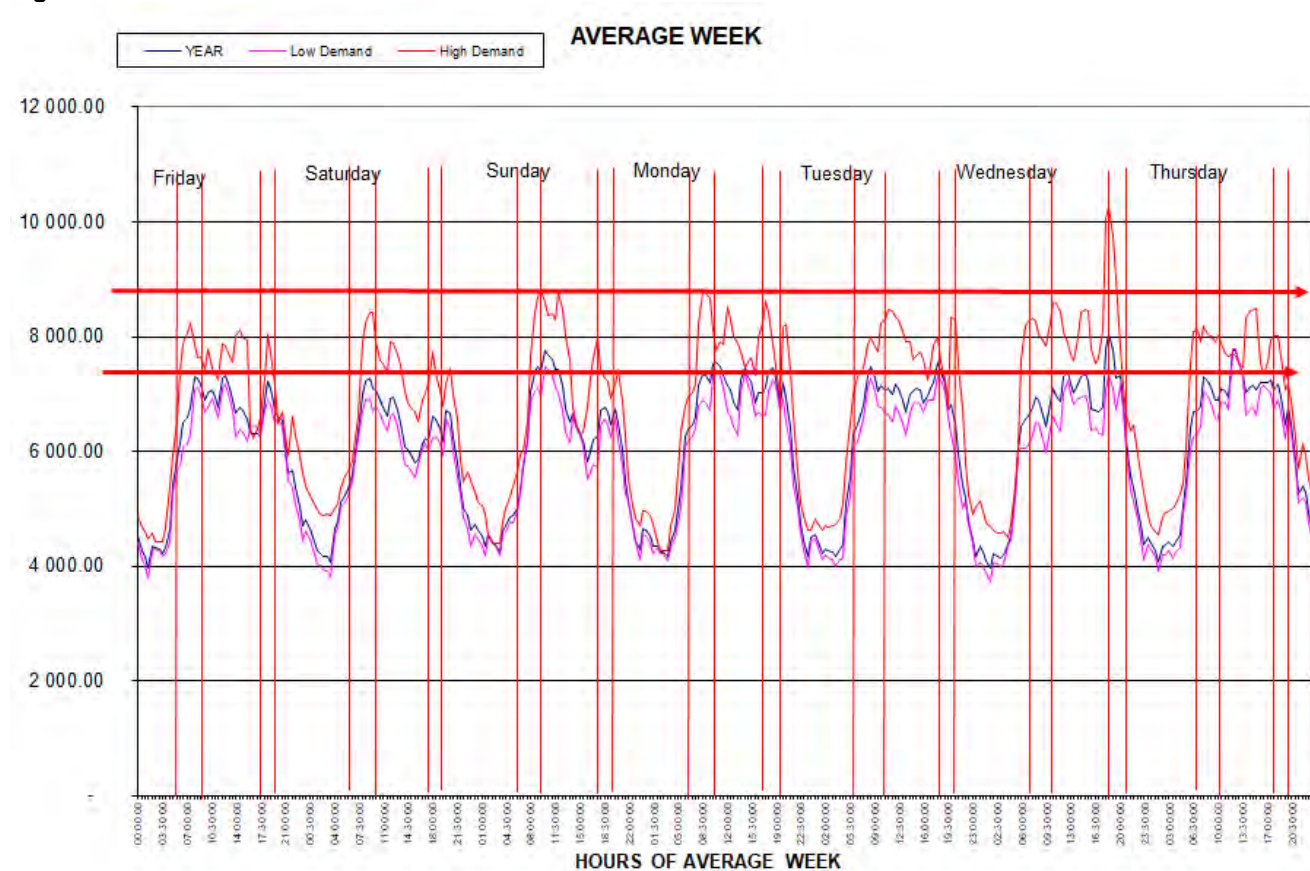
Figure 5

This shows that there is limited opportunity to save on maximum demand charges by only cutting out the peaks for a few hours in the year. Although the potential looks limited for the combined load, it will become clear that there are great opportunities to reduce peaks at each individual Eskom point of supply. Analysis shows that close to 1.4 MW can be further reduced by managing less than 50 peak hours in the year. This shows the importance of applying demand side management in the pricing signal to customers.

Figure 6 shows the $\frac{1}{2}$ hourly kVA values (Y-axis) for the following average weeks (7 day $\frac{1}{2}$ hours per week = x-axis) of the total Eskom supply in the year:

- Average for whole year.
- Average for high-demand period
- Average for low-demand period.

Figure 6

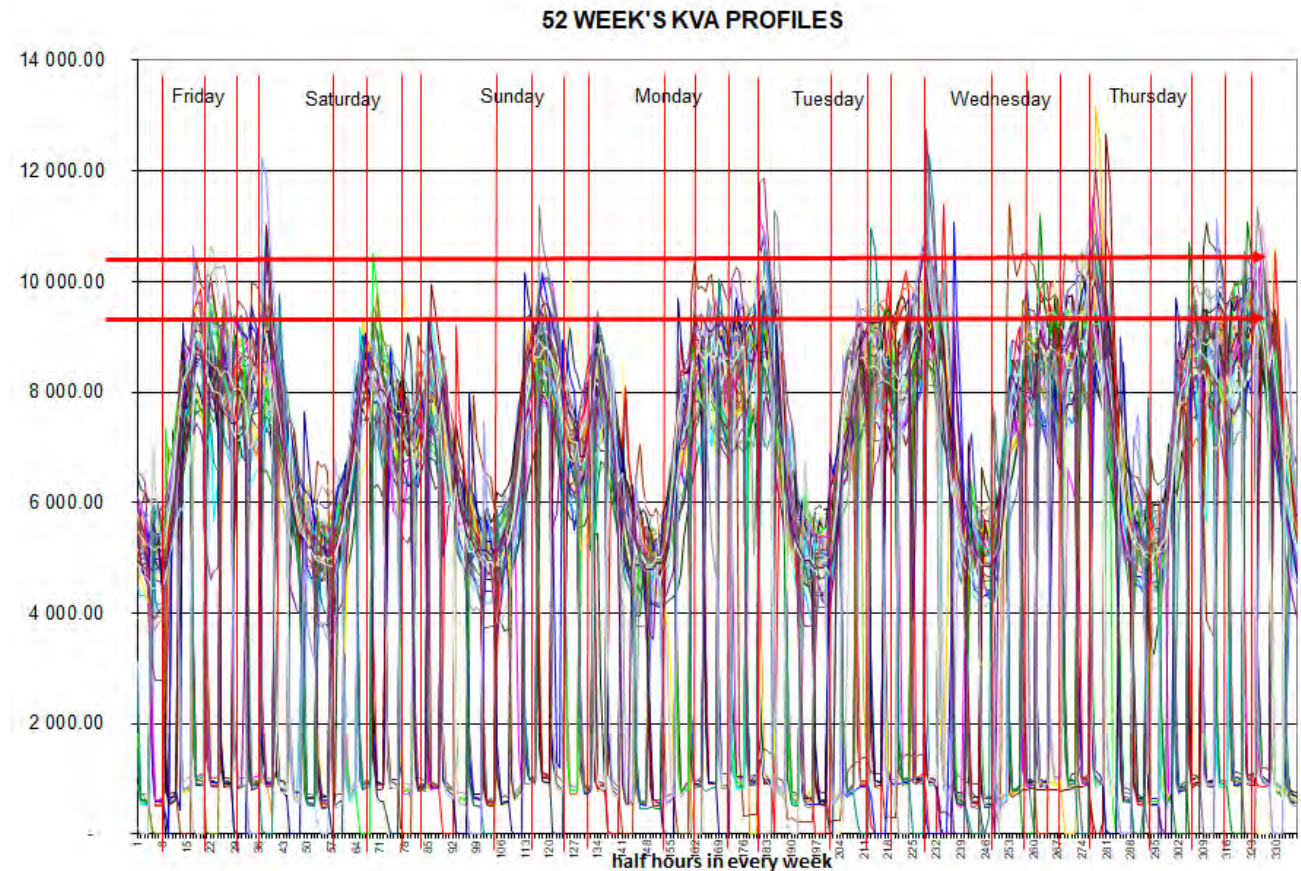


The following can be said in this respect:

- This is similar to other town profiles.
- It shows the very high evening peak especially in the High demand period (mainly from domestic customers).
- With the hot summers there is also a lower peak during the late mornings.
- It shows lower consumption on Saturdays and Sundays but late morning peaks on Sundays.
- Very low levels of consumption during the night.

Figure 7 Error! Reference source not found. shows the ½ hourly kVA values (Y-axis) for every week of the year (7 day ½ hours per week = x-axis). This is a very important graph as the previous average graph easily hides very important information.

Figure 7



The following can be seen from this:

- There are high peaks during the mornings and evenings although the highest peak was during the late afternoon.
- It also shows that there are only a few days in the year where the demand actually exceeds 12 MW. That leaves massive opportunity to save more than 2 MW with very limited effort.
- This is a clear message that the key focus for demand reduction must be on domestic evening peaks but the rising morning peaks cannot be ignored.

An analysis was also undertaken on the impact of converting to alternative Eskom tariffs. The results are shown in **Error! Reference source not found.**

Table 3

????????????????

5. NETWORK CAPITAL COST ANALYSIS

The first step in analysing network assets is to develop a Reduced network diagram (RND).

Figure 8 illustrates this for the Swellendam network. Most rural supplies in the area are provided by Eskom.

Final

Figure 8

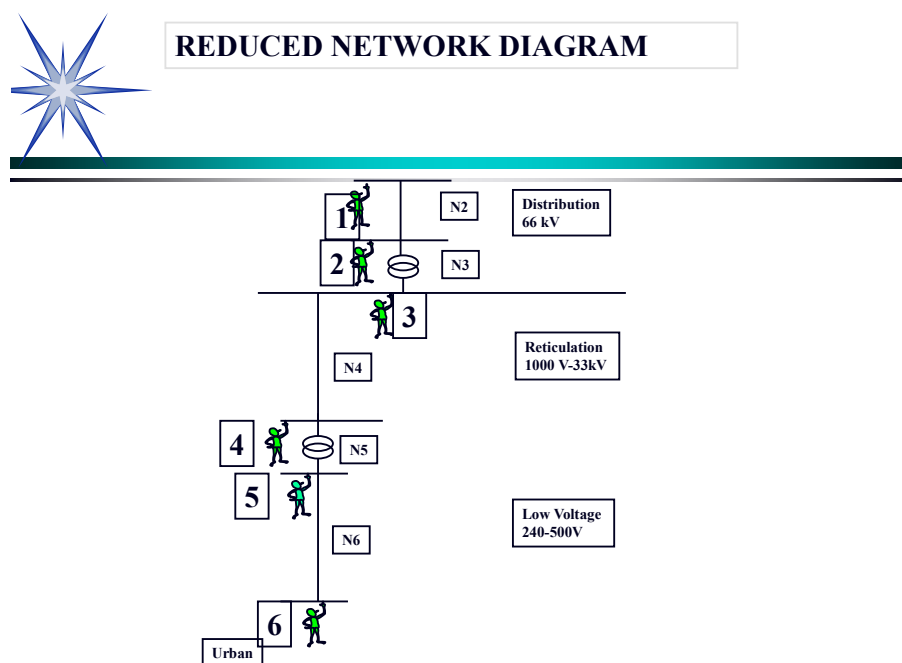


Table 4 shows the RND in table form. All costs and customers will be linked to these networks in the cost of supply study.

Table 4

SWELLENDAM

			Table 1
NETWORK CONSTRUCTION			
PRIMARY DESCRIPTION	SECONDARY DESCRIPTION	NETWORK CODE	VOLTAGE
Reticulation	Reticulation urban	N4	11 KV
Retic/LV transf	Retic subs urban	N5	11 KV to 400 V
LV	LV urban	N6	400 V

The following comments in this respect:

The summary of electrical assets in the financial assets register was studied and the following found:

- The asset descriptions are not detailed enough: cable and line lengths not shown.
- No replacement values provided.

The technical asset register was then obtained and studied.

The summary of the technical asset register with replacement values are shown in Table 5.

Table 5

Row Labels	Count of FAR ID	Sum of Quantity	Sum of Escalated to 2023	Unit values	New CRC
Electrical	3711	262481.1054	R226 933 422		
MV networks	147	39 417	R39 634 324	R1 006	R91 319 225
Electrical infrastructure ;MV switching stations;DC systems;DC syst	1	1	R269 214	R269 214	R620 282
Electrical infrastructure ;MV switching stations;Electricity bulk met	1	1	R302 380	R302 380	R696 696
Electrical infrastructure ;MV switching stations;External facilities;E	1	60	R45 525	R759	R104 891
Electrical infrastructure ;MV switching stations;MV switching statio	3	3	R1 669 262	R556 421	R3 846 052
MV Switchgear;Feeder Panel;11kV;None	4	4	R1 586 528	R396 632	R3 655 430
MV Switchgear;Single Bus Bar;;	1	0	R17 560	#DIV/0!	R40 459
MV Switchgear;Single Bus Bar;11kV;1250A	9	9	R3 994 116	R443 791	R9 202 619
MV Switchgear;Single Bus Bar;11kV;630A	8	8	R2 813 373	R351 672	R6 482 135
Auto Recloser;;11kV	1	1	R195 350	R195 350	R450 094
MV conductors;MV cable;;11 Kv-185 mm ²	1	135	R607 349	R4 499	R1 399 358
MV conductors;MV cable;;11 Kv-35 mm ²	1	500	R627 125	R1 254	R1 444 924
MV conductors;MV cable;;11 Kv-95 mm ²	1	170	R163 346	R961	R376 356
MV conductors;MV overhead line;;11 Kv-Mink	1	200	R713 682	R3 568	R1 644 355
MV networks;MV conductors;MV cable;11 Kv-185 mm ²	1	120	R425 314	R3 544	R979 942
MV Overhead Line;11kV ABC;Aluminium (3 core);50mm	3	3101.530974	R2 608 479	R841	R6 010 051
MV Overhead Line;11kV ACSR;Aluminium (3 conductor);Fox	1	396.4326881	R46 218	R117	R106 488
MV Overhead Line;11kV ACSR;Aluminium (3 conductor);Gopher	1	273.4633327	R18 279	R67	R42 115
MV Overhead Line;11kV ACSR;Aluminium (3 conductor);Mink	24	19212.00738	R8 162 588	R425	R18 806 962
MV Overhead Line;11kV ACSR;Aluminium (3 conductor);Rabbit	1	456.2069199	R70 065	R154	R161 432
MV Overhead Line;11kV ACSR;Aluminium (3 conductor);Wolf	2	970.8383382	R781 418	R805	R1 800 422
MV Overhead Line;22kV ACSR;Aluminium (3 conductor);Fox	4	2974.534329	R732 624	R246	R1 687 999
MV Overhead Line;22kV ACSR;Aluminium (3 conductor);Gopher	12	6833.237522	R2 504 481	R367	R5 770 433
MV Overhead Line;22kV ACSR;Aluminium (3 conductor);Mink	2	397.9815734	R45 678	R115	R105 244
MV Overhead Line;ACSR;Aluminium (3 conductor);ACSR	2	984	R207 569	R211	R478 249
MV Overhead Line;Overhead line;11 Kv;Mink	3	1190	R573 805	R482	R1 322 073
Electrical infrastructure ;MV networks;MV conductors;MV conduct	4	1361	R2 621 553	R1 926	R6 040 172
Electrical infrastructure ;MV networks;MV network equipment;MV	3	3	R528 568	R176 189	R1 217 843
Ring Main Unit;1 Way;11kV;400A	2	2	R290 568	R145 284	R669 481
Ring Main Unit;1 Way;11kV;630A	19	19	R2 602 913	R136 995	R5 997 226
Ring Main Unit;1 Way;11kV;90A	15	15	R1 871 210	R124 747	R4 311 350
Ring Main Unit;3 Way;11kV;630A	14	14	R2 351 243	R167 946	R5 417 366
Ring Main Unit;4 Way;11kV;630A	1	1	R186 943	R186 943	R430 725
					R0
MV/LV transformation	218	26 544	R104 623 813	R3 941	R241 057 869
Battery Tripping Unit;;30Vdc	2	2	R13 714	R6 857	R31 597
Battery Tripping Unit;None;None;None	1	1	R52 989	R52 989	R122 088
Buildings;Buildings;;Building (brick/mortar)	1	76.5872	R1 648 755	R21 528	R3 798 805
Distribution Transformer;Ground Mounted;11kV/400V;160kVA	1	1	R81 231	R81 231	R187 161
Distribution Transformer;Ground Mounted;11kV/400V;200kVA	3	3	R471 287	R157 096	R1 085 866
Distribution Transformer;Ground Mounted;11kV/400V;300kVA	2	2	R793 307	R396 654	R1 827 814
Distribution Transformer;Ground Mounted;11kV/400V;315kVA	1	1	R25 243	R25 243	R58 161
Distribution Transformer;Ground Mounted;11kV/400V;400kVA	1	1	R263 997	R263 997	R608 260
Distribution Transformer;Ground Mounted;11kV/400V;500kVA	4	4	R739 905	R184 976	R1 704 774
Distribution Transformer;Ground Mounted;11kV/400V;50kVA	1	1	R138 665	R138 665	R319 490
Distribution Transformer;Ground Mounted;22kV/400V;100kVA	2	2	R554 392	R277 196	R1 277 343
Distribution Transformer;Ground Mounted;22kV/400V;150kVA	1	1	R182 879	R182 879	R421 362
Distribution Transformer;Ground Mounted;22kV/400V;200kVA	3	3	R571 454	R190 485	R1 316 655
Distribution Transformer;Ground Mounted;22kV/400V;315kVA	1	1	R131 406	R131 406	R302 765
Distribution Transformer;Ground Mounted;22kV/400V;500kVA	2	2	R1 562 270	R781 135	R3 599 539
Distribution Transformer;Ground Mounted;None;EarthMat	1	1	R18 785	R18 785	R43 282
Distribution Transformer;Pole Mounted;11kV/230V;10kVA	1	1	R43 461	R43 461	R100 137
Distribution Transformer;Pole Mounted;11kV/230V;5kVA	2	2	R233 082	R116 541	R537 032
Distribution Transformer;Pole Mounted;11kV/400V;100kVA	23	23	R2 186 795	R95 078	R5 038 472
Distribution Transformer;Pole Mounted;11kV/400V;150kVA	3	3	R356 425	R118 808	R821 219
Distribution Transformer;Pole Mounted;11kV/400V;200kVA	10	10	R1 629 909	R162 991	R3 755 381
Distribution Transformer;Pole Mounted;11kV/400V;25kVA	3	3	R238 479	R79 493	R549 466
Distribution Transformer;Pole Mounted;11kV/400V;315kVA	7	7	R554 317	R79 188	R1 277 170
Distribution Transformer;Pole Mounted;11kV/400V;400kVA	3	3	R437 503	R145 834	R1 008 027
Distribution Transformer;Pole Mounted;11kV/400V;500kVA	3	3	R580 520	R193 507	R1 337 544
Distribution Transformer;Pole Mounted;11kV/400V;50kVA	9	9	R1 094 846	R121 650	R2 522 573
Distribution Transformer;Pole Mounted;11kV/400V;75kVA	1	1	R49 451	R49 451	R113 937
Distribution Transformer;Pole Mounted;22kV/400V;100kVA	6	6	R818 201	R136 367	R1 885 170
Distribution Transformer;Pole Mounted;22kV/400V;200kVA	3	3	R155 068	R51 689	R357 285
Distribution Transformer;Pole Mounted;22kV/400V;25kVA	1	1	R216 232	R216 232	R498 207
Distribution Transformer;Pole Mounted;22kV/400V;315kVA	1	1	R48 499	R48 499	R111 743
Distribution Transformer;Pole Mounted;22kV/400V;50kVA	3	3	R103 828	R34 609	R239 225
Electrical infrastructure ;MV networks;MV mini-substations;MV mi	1	1	R396 554	R396 554	R913 678
Electrical infrastructure ;MV networks;MV transformers;MV transf	1	1	R137 010	R137 010	R315 677
External facilities;Fencing;;Wire fence	1	202.2272	R387 450	R1 916	R892 701
External facilities;Gabions;;Gabions	1	46	R425 058	R9 240	R979 353
External facilities;Wall;;Brick wall	1	25	R29 928	R1 197	R68 956
Mini Substation;With RMU;11kV/400V;200kVA	6	6	R3 084 386	R514 064	R7 106 560
Mini Substation;With RMU;11kV/400V;315kVA	17	17	R5 596 950	R329 232	R12 895 620
Mini Substation;With RMU;11kV/400V;400kVA	3	3	R946 009	R315 336	R2 179 646
Mini Substation;With RMU;11kV/400V;500kVA	7	7	R1 233 960	R176 280	R2 843 099
Mini Substation;Without RMU;11kV/400V;315kVA	5	5	R641 388	R128 278	R1 477 787
Mini Substation;Without RMU;22kV/400V;200kVA	1	1	R471 068	R471 068	R1 085 361
Mini Substation;Without RMU;22kV/400V;315kVA	1	1	R934 982	R934 982	R2 154 240
Mini Substation;Without RMU;22kV/400V;500kVA	1	1	R70 827	R70 827	R163 190
Minisub;11 Kv;With / Without RMU;400 Kva	2	2	R1 017 558	R508 779	R2 344 498
MV transformers;MV transformer;;Pole mounted transformer-11	1	1	R299 363	R299 363	R689 744
MV Underground Cable;11kV PILC;Copper (3 core);16mm	1	57.80243875	R29 757	R515	R68 561
MV Underground Cable;11kV PILC;Copper (3 core);185mm	1	300	R935 376	R3 118	R2 155 148
MV Underground Cable;11kV PILC;Copper (3 core);25mm	2	268.6556405	R539 353	R2 008	R1 242 693
MV Underground Cable;11kV PILC;Copper (3 core);35mm	18	8526.248069	R13 245 447	R1 553	R30 518 093
MV Underground Cable;11kV PILC;Copper (3 core);50mm	2	412.4360804	R990 905	R2 403	R2 283 089
MV Underground Cable;11kV PILC;Copper (3 core);70mm	13	10507.17056	R28 523 399	R2 715	R65 719 167
MV Underground Cable;11kV PILC;Copper (3 core);95mm	6	5250.275179	R26 450 725	R5 038	R60 943 634
MV Underground Cable;Cable;11 Kv;35 mm ²	1	200	R169 712	R849	R391 023
Other Assets;Fencing;;Wire Fence	3	142	R9 619	R68	R22 163
Other Assets;Small Building;;Brick-Mortar	9	361	R731 231	R2 026	R1 684 788
Transformer;Pole mounted transformer;11 Kv;500 Kva	2	2	R580 704	R290 352	R1 337 968
Electrical infrastructure ;MV substations;Electricity bulk meters;Ele	2	2	R17 700	R8 850	R40 782
MV mini-substations;MV transformer;;315 Kva	1	1	R712 029	R712 029	R1 640 547
MV substations;Electricity bulk meters;Electricity bulk meter;Meter	1	1	R11 536	R11 536	R26 579
MV substations;Pavements;Road surface;Pavers	1	12	R6 933	R578	R15 975

Row Labels	Count of FAR ID	Sum of Quantity	Sum of Escalated to 2023	Unit values	New CRC
LV network	576	93 184	R45 655 208		R490 R105 191 607
LV conductors ;LV overhead line;;Aerial bundled cable;95 mm ²	1	120	R16 794	R140	R38 695
LV networks;LV conductors ;LV cable;6 mm ²	4	62.82	R21 395	R341	R49 294
LV networks;LV conductors ;LV cable;70 mm ²	4	62.82	R131 642	R2 096	R303 308
LV networks;LV conductors ;LV overhead line;Aerial bundled cable	15	949.9	R1 089 792	R1 147	R2 510 929
LV Overhead Line;Overhead line;Aerial bundled cable;35 mm ²	2	450	R91 556	R203	R210 948
LV Overhead Line;Overhead line;Aerial bundled cable;50 mm ²	3	650	R316 601	R487	R729 464
LV Overhead Line;Overhead line;Aerial bundled cable;70 mm ²	291	51093.04	R18 678 348	R366	R43 035 735
LV Overhead Line;Overhead line;Aerial bundled cable;95 mm ²	6	2326	R929 776	R400	R2 142 245
LV Overhead Line;Overhead line;Aluminium;Hare	104	23556.74	R15 811 078	R671	R36 429 419
LV Overhead Line;Overhead line;Copper;45mm ²	1	70	R47 946	R685	R110 469
LV Overhead;Copper;;10mm ² Cu Airdac	1	1295	R238 100	R184	R548 593
LV Underground Cable;Cable;;	2	0	R3 290 647	#DIV/0!	R7 581 797
LV Underground Cable;Cable;Copper;70 mm ²	131	11530.15	R4 031 302	R350	R9 288 298
LV Underground Cable;PVC.SWA;Copper (3 core);?	1	0	R490 344	#DIV/0!	R1 129 774
Electrical infrastructure ;LV networks;LV conductors ;LV conductors	10	1018	R469 886	R462	R1 082 638
				#DIV/0!	R0
Consumer connections	3346	196519.47	R25 570 851	R130	R58 916 365
Electrical Sleeves	127	0	R1 657 974	#DIV/0!	R3 820 046
Electrical Sleeves	8	0	R252 031	#DIV/0!	R580 691
Electrical Sleeves	2	0	R97 858	#DIV/0!	R225 470
Electrical Sleeves	2	0	R203 921	#DIV/0!	R469 844
Electrical Sleeves	1	0	R151 691	#DIV/0!	R349 502
Consumer Connection Cable;Airdac;Copper (2 core);10mm	3	92450	R4 954 245	R54	R11 414 799
Consumer Connection Cable;Not Applicable;;	142	0	R1 403 957	#DIV/0!	R3 234 778
Consumer Connection Point;;;Cable and Meter	6	560	R2 100 607	R3 751	R4 839 891
Consumer Connection Point;;;Meter	4	5323	R11 308 115	R2 124	R26 054 395
Consumer Connection Point;None;None;Meter	1	1	R8 256	R8 256	R19 023
Electrical infrastructure ;LV networks;Municipal service connection	2	463	R87 059	R188	R200 589
Electrical Plant;Boards;;Distribution Board	2	2	R348 863	R174 431	R803 795
LV networks;Municipal service connections;LV kiosk;Distrubution k	3	3	R163 794	R54 598	R377 388
Municipal Service Connections;Consumer Connection;;Consumer (	5	574	R2 315 423	R4 034	R5 334 836
Municipal Service Connections;Kiosk;;Distribution kiosk	118	118	R333 264	R2 824	R767 854
Municipal Service Connections;Kiosk;None;Distrubution kiosk	1	1	R96 402	R96 402	R222 114
Pillar Box;;	1	1	R87 390	R87 390	R201 350
				#DIV/0!	R0
Public lights	2 342	3 839	R11 449 227	R2 982	R26 379 522
Sports Ground;Other Assets;Lighting;Spotlight	104	104	R105 179	R1 011	R242 336
Sports Ground;Other Assets;Lighting;Spotlight Stand	26	312	R2 208 750	R7 079	R5 089 057
Streetlight;Street light;;Main street light - Double	3	3	R19 027	R6 342	R43 840
Streetlight;Street light;;Main street light - Single	204	204	R1 037 573	R5 086	R2 390 613
Streetlight;Street light;;Network pole light	1332	1373	R1 601 323	R1 166	R3 689 518
Streetlight;Street light;;Standard street light	655	709	R3 470 326	R4 895	R7 995 784
TBD;Streetlights;;Network pole light	1	0	R189 415	#DIV/0!	R436 421
Electrical infrastructure ;LV networks;Public lighting;Public lighting	3	1120	R2 762 473	R2 466	R6 364 859
LV networks;Public lighting;Streetlights;Network pole light-LED	14	14	R55 161	R3 940	R127 094
					R0
			R226 933 422		R522 864 588
Grand Total	3711	262481.1054	R226 933 422		R522 864 588

The replacement per units values were tested and found to be too low. The CRC values were thus doubled to obtain more reasonable values.

The depreciation and ROA making up the total Capital revenue requirement is shown in Table 6.

Table 6

Sum of Quantity	Sum of Quantity	Service connection	Meter Incl Inst	Current Replacement cost	Life expectanc y Years	CRC Depreciation	ROA @ 3.5%	Total Capex provision	Current Depreciation	Current Interest	Total current provision	Capital ratios
Energy					15	-	-	-	-	-	-	0.0%
HV					50	-	-	-	-	-	-	0.0%
HV/MV					50	-	-	-	-	-	-	0.0%
MV	39 417			91 319 225	45	2 029 316	3 196 173	5 225 489	136 114	91 346	227 460	11.9%
MV to LV	26 544			241 057 869	40	6 026 447	8 437 025	14 463 472	404 216	241 129	645 345	33.7%
LV	93 184			105 191 607	35	3 005 474	3 681 706	6 687 181	201 588	105 223	306 811	16.0%
1 PH kWh Pre-paid	7 838	8 000	1 400	73 679 550	10	7 367 955	2 578 784	9 946 739	494 196	73 701	567 898	29.7%
3 PH kWh Pre-paid	74	10 000	2 500	930 208	10	93 021	32 557	125 578	6 239	930	7 170	0.4%
1 PH kWh	832	6 000	1 000	5 824 000	30	194 133	203 840	397 973	13 021	5 826	18 847	1.0%
3 Ph kWh	442	10 000	2 000	5 304 000	30	176 800	185 640	362 440	11 859	5 306	17 164	0.9%
3 TOU	35	20 000	10 000	1 050 000	30	35 000	36 750	71 750	2 348	1 050	3 398	0.2%
3 PH TOU & ct's	5	12 000	15 000	135 000	30	4 500	4 725	9 225	302	135	437	0.0%
TOU RMU & CT/VT's	1	450 000	20 000	470 000	30	15 667	16 450	32 117	1 051	470	1 521	0.1%
TOU at HV sub With CB	1	950 000	20 000	970 000	30	32 333	33 950	66 283	2 169	970	3 139	0.2%
Streetlight	3 839			26 379 522	15	1 758 635	923 283	2 681 918	117 958	26 387	144 346	7.5%
TOTALS	26 682			552 310 981		20 739 281	18 338 729	41 914 156	1 391 061	524 119	1 915 180	100.0%

The following in this respect:

- CRC depreciation – Calculated using the NERSA prescribed life expectancy.
- ROA - Return on Assets. The 3.5% is a real rate return considered internationally acceptable. This component is to cover the average cost of capital, including interest and return.

The process followed is to calculate the total capital provision as by international standards (depreciation plus ROA also called levelised cost) and then the ratio of these provisions relative to the total provision. Then

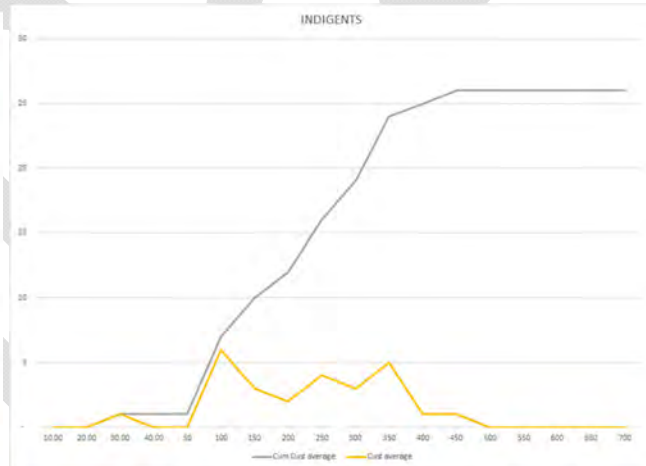
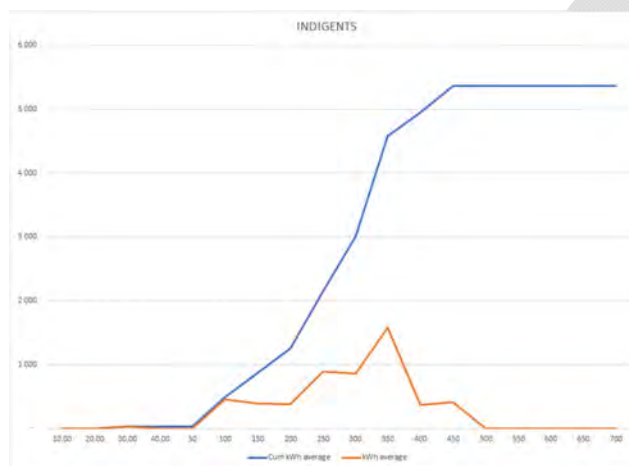
apportion the current total provision (depreciation and interest) to the various asset categories using these ratios. These values will be used as a basis for the cost of supply analysis.

6. CUSTOMER CONSUMPTION PATTERNS.

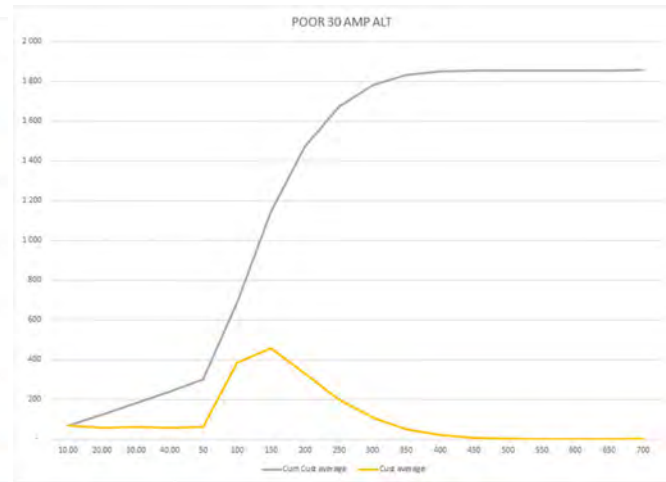
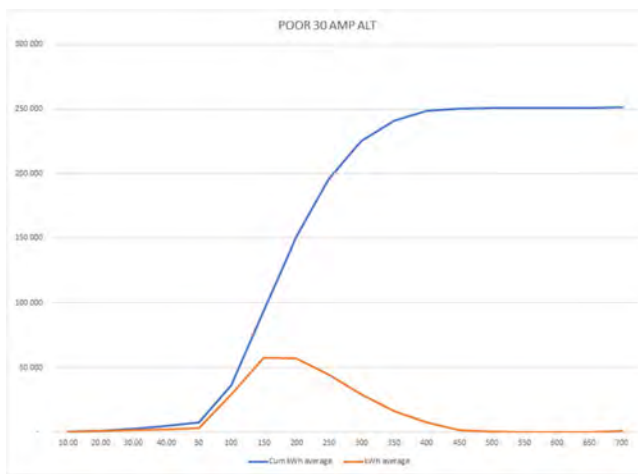
The sales are then analysed even further to determine the number of consumers per consumption block. This is important when deliberating about categorising consumers and developing appropriate tariff structures and consumer impact. The tables and graphs below show a section of the analysis for each of the prepayment small consumer tariffs. In case of each tariff the graphs after each table illustrates this graphically:

- The first graphs show:
 - the cumulative kWh vs each kWh block. (vertical axis)
 - the kWh per kWh block (horizontal axis)
- The second graphs show:
 - the cumulative consumers vs each kWh block. (vertical axis)
 - the consumers per kWh block. (horizontal axis)

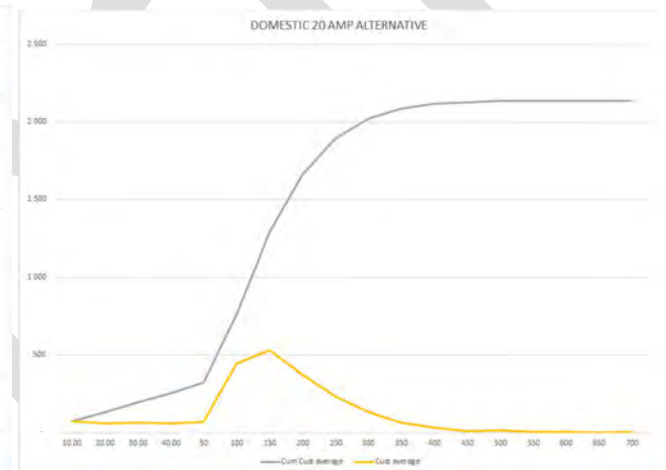
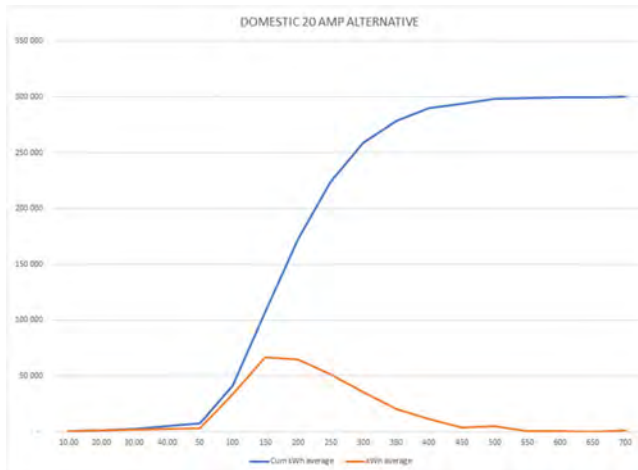
1. INDIGENT Average																			
	10.00	20.00	30.00	40.00	50	100	150	200	250	300	350	400	450	500	550	600	650	700	
Cum kWh a	-	-	27	27	27	482	871	1 250	2 145	3 003	4 577	4 947	5 362	5 362	5 362	5 362	5 362	5 362	
kWh avera	-	-	27	-	-	455	389	378	895	858	1 574	370	414	-	-	-	-	-	
Cum Cust a	-	-	1	1	1	7	10	12	16	19	24	25	26	26	26	26	26	26	
Cust avera	-	-	1	-	-	6	3	2	4	3	5	1	1	-	-	-	-	-	
Block	50	350	600	> 600	Check	Check	BREAKEVEN			Amps	20	30.00	40.00	50.00	60.00	70.00	120.00	150.00	180.00
kWh/y	322	54 602	9 415	0	5 362	-	-	-	-	-	550.00	650.00	800.00	950.00	1 050.00	1 200.00	1 700.00	2 100.00	2 500.00
1. INDIGENT - 1 Fase 20A - Geen Dagtarief										Customers	26	-	-	-	-	-	-	-	-



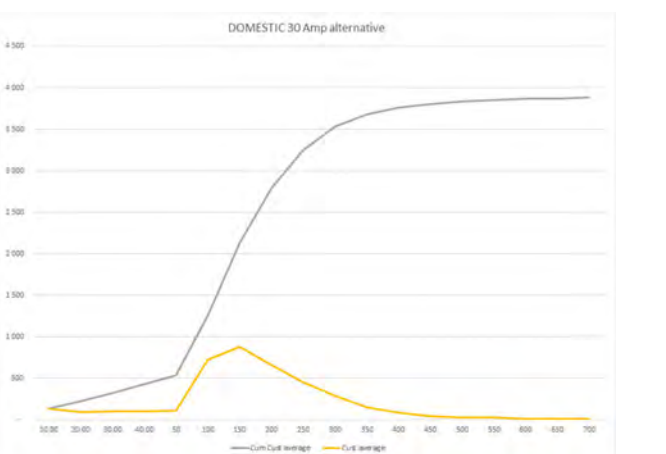
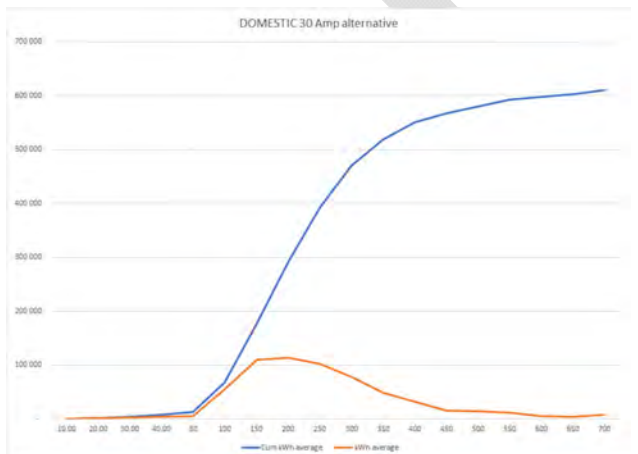
2. POOR 1- Average																			
	10.00	20.00	30.00	40.00	50	100	150	200	250	300	350	400	450	500	550	600	650	700	
Cum kWh a	172	955	2446	4451	7233	36351	93924	151152	195837	225150	241092	248507	250165	250645	250645	250645	250645	251331	
kWh avera	172	783	1490	2006	2782	29117	57574	57228	44685	29313	15942	7415	1658	481	-	-	-	686	
Cum Cust a	66	122	182	238	300	685	1143	1474	1674	1781	1831	1851	1855	1856	1856	1856	1856	1857	
Cust avera	66	56	60	56	62	385	458	331	200	107	50	20	4	1	-	-	-	1	
Block	50	350	600	> 600	Check	Check	BREAKEVEN			Amps	20	30.00	40.00	50.00	60.00	70.00	120.00	150.00	180.00
kWh/y	86800	2806301	114642	18169	252159	-	-	-	-	-	550.00	650.00	800.00	950.00	1050.00	1200.00	1700.00	2100.00	2500.00



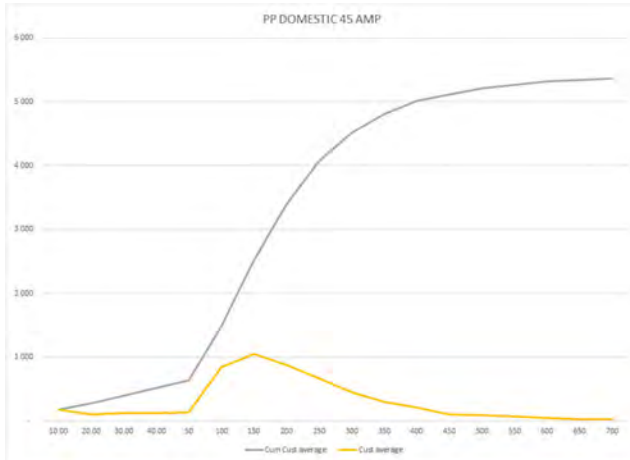
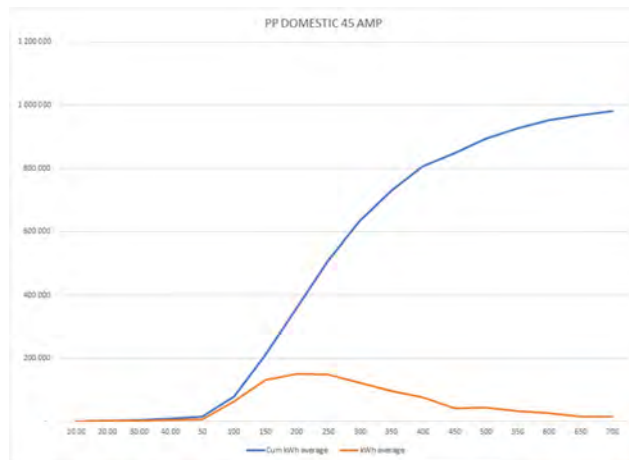
4. HUISHOUDELIK - 1 Fase 20A Alternatieve tarief																			
	10.00	20.00	30.00	40.00	50	100	150	200	250	300	350	400	450	500	550	600	650	700	
Cum kWh a	194	1 002	2 569	4 688	7 658	41 344	107 638	172 197	223 764	259 060	278 888	290 110	293 868	298 704	299 227	299 788	299 788	300 475	
kWh avera	194	809	1 567	2 119	2 970	33 686	66 294	64 559	51 567	35 296	19 828	11 221	3 759	4 835	523	561	-	686	
Cum Cust a	73	131	194	253	319	762	1 291	1 664	1 895	2 024	2 086	2 116	2 125	2 135	2 136	2 137	2 137	2 138	
Cust avera	73	58	63	59	66	443	529	373	231	129	62	30	9	10	1	1	-	1	
Block	50	350	600	> 600	Check	Check	BREAKEVEN			Amps	20	30.00	40.00	50.00	60.00	70.00	120.00	150.00	180.00
kWh/y	91 897	3 254 762	250 801	18 169	301 302	-				kWh/m	550.00	650.00	800.00	950.00	1 050.00	1 200.00	1 700.00	2 100.00	2 500.00
4. HUISHOUDELIK - 1 Fase 20A Alternatieve tarief																			
									Customers	2 136	1	1	1	-	-	-	-	-	



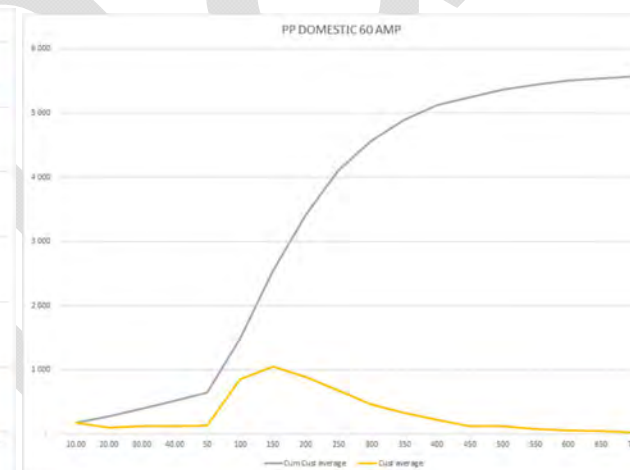
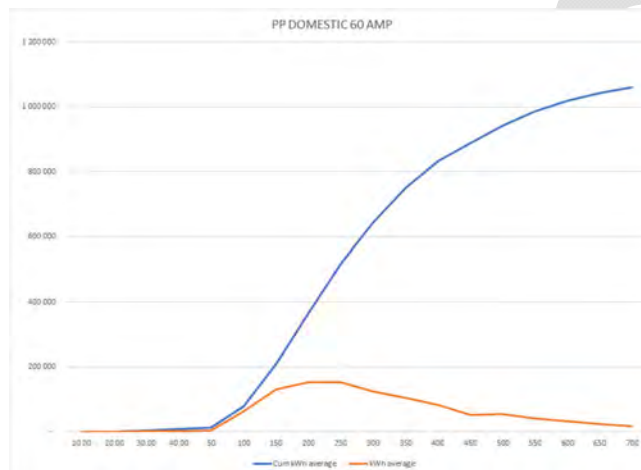
6. HUISHOUDELIJK - 1 Fase 30A Alternatieve tarief																		
	10.00	20.00	30.00	40.00	50	100	150	200	250	300	350	400	450	500	550	600	650	700
Cum kWh a	426	1 689	4 200	7 772	12 602	67 639	177 522	291 567	393 003	470 711	519 301	550 794	566 752	580 572	592 704	598 463	602 865	610 282
kWh averag	426	1 263	2 511	3 572	4 830	55 037	109 883	114 045	101 436	77 708	48 590	31 493	15 958	13 820	12 132	5 759	4 402	7 417
Cum Cust a	133	222	323	424	532	1 255	2 135	2 791	3 246	3 530	3 681	3 765	3 803	3 832	3 855	3 865	3 872	3 883
Cust averag	133	89	101	101	108	723	880	656	455	284	151	84	38	29	23	10	7	11
Block	50	350	600	> 600	Check	Check	BREAKEVEN	Amps	20	30.00	40.00	50.00	60.00	70.00	120.00	150.00	180.00	
kWh/y	151 227	6 080 384	1 002 773	342 655	631 420	-		kWh/m	550.00	650.00	800.00	950.00	1 050.00	1 200.00	1 700.00	2 100.00	2 500.00	
6. HUISHOUDELIJK - 1 Fase 30A Alternatieve tarief									Customers	3 855	17	18	9	1	1	4	-	-



7. HUISHOUDLIJK - 1 Fase 45A + Dagtarief																		
	10.00	20.00	30.00	40.00	50	100	150	200	250	300	350	400	450	500	550	600	650	700
Cum kWh	475	1 911	4 850	8 950	14 609	79 125	209 827	361 689	509 892	633 222	729 545	806 486	848 828	892 946	926 037	952 491	967 520	982 385
kWh avera	475	1 436	2 939	4 100	5 659	64 516	130 702	151 862	148 203	123 330	96 323	76 940	42 342	44 118	33 091	26 454	15 029	14 865
Cum Cust	173	274	394	510	637	1 483	2 529	3 399	4 061	4 511	4 809	5 015	5 115	5 208	5 271	5 317	5 341	5 363
Cust avera	173	101	120	116	127	846	1 046	870	662	450	298	206	100	93	63	46	24	22
Block	50	350	600	> 600	Check	Check	BREAKEVEN		Amps	20	30.00	40.00	50.00	60.00	70.00	120.00	150.00	180.00
kWh/y	175 312	8 579 229	2 855 704	800 302	1 034 212	-			kWh/m	550.00	650.00	800.00	950.00	1 050.00	1 200.00	1 700.00	2 100.00	2 500.00
7. HUISHOUDLIJK - 1 Fase 45A + Dagtarief																		
									Customers	5 271	70	43	19	8	5	4	-	-



8. HUISHOUDLIJK - 1 Fase 60A + Dagtarief																		
	10.00	20.00	30.00	40.00	50	100	150	200	250	300	350	400	450	500	550	600	650	700
Cum kWh	475	1 911	4 878	9 014	14 717	79 656	210 894	365 094	518 041	644 383	751 075	834 454	887 300	942 749	985 793	1 018 522	1 043 443	1 061 653
kWh avera	475	1 436	2 967	4 135	5 703	64 939	131 238	154 200	152 948	126 342	106 691	83 379	52 846	55 449	43 044	32 729	24 921	18 210
Cum Cust	174	275	396	513	641	1 492	2 542	3 425	4 108	4 569	4 899	5 122	5 247	5 364	5 446	5 503	5 543	5 570
Cust avera	174	101	121	117	128	851	1 050	883	683	461	330	223	125	117	82	57	40	27
Block	50	350	600	> 600	Check	Check	BREAKEVEN		Amps	20	30.00	40.00	50.00	60.00	70.00	120.00	150.00	180.00
kWh/y	176 606	8 836 290	3 508 422	1 191 036	1 142 696	-			kWh/m	550.00	650.00	800.00	950.00	1 050.00	1 200.00	1 700.00	2 100.00	2 500.00



This information is critical for the following:

- The fact that sales is already collected by Amp size makes this very useful.
- Determination of different tariff categories
- Determination of a subsidy tariff for the poor that are not indigent.
- Selecting consumers on appropriate tariffs.

This clearly shows that there are many poor consumers that use very little and probably can't afford more even if they are not indigent.

7. CUSTOMER / SALES / REVENUE ANALYSIS.

Before one can start classifying costs, some calculations need to be done which will be used in the classification process. It starts off with the analysis of customers, tariffs and revenue.

Final

Table 7

shows the 2022/2023 and 2023/2024 tariffs. The current tariffs are used to ensure that any restructuring that was done during the last tariff change is incorporated.

Final

Table 7

SWELLENDAM MUNISIPALITEIT		
2023 / 2024 FINANSIËLE JAAR	2022/2023	2023/2024
Gelde vir die verskaffing van elektrisiteit:	BTW Uigesluit	BTW Uigesluit
Huishoudings		
Voorafbetaalde meters		
vir hierdie huishoudings met konvensionele meters)		
Dom Deernis 1 fase 20 A		
Basiese Dagtarief		Geen / None
Blok 1: 0 - 50kWh (Gratis eenhede)	1.310	R1.507
Blok 2: 51 - 350kWh	1.681	R1.933
Blok 3: 351 - 600kWh	2.382	R2.739
Blok 4: >600kWh	2.812	R3.234
	-	
Gewone huishoudings	-	
Dom 1 Fase PP	-	
Dom 1 Fase PP 0-30A	-	
Basiese Dagtarief	4.474	R5.145
Blok 1: 0-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.701	R1.956
Blok 3: 351 - 600kWh	2.402	R2.762
Blok 4: >600kWh	2.842	R3.268
	-	
Dom 1 Fase PP 1-30A Alternatief	-	
Basiese Dagtarief		Geen / None
Blok 1: 0-50kWh	2.131	R2.451
Blok 2: 51 - 350kWh	2.262	R2.601
Blok 3: 351 - 600kWh	2.502	R2.877
Blok 4: >600kWh	2.962	R3.406
	-	
Dom 1 Fase PP 45A	-	
Basiese Dagtarief	8.195	R9.42
Blok 1: 0-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.701	R1.956
Blok 3: 351 - 600kWh	2.402	R2.762
Blok 4: >600kWh	2.842	R3.268
	-	
Dom 1 Fase PP 60A	8.190	
Basiese Dagtarief	8.195	R9.42
Blok 1: 0-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.701	R1.956
Blok 3: 351 - 600kWh	2.402	R2.762
Blok 4: >600kWh	2.842	R3.268
	-	
3 Fase	-	
Dom 3 Fase PP 21-60A	-	
Basiese Dagtarief	11.059	R12.72
Blok 1: 0-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.701	R1.956
Blok 3: 351 - 600kWh	2.402	R2.762
Blok 4: >600kWh	2.842	R3.268
	-	
Konvensionele Meters	-	
1 Fase	-	
Dom 1 Fase Kony 1-30A	-	
Basiese fooi per maand	215.391	R247.70
Blok 1B: 21-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.711	R1.968
Blok 3: 351 - 600kWh	2.411	R2.773
Blok 4: >600kWh	2.852	R3.280
	-	
Dom 1 Fase Kony 45A	-	
Basiese fooi per maand	416.417	R478.88
Blok 1B: 21-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.711	R1.968
Blok 3: 351 - 600kWh	2.411	R2.773
Blok 4: >600kWh	2.852	R3.280
	-	
Dom 1 Fase Kony 60A	-	
Basiese fooi per maand	416.417	R478.88
Blok 1B: 21-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.711	R1.968
Blok 3: 351 - 600kWh	2.411	R2.773
Blok 4: >600kWh	2.852	R3.280
	-	
3 Fase	-	
Dom 3 Fase Kony 21-30A	-	
Basiese fooi per maand	551.783	R634.55
Blok 1B: 21-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.711	R1.968
Blok 3: 351 - 600kWh	2.411	R2.773
Blok 4: >600kWh	2.852	R3.280
	-	
Dom 3 Fase Kony 31-100A	-	
Basiese fooi per maand	1 033.878	R1 188.96
Blok 1B: 21-50kWh	1.321	R1.519
Blok 2: 51 - 350kWh	1.711	R1.968
Blok 3: 351 - 600kWh	2.411	R2.773
Blok 4: >600kWh	2.852	R3.280

SWELLENDAM MUNISIPALITEIT		
2023 / 2024 FINANSIËLE JAAR	2022/2023	2023/2024
Gelde vir die verskaffing van elektrisiteit:	BTW Uigesluit	BTW Uigesluit
Kommersiële Verbruikers		
Besighede, kantoorgeboue, hotelle, B&B's, klubs (uitgesluit portklubs), tydelike aansluitings met 'n breker van meer as 60A vir enkel fase of 100A vir drie fase.		
Vooruitbetaalde Meters		
1 Fase		
Komm 1 Fase PP 30A		
Basiese Dagtarief	5 122	R5.89
Energie	2 752	R3.165
	-	
Komm 1 Fase PP 60A - 80A		
Basiese Dagtarief	5 124	R5.89
Energie	2 912	R3.349
	-	
3 Fase		
Komm 3 Fase PP 60A - 80A		
Basiese Dagtarief	5 122	R5.89
Energie	2 912	R3.349
	-	
Konvensionele Meters		
1 Fase		
Komm 1 Fase Konv 20-30Amp		
Basiese fooi per maand	344.678	R396.38
Energie	2 502	R2.877
	-	
Komm 1 Fase Konv 31-60Amp		
Basiese fooi per maand	639.104	R734.97
Energie	2 431	R2.796
	-	
3 Fase		
Komm 3 Fase Konv 20-30Amp		
Basiese fooi per maand	827.730	R951.89
Energie	2 251	R2.589
	-	
Komm 3 Fase Konv 31-60Amp		
Basiese fooi per maand	1 641.165	R1 887.34
Energie	2 251	R2.589
	-	
Komm 3 Fase Konv 61-100Amp		
Basiese fooi per maand	2 732.722	R3 142.63
Energie	2 211	R2.543
	-	
Grootmaatsdienste		
Normale grootmaatsdienste		
Basies heffing per maand	947.878	R1 090.06
Netwerk vraag heffing (KVA)	296.470	R340.94
Netwerk beskikbaarheid heffing (KVA)	30.557	R35.14
Energie heffing	1.181	R1.358
	-	
Time of Use		
Basies heffing per maand	947.878	R1 090.06
Netwerk vraag heffing (KVA)	55.017	R63.27
Netwerk beskikbaarheid heffing (KVA)	42.870	R49.30
Energie heffing	-	
Hoë aanvraag (Junie tot Augustus)	-	
Piek-tye	5.284	R6.077
Standaard	1.691	R1.945
Buite piek-tye	0.980	R1.127
Lae aanvraag	-	
Piek-tye	1.821	R2.094
Standaard	1.301	R1.496
Buite piek-tye	0.870	R1.001
Reaktiewe elektrisiteit fooi (R / kvarh)	0.210	R0.242
	-	
Ander elektrisiteitstariewe		
Straatligte	-	
	2.231	R2.566
Sportgronde	-	
Sportgronde 0-30Amp	2.752	R3.165
Sportgronde 31-60Amp	2.752	R3.165
	-	
Skougronde	2.982	R3.429
	-	
Drostdy Water Meul	2.752	R3.165
	-	
Skole	-	
Skole 31-60Amp 1 fase	-	
Basiese fooi per maand	387.774	R445.94
Energie	2.682	R3.084
	-	
Skole 31-60Amp 3 fase	-	
Basiese fooi per maand	1 027.522	R1 181.65
Energie	2 502	R2.877
	-	
Skole 61-100Amp 3 Fase	-	
Basiese fooi per maand	2 732.913	R3 142.85
Energie	2.242	R2.578
	-	
Skole Sport gronde	2.752	R3.165
	-	
Munisipale verbruik		
Standaard Verbruik	2.231	R2.57
Munisipale grootmaatsdienste	-	
Basies heffing per maand	947.883	R1 090.07
Netwerk vraag heffing (KVA)	296.467	R340.94
Netwerk beskikbaarheid heffing (KVA)	30.557	R35.14
Energie heffing	1.181	R1.358
	-	
Beskikbaarheids fooie	234.58	R270.00

Table 8 shows the 2023/2024 tariff charges for purpose of calculations and assessment.

Table 8

SWELLEN DAM		CHARGES APPLICABLE FOR ALL MONTHS OF THE YEAR										24 114 302				8 034 086				HIGH SEASON CHARGES				LOW SEASON CHARGES				9 000									
year		2005/2007		2022/2023		TARIFF RATES		Access		MD (all hours)		ALL Energy		Block 1 kWh		Block 2 kWh		Block 3 kWh		Block 4 kWh		Energy Peak		Energy Standard		Energy Off-Peak		Reactive energy		MD (P&S)		Energy Peak		Energy Standard		Energy Off-Peak	
		Customer service		Basic		RkVA/m		RkVA/m		RkVA/m		R kWh		50 000		350 000		600 000		>600		ckWh		ckWh		ckWh		ckWh		ckWh		ckWh		ckWh			
TARIFF NAME		TARIFF CODE		RPO/Sm		RkVA/m		RkVA/m		RkVA/m		R kWh		50 000		350 000		600 000		>600		ckWh		ckWh		ckWh		ckWh		ckWh		ckWh		ckWh			
1. INDEKST - 1 Fase 20A - Geen Dagland																R 1 933		R 2 730		R 3 234																	
2. INDEKST - 1 Fase 20A - Konv.																R 2 451		R 2 730		R 3 234																	
3. HUSHOUDLIK - 1 Fase 20A Alternatieve tarief																R 2 001		R 2 877		R 3 400																	
4. POOR - 300A Alternatieve tarief																R 2 451		R 2 877		R 3 400																	
5. HUSHOUDLIK - 1 Fase 30A - Dagland																R 1 956		R 2 762		R 3 268																	
6. HUSHOUDLIK - 1 Fase 30A Alternatieve tarief																R 1 956		R 2 762		R 3 268																	
7. Konv 1 Fase Konv 120A																R 1 519		R 2 762		R 3 268																	
8. HUSHOUDLIK - 1 Fase 45A - Dagland																R 1 519		R 2 762		R 3 268																	
9. HUSHOUDLIK - 1 Fase 45A - Dagland																R 1 519		R 2 762		R 3 268																	
10. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
11. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
12. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
13. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
14. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
15. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
16. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
17. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
18. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
19. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
20. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
21. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
22. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
23. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
24. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
25. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
26. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
27. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
28. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
29. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
30. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
31. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
32. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
33. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
34. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
35. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
36. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
37. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
38. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
39. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
40. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
41. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
42. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
43. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
44. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
45. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
46. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
47. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
48. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
49. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
50. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
51. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
52. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
53. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
54. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
55. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
56. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
57. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
58. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
59. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
60. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
61. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
62. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
63. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
64. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
65. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
66. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	
67. HUSHOUDLIK - 1 Fase 60A - Dagland																R 1 519		R 2 762		R 3 268																	

Table 9

[illegible]

Table 10

SWELLENDAM		44 742		CONSUMPTION STATISTICS FOR CHARGES APPLICABLE FOR ALL MONTHS OF THE YEAR									
CONSUMPTION STATISTICS				POD's / customer		MD-kVA/Cust	LF (annual)	LF (ave month)	Ave consump.	% 1 st block energy Vs total energy	% 2 nd block energy Vs total energy	% 3 rd block energy Vs total energy	% 4 th block energy Vs total energy
TARIFF NAME	TARIFF CODE	kWh/cust/m	category	Ratio	%	%	%	%	kWh/cust/m	%	%	%	%
1 INDIGENT - 1 Fase 20A - Geen Dagtarief	0	183	20	-	-	-	-	-	183.0	25%	74%	1%	0%
1 INDIGENT - 1 Fase 20A - Konv	0	14	20	-	-	-	-	-	14.1	26%	68%	4%	2%
4 HUISHOUDELIK - 1 Fase 20A Alternatieve tarief	0	243.0	20	-	-	-	-	-	243.5	25%	69%	7%	3%
4 HUISHOUDELIK - 1 Fase 20A + Dagtarief	0	19	20	-	-	-	-	-	15.6	14%	68%	16%	1%
4 HUISHOUDELIK - 1 Fase 30A + Dagtarief	0	54	30	-	-	-	-	-	53.7	16%	63%	20%	1%
4 HUISHOUDELIK - 1 Fase 30A Alternatieve tarief	0	288	30	-	-	-	-	-	287.6	17%	65%	13%	4%
Dom 1 Fase Konv 1-30A	0	332	30	-	-	-	-	-	331.8	13%	20%	59%	8%
7 HUISHOUDELIK - 1 Fase 45A + Dagtarief	0	460	30	-	-	-	-	-	460.0	11%	55%	22%	13%
7 HUISHOUDELIK - 1 Fase 45A + Dagtarief	0	138	40	-	-	-	-	-	137.8	18%	78%	4%	0%
8 HUISHOUDELIK - 1 Fase 60A + Dagtarief	0	516	45	-	-	-	-	-	515.6	10%	50%	22%	18%
11 HUISHOUDELIK - 1 Fase 60 AMP Monthly Basic	0	168	50	-	-	-	-	-	167.9	16%	63%	20%	1%
Dom 1 Fase Konv 60A	0	487	45	-	-	-	-	-	487.2	9%	23%	47%	20%
9 HUISHOUDELIK - 3 F - 1/3 21A - 60A + Dagtarief	0	1932	150	-	-	-	-	-	1932.4	3%	17%	9%	71%
Dom 3 Fase Konv 21-30A	0	120	80	-	-	-	-	-	120.2	5%	14%	25%	57%
Dom 3 Fase Konv 31-100A	0	582	70	-	-	-	-	-	582.1	7%	17%	33%	44%
BESIGHEID - 1 Fase 20A + Dagtarief	0	292	20	-	-	-	-	-	292.1	0%	0%	0%	0%
Komm 1 Fase Konv 20-30Amp	0	354	30	-	-	-	-	-	353.6	0%	0%	0%	0%
BESIGHEID - 1 Fase 30A + Dagtarief	0	412	30	-	-	-	-	-	412.3	0%	0%	0%	0%
BESIGHEID - 1 Fase 45A + Dagtarief	0	413	30	-	-	-	-	-	412.9	0%	0%	0%	0%
Komm 1 Fase Konv 31-60Amp	0	346	30	-	-	-	-	-	345.8	0%	0%	0%	0%
BESIGHEID - 1 Fase 60A + Dagtarief	0	761	50	-	-	-	-	-	760.9	0%	0%	0%	0%
Komm 1 Fase Konv 30-100Amp	0	6	50	-	-	-	-	-	5.5	0%	0%	0%	0%
BESIGHEID - 3 Fase 60A + Dagtarief	0	1046	90	-	-	-	-	-	1045.7	0%	0%	0%	0%
BESIGHEID - 3 Fase 80A + Dagtarief	0	1084	120	-	-	-	-	-	1084.1	0%	0%	0%	0%
Komm 3 Fase Konv 20-30Amp	0	2043	120	-	-	-	-	-	2042.9	0%	0%	0%	0%
Komm 3 Fase Konv 31-60Amp	0	2038	120	-	-	-	-	-	2038.0	0%	0%	0%	0%
Komm 3 Fase Konv 61-100Amp	0	3825	240	-	-	-	-	-	3824.8	0%	0%	0%	0%
SPORT GRONDE 0A - 60A - Geen Dagtarief	0	297	50	-	-	-	-	-	297.3	0%	0%	0%	0%
Sportgronde 0-30Amp	0	471	30	-	-	-	-	-	471.2	0%	0%	0%	0%
Sportgronde 31-60Amp	0	1010	60	-	-	-	-	-	1009.6	0%	0%	0%	0%
Sportgronde	0	412	50	-	-	-	-	-	411.8	0%	0%	0%	0%
Drostdy Water Meul	0	56	30	-	-	-	-	-	56.3	0%	0%	0%	0%
Sko1e 31-60Amp 1 fase	0	3 919	60	-	-	-	-	-	3 915.8	0%	0%	0%	0%
Sko1e 31-60Amp 2 fase	0	5 367	300	-	-	-	-	-	5 367.0	0%	0%	0%	0%
Sko1e 61-100Amp 2 fase	0	412	60	-	-	-	-	-	411.8	0%	0%	0%	0%
Sko1e Sport gronde	0	4781	30	-	-	-	-	-	4 781.1	0%	0%	0%	0%
Standaard Verbruik: 20-30 1 phase	0	871	60	-	-	-	-	-	870.7	0%	0%	0%	0%
Standaard Verbruik: 30-60 2 phase	0	316	60	-	-	-	-	-	310.3	0%	0%	0%	0%
Standaard Verbruik: 60-100 1 phase	0	1 727	120	-	-	-	-	-	1 726.7	0%	0%	0%	0%
Munisipale grootaandienste	0	25 801	-	-	99.60	35.49%	46.13%	25 800.8	0%	0%	0%	0%	
Normale grootaandienste	0	16 980	-	-	55.92	41.60%	47.31%	16 980.2	0%	0%	0%	0%	
Bulk MV	247	426	-	-	1 292.50	-	30.16%	247 426.4	0%	0%	0%	0%	
TOU LV	0	13 114	0	-	205.00	6.09%	43.92%	13 114.4	0%	0%	0%	0%	
TOU MV	0	161 986	0	-	850.22	26.10%	29.88%	161 986.4	0%	0%	0%	0%	
Straatligte	0	36	0 410 46402	-	-	-	-	-	36.3	0%	0%	0%	0%
Besikbaarheid	0	3	3 09959597	-	-	3.07	8.00%	-	-	-	-	-	-

These values all makes sense and will thus be used as such.

Various reports had to be used to determine the sales per tariff. **Error! Reference source not found.** shows the sales for pre-payment consumers.

Table 13 shows the consumption per tariff block. This is obtained by calculation of the individual consumer monthly data.

Table 11

PREPAID SALES		Include basics and VAT								
Row Labels	Count of Meter No	Sum of Value	Sum of Units Purchased	Sum of Free Units	FBE/cut	Unit/cut	R/unit	R/cust/m	Customers	
1. INDIGENT - 1 Fase 20A - Geen	1	557	271	-	0	271.20	2.05	556.55	0	
1. INDIGENT - 1 Fase 20A - Geen Dagtarief	20 770	5 238 001	2 932 405	901 160	43.38757824	141.18	1.79	252.19	1 731	
10. HUISHOUELIK - 1 FASE 30 AMP Monthly Basic	12	6 893	4 050	-	0	337.47	1.70	574.38	1	
11. HUISHOUELIK - 1 FASE 60 AMP Monthly Basic	36	36 637	18 876	-	0	524.33	1.94	1 017.70	3	
12. DOM 3 PHASE - MONTHLY BASIC	12	21 870	9 934	-	0	827.85	2.20	1 822.52	1	
13. HUISHOUELIK 45 AMP - MONTHLY DAILY CHARGE	13	6 472	3 750	-	0	288.47	1.73	497.86	1	
2. POOR 1-30A Alternatieve tarief	3 218	1 224 729	574 502	73 210	22.75015538	178.53	2.13	380.59	268	
3. HUISHOUELIK - 1 Fase 20A + Dagtarief	12	6 770	4 095	-	0	341.23	1.65	564.14	1	
4. HUISHOUELIK - 1 Fase 20A Alternatieve tarief	18 655	7 815 577	3 705 034	371 970	19.93942643	198.61	2.11	418.95	1 555	
5. HUISHOUELIK - 1 Fase 30A + Dagtarief	138	72 184	41 579	80	0.579710145	301.29	1.74	522.93	12	
6. HUISHOUELIK - 1 Fase 30A Alternatieve tarief	14 901	9 020 089	4 299 447	1 330	0.00077912	206.89	2.29	050.08	1 240	
7. HUISHOUELIK - 1 Fase 45A + Dagtarief	2 660	2 400 418	1 228 741	-	0	461.93	1.95	902.41	222	
8. HUISHOUELIK - 1 Fase 60A + Dagtarief	3 757	3 939 023	1 938 969	-	0	516.10	2.03	1 048.45	313	
9. HUISHOUELIK - 3 Fase 21A - 60A + Dagtarief	42	161 009	62 347	-	0	1 484.45	2.58	3 833.55	4	
BESIGHEID - 1 Fase 20A + Dagtarief	113	90 656	33 005	-	0	292.08	2.75	802.26	9	
BESIGHEID - 1 Fase 30A + Dagtarief	641	722 380	264 294	50	0.07800312	412.31	2.73	1 126.96	53	
BESIGHEID - 1 Fase 45A + Dagtarief	180	204 268	74 323	-	0	412.91	2.75	1 134.82	15	
BESIGHEID - 1 Fase 60A + Dagtarief	677	1 497 822	515 127	-	0	760.90	2.91	2 212.44	56	
BESIGHEID - 3 Fase 60A + Dagtarief	432	1 330 317	451 758	-	0	1 045.74	2.94	3 079.44	36	
BESIGHEID - 3 Fase 80A + Dagtarief	427	1 363 467	462 895	-	0	1 084.06	2.95	3 193.13	36	
DO NOT USE 7. HUISHOUELIK - 1 Fase 45A + Dagtarief DO	1	1	1	-	0	0.70	1.24	0.87	0	
SPORT GRONDE 0A - 60A - Geen Dagtarief	74	60 450	22 001	-	0	297.31	2.75	816.89	6	
Grand Total	66 852	36 028 148	16 647 401	1 347 800	20.16095255	249.02	2.16	538.92	5 571	

Table 12

BLOCK SUMMARY PP	901 160	1 973 552	991 360	4 102	3870174.2
	50	350	600	> 600	Total
1. INDIGENT - 1 Fase 20A - Geen	959 256	1 973 552	32 104	4 102	2 969 014
2. POOR 1-30A Alternatieve tarief	154 741	389 491	28 302	1 968	574 502
4. HUISHOUELIK - 1 Fase 20A Alternatieve tarief	878 571	2 434 094	266 549	119 958	3 699 172
6. HUISHOUELIK - 1 Fase 30A Alternatieve tarief	733 041	2 797 269	581 952	187 185	4 299 447
7. HUISHOUELIK - 1 Fase 45A + Dagtarief	131395.2	673564	277393	146389.1	1 228 741
8. HUISHOUELIK - 1 Fase 60A + Dagtarief	186431	976436.7	437731.4	338370.1	1938969.2
9. HUISHOUELIK - 3 Fase 21A - 60A + Dagtarief	2 080	9 305	5 145	45 816	62 347
					14 772 192
1. INDIGENT - 1 Fase 20A - Geen	23.3%	51.0%	25.6%	0.1%	100.0%
2. POOR 1-30A Alternatieve tarief	26.9%	67.8%	4.9%	0.3%	100.0%
4. HUISHOUELIK - 1 Fase 20A Alternatieve tarief	23.8%	65.8%	7.2%	3.2%	100.0%
6. HUISHOUELIK - 1 Fase 30A Alternatieve tarief	17.0%	65.1%	13.5%	4.4%	100.0%
7. HUISHOUELIK - 1 Fase 45A + Dagtarief	10.7%	54.8%	22.6%	11.9%	100.0%
8. HUISHOUELIK - 1 Fase 60A + Dagtarief	9.6%	50.4%	22.6%	17.5%	100.0%
9. HUISHOUELIK - 3 Fase 21A - 60A + Dagtarief	3.3%	14.9%	8.3%	73.5%	100.0%

Table 13 shows the conventional consumer sales data including basic charges.

Table 13

Row Labels	Count of ACCOUNT	Sum of UNITS OR AMPS	Sum of AMOUNT	Err	Correct	kWh/cut/m
COM1	1 334	365 245	1 183 870	Customers	Customers	
20-30Amp	595	110 321	376 353	50	26	354
31-100Amp	2	66	459	0	1	6
31-60Amp	737	254 858	807 058	61	32	664
COM3	2 801	3 529 203	9 783 774	233		
20-30Amp	1 330	1 470 882	3 976 100	111	60	2 043
31-100Amp	3	287	2 167	0	0	
31-60Amp	868	1 002 389	2 809 046	72	41	2 037
61-100Amp	600	1 055 645	2 996 461	50	23	3 825
DOM1	29 942	3 870 562	9 755 466	2 495		
20-30Amp	15 042	1 689 362	4 014 317	1 254	391	360
31-60Amp	14 900	2 181 200	5 741 149	1 242	342	531
DOM3	2 727	602 477	1 948 932	227		
20-30Amp	451	126 328	378 749	38	13	810
31-100Amp	2 276	476 149	1 570 183	190	59	673
DROST	12	676	1 859	1		
20-30Amp	12	676	1 859	1	1	56
IND	10	1 689	2 888	1		
20-30Amp	6	1 130	1 932	1	6	16
31-60Amp	3	405	693	0	3	11
#N/A	1	154	263	0	1	13
MCOM3	10	600	8 270	1		
20-30Amp	10	600	8 270	1	1	50
MDOM1	50	7 742	18 087	4		
20-30Amp	50	7 742	18 087	4	1	645
MUNEL	913	1 200 673	2 677 501	76		
20-30Amp	80	344 242	767 660	7	6	4 781
31-100Amp	142	125 383	279 604	12	12	871
31-60Amp	69	26 565	59 240	6	7	316
#N/A	622	704 483	1 570 997	52	34	1 727
SHOW1	22	19 862	59 189	2		
61-100Amp	22	19 862	59 189	2	1	1 655
SKL3	216	475 150	1 303 004	18		
31-60Amp	144	281 939	771 992	12	6	3 916
61-100Amp	72	193 211	531 011	6	3	5 367
SKLSP	23	4 942	13 591	2		
31-60Amp	23	4 942	13 591	2	1	412
SPORT	64	46 039	126 607	5		
20-30Amp	52	33 924	93 291	4	6	471
31-60Amp	12	12 115	33 316	1	1	1 010
STR	731	515 596	1 149 779	61		
#N/A	731	515 596	1 149 779	61	NA	
Grand Total	38 855	10 640 456	28 032 817	3 238	1078	823

The domestic tariffs feature block rate and thus the quantities per block is required. This is not provided in summary form. The sales per block was then calculated from the individual consumer monthly data. A summary of these ratios are shown in Table 14 below.

Table 14

BLOCK SUMMARY CONVENTIONAL					
	50	350	600	> 600	Total
20-30Amp	441 223	1 144 869	62 565	40 705	1 689 362
31-60Amp	465 076	1 389 313	162 924	766 364	2 783 677
20-30Amp	20 825	58 182	8 515	38 806	126 328
31-100Amp	105 730	234 824	24 794	110 801	476 149
					5 075 516
-					
BLOCK SUMMARY CONVENTIONAL					
	50	350	600	> 600	Total
20-30Amp	26.1%	67.8%	3.7%	2.4%	100.0%
31-60Amp	16.7%	49.9%	5.9%	27.5%	100.0%
20-30Amp	16.5%	46.1%	6.7%	30.7%	100.0%
31-100Amp	22.2%	49.3%	5.2%	23.3%	100.0%

Table 15 provides details of the Bulk loads and

Table 16 including public lighting. The following should be noted in this respect:

- The municipality provides the energy to all the other public lights.
- The municipality provides maintenance to all the public lights.

Table 15

Row Labels	Count of ACCOUNT	Sum of UNITS OR AMPS	Sum of AMOUNT	Consumers	Correct
MNETW	58	5 976	182 447	5	Consumers
KVA	58	5 976	182 447	5	5
NETWC	365	38 324	1 170 032	30	
KVA	365	38 324	1 170 032	30	34
TOM	12	282 282	333 093	1	
kWh	12	282 282	333 093	1	
kWh	375	9 614 772	11 345 431	31	
kWh	375	9 614 772	11 345 431	31	
MkWh	48	1 548 050	1 826 699	4	
kWh	48	1 548 050	1 826 699	4	
Grand Total	858	11 489 404	14 857 702	72	

Basic and demand is swapped							
Row Labels	Count of ACCOUNT	Sum of UNITS OR AMPS	Sum of AMOUNT		Customers	Ave MD	R/unit
Basic	412	33547	9936956.87				
BUSIN	256	13534	4008906.14	24118.827	21	52.87	296.21
GOV	29	882	261257.22	296.21	2	30.41	296.21
HOSP	24	2116	626780.36		2	88.17	296.21
IND	8	13487	3994984.27		1	1 685.88	296.21
LA	2	77	22808.17		0	38.50	296.21
LIND	12	1062	314575.02		1	88.50	296.21
OLD	12	1104	327015.84		1	92.00	296.21
OTHER	24	489	144846.69		2	20.38	296.21
SCHOO	24	699	207050.79		2	29.13	296.21
SRES	21	97	28732.37		2	4.62	296.21
Demand	414	474	409204.59		35		
BUSIN	258	318	261463.23		22	1.23	822
GOV	29	29	27464.74		2	1.00	947.06
HOSP	24	24	22729.44		2	1.00	947.06
IND	8	8	7576.48		1	1.00	947.06
LA	2	2	1894.12		0	1.00	947.06
LIND	12	12	11364.72		1	1.00	947.06
OLD	12	12	11364.72		1	1.00	947.06
OTHER	24	24	22729.44		2	1.00	947.06
SCHOO	24	24	22729.44		2	1.00	947.06
SRES	21	21	19888.26		2	1.00	947.06
Grand Total	826	34021	10346161.46		69		

Itemised Billing Data, January, 2022
39. Southern Oil Ltd. - TOU



TOU DETAILS LV

BILL DATE	Tariff Code	PEAK	STANDARD	OFF PEAK	TOTAL	DEMAND	NAC	REACTIVE	ADMIN	TOTAL	Customers							
		kWh	Amount	kWh	Amount	kWh	Amount	kVar	Amount	Amount								
2022-07-15		3 137	R15 926.16	8 560	R13 936	11 175	R10 582	22 872	R40 445	87	R2 290	1 355	R277	R1 795	R70 076	0		
2022-08-15		3 614	R19 082.98	9 758	R16 491	14 461	R14 172	27 833	R49 746	46	R2 507	1 535	R322	R1 894	R79 739	0		
2022-09-15		4 362	R16 595.59	10 822	R16 532	12 887	R11 999	28 071	R45 126	100	R2 738	1 684	R354	R1 894	R75 381	0		
2022-10-15		3 632	R6 610.39	8 904	R11 575	10 760	R9 362	23 297	R27 547	51	R2 788	1 786	R375	R1 894	R57 874	0		
2022-11-15		4 073	R7 413.59	11 005	R14 306	14 860	R12 928	29 938	R34 648	66	R3 645	2 860	R601	R1 894	R66 057	0		
2022-12-15		4 129	R7 515.44	10 325	R13 422	12 380	R10 771	26 835	R31 709	65	R3 552	2 904	R610	R1 894	R63 035	0		
2023-01-16		3 575	R6 506.14	10 170	R13 221	13 400	R11 658	27 145	R31 385	74	R4 046	3 207	R674	R1 894	R63 268	0		
2023-02-15		4 187	R7 619.54	10 647	R13 842	13 104	R11 400	27 938	R32 862	88	R4 811	3 655	R768	R1 894	R65 604	0		
2023-03-15		3 460	R6 297.05	9 299	R12 088	10 943	R9 520	23 701	R27 905	83	R4 583	3 250	R552	R1 894	R60 204	0		
2023-04-15		4 109	R7 477.65	9 638	R12 529	14 609	R12 710	28 355	R32 717	85	R4 671	3 344	R492	R1 894	R65 044	0		
2023-05-15		2 587	R4 708.78	8 067	R10 487	11 788	R10 256	22 442	R25 451	92	R5 043	3 327	R279	R1 894	R57 937	0		
2023-06-15		4 158	R14 595.32	10 165	R15 200	11 996	R11 127	26 319	R40 922	147	R4 046	3 122	R236	R1 894	R72 368	0		
Total		45 023	R120 348.63	117 359	R163 629	152 364	R136 485	314 746	R420 462	982	R44 720	7 080	R303 236	R5 538	R22 631	R796 587		
Hi		10 909	R49 604.46	28 483	R45 627	37 632	R35 881	77 025	R131 112	279	R8 843	1 770	R75 809	4 012	R835	R5 584	R222 183	
Low		34 114	R70 744.17	88 876	R118 002	114 732	R100 604	237 722	R289 350	702	R35 877	5 310	R227 427	22 394	R4 703	R17 047	R574 404	

TOU DETAILS MV

Remove SOIL up to 3 2023

BILL DATE	Tariff Code	PEAK	STANDARD	OFF PEAK	TOTAL	DEMAND	NAC	REACTIVE	ADMIN	TOTAL	Customers							
		kWh	Amount	kWh	Amount	kWh	Amount	kVar	Amount	Amount								
2022-07-15		30 453	R154 579.19	101 698	R165 899	65 777	R62 289	197 928	R382 767	2 031	R53 757	1 884	R80 692	38 315	R7 855	R1 795	R526 866	0
2022-08-15		43 422	R229 268.79	136 227	R230 223	107 949	R105 790	287 598	R565 282	957	R52 606	1 884	R80 692	73 163	R15 364	R1 894	R715 838	0
2022-09-15		52 271	R200 846.45	144 471	R221 534	95 224	R88 882	291 967	R511 263	2 043	R56 160	1 884	R80 692	112 557	R23 637	R1 894	R673 645	0
2022-10-15		52 559	R95 657.02	140 068	R182 089	101 658	R88 442	294 285	R366 188	1 352	R74 315	1 884	R80 692	118 423	R24 869	R1 894	R547 958	0
2022-11-15		65 002	R118 304.51	189 722	R246 639	166 133	R144 536	420 858	R509 479	1 482	R81 481	1 884	R80 692	226 337	R47 531	R1 894	R721 077	0
2022-12-15		46 701	R84 995.89	135 294	R175 882	82 428	R71 712	264 423	R332 591	1 394	R76 615	1 884	R80 692	124 574	R26 161	R1 894	R517 952	0
2023-01-15		39 202	R71 346.77	126 365	R164 275	98 540	R85 730	264 107	R321 352	1 544	R84 896	1 884	R80 692	118 718	R24 931	R1 894	R513 764	0
2023-02-15		50 834	R92 517.44	141 617	R184 102	104 242	R90 690	296 692	R367 310	1 772	R97 391	1 884	R80 692	136 717	R28 711	R1 894	R575 997	0
2023-03-15		111 126	R202 248.52	299 279	R389 062	341 770	R297 340	752 174	R888 651	2 992	R164 470	3 884	R166 352	177 198	R37 212	R2 841	R1 259 525	0
2023-04-15		146 637	R266 880.07	337 888	R439 254	507 083	R441 162	991 608	R1 147 266	2 895	R159 119	3 884	R166 352	227 200	R47 712	R2 841	R1 523 320	0
2023-05-15		94 284	R171 596.95	275 999	R358 798	381 074	R331 534	751 357	R861 930	2 646	R145 442	3 884	R166 352	157 740	R33 126	R2 841	R1 209 690	0
2023-06-15		167 455	R587 323.74	404 670	R606 989	446 388	R415 137	1 018 512	R1 609 449	5 627	R154 647	3 884	R166 352	215 266	R45 206	R2 841	R1 978 495	0
Total		899 945	R2 275 565.34	2 433 297	R3 364 745	2 498 267	R2 223 246	5 831 510	R7 863 557	26 735	R1 200 898	30 608	R1 310 941	1 726 209	R362 313	R26 419	R10 764 127	
Hi		241 330	R971 171.72	642 594	R1 003 111	620 114	R583 215	1 504 038	R2 557 498	8 615	R261 010	7 652	R327 735	326 744	R68 425	R6 531	R3 221 198	
Low		658 616	R1 304 393.62	1 790 703	R2 361 635	1 878 153	R1 640 030	4 327 472	R5 306 059	18 120	R939 888	22 956	R983 205	1 399 465	R293 888	R19 888	R7 542 928	

Table 16

Streetlights				
Swellendam				
Town	Total	Watt/lig	Tot watt	kW
Swellendam	10	70	700	0.7
Swellendam	492	125	61500	61.5
Swellendam	265	32	8480	8.48
Swellendam	445	54	24030	27.648
Swellendam	410	144	59040	59.04
Total	1654			157.368
Suurbraak	64	125	8000	8
Suurbraak	149	70	10430	10.43
Suurbraak	54	150	8100	8.1
Total	267			26.53
Barrydale	122	70	8540	8.54
Barrydale	333	125	41625	41.625
Total	455			50.165
	Lights		Consumption	Rand/Kw/
Total Consumption	2376		234	2.95
			2 832 kWh/day	
			1 033 739 kWh/year	

Grand Totals	Customers	Units	Rand
Con	1 078	10 640 456	28 032 817
Basics			2 236 155
PP	5 571	17 995 201	37 728 148
Bulk	39	11 445 104	24 794 659
TOU	5	5 831 510	11 560 714
Streetlight	2 376		
Availability	504		1 149 779
Total	9 573	45 912 271	105 502 272
N-1	9 601	46 122 402	105 003 066
Diff	28	210 131	(499 206)
	0.30%	0.46%	-0.47%

Table 17 shows the NERSA Tariff D-form which shows a good correlation between the data sets.

Table 17

Tariff Name	Tariff Number	SIC (code)	Load profile (code)	Tariff structure (code)	Number of consumers	Energy Sales
Domestic	Pre-Paid Indig	0	1	5,6	2 339	4 863 133 kWh
Domestic	P&P(0-30A)	0	1	5,6	3 231	8 011 267 kWh
Domestic	P&P(0-30A)D	0	1	5,6	16	53 711 kWh
Domestic	P&P(31-60A)	0	1	5,6	628	2 473 024 kWh
Domestic	P&P3(21-60)	0	1	5,6	5	72 281 kWh
Domestic Convensional	1P(0-60A)	0	1	5,6	706	4 169 723 kWh
Domestic Convensional	3P(0-100A)	0	1	5,6	64	634 483 kWh
CommercialConvensional	1P(0-60A)	0	4	5,6	57	382 903 kWh
CommercialConvensional	3P(0-100A)	0	4	5,6	127	3 507 561 kWh
Commercial	1P(20-30A)D	0	4	5,6	98	302 930 kWh
Commercial	1P(31-60)D	0	4	5,6	110	1 383 135 kWh
Commercial	3P(0-80A)	0	4	5,6	94	924 595 kWh
Industrial	Normal Bulk	0	4	5,6	54	15 791 763 kWh
Sport Grounds	P(20-60A)	0	1	5,6	10	22 317 kWh
Other	Special	0	11	5,6	82	2 298 121 kWh
Street Lights	Normal	0	11	5,6	64	1 281 019 kWh
Total					7 685	46 171 966 kWh

Table 18 shows a summary of the 2022/2023 actual revenue from the sales reports.

Final

[illegible]

Table 19

[illegible]

Table 20 **Error! Reference source not found.** shows a summary of the newly calculated revenue compared with the actual revenue.

Table 20

SWELLENDAM				
CALCULATED REVENUE				
	TOTAL	Actual: Reference		
TARIFF NAME	R/year	Total	Difference	% Diff
1. INDIGENT - 1 Fase 20A - Geen Dagtarief	5 497 815	5 238 558	259 258	4.9%
1. INDIGENT - 1 Fase 20A - Konv	2 515	1 689	826	48.9%
4. HUISHOUDELIK - 1 Fase 20A Alternatieve tarief	11 833 837	7 815 577	4 018 260	51.4%
3. HUISHOUDELIK - 1 Fase 20A + Dagtarief	132 559	1 224 729	-1 092 171	-89.2%
5. HUISHOUDELIK - 1 Fase 30A + Dagtarief	40 097	79 057	-38 960	-49.3%
6. HUISHOUDELIK - 1 Fase 30A Alternatieve tarief	11 414 861	9 835 439	1 579 422	16.1%
Dom 1 Fase Konv 1-30A	4 603 674	4 040 604	563 069	13.9%
7. HUISHOUDELIK - 1 Fase 45A + Dagtarief	3 514 755	6 472	3 508 283	54205.4%
7. HUISHOUDELIK - 1 Fase 45A + Dagtarief	7 144	2 400 418	-2 393 275	-99.7%
8. HUISHOUDELIK - 1 Fase 60A + Dagtarief	5 583 966	3 939 023	1 644 944	41.8%
11. HUISHOUDELIK - 1 FASE 60 AMP Monthly Basic	30 225	58 507	-28 282	-48.3%
Dom 1 Fase Konv 60A	7 114 675	7 458 736	-344 060	-4.6%
9. HUISHOUDELIK - 3 Fase 21A - 60A + Dagtarief	254 976	557	254 419	45713.6%
Dom 3 Fase Konv 21-30A	423 427	397 256	26 171	6.6%
Dom 3 Fase Konv 31-100A	1 984 213	1 570 183	414 030	26.4%
BESIGHEID - 1 Fase 20A + Dagtarief	124 704	90 656	34 048	37.6%
Komm 1 Fase Konv 20-30Amp	441 064	406 983	34 081	8.4%
BESIGHEID - 1 Fase 30A + Dagtarief	1 000 015	722 380	277 635	38.4%
BESIGHEID - 1 Fase 45A + Dagtarief	281 173	204 268	76 905	37.6%
Komm 1 Fase Konv 31-60Amp	1 254 256	124 270	1 129 986	909.3%
BESIGHEID - 1 Fase 60A + Dagtarief	1 846 508	1 497 822	348 686	23.3%
Komm 1 Fase Konv 30-100Amp	9 004	976 663	-967 659	-99.1%
BESIGHEID - 3 Fase 60A + Dagtarief	1 590 333	1 330 317	260 016	19.5%
BESIGHEID - 3 Fase 80A + Dagtarief	1 626 733	1 363 467	263 266	19.3%
Komm 3 Fase Konv 20-30Amp	4 517 121	4 052 441	464 680	11.5%
Komm 3 Fase Konv 31-60Amp	3 165 087	2 811 213	353 875	12.6%
Komm 3 Fase Konv 61-100Amp	2 995 787	3 069 849	-74 063	-2.4%
SPORT GRONDE 0A - 60A - Geen Dagtarief	69 632	60 450	9 183	15.2%
Sportgronde 0-30Amp	107 369	93 291	14 078	15.1%
Sportgronde 31-60Amp	38 344	33 316	5 028	15.1%
Skougronde	16 946	13 591	3 356	24.7%
Drostdy Water Meul	2 140	1 859	281	15.1%
Skole 31-60Amp 1 fase	901 608	771 992	129 615	16.8%
Skole 31-60Amp 3 fase	-	1	-1	-100.0%
Skole 61-100Amp 3 Fase	611 241	531 011	80 229	15.1%
Skole Sport gronde	15 641	13 591	2 051	15.1%
Standaard Verbruik: 20-30 1 phase	883 325	767 660	115 665	15.1%
Standaard Verbruik: 30-100 1 phase	321 733	279 604	42 129	15.1%
Standaard Verbruik: 30-60 3 phase	68 166	59 240	8 926	15.1%
Standaard Verbruik: 60-100 3 phase	1 807 703	1 570 997	236 706	15.1%
Munisipale grootmaatsdienste	3 944 914	3 372 692	572 222	17.0%
Normale grootmaatsdienste	17 493 823	14 467 807	3 026 015	20.9%
Bulk MV	9 188 421	8 542 568	645 853	7.6%
TOU LV	806 794	797 422	9 372	1.2%
TOU MV	10 791 995	10 832 552	-40 556	-0.4%
Straatligte	2 652 575	1 149 779	1 502 796	130.7%
Besikbaarheid	1 632 960	1 294 362	338 598	26.2%
105 502 272	122 645 853	105 370 916	17 274 936	16.39%
	105 301 656	-16.47%	7 199 972.02	115 445 880.67

This shows a total increase slightly higher than the average price increase of 15.1%.

These values will be used to calculate various cost of supply factors.

8. NETWORK LOSSES.

The losses in the network are required in various instances. The first step is to determine the amount of energy flowing through each of the networks for each representative load profile. This is done by obtaining the kWh from each customer category from the actual consumption table and allocating it to the relevant point on the network. The result is shown in Table 21.

Table 21

SWELLENDAM													
kWh CONNECTED BY NETWORK													
Supply position	MV at HV sub P01	MV P01	LV P02	Comm P03	Mun P03	Dom >20 Amp P04	Dom=20 Amp P05	Indigent P06	Lights P06	P07	P08		Total
S00	0	0	0	0	0	0	0	0	0	0	0	0	0
S01	0	0	0	0	0	0	0	0	0	0	0	0	0
S02	0	0	0	0	0	0	0	0	0	0	0	0	0
S03	0	0	0	0	0	0	0	0	0	0	0	0	0
S04	0	8 800 626	0	0	0	0	0	0	0	0	0	0	8 800 626
S05	0	0	7 242 684	0	1 548 050	0	0	0	0	0	0	0	8 790 734
S06	0	0	0	6 249 598	1 200 673	5 775 595	10 469 596	3 801 840	1 033 739	0	0	0	28 531 042
S07	0	0	0	0	0	0	0	0	0	0	0	0	0
S08	0	0	0	0	0	0	0	0	0	0	0	0	0
S09	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	8 800 626	7 242 684	6 249 598	2 748 723	5 775 595	10 469 596	3 801 840	1 033 739	0	0	0	46 122 402
												Bulk +SSEG	50 709 600
												Difference	9.05%
													46 122 402
													-4 587 198

The next step in the process, to calculate the losses of every network component, is as follows:

- An estimate is made about the loss % for every network component. This is done by considering the impedances of individual network components, the numbers involved and the loads flowing through it.
- The total infeed loads are then added to the relevant losses for every network through which it flows and are then added to the loads through all other networks to yield the total load.
- The loss factors are then modified until the total load, as calculated, is equal to the total load supplied in bulk. This is done by modifying the first pass estimation loss factors by the loss adjustment factor.

The resultant calculations are shown in **Table 22**
Table 22 and **Table 23**.

Table 22

SWELLENDAM													
ENERGY BALANCING													
FIRST PASS - BALANCE TOTALS BY CHANGING LOSS FACTORS ONLY													
Supply position	kWh	Through Network	Grand Total	HIGH SEASON				LOW SEASON				Tot	MAX DEM
				P	S	O	Tot	P	S	O	Tot	Tot kWh	kVA
		TOTAL	50 709 600	2390553	5905436	5976876	13987701	5930185.856	14481586.85	15349464.58	36 594 854	50 582 555	139 255
S0	0	NL0	50 709 600	2157953	6049718	5780030	13987701	5843526.63	14642664.12	16108663.45	36 594 854	50 582 555	176 397
S1	0	NL1	50 709 600	2 157 953	6 049 718	5 780 030	13 987 701	5 843 527	14 642 664	16 108 663	36 594 854	50 582 555	176 397
S2	0	NL2	50 709 600	2157953	6049718	5780030	13987701	5843526.63	14642664.12	16108663.45	36 594 854	50 582 555	176 397
S3	0	NL3	50 015 127	2157953	6049718	5780030	13987701	5843526.63	14642664.12	16108663.45	36 594 854	50 582 555	176 397
S4	8 800 626	NL4	48 873 525	2132251	5977664	5711188	13821102	5773928.115	14468264.7	15916803.45	36 158 996	49 980 099	174 296
S5	8 790 734	NL5	38 975 296	1735494	4900377	4519273	11155144	4670070.532	11649684.91	12720254.17	29 040 010	40 195 153	157 376
S6	28 531 042	NL6	28 531 042	1369916	3659220	3658811	8594947	3657292.03	8719254.288	9486717.816	21 863 264	30 458 211	78 114
S7	0	NL7	0	0	0	0	0	0	0	0	-	-	-
S8	0	NL8	0	0	0	0	0	0	0	0	-	-	-
S9	0	NL9	0	0	0	0	0	0	0	0	-	-	-
	46 122 402												
COMPARISONS													
Supply position	Grand Total	Low Season				High Season				MAX DEM			
		Sub-tot	Off-peak	Standard	Peak	Sub-tot	Off-peak	Standard	Peak	Tot kWh	kVA		
Bulk Purchases	50709599.59	2 390 553	5 905 436	5 976 876	13 987 701	5 930 186	14 481 587	15 349 465	36 594 854	50 582 555	139 255		
Total calculated	50709599.59	2 157 953	6 049 718	5 780 030	13 987 701	5 843 527	14 642 664	16 108 663	36 594 854	50 582 555	176 397		
Difference	0.00	(232 599.80)	144 282.50	(196 845.83)	-	(86 659.23)	161 077.27	759 198.88	-	-	37 141.81		
% Difference	0.20%	-9.73%	2.44%	-3.29%	0.00%	-1.46%	1.11%	4.95%	0.00%	0.00%	26.67%		
Total losses	9.05%	9.05%											
Adjust losses to balance grand totals													

It is important to note that the losses refer to all losses from the Eskom infeed points right down to the customers connected on the LV network and include non-technical losses.

Table 23

SWELLENDAM				
NETWORK LOSSES				
Supply position	Per Network Estimate	Per Network Adjusted	Network Point	Total at Supply Point
N0	0.00%	0.00%	S0	0.00%
N1	0.00%	0.00%	S1	0.00%
N2	0.00%	0.00%	S2	0.00%
N3	1.50%	1.37%	S3	1.37%
N4	2.50%	2.28%	S4	3.68%
N5	3.00%	2.74%	S5	6.52%
N6	6.00%	5.48%	S6	12.36%
N7	0.00%	0.00%	S6	12.36%
		Total losses		9.05%

These load loss factors will be used in calculating the costs per tariff cost category.

9. RINGFENCING.

Before one can calculate the revenue requirement, a ringfencing study needs to be completed to determine the true costs and revenues and specifically overheads that should be charged to Electricity by the municipality. This means that the trial balance of the municipality and the NERSA D-form figures will be different due to a proper ringfencing process being followed.

Because it is best to do cost functionalization as early as possible in the process, it is done as part of the ringfencing study. In other words, the costs within electricity are identified and then costs are allocated from the various support functions in the municipality towards each of the various functions in electricity.

9.1. Key focus areas

There are a host of practices that affect the accuracy of the cost and revenue of current LG electricity distributors. The following ones will take the key attention:

The focus will firstly be on the larger items and thus the 20% of items that have 80% of the impact.

Services being supplied by Electricity to the rest of the LG where no charge is levied to cover the cost of supplying such service. The services involved here include the following: Electrical maintenance of LG facilities such as water works, sewerage works, buildings, houses etc.

Electricity equipment and other resources being used by the rest of the LG with no charge. This typically includes the following: Heavy vehicles, large machinery, meter readers etc.

Public lighting including streetlights, high mast lights, robots, parking lot lights, etc. This service is considered a LG service and not part of electricity supply although the service is provided by Electricity.

Electricity for own use by LG. Many municipalities have a different set of tariffs for the supply of electricity for use by its own facilities, such as municipal buildings, stores, sewerage supplies, water pumping and sometimes also for staff. If these tariffs are not cost reflective it has the effect of distorting the true electricity supply cost/revenue and thus surplus. In some cases, an overcharge is made to the LG in the tariff and in other cases an undercharge.

Services provided to Electricity by the LG. Typical services include the following: Meter reading and billing, revenue collection, general accounting and administration, telephones, stores, etc. The extent to

which this is done, differs significantly between various distributors. The big problem here is the extent of allocation of these costs made to the electricity department:

- Administration and overheads are allocated in terms of turnover instead of more realistic allocation factors, such as the number of staff, the own costs, area of office space etc. The problem with this is that the purchase cost of electricity is close to 70% of the revenue and the tax (surplus) being levied by the LG on electricity makes up a further approximately 20%. This method overstates the true share of the cost by the electricity department by more than 50%.
- Metering and billing costs should typically be allocated according to the share of the cost of the billing system with the number of transactions or actual processing time. Where the revenue is used as a basis, a misallocation is again made.
- A wide range of other methods are being used to allocate the other costs. There are internationally accepted methods that should be used to allocate the costs to ensure a fair burden on the electricity department.

Funding of capital expenditure. Assets in municipalities are mainly funded directly from profits / retained income and various grants received by the municipality. Some assets are still funded from external loans. The capital expenditure does not form part of the income statement, except in subsequent years when it appears as depreciation.

Government Grant funding. A large portion of LG income is from Government Grants. These are used to subsidise charges to residents but also to fund operating and capital costs. This distorts the normal profitability of departments and complicates the fair allocation of costs and revenues. Proposals will however be made in this respect.

There are a host of practices that affect the accuracy of the cost and revenue of current LG electricity distributors. The focus will firstly be on the larger items and thus the 20% of items that have 80% of the impact. It is one matter to develop a generic methodology to be applied. Things are always different because of the following:

- The way the municipality operates and is structured.
- The availability of data in the required format / level of detail.
- The need to focus on big values that have a significant impact.

9.2. Methodology applied

The process starts with an analysis of the Total Municipal Trial Balance for the completed financial year. These are the figures that are used as the basis for the compilation of the Annual Financial statements.

In analysing the Swellendam data the following key steps were followed to achieve accurate ringfencing:

- The data was ordered as follows:
 - The head office, support and administrative functions. These are not considered primary service delivery but act as support to the various line functions and as such the line departments should cover their costs.
 - Community services, the economic services trading services. These are considered the primary service delivery to the community and need to carry all costs of the overheads and service departments.
- The various sub-departments and cost categories are grouped to make viewing practical.

This process is illustrated graphically in **Figure 9** below.

Figure 9

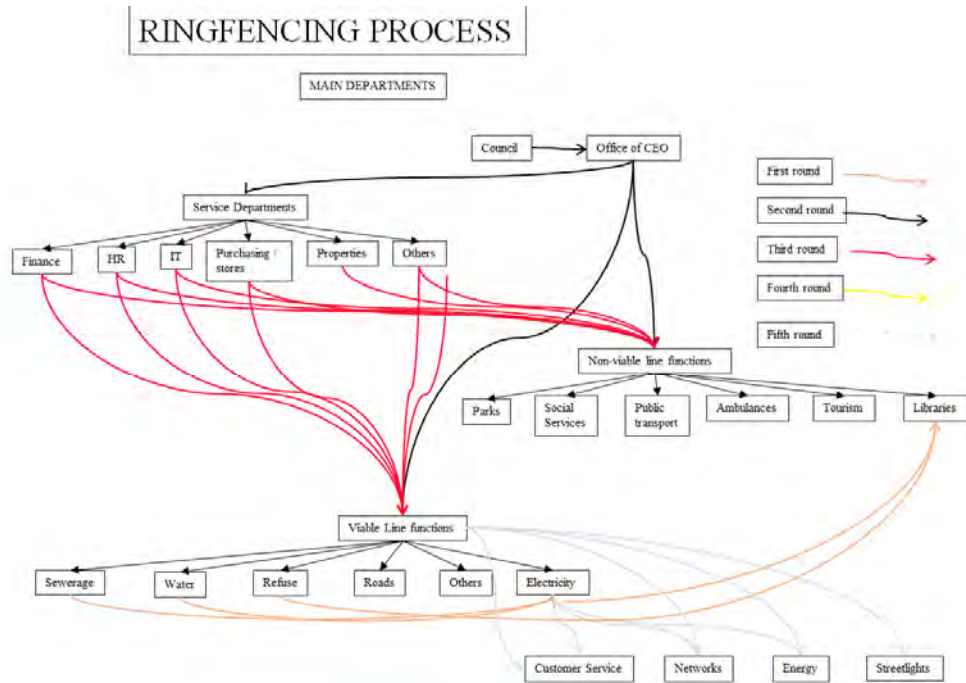


Table 24 **Table 24** Error! Reference source not found. shows the trial balance per group before any adjustments.

Final

Table 24

Sum of Total/Actual	Executive and Council Total	Finance and Administration Total	Internal Audit Total	Planning and Development Total	Environmental Protection Total	Health Total	Housing Total	Other Total	Community and Social Services Total	Public Safety Total	Road Transport Total	Sport and Recreation Total	Waste Management Total	Waste Water Management Total	Water Management Total	Energy Sources Total	Grand Total
Row Labels																	
Assets	10 344 171	56 618 216	215 747 112	29 543 312	186 987 629	4 480 144	17 014 674	15 820 659	86 795 560	1 022 137	239 402 030	19 036 476	88 039 128	176 017 055	259 632 019	124 219 288	1 713 170 617
Expenditure	12 922 000	41 704 575	310 420 862	8 097 633	21 497 525	2 133 303	4 178 263	2 785 302	11 640 316	11 530 636	58 359 552	14 672 531	28 712 939	21 859 576	73 587 072	107 855 435	581 000 685
Bulk Purchases																	
Contracted Services	487 166	7 864 688	14 551 583	284 661	2 760 865	450 311	268 386	239 815	2 110 843	1 198 321	2 392 270	2 895 631	7 514 056	2 761 400	9 271 119	28 900	84 391 990
Consultants and Professional Services		4 168 345	2 767 162	262 582	1 664 217	4 318	144 535	149 513	1 528 127	295 381	1 934 181	34 176	4 441 460	2 569 125	8 213 797	15 500 162	72 787 324
Contractors	182 516	1 585 063	9 577 724	22 020	505 273	83 323	693 656	84 035	382 716	901 040	458 088	2 615 031	1 554 898	132 275	1 057 322	2 869 856	32 030 478
Outsourced Services	304 510	2 215 340	2 206 937		51 336	211 157	178 103	597 883	3 967	8 190	14 254 378	452 828	193 255	5 771 465	14 912 662	47 003	12 375 747
Depreciation and Amortisation	76 572	553 895	1 632 462		5 278 574	404	2 922		347 987	8 190	14 254 378	452 828	193 255	5 771 465	14 912 662	3 755 448	48 964 370
Employee Related Cost	1 301 084	10 078 076	51 078 056	2 137 086	14 997 070	1 814 711	1 662 060	2 311 913	7 791 857	9 029 444	35 441 417	9 892 762	15 081 059	8 819 498	10 660 338	988 087	184 821 561
Interest: Dividends and Rent on Land	2 394																
Inventory Consumed	443 112	923 072	4 737 112	7 370	613 119	109 389	19 956	83 288	814 835	662 722	6 089 635	579 600	2 671 709	1 908 610	32 529 410	157 695	7 267 220
Irrecoverable Debts Written Off																	
Operating Leases	611 490	1 016 027	589 659		283 628		190 889		39 527	21 419	120 129				284 352		1 951 179
Operational Cost	2 165 121	8 944 703	17 258 439	5 668 575	564 088	325 660	90 626	50 174	743 266	611 941	501 981	531 418	4 342 158	2 598 602	5 524 481	10 954	39 283 688
Remuneration of Councillors	7 671 207																7 671 207
Surplus / Deficit			76 195 607														76 195 607
Transfers and Subsidies	163 660	3 930 514	378 144									220 000					4 528 658
Gains and Losses		116 510	1 081 350									8 661	8 142 123	7 516 336	32 707 353	4 154 802	53 065 373
Disposal of Fixed and Intangible Assets		104 902	213 000									51		338 126	131 997		1 833 922
Fair Value Adjustment																	11 195 458
Impairment Loss		11 608	9 899 278														9 910 886
Inventory			1 531														1 531
Reversal of Impairment Loss																	
Liabilities	184 070	1 241 700	225 439 800	18 526	8 090 311	343 443	6 195 076	76 110	1 722 066	1 105 260	8 034 652	130 782	16 825 216	31 420 108	28 462 037	60 752 787	371 018 027
Net Assets	30 624	38 796	1 355 772 668		2 222 629				68 607	2 541 796	246 103	2 541 796	25 662	3 657 071	2 795 111	2 381 689	1 341 992 603
Accumulated Surplus/(Deficit)	30 624	38 796	1 355 772 668		2 222 629				68 607	2 541 796	246 103	2 541 796	25 662	3 657 071	2 795 111	2 381 689	1 341 992 603
Revenue	4 443 000	4 941 000	231 106 143		5 173 697	1 188 893	1 955 738	1 859 578	3 290 578	3 136 781	17 463 191	486 726	28 519 776	142 600 886	100 533 844	86 207 618	634 212 057
Exchange Revenue			11 013 721		3 637 129	11 036		354	576 282	6 864	40 600	257 153	22 219 340	18 085 565	66 335 044	81 735 917	207 613 814
Interest: Dividend and Rent on Land			9 366 128		82 118			354					1 590 524	1 360 982	2 219 147	1 079 920	16 073 274
Licences or Permits																	3 685 609
Operational Revenue			1 460 879		3 960				457 992	6 864							1 914 593
Rental from Fixed Assets					928 443				118 184								1 046 826
Sales of Goods and Rendering of Services			186 713		2 622 508	11 036			106		49 600		257 153				3 110 017
Service Charges																	
Non-exchange Revenue	4 443 000	4 941 000	227 092 422		1 536 868	1 177 857	1 955 738	1 859 224	2 714 295	3 139 812	17 463 191	229 723	20 265 916	16 704 583	64 111 001	80 661 966	183 743 446
Fines, Penalties and Forfeits																	4 531 201
Licences or Permits																	7 703
Property Rates																	8 845 770
Property Rates by Usage																	1 305 973
Surcharges and Taxes																	143 571 830
Transfers and Subsidies																	7 339 659
Grand Total	4 443 000	4 941 000	24 638 788		1 536 868		1 859 224		2 714 295	3 022 528	17 190 637	229 723	20 265 916	124 515 521	34 188 800	4 524 000	270 030 514
	38 669 131	20 965 034	1 481 231 266	21 462 245	401 700 238	4 314 866	13 138 283	14 844 043	96 943 972	8 311 112	288 823 622	2 169 433	79 574 860	235 029 044	239 735 673	89 892 809	26
Total cost	12 922 000	41 704 575	168 420 862	8 097 633	24 497 525	2 963 066	4 178 263	2 785 302	11 640 316	11 530 636	58 359 552	14 672 531	28 712 939	21 859 576	73 587 072	105 855 435	581 000 685
Total Revenue	-4 443 000	-4 941 000	-231 106 143		-1 188 893	-1 955 738	-1 859 578	-1 859 578	-3 290 578	-3 136 781	-17 463 191	-486 726	-28 519 776	-142 600 886	-100 533 844	-86 207 618	-634 212 057
Net	8 479 000	16 763 575	-64 685 181	8 097 633	19 228 829	1 774 172	177 665	-2 318 685	8 357 738	8 393 855	40 896 361	14 185 804	191 163	-120 741 110	-26 946 773	19 587 817	-53 205 373

All the main transactions were analysed and any area where costs / revenues were not transacted correctly were identified. These were checked with the municipality and the required adjustments were made. The trial balance was found to represent the true picture accurately. The positive amounts refer to charges to electricity and negative amounts refer to amounts charged by electricity to the various departments and detailed in the fourth column.

Some adjustments have however been made to represent the data more accurately for tariff making purposes as shown in Table 25.

Table 25

COST ADJUSTMENTS	1 478 780	-35 676 494	6 238 263	-14 701 565	-7 863 044	-4 959 767	4 508 617	-4 780 826	3 396 496	-52 359 540
Surplus / Deficit	-	-52 359 540	-	-	-	-	-	-	-	-52 359 540
Default	1 478 780	16 883 046	6 238 263	-14 701 565	-7 863 044	-4 959 767	4 508 617	-4 780 826	3 396 496	-
REVENUE ADJUSTMENTS	-	-	1 546 511	28 212 425	732 730	4 922 365	-	12 030 221	439 236	47 883 487
Capital	-	-	1 546 511	28 212 425	732 730	4 922 365	-	12 030 221	439 236	47 883 487
Default	-	-	-	-	-	-	-	-	-	-
New Total Cost	5 425 525	38 678 630	32 031 640	83 237 007	15 036 884	22 783 582	6 151 361	24 900 305	95 179 511	323 424 444
New Total Revenue	-1 046 050	-63 127 280	-24 717 573	-76 669 398	-28 318 818	-1 801 053	-162 878	-29 580 324	-101 354 626	-326 777 997
New net income	4 379 475	-24 448 650	7 314 067	6 567 609	-13 281 934	20 982 529	5 988 483	-4 680 018	-6 175 115	-3 353 553

The only adjustment done is to remove the capital grant income as this must cover capital costs not operating costs.

9.3. Overhead cost allocation

The next step is to calculate the fair portion of the municipal overheads that should be covered by the electricity department. It was previously stated that no overhead costs have been allocated to Electricity. The next section does a calculation of a fair amount which should be allocated to all the line functions in the municipality by overhead and service departments. The first step is to calculate the ratios of various possible allocation factors using actual data.

Various ratios were analysed. The problem found was that in many cases the data required was inadequate in terms if not reflecting the required departments or in many cases were all grouped together. It is however believed that these ratios provide a fair means of allocating overhead costs.

The table below then shows the following:

ALLOCATER DATA.

- This refers to the various allocation bases which are to be used.
- The first line shows the data used
- The second line shows the ratio which will be applied in allocating the service department costs to that line department.
- This is calculated by dividing the line department units by the total units of all line departments.

ALLOCATION TO LINE DEPARTMENTS

- This shows the amounts allocated from each service department to the various line departments.
- The first column shows the name of the Service department.
- The second column shows the basis for allocation of the cost. Various basis were considered and inputs from staff was obtained at the workshops. Unfortunately, only those where data was provided could be used.
- The third column shows the percentage of the service department costs to be allocated on the basis.
- The cells in yellow shows the amounts allocated from the service department as a ().
- The other cells show the amounts allocated to each line department.
- The last column shows that the net amounts sum to zero.

NEW NET INCOME

- This shows the new costs / revenue per department after the cost allocations.
- The subsequent new net income.

The following should also be noted:

- The cost for the Councillors and admin is not allocated to line departments. This will be offset against Account surplus.
- The Municipal and General is a problematic cost centre because:
 - The majority of grant funding is collected under this account. This will not be off-set against line department costs.
 - Various very big costs which belong to line departments are also collected here. The following is proposed in this respect:
 - Only the big cost items minus the small, related incomes will be allocated to the line departments.
 - Bad debt written off. This mainly relates to rates income thus based on total line depart cost.
 - Depreciation. This is only on common assets. Total line depart cost.
 - Inventory and consumables. Total line depart cost.
 - Interest costs relating to retirement benefits. Line department labour cost.
 - Leave pay. Line department labour cost.
 - Various operational costs. Total line depart cost.
- Municipal manager. All costs allocated to Line departments based on total own costs.
- Financial services.
 - Asset and risk based on asset values.
 - Billing finance based on number of bills per service.
 - Debt collection based on outstanding debt per service.
 - Supply chain based on inventory.
 - Remainder based on total cost. Net amount minus property rates income.
- Corporate services. Total net amount.
 - All HR functions according to staff numbers.
 - Remainder based on total cost.
- Strategy and Economic development. Net amount all based on total cost.

The allocation factors and allocations to line departments are shown in Table 26

Table 26.

Final

Table 26

Sum of Actuals Total	MUNICIPAL MANAGER	FINAN	CORPORATE SERVICES	COMMUNITY SERVICES	SEWERAGE	STREETS	ENGINEERS SERVICES	WATER WORKS	ELECTRICITY	
Row Labels										Grand Total
ALLOCATER DATA										
Allocation factors to all Line departments										
Total cost (-purchases)				83 237 007	15 036 884	22 783 582	6 151 361	24 900 305	15 485 410	167 594 549
Ratio				49.67%	8.97%	13.59%	3.67%	14.86%	9.24%	100.00%
Exchange Revenue				-22 308 040	-19 897 206	-70 009	-162 878	-23 074 776	-97 993 812	-163 506 720
Ratio				13.64%	12.17%	0.04%	0.10%	14.11%	59.93%	100.00%
Contracted Services				11 681 720	1 020 750	6 328 228	64 205	442 863	1 538 477	29 473 640
Ratio				39.63%	3.46%	21.47%	0.22%	1.50%	5.22%	100.00%
Number of customers / bills / vending				11 387	11 387	1	1	11 387	11 387	45 552
Ratio				25.00%	25.00%	0.00%	0.00%	25.00%	25.00%	100.00%
Number of meter readings / y				1	1	1	1	11 387	1 078	12 469
Ratio				0.01%	0.01%	0.01%	0.01%	91.32%	8.65%	100.00%
Employee Related Cost				33 964 665	6 469 053	8 855 637	5 084 669	8 875 719	7 601 699	70 851 443
Ratio				47.94%	9.13%	12.50%	7.18%	12.53%	10.73%	100.00%
Staff numbers				27	12	9	7	12	6	73
Ratio				36.99%	16.44%	12.33%	9.59%	16.44%	8.22%	100.00%
Property, Plant and Equipment				-	-	-	-	-	-	-
Ratio				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation and Amortisation				2 308 861	2 746 372	4 199 173	456 091	2 350 421	1 394 085	13 455 003
Ratio				17.16%	20.41%	31.21%	3.39%	17.47%	10.36%	100.00%
Inventory Consumed				2 463 990	1 028 326	1 124 883	84 456	11 137 315	1 883 219	17 722 188
Ratio				13.90%	5.80%	6.35%	0.48%	62.84%	10.63%	100.00%
Capex				3 440 356	-	-	428 832	9 051 874	-	63 773 358
Ratio				5.39%	0.00%	0.00%	0.67%	14.19%	0.00%	100.00%
Equal				1	1	1	1	1	1	6
Ratio				16.67%	16.67%	16.67%	16.67%	16.67%	16.67%	100.00%

The actual allocations from the various Head Office departments to Line departments and then from Infrastructure to the relevant underlying departments are shown in Table 27.

Table 27

Sum of Actuals Total	MUNICIPAL MANAGER	FINAN	CORPORATE SERVICES	COMMUNITY SERVICES	SEWERAGE	STREETS	ENGINEERS SERVICES	WATER WORKS	ELECTRICITY	
Row Labels										Grand Total
ALLOCATER DATA										
ALLOCATION TO LINE DEPARTMENTS	-4 379 475	-11 320 031	-10 017 398	12 772 481	2 307 367	3 496 075	943 909	3 820 881	2 376 192	-0
MUNICIPAL MANAGER	-4 379 475			2 175 097	392 934	595 366	160 743	650 679	404 655	-
INFORMATION TECHNOLOGY		-2 782 563		1 381 979	249 657	378 275	102 131	413 418	257 103	-0
STORES		-1 074 305		533 561	96 389	146 046	39 431	159 615	99 264	0
SUPPLY CHAIN MANAGEMENT		-2 110 448		1 048 189	189 353	286 904	77 462	313 559	195 001	-
Rest of Finance and administration		-5 352 716		2 658 464	480 255	727 673	196 465	795 278	494 581	-0
HUMAN RESOURCES			-2 498 522	1 240 908	224 172	339 661	91 705	371 217	230 859	-
HUMAN RESOURCES			-2 498 522	1 240 908	224 172	339 661	91 705	371 217	230 859	-
Rest of Corporate			-5 020 354	2 493 394	450 435	682 490	184 266	745 897	463 871	-
					-	-				-
NEW COST AFTER ALLOCATION	1 046 050	27 358 598	22 014 242	96 009 488	17 344 250	26 279 657	7 095 270	28 721 186	97 555 703	323 424 444
NEW REVENUE	-1 046 050	-63 127 280	-24 717 573	-76 669 398	-28 318 818	-1 801 053	-162 878	-29 580 324	-101 354 626	-326 777 997
NEW NET INCOME	-	-35 768 681	-2 703 331	19 340 090	-10 974 567	24 478 604	6 932 392	-859 138	-3 798 923	-3 353 553
Allocation factors of Tech Services Overheads										
Direct costs										
According to own cost exc Bulk				-	17 344 250	26 279 657		28 721 186	17 861 602	90 206 696
Ratio				-	19%	29%		32%	20%	100%
Actual allocation				-	1 332 907.05	2 019 593.79	-6 932 391.89	2 207 225.48	1 372 665.57	-
TOTAL ALLOCATIONS	-4 379 475.32	-11 320 031.47	-10 017 397.50	12 772 480.69	3 640 273.84	5 515 669.28	-5 988 483.16	6 028 106.14	3 748 857.50	0.00
NEW COST AFTER ALLOCATION	1 046 049.58	27 358 598.47	22 014 242.28	96 009 487.59	18 677 157.45	28 299 251.15	162 877.69	30 928 411.58	98 928 368.60	323 424 444.39
NEW REVENUE	-1 046 049.58	-63 127 279.58	-24 717 572.82	-76 669 397.75	-28 318 817.59	-1 801 052.95	-162 877.69	-29 580 323.67	-101 354 625.74	-326 777 997.37
NEW NET INCOME	-	-35 768 681.11	-2 703 330.54	19 340 089.84	-9 641 660.14	26 498 198.20	0.00	1 348 087.91	-2 426 257.14	-3 353 552.98

The next step is to allocate the costs between the various sections within electricity. The allocation factors and the actual allocation of the various cost items to the various departments within electricity are shown in

Table 28

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Table 28

ELECTRICITY	Allocator	%	Energy	HV Networks	HV/MV networks	Networks MV	NetworksMV/LV	Networks LV	Customer Services	Streetlights	Electricity Total
Bulk Purchases	Bulk Purchases	100%	79 694 101								79 694 101
Connection/Dis-connection	Customers	100%							22 503		22 503
Bad Debts Written Off	Customers	100%							105 684		105 684
Computer Equipment	Staff	100%	-	-	-	1 880	2 177	6 876	6 876	2 968	20 778
LV Networks	Direct	100%						508 868			508 868
MV Networks	Direct	100%				515 988					515 988
MV Substations	Direct	100%					15 208				15 209
MV Switching Stations	Direct	100%					118 715				118 715
Furniture and Office Equipment	Staff number	100%	-	-	-	2 368	2 741	8 660	8 660	3 738	26 168
Machinery and Equipment	Depreciation	100%	-	-	-	11 681	34 688	17 299	45 584	10 123	119 375
Other Assets	Consumers	100%							29 772		29 772
Transport Assets	Staff number	100%	-	-	-	3 274	3 791	11 977	11 977	5 170	36 188
Employee Related Cost	Staff number	100%	-	-	-	887 773	796 398	2 515 801	2 515 801	1 086 957	7 601 699
Interest, Dividends and Rent o	Depreciation	100%	-	-	-	51 284	152 269	75 954	200 138	44 444	524 119
Inventory Consumed	Depreciation	100%	-	-	-	184 271	547 228	272 910	719 117	150 692	1 883 219
Prepaid Electricity	Consumers	100%							873 626		873 626
Communication	Consumers	100%							246 015		246 015
Hire Charges	Assets	100%	-	-	-	382	1 009	440	370	110	2 312
Licences	Staff number	100%	-	-	-	3 980	4 809	14 560	14 560	6 285	43 993
Bank Charges, Facility and Car	Cumm cost	100%	-	-	-	15 084	17 311	35 402	49 502	13 595	130 895
Statutory Payments other than	Cumm cost	100%	-	-	-	1 831	2 101	4 297	6 008	1 650	15 887
OVERHEADS	Cumm cost	100%	-	-	-	432 018	495 793	1 013 935	1 417 736	389 375	3 748 857
REVENUE'											
Interest	Tot	100%									-409 153
Development Charges	Tot	100%	-	-	-	-	-	-	-	-	-118 313
Availability Charges	Tot	100%									-
Connection/Reconnection	Customers	100%									-570 045
Electricity Sales	Tot	100%									-96 871 124
Meter Reading Fees	Customers	100%									-785
Monetary Allocations	Tot	100%									-1 781 317
Disposal Facilities	Tot	100%									-
-											
TOTAL COSTS			79 694 101	-	-	1 911 814	2 194 040	4 486 979	6 273 928	1 723 107	96 283 970
TOTAL REVENUE			-	-	-	-	-	-	-	-	-99 750 737
NET INCOME - loss			79 694 101	-	-	1 911 814	2 194 040	4 486 979	6 273 928	1 723 107	-3 466 767

10. REVENUE REQUIREMENT.

This section calculates the revenue requirement for Swellendam using the NERSA method. The items are then grouped as per the NERSA method. The calculation of the revenue requirement is shown in Table 29.

Table 29

CORRECTED NERSA RR FOR CO	Energy	HV Networks	HV/MV networks	Networks MV	NetworksMV/LV	Networks LV	Customer Services	Streetlights	Electricity Total
Bulk (full cost as losses are included)	79 694 101	-	-	-	-	-	-	-	79 694 101
Operating cost	-	-	-	365 164	423 214	1 312 599	2 447 981	564 619	5 113 577
Shared cost adjusted to 30% of own	-	-	-	432 018	495 793	1 013 935	1 417 736	389 375	3 748 857
Depreciation	-	-	-	535 191	177 321	553 681	102 869	21 999	1 391 061
Interest (excluding Eskom)	-	-	-	-	-	-	-	-	524 119
Repairs and Maintenance actual	-	-	-	528 157	945 412	1 530 811	1 999 520	702 670	5 706 571
Bad debt written off (this is not a cost)	-	-	-	-	-	-	105 684	-	105 684
Sub-total cost	79 694 101	-	-	1 860 530	2 041 741	4 411 026	6 073 790	1 678 664	96 283 970
Surplus	-	-	-	-	-	-	-	3.6%	3 466 767
Total Allowed revenue	-	-	-	-	-	-	-	-	99 750 737
Revenue: Adjusted	-	-	-	-	-	-	-	-	99 750 737
Shortfall	-	-	-	-	-	-	-	-	-
% Structure increase	-	-	-	-	-	-	-	-	0.0%

This shows the situation before any adjustments. The buildup of revenue is shown in Table 30 below.

Table 30

REVENUE ANALYSIS	
Availability Charges	
Connection/Reconnection	-570 045
Electricity Sales	-96 871 124
Interest	-409 153
FBE income foregone	
Equitable share	-1 781 317
Additional equitable share	-
Other income	-119 097
Change COS internal tariffs	319 493
Change COS streetlight revenue	-1 283 612
Revenue adjusted for high losses	
TOTAL REVENUE	-100 714 855
Cost	96 283 970
New surplus	(4 430 886)
%	-4.6%

This shows that if cost reflective internal charges were levied, the surplus would increase to 4.6%. The proposed adjustments to remove non prudent items are shown in Table 31 below.

Table 31

RR Adjustments	Limit	Actual	Tot	Adjust
Eskom Losses exceeding	8%	6.0%	79 694 101	-
Eskom interest			-	-
Eskom excess access charges			-	-
Bad debt > 5% of rev	5%	0.1%	105 684	-
Shared cost > 30% of own cost	30%	23%	3 748 857	-

After doing these adjustments the revenue requirement is shown in

Table 32 below. (No adjustments required)

Final

Table 32

CORRECTED NERSA RR FOR COS	Energy	HV Networks	HV/MV networks	Networks MV	NetworksMV/LV	Networks LV	Customer Services	Streetlights	Electricity Total	With 7.5% surplus and 35% ROA at CRC	NERSA RR		
Bulk (full cost as losses are included)	79 694 101	-	-	-	-	-	-	-	79 694 101	79 694 101	Bulk		
Operating cost	-	-	-	365 164	423 214	1 312 599	2 447 981	564 619	5 113 577	5 113 577	Operating cost		
Shared cost adjusted to 30% of cost	-	-	-	432 018	495 793	1 013 935	1 417 736	389 375	3 748 857	3 748 857	Shared cost adjusted		0.10
Depreciation	-	-	-	535 191	177 321	553 681	102 869	21 999	1 391 061	20 739 281	Depreciation		
Interest (excluding Eskom)	-	-	-	-	-	-	-	-	524 119	524 119	Interest		
Repairs and Maintenance actual	-	-	-	528 157	945 412	1 530 811	1 999 520	702 670	5 706 571	5 706 571	Repairs and Maintenance actual / @ 6%		
Bad debt written off (this is not a cost)	-	-	-	-	-	-	105 684	-	105 684	105 684	Bad debt written off		
Sub-total cost	79 694 101	-	-	1 860 530	2 041 741	4 411 026	6 073 790	1 678 664	99 283 970	116 632 190	Sub-total cost		
Surplus								3.6%	3 466 767	4 163 412	Surplus: 7.5%		
Total Allowed revenue									99 750 737	119 795 602	Total Allowed revenue		
Revenue: Adjusted									99 750 737	-99 750 737	Revenue: Adjusted		
Shortfall									-	60 527 988	Shortfall		
% Structure increase									0.0%	15.6%	% Structure increase		

Table 33 Shows the costs split by Support and capital provision.

Table 33

CORRECTED NERSA RR FOR COS	Energy	HV Networks	HV/MV networks	Networks MV	NetworksMV/LV	Networks LV	Customer Services	Streetlights	Electricity Total
Total Support costs	-	-	-	1 325 339	1 864 420	3 857 345	5 970 921	1 656 685	14 674 689
Total capital provision	-	-	-	535 191	177 321	553 681	102 869	21 999	1 915 180
Purchases	79 694 101	-	-	-	-	-	-	-	79 694 101
GRAND TOTAL	79 694 101	-	-	1 860 530	2 041 741	4 411 026	6 073 790	1 678 664	96 283 970

The following very important facts need to be noted:

- A surplus of 3.6% is currently realised. This is less than the NERSA benchmark of 15% after allocation of overhead costs is considered high as the NERSA benchmarks (10 to 20%) were developed assuming no overhead costs.
- The calculated Head Office / Service department allocation (admin charge) to electricity is less than 30% own costs excluding Eskom. This can be considered to be reasonable.
- The current replacement value (CRV) annual depreciation is equal to R20 mill. The surplus must at least cover this amount to ensure long term sustainability. The current surplus is equal to only R3.8 mill. Although this is less than the CRC depreciation significant financial support is obtain from various grant sources.

11. REPRESENTATIVE LOAD PROFILE ANALYSIS.

Extensive work is required in respect of load profiles. This refers to the way electricity is used by different customer categories and through different networks. The data used is 12 months of ½ hourly data.

The representative load profiles refer to the typical load profile of customers in a tariff category. The typical profiles that have been accepted nationwide and for which data is separately available include the following:

- Commercial
- Municipal
- Domestic
- Res Poor
- Streetlights.

The municipality provided 30 customer load profiles. These were provided by Cigicell. The profiles were for a whole year and of good quality.

Details of the customers and the type of profile of each type is indicated in Table 34.

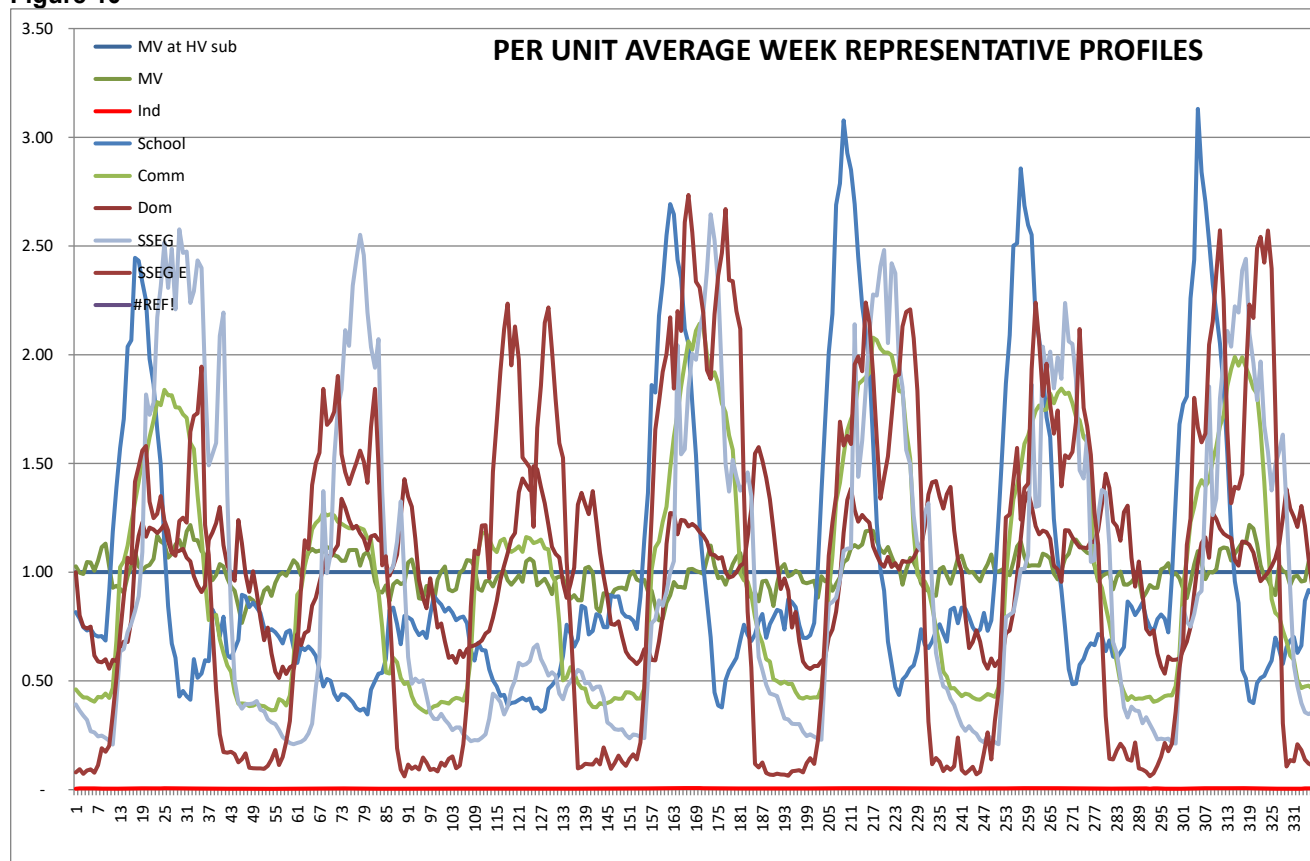
Table 34

PROFILE NAME	PROFILE	NETWORK
Aan De Leiser	Comm	LV
Absa	Comm	LV
Atlas Towers	Comm	LV
Barrydale Tower	Comm	LV
Bidvest	Comm	LV
Bontebok	Comm	LV
Buirski Plein	Comm	LV
BVSA Finansiele Dienste	Comm	LV
Carlton Mall	Comm	LV
Community Correction	Comm	LV
DE Companje	Dom	LV
De Vagebond	Comm	LV
Department Education	Comm	LV
Department Public Works	Comm	LV
Die Vis fabriek	Ind	LV
Dieco Pro	Comm	LV
Firmus & Investments	Ind	MV
Gaiko Lodge	Comm	LV
HB Skare	Comm	LV
Hermatage Pompstasie	Mun	LV
Huis AA Tomlison	Dom	LV
Joseph Barry	Comm	LV
Kiewietssnes Trust Old Telkom	Comm	LV
Kliniek	Comm	LV
Kliprivier Riool	Mun	LV
Langeberg Apartments	Dom	LV
MVC Trust	Comm	LV
N 2 Riool	Mun	LV
Neotel	Ind	LV
Nexusag 37	Comm	LV
Niko Trust Cape Feeds	Comm	LV
Niko Trust Cape Feeds	Comm	LV
OK Barrydale	Comm	LV
OK Barrydale	Comm	LV
Ostriswell	Comm	LV
Phizako BPK Apteek	Comm	LV
Plantveld EDMS	Dom	LV
Provinsiale Hospitaal	Comm	LV
Pulsating Jigs	Comm	LV
Railton Clinic	Comm	LV
Sentraal Suid Kooperasie SILO	Ind	MV
Shoprite Checkers	Comm	LV
Sorteria Estates	Dom	LV
Sothern Oil	Ind	MV
Spar	Comm	LV
SSK Landmark	Comm	LV
Sutherland Sawmill	Ind	LV
Suurbraak Sewage Plant	Mun	LV
Suurbraak Waterworks	Mun	LV
Suurbraak Waterworks 2	Mun	LV
Tredici	Comm	LV
Van Der Merwe Trust	Comm	LV
Vodacom Tower	Comm	LV
Voortrek Beleggings PEP Home	Comm	LV
VRT Pitt	Comm	LV
Waterworks	Mun	LV

These profiles were then analysed and the resultant representatives profiles calculated.

Figure 10 shows the $\frac{1}{2}$ hourly kVA values (Y-axis) for the average week (7 day $\frac{1}{2}$ hours per week = x-axis) for each of the representative load profiles.

Figure 10



These profiles are then used to simulate the load profiles at each of the representative networks.

11.1. Network profiles.

To be able to calculate the load on a particular network one firstly has to calculate the profile at every infeed point on the network. This is calculated by:

- Multiplying the total load for every representative load profile being fed in at that point with the representative load profile ratio to establish the total load of every profile.
- The values for every representative profile are then added together.

The next step is to calculate the loads going through every network component.

- Calculate the load being taken at the infeed point of every network by adding the losses to the load being taken from the outgoing side of that network.
- Calculate the load through each individual network by adding the load infeed at the outgoing side of that network to the load going through the next network.
- This is an integrated process starting with the last points on the networks from where loads are taken and working upwards towards the main supply point to the distributor.
- This should be done for every half hour of the year, yielding an annual half hourly profile going through every network.

The result is an annual profile at N2 (the Eskom supply point).

11.2. Profile re-conciliation.

It is essential that an assessment be made of the accuracy of the representative load profiles used. This is done by

- calculating the annual load profile from the LV network up to HV network:
- multiplying consumption at each point on the network times the per unit representative load profile at that point.
- adding up from the LV network up to the highest voltage network including losses at each point up calculations
- and comparing that with the annual purchase load profile.

Table 35 below shows the maximum demand with date and time for the actual purchase profile and the N2 profile. The maximum demand occurs at a very different time of the year.

Table 35

N2 Max	N2 Max date	N2 Max
15 701.19	2023/04/04 19:30	15 701.19
Σ kVA at Peak	Σ Own Max	Max
3 424.22	28 729.32	
		1
Purchase Max	Max date	
13 159.26	2023/06/13 16:30	13 159.26
Σ kVA at Peak	Σ Own Max	
11 405.90	29 077.32	

Figure 11 shows the Eskom and N2 profile for the Eskom peak day. One of the challenges with this analysis relate to the Eskom load shedding which disports all the profiles. This is clear from this graph.

Final

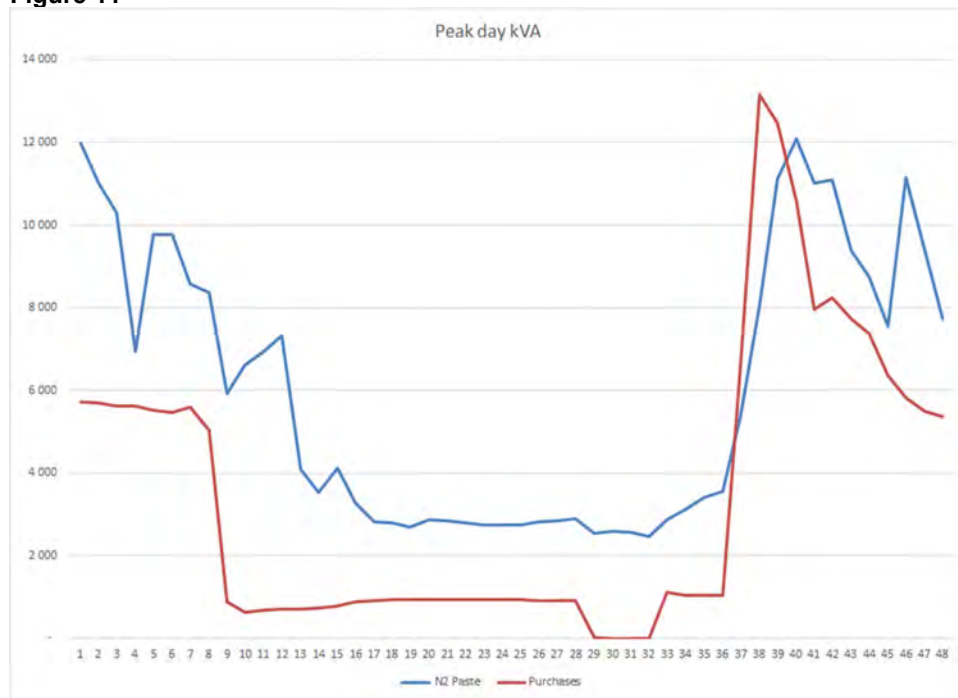
Figure 11

Figure 12 below shows the Eskom and N2 profile for the Eskom peak week. The same problem as for the peak day is apparent here as well.

Figure 12

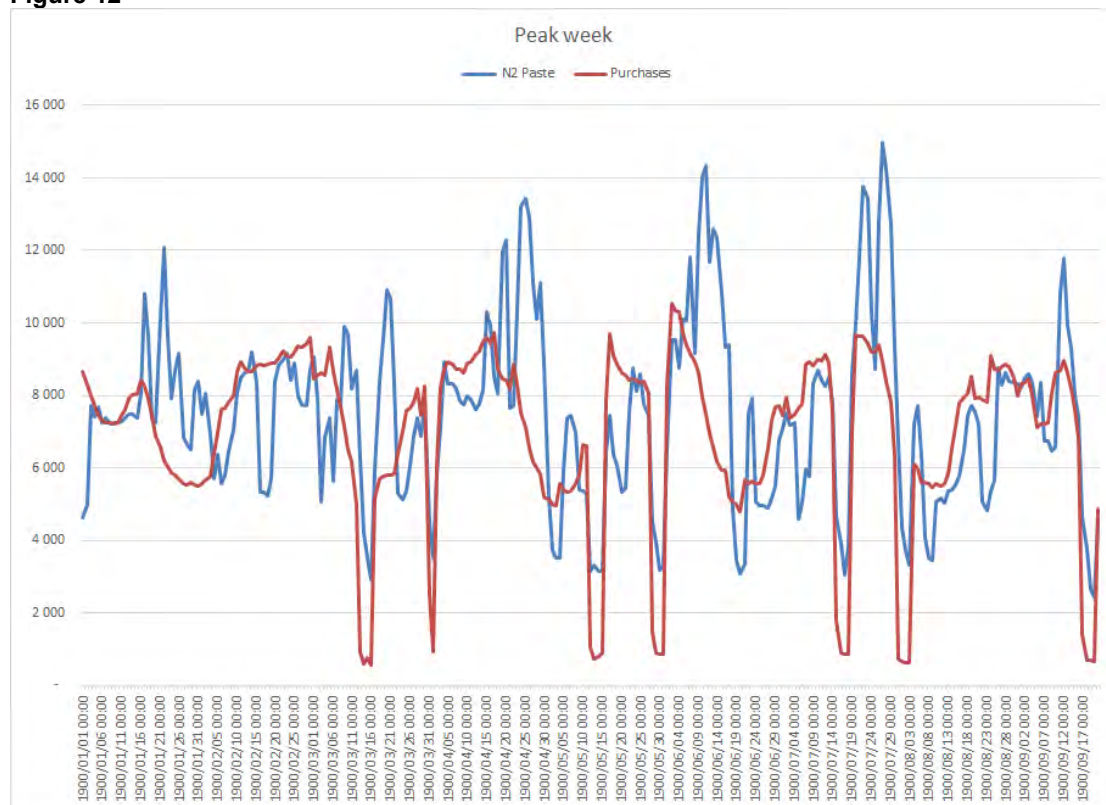
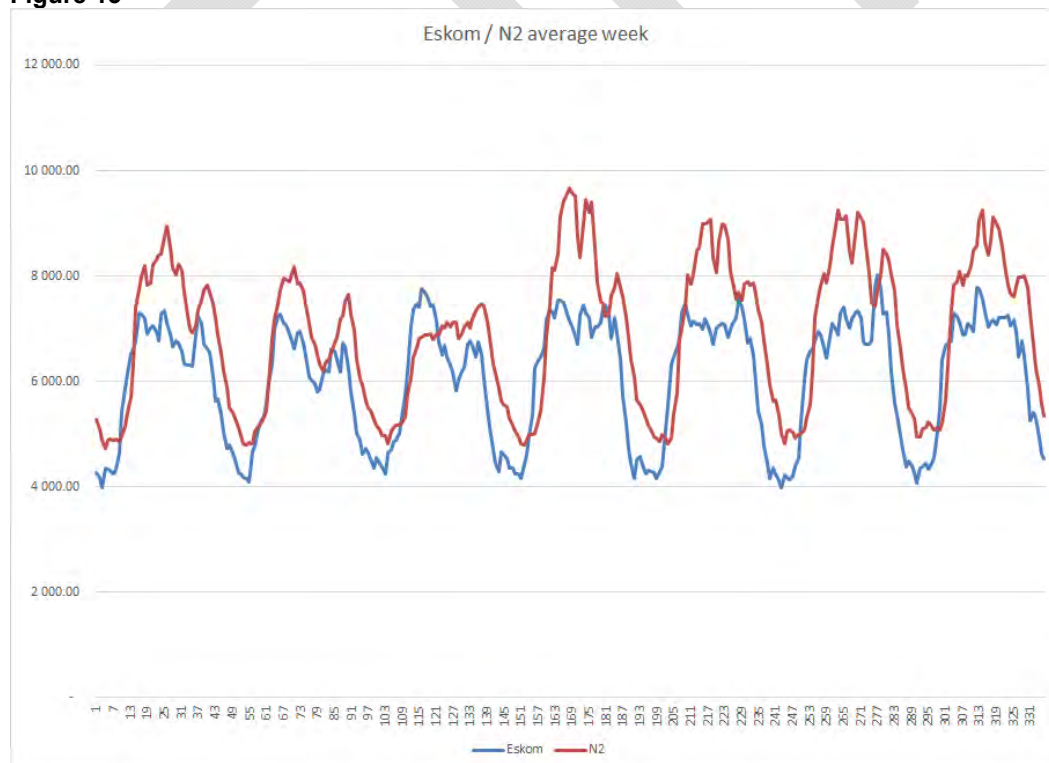


Figure 13 below shows the average week for Eskom and N2. Here it is clear that there is a very good correlation.

Figure 13



This concludes the analysis of load profiles. These results will be used later on specifically as basis for the kVA units per network.

11.3. Representative Profile Quantities.

The TOU quantities for each of the representative load profiles were then calculated. The per unit representative load profile quantities for the year are then multiplied by the total kWh for each representative load profile. The results are shown in Table 36 Table 36:

The process followed in the model can be described briefly as follows:

- The ½ hourly kWh and kvarh per unit figures as calculated for each annual profile from above is used as starting point. The per unit value means that each actual half hourly value is divided by the total number of half hours in a year (365 days x 24 hours = 8760).
- In other words, if the total number of kWh used by this profile of customers are multiplied by the per unit values and then again divided by 8760, the full picture for this profile is obtained.
- For each profile the kVA values are then calculated. This is done by calculating the square root of the 1/2 hourly kWh and kvarh and multiplying by 2.
- For each half hour the excess kvarh are then calculated by obtaining the amount of kvarh exceeding the kvarh associated with the kW peak for than ½ hour with a power factor of 0.85.
- The ½ hourly kWh, kvarh and kVA figures are then sorted and summed by:
 - For each month.
 - Season: High and Low.
 - TOU period: Peak, Standard and Off-peak.
 - Excess kvarh during peak and standard periods only.
- The sum of the maximum demands incurred during each month is then calculated as well as the highest maximum demand during the whole year.
- From these the Annual Load Factor (LF) and Excess kvarh % of total kWh are calculated.
- These values are then calculated for each profile.

Table 36

REP PROFILE QUANTITIES	TOTAL				HIGH SEASON			LOW SEASON			Annual		
YEAR	ENERGY	MAX DEMAND	MAX DEMAND	MAX DEMAND P&S	Monthly KVA LOAD FACTOR	P	S	O	P	S	O	Max	kVA Load factor
PROFILE	kWh (FOR)	kW	kVA	kVA	%	kWh (FOR)	kWh (FOR)	kWh (FOR)	kWh (FOR)	kWh (FOR)	kWh (FOR)	kVA	LF
1Bulk	9 085 643	23 166.59	23 166.59	23 135.31	61.01%	4.0%	10.9%	12.3%	11.3%	28.8%	32.8%	2 113	49.09%
2MVind(kWh+)	-	-	-	-	#DIV/0!	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	#DIV/0!	#DIV/0!
3LVMUN(kWh+)	2 967 362	8 409.15	9 163.80	9 089.05	34.03%	4.4%	11.3%	13.3%	10.6%	27.0%	33.4%	2 114	16.03%
4LVInd(kWh+)	7 657 506	52 580.50	110 221.11	108 446.80	10.19%	3.5%	13.1%	8.9%	10.2%	30.9%	33.4%	10 749	8.13%
5LVComm(kWh+)	6 889 551	19 604.13	20 494.44	20 341.27	52.46%	4.2%	11.5%	11.3%	12.0%	30.1%	30.9%	1 943	40.48%
6LVDom(kWh+)	6 741 882	24 116.94	29 624.85	29 204.67	27.62%	5.9%	15.3%	14.3%	11.8%	26.9%	25.9%	7 475	10.30%
7Res Poor	16 094 968	44 787.96	46 030.92	46 030.92	47.72%	4.3%	11.4%	10.1%	12.9%	30.1%	31.3%	4 336	42.37%
8Lights	1 145 643	3 421.11	4 175.99	4 175.99	40.42%	1.2%	5.2%	20.4%	3.0%	11.3%	58.8%	348	37.58%

The following should be noted in this respect:

- The average Load factor refers to the total kWh per year divided by the sum of the monthly maximum demand in the year times the total hours in the year. (Total kWh for year) ÷ (Sum 12 kVA maximum demands x hours in year).
- The Annual LF refers to the total kWh per year divided by the highest maximum demand in the year times 12 times the total hours in the year. (Total kWh for year) ÷ (Highest maximum demand in year x 12 x hours in year).
- The % values in each of the TOU periods refer to the % of consumption relative to the total consumption.
- The reactive energy refers to the kvarh as calculated in the Eskom Megaflex tariff. (Sum of: kvarh – 30% of kWh for each ½ hour in peak and standard periods).

The profiles for Industrial and Domestic will not be used as this does not represent a typical profile of these type of consumers.

This data will be used to calculate the load demands of each profile and the kWh's used in the different time periods.

11.4. Network Profile Quantities.

The network profiles calculated above are now further processed. The maximum demand and TOU ratios are required for further analyses and the results obtained are shown in Table 37. Once again it is clear that there is a good correlation.

Table 37

NETWORK QUANTITIES		YEAR TOTAL					HIGH SEASON			LOW SEASON			YEAR TOTAL	
YEAR	P&S	ENERGY	MAX DEMAND	MAX DEMAND	MAX DEMAND P&S	Monthly KVA LOAD FACTOR	P	S	O	P	S	O	Max	kVA Load factor
Year	kvarh	kWh (FOR)	kW	kVA	kVA	%	kWh (FOR)	kWh (FOR)	kWh (FOR)	kWh (FOR)	kWh (FOR)	kWh (FOR)	kVA	LF
1Purchases	1 305 141	50 034 101	134 844.88	139 255.04	138 783.75	55.34%	4.8%	11.8%	11.9%	11.9%	28.9%	30.7%	13 159	43.40%
2N2	5 725 571	50 582 555	136 305.94	176 396.85	175 427.52	42.74%	4.3%	12.0%	11.4%	11.6%	28.9%	31.8%	15 701	36.78%
3Total N3	5 725 571	50 582 555	136 305.94	176 396.85	175 427.52	42.74%	4.3%	12.0%	11.4%	11.6%	28.9%	31.8%	15 701	36.78%
4Total N4	5 657 378	49 980 099	134 682.48	174 295.90	173 338.11	42.74%	4.3%	12.0%	11.4%	11.6%	28.9%	31.8%	15 514	36.78%
5Total N5	6 599 961	40 195 153	112 409.15	157 376.11	156 495.23	38.48%	4.3%	12.2%	11.2%	11.6%	29.0%	31.6%	14 336	32.01%
6Total N6	887 354	30 458 211	72 179.31	78 114.40	75 921.52	49.90%	4.5%	12.0%	11.7%	12.0%	28.6%	31.1%	10 594	32.82%

These values will be used to calculate the peak demands at every point on the network and thus to calculate the per unit R/kVA for each network.

12. COST OF SUPPLY

The next step is to allocate the electricity costs between the various cost functions. The table below firstly shows the cost adjustments and then the method used and the actual allocation of cost per function. The next step is to functionalise the various costs between the various cost drivers. The 4 types of functions in electricity namely:

- Purchases
- Networks and
- Customer services.
- Streetlights.

The steps to be followed to do this are as follows:

- The costs, as per the trial balance, are firstly allocated directly to the relevant function as prescribed by the particular activity.
- The common costs are then allocated based on various relevant ratio's such as number of staff or asset values.

These calculations were already done in the Ringfencing part of the study.

12.1. Cost Classification

The next step is to classify these costs into the different cost types / drivers. The electricity costs, from a tariff point of view are classified as one of the types below:

- R/kWh in terms of the different TOU periods namely, peak, standard and off-Peak.
- R/kVA costs also separated by dedicated and shared per network.
- R/customer as per customer category.
- Rand / light in the case of streetlight maintenance costs.

The way in which these costs are functionalised / classified is shown in Table 38.

Table 38

COST FUNCTIONALISATION				
		R/kWh	R/kVA	R/Customer
Purchase		All Energy charges levied to munic	All demand and access charges levied to munic	None
Network costs	Capital provision	None	All	None
	Operating and maintenacne	None	All	None
Customer Services		None	None	All

The actual functionalisation/ classification of costs is shown in Table 39Table 39.

Table 39

CORRECTED NERSA RR FOR CC									
	Energy	HV Networks	HV/MV networks	Networks MV	NetworksMV/LV	Networks LV	Customer Services	Streetlights	Electricity Total
Bulk (full cost as losses are included)	79 694 101	-	-	-	-	-	-	-	79 694 101
Operating cost	-	-	-	365 164	423 214	1 312 599	2 447 981	584 819	5 113 577
Shared cost adjusted to 30% of own	-	-	-	432 018	495 793	1 013 935	1 417 736	389 375	3 748 857
Depreciation	-	-	-	535 191	177 321	553 681	102 869	21 999	1 391 061
Interest (excluding Eskom)	-	-	-	-	-	-	-	-	524 119
Repairs and Maintance actual	-	-	-	528 157	945 412	1 530 811	1 999 520	702 670	5 706 571
Bad debt written off (this is not a cost)	-	-	-	-	-	-	105 684	-	105 684
Sub-total cost	79 694 101	-	-	1 860 530	2 041 741	4 411 026	6 073 790	1 678 664	96 283 970
Surplus								3.6%	3 486 767
Total Allowed revenue									99 750 737
Revenue: Adjusted									99 750 737
Shortfall									-
% Structure increase									0.0%

The following points are of note:

- There is a small portion of customer services costs which can be classified in R/kWh. The problem is that the true cost really depends on the number of customers and not the amount of kWh purchased. All customer services costs are therefore classified as R/Customer.
- A portion of the Eskom costs relate to the demand or maximum capacity taken from the network. This will be classified as such later on in the process of detailed cost calculations.

These costs will now be used as a basis for the detailed cost calculations to follow.

12.2. Cost allocation: phase 1

The next step is to allocate the various costs per the different cost categories. This is shown in Table 40 in respect of the capital portion of the network and customer connections. It also allows for adjustment to reflect the pricing policy of the municipality. In other words, where customers pay outside of the tariff (by way of connection fees, capital contributions, subdivision fees or developer contributions), the full capital provision must not come from the tariff. In this respect staff indicated that all capital costs for new customers / capacity are covered outside of the tariff and thus no adjustment is made.

Table 40

SWELLENDAM									
TOTAL NETWORK CAPITAL CAPITAL REVENUE REQUIREMENT									
Total Network Levelised costs			Adjustment to reflect cash payments			Adjustment: difference: revenue requirement - capital provision in budget			Reconciled
		R/year	%	%					R/year
Energy	Energy	0	0%	0%	0	LEVELISATION ADJUSTMENT			0
N2	HV	0	0%	0%	0				0
N3	HV/MV	0	0%	0%	0	Total levelised costs			0
N4	MV	136 114	0%	0%	136 114	Current capital provisio			21 958
N5	MV to LV	404 216	0%	0%	404 216	Difference			65 208
N6	LV	201 588	0%	0%	201 588	% Adjustment			32 520
N7			0%	0%	0				0
N8			0%	0%	0				0
Streetlights		117 958	0%	0%	117 958				19 029
Totals		859 877			859 877				138 715
METERING									
1 PH kWh Pre-paid		9 946 739	0%	0%	9 946 739				1 604 601
3 PH kWh Pre-paid		125 578	0%	0%	125 578				20 258
1 PH kWh		397 973	0%	0%	397 973				64 201
3 Ph kWh		362 440	0%	0%	362 440				58 469
3 TOU		71 750	0%	0%	71 750				11 575
3 PH TOU & ct's		9 225	0%	0%	9 225				1 488
TOU RMU & CT/VT's		32 117	0%	0%	32 117				5 181
TOU at HV sub With CB		66 283	0%	0%	66 283				10 693
			0%	0%	-				0
									0
									0
SUB-TOTAL		11 012 106			11 012 106				1 776 465
GRAND TOTAL		11 871 982			11 871 982				1 915 180

The next step is to allocate the support costs (operations, maintenance and administration) relating to the networks and technical customer services. The operating costs per different cost type, network and customer category are shown in Table 41.

Table 41

SWELLENDAM								
OPERATING COST SEPARATION								
		0						
	0 N0	-						
	0 N1	5 970 921						
	0 N2	-						
	0 N3	-						
	0 N4	1 325 339						
	0 N5	1 864 420						
	0 N6	3 857 345						
SL	N7	1 656 665						
		14 674 689						
	Network operating	Adjust Factor	Initial ratio	Act Share	ALLOCATED SUPPORT			
N0				0.00%	-			
N1		100%		0.00%	-			
N2		100%	0.00%	0.00%	-			
N3		100%	0.00%	0.00%	-			
N4	1325339	100%	18.81%	18.81%	1 194 566			
N5	1864420	100%	26.46%	26.46%	1 680 455			
N6	3857345	120%	54.74%	65.68%	4 172 083			
					-			
	7 047 103		100.00%	110.95%	7 047 103			
Customer service direct			5 970 921					
				Total				
	Service connection / Metering share		50.0%	2 985 461				
	Billing share		25.0%	1 492 730				
	Customer service share		25.0%	1 492 730				
			100.00%	5 970 921				
Service connection / Metering Revenue requirement				2 985 461				
Metering	Meter capex RR	Customers	Equivalent meter cost weight	Equivalent single phase meters	Portion of metering opex	Opex R/y	Metering: Capex and Opex	Total R/cust/m
1 PH kWh Pre-paid	1 604 601	7 838	1.50	11 757	79.62%	2 377 095	3 981 696	42.3
3 PH kWh Pre-paid	20 258	74	2.50	186	1.26%	37 614	57 872	64.8
1 PH kWh	64 201	832	1.50	1 248	8.45%	252 319	316 520	31.7
3 Ph kWh	58 469	442	2.50	1 105	7.48%	223 408	281 876	53.1
3 TOU	11 575	35	10.00	350	2.37%	70 763	82 337	196.0
3 PH TOU & ct's	1 488	5	15.00	75	0.51%	15 163	16 652	277.5
TOU RMU & CT/VT's	5 181	1	20.00	20	0.14%	4 044	9 225	768.7
TOU at HV sub With CB	10 693	1	25.00	25	0.17%	5 054	15 747	1 312.3
	-							
SUB-TOTAL	1 776 465	9 229	78	14 766	100.00%	2 985 461	4 761 925	
Billing/ cust.service	Equivalent cost weight	Number of customers	Equivalent < 50 kW customers	Billing/cust.serv. cost R/y	R/cust/m			
Small <50 kVa	1	9187	9 187	2 918 740	26.48			
Medium <500 kVa	5	40	200	63 543	132.38			
Large <2000 kVa	10	1	10	3 177	264.76			
Very large >2000kVa	20	0	-	-	#DIV/0!			
Total		9228	9 397	2 985 461				
Sub-Total							5 970 921	
GRAND TOTAL								14 674 689

The following should be noted in this respect:

- The operating costs are as per the ringfenced trial balance.
- The network costs are then allocated as follows:
 - According to the Network capital revenue requirement at first pass.
 - These figures are then adjusted based on inputs from staff to reflect the real case of support costs per network.
- The customer services costs are then split between:
 - Metering according to different connections and metering.
 - This is done by giving a weighting to each of the types of connections. The following in this respect:
 - This is a difficult number to determine because records are not kept of difference in these costs.
 - This has been done based on experiences elsewhere and inputs from staff.
 - An example is the amount of come backs that have been experienced with pre-payment meters compared with conventional 1 phase meters.

- Another example is that the Bulk meters are not read by normal meter readers but by the Distribution staff.
- The effective cost per meter is thus calculated.
- Billing and customer services according to size of customer.
 - This is again done by giving a weighting to each size of customer. The following should be noted in this respect:
 - This is one of the most difficult assumptions because records are not kept of customer service costs per size of customer.
 - This has been done based on experiences elsewhere and inputs from staff.
 - An example is that a customer > 50 kVA is a 3 phase customer which means there is a more sophisticated meter or 3 single phase meters that need to read and thus 3 readings to be entered into the billing system compared with only one for a customer < 50 kVA which are mostly 1 phase customers.
 - Staff also indicated that bigger customers have more queries on their electricity bills and they thus spend more time on them.
 - These assumptions are subjective but the best available considering the staff inputs.
 - The effective cost per size of customer is then calculated.

12.3. Cost allocation: phase 2

Swellendam purchases all its energy from Eskom on TOU at Megaflex.

For these reasons the Megaflex tariff will be used as a basis to calculate the cost of supply and specifically the energy costs and unit rates.

The summary of Megaflex LG rates is shown in Table 42.

Table 42

Megaflex			2023/2024
> 900km			0.00%
≥ 500V & < 66kV	Transmission network access	R/kVA/m	R 14.72
	Network access charge:	R/kVA/m	R 28.65
	Network demand High:	R/kVA/m	R 54.31
	Network demand Low:	R/kVA/m	R 54.31
TOU: High Demand Season	Peak	c/kWh	570.45
(June -Aug)	Standard	c/kWh	172.79
	Off-peak	c/kWh	93.85
TOU: Low Demand Season	Peak	c/kWh	186.06
(Sept-May)	Standard	c/kWh	128.06
	Off-peak	c/kWh	81.21
Electrification and rural		c/kWh	13.90
Affordability		c/kWh	-
Urban low voltage subsidy charge [R/kVA/m]		R/kVA/m	-
Reliability service		c/kWh	0.71
REACTIVE ENERGY (c/kvarh)	High Demand	c/kvarh	25.11
	Low demand	c/kvarh	-

These values will be used as the initial per unit energy and Demand / Access charges.

12.4. Cost allocation: phase 3

The next step is to add the capital cost to the operating costs and then allocating it to the various cost drivers as is shown in Table 43. The cost of the actual streetlights plus overheads is allocated on a per light basis.

Table 43

The following should be noted in this respect:

- Based on experience the non-co-incidental peak demand method was used as basis to allocate all network costs to customer categories.

To be able to allocate the network costs as a per unit cost (R/kVA), the kVA for each network is required. This was calculated by building up the total load profile of each network starting at LV and working up to the high voltages. It must be noted that the Purchase values differ from the billing data as it is calculated from the load profile data.

The allocation units to be used are shown in Table 44Table 45. The network kVA and kWh quantities were obtained from the Quantities tables. The sales data was obtained from the sales data.

Table 44

SWELLENDAM					
TOTAL ALLOCATION UNITS					
NETWORK					
(System peak week			Max kVA	Σ kVA y	kWh
			kVA	kVA	kWh
		N0	13159	176 397	50 582 555
Energy	Energy	N1	13159	176 397	50 582 555
HV	HV	N2	15701	176 397	50 582 555
HV/MV	HV/MV	N3	15701	176 397	50 582 555
MV	MV	N4	15514	174 296	49 980 099
MV to LV	MV to LV	N5	14336	157 376	40 195 153
LV	LV	N6	10594	78 114	30 458 211
Lights	LV	N6			2 376
		N5/6			
GRAND TOTAL					2 376
Metering					
Metering					
1 PH kWh Pre-paid		7 838			
3 PH kWh Pre-paid		74			
1 PH kWh		832			
3 Ph kWh		442			
3 TOU		35			
3 PH TOU & ct's		5			
TOU RMU & CT/VT's		1			
TOU at HV sub With CB		1			
		0			
SUB-TOTAL		9 229			
Billing/ cust.service					
		0			
Small <50 kVa		9 187			
Medium <500 kVa		40			
Large <2000 kVa		1			
Very large >2000kVa		0			
Total		9 228			

The next step is to calculate the unit costs. This is done by dividing the total cost per category by the relevant units. The results are shown in Table 45.

Table 45

SWELLENDAM						
COST PER UNIT						
NETWORK						
(System peak week demand)				Max kVA	Σ kVA y	PODs
				All	All	R/PODs
		N0		0.00	0.00	0.00
Energy	Energy	N1		0.00	0.00	0.00
HV	HV	N2		0.00	0.00	0.00
HV/MV	HV/MV	N3		0.00	0.00	0.00
MV	MV	N4		3.82	4.08	0.00
MV to LV	MV to LV	N5		6.76	7.39	0.00
LV	LV	N6		17.62	28.67	0.00
Lights	LV	N6		17.62	28.67	63.17
GRAND TOTAL						
Metering		R/C/m				
1 PH kWh Pre-paid		31				
3 PH kWh Pre-paid		50				
1 PH kWh		27				
3 Ph kWh		45				
3 TOU		177				
3 PH TOU & ct's		260				
TOU RMU & CT/VT's		464				
TOU at HV sub With CB		683				
NA		0				
AVERAGE		33				
Billing/ cust.service		R/C/m				
Small <50 kVa		26				
Medium <500 kVa		132				
Large <2000 kVa		265				
Very large >2000kVa		0				
NA		0				
AVERAGE		27				

The costs obtained up to now reflect the cost of every separate network segment. To have a more practical set of charges these must be set for every network supply position stating the total charges at each point. This involves the network cost closest to the supply position plus all the networks up to that point plus the losses incurred in the networks up to that point. The values stated therefore reflect the total per unit cost of supply at that network supply point. The resultant costs are shown in Table 46.

Table 46

SWELLENDAM	2023/2024			Eskom adjust			0.00%
COSTS PER TARIFF COST CATEGORY				Cost increase			5.5%
				+ Surplus			4.3%
FOR ALL LOAD FACTORS							
			Access	Demand	Peak	Standard	Off-peak
HIGH SEASON	Access / Demand	R/kVA/m	45.23	56.65			
	Energy	c/kWh			5.9498	1.8022	0.9789
LOW SEASON	Access / Demand	R/kVA/m	45.23	56.65			
	Energy	c/kWh			1.9406	1.3357	0.8470
	Super Peak	c/kvarh			-	-	
Fixed charges (R/m)		R/m					
Reactive energy - Hi	Total excess for year	c/kvarh	0.2619				
Transmission network		R/m					
National levies		c/kWh	0.1524				
TOTAL COSTS PER SUPPLY POSITION			Acc %	Acc	DM		
Total Network Charges (including losses)				R/KVA/m	R/KVA/m	c/kWh	R/pod/m
		Total losses		All	All	All	
		0.00%				0	0.00
S0		0.00%		0.00	0.00	0	0.00
S1	Non-Tech	0.00%		0.00	0.00	0	0.00
S2		0.00%		0.00	0.00	0	0.00
S3		1.37%		0.00	0.00	0	0.00
S4		3.68%		4.25	4.54	0	0.00
S5		6.52%		11.84	12.84	0	0.00
S6		12.36%		31.71	45.18	0	0.00
S7 Lights		12.4%		31.71	45.18	0	63.17
Metering	R/C/m						
1;1 PH kWh Pre-paid	34.38						
2;3 PH kWh Pre-paid	55.06						
3;1 PH kWh	29.82						
4;3 Ph kWh	49.80						
5;3 TOU	193.88						
6;3 PH TOU & ct's	285.49						
7;TOU RMU & CT/VT's	509.16						
8;TOU at HV sub With CB	749.70						
9;NA	0.00						
10;0	0.00						
AVERAGE	35.74						
Billing/ cust.service	0						
	R/C/m						
1;Small <50 kVa	29						
2;Medium <500 kVa	145						
3;Large <2000 kVa	291						
4;Very large >2000kVa	0						
5;NA							
NA	30						

The following should be noted in this respect:

- Own costs increase by CPI.
- The surplus is the actual surplus.
- The surplus reflects the current surplus which NERSA would allow under normal circumstances.
- The R/kVA costs are split here between the dedicated and shared portion as follows:
 - Dedicated refers to networks which cannot really be shared with other customers. For example, if a development is done based on a particular after diversity maximum demand (ADMD) and supplies to various small and large customers are installed, if customers change their loads the costs do not change, and these networks cannot be used to supply other customers and thus are considered dedicated.
 - Assumptions about this is subjective but also reflects the realities in each municipality. Where there is ongoing growth and customers continue to use the power installed this is not a problem.

- In areas where economic growth is bad and customers reduce their demands, the risk of revenue loss is higher to municipalities as there are less customers to share the unused capacity with.
- These values show the total network costs at each position on the network including the costs and losses of all higher voltage networks up to that point. In other words when a demand of say 10 kVA is incurred at a LV point of supply, the demand at the point of purchase which is increased by the total losses up to that point. Losses thus effect the network and energy costs.
- It is important to note that these are per unit values. For example, the energy costs for each profile will be calculated by using the Eskom energy rates, plus the losses up to each relevant network multiplied by the % of kWh in each TOU period multiplied by the total number of kWh for that profile.
- The Eskom and own network costs are calculated by:
 - Multiplying the sum of the monthly maximum demands by that profile by the Eskom maximum demand and own maximum demand per unit costs.
 - Multiplying the highest annual maximum demand by the Eskom access charge plus losses and the own Access costs.

Before one can go from the costs per tariff cost category to costs per tariff, we need to know the statistics of the loads associated with the various tariffs. Representative load profiles were calculated from available data. These were then analysed and the necessary details calculated under the load profile section.

The following comments in this respect:

- The quantities shown represents the quantities associated with each representative load profile at the relevant network where it is supplied from.
- For example, the kWh represents the kWh used by streetlights supplied from the LV network. The Sum of maximum demands represents the sum of the sum of the 12 highest maximum demands incurred on the network, the Annual maximum demands is the highest maximum demand that Streetlight supplies placed on the network in the year.
- Because the individual maximum demand method is used, the maximum demand values of each profile are used irrespective of when it was incurred.
- These quantities will be used to calculate the per unit charges.

The next step is to now calculate the various per unit charges which should apply in respect of the different customer, network and energy charges relevant to the various periods. This makes use of:

- The position at which the customer is supplied to determine:
 - the R/kVA network costs plus R/kVA Eskom costs.
 - the losses % to be added to Energy and Eskom Demand/Access.
- The type of metering and size of supply to determine the metering and billing / customer service costs.

This is shown in Table 47.

Table 47

SWELLENDAM							
year					57600		
TAR	347	2022/2023					CHARGES
TARIF			Netw	Profile	Meter	Size	Capacity
F	TARIFF CODE		ork				(Amps)
1	1. INDIGENT - 1 Fase 20A - Geen Dagtarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	20
1	1. INDIGENT - 1 Fase 20A - Konv		S6	7Res Poor	3;1 PH kWh	1;Small <50 kVa	20
1	4. HUISHOUELIK - 1 Fase 20A Alternatiewe tarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	20
1	2. POOR 1-30A Alternatiewe tarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	20
1	5. HUISHOUELIK - 1 Fase 30A + Dagtarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	30
1	6. HUISHOUELIK - 1 Fase 30A Alternatiewe tarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	30
1	Dom 1 Fase Konv 1-30A		S6	7Res Poor	3;1 PH kWh	1;Small <50 kVa	30
1	7. HUISHOUELIK - 1 Fase 45A + Dagtarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	40
1	7. HUISHOUELIK - 1 Fase 45A + Dagtarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	45
1	8. HUISHOUELIK - 1 Fase 60A + Dagtarief		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	60
1	11. HUISHOUELIK - 1 FASE 60 AMP Monthly Basic		S6	7Res Poor	1;1 PH kWh Pre-paid	1;Small <50 kVa	40
1	Dom 1 Fase Konv 60A		S6	7Res Poor	3;1 PH kWh	1;Small <50 kVa	45
1	9. HUISHOUELIK - 3 Fase 21A - 60A + Dagtarief		S6	7Res Poor	2;3 PH kWh Pre-paid	1;Small <50 kVa	30
1	Dom 3 Fase Konv 21-30A		S6	7Res Poor	4;3 Ph kWh	1;Small <50 kVa	80
1	Dom 3 Fase Konv 31-100A		S6	7Res Poor	4;3 Ph kWh	1;Small <50 kVa	70
1	BESIGHEID - 1 Fase 20A + Dagtarief		S6	5LVComm(kWh+)	1;1 PH kWh Pre-paid	1;Small <50 kVa	20
1	Komm 1 Fase Konv 20-30Amp		S6	5LVComm(kWh+)	3;1 PH kWh	1;Small <50 kVa	30
1	BESIGHEID - 1 Fase 30A + Dagtarief		S6	5LVComm(kWh+)	1;1 PH kWh Pre-paid	1;Small <50 kVa	30
1	BESIGHEID - 1 Fase 45A + Dagtarief		S6	5LVComm(kWh+)	1;1 PH kWh Pre-paid	1;Small <50 kVa	45
1	Komm 1 Fase Konv 31-60Amp		S6	5LVComm(kWh+)	3;1 PH kWh	1;Small <50 kVa	60
1	BESIGHEID - 1 Fase 60A + Dagtarief		S6	5LVComm(kWh+)	1;1 PH kWh Pre-paid	1;Small <50 kVa	60
1	Komm 1 Fase Konv 31-60Amp		S6	5LVComm(kWh+)	3;1 PH kWh	1;Small <50 kVa	50
1	BESIGHEID - 3 Fase 60A + Dagtarief		S6	5LVComm(kWh+)	2;3 PH kWh Pre-paid	1;Small <50 kVa	80
1	BESIGHEID - 3 Fase 80A + Dagtarief		S6	5LVComm(kWh+)	2;3 PH kWh Pre-paid	1;Small <50 kVa	120
1	Komm 3 Fase Konv 20-30Amp		S6	5LVComm(kWh+)	4;3 Ph kWh	1;Small <50 kVa	90
1	Komm 3 Fase Konv 31-60Amp		S6	5LVComm(kWh+)	4;3 Ph kWh	1;Small <50 kVa	120
1	Komm 3 Fase Konv 61-100Amp		S6	5LVComm(kWh+)	2;3 PH kWh Pre-paid	1;Small <50 kVa	240
1	SPORT GRONDE 0A - 60A - Geen Dagtarief		S6	5LVComm(kWh+)	4;3 Ph kWh	1;Small <50 kVa	60
1	Sportgronde 0-30Amp		S6	5LVComm(kWh+)	3;1 PH kWh	1;Small <50 kVa	30
1	Sportgronde 31-60Amp		S6	5LVComm(kWh+)	3;1 PH kWh	1;Small <50 kVa	60
1	Skougronde		S6	5LVComm(kWh+)	4;3 Ph kWh	1;Small <50 kVa	50
1	Drostdy Water Meul		S6	5LVComm(kWh+)	3;1 PH kWh	1;Small <50 kVa	30
1	Skole 31-60Amp 1 fase		S6	5LVComm(kWh+)	3;1 PH kWh	1;Small <50 kVa	60
1	Skole 31-60Amp 3 fase		S6	5LVComm(kWh+)	4;3 Ph kWh	1;Small <50 kVa	135
1	Skole 61-100Amp 3 Fase		S6	5LVComm(kWh+)	4;3 Ph kWh	1;Small <50 kVa	300
1	Skole Sport gronde		S6	5LVComm(kWh+)	4;3 Ph kWh	1;Small <50 kVa	60
1	Standaard Verbruik: 20-30 1 phase		S6	3LVMUN(kWh+)	3;1 PH kWh	1;Small <50 kVa	30
1	Standaard Verbruik: 30-100 1 phase		S6	3LVMUN(kWh+)	3;1 PH kWh	1;Small <50 kVa	60
1	Standaard Verbruik: 30-60 3 phase		S6	3LVMUN(kWh+)	4;3 Ph kWh	1;Small <50 kVa	60
1	Standaard Verbruik: 60-100 3 phase		S6	3LVMUN(kWh+)	4;3 Ph kWh	1;Small <50 kVa	120
1	Munisipale grootmaatsdienste		S5	3LVMUN(kWh+)	6;3 PH TOU & ct's	2;Medium <500 kVa	0
1	Normale grootmaatsdienste		S5	3LVMUN(kWh+)	6;3 PH TOU & ct's	2;Medium <500 kVa	0
1	Bulk MV		S4	1Bulk	7;TOU RMU & CT/VT's	3;Large <2000 kVa	0
1	TOU LV		S5	1Bulk	6;3 PH TOU & ct's	2;Medium <500 kVa	0
1	TOU MV		S4	1Bulk	7;TOU RMU & CT/VT's	3;Large <2000 kVa	0
1	Straatligte		S6	8Lights	NA	NA	0.410
1	Beskikbaarheid		NA	NA	NA	NA	3.067

The resultant costs per tariff broken up in all the different components are shown in Table 48Table 48.

The consumption values of the various customer categories were previously calculated. These quantities are broken up into the detailed cost categories and not billing quantities. This is done by using the representative load profile, load factor and consumption per TOU period.

- The ratio of consumption Peak, Standard, Off-peak
- and the load factors of the different representative load profiles
- are obtained from the representative load profile quantities.

The consumption quantities per TOU period are shown in Table 49Error! Reference source not found..

CHARGES APPLICABLE FOR ALL MONTHS OF THE YEAR										HIGH SEASON CHARGES					LOW SEASON CHARGES				
year	2023/2024 details				MONTHS IN YEAR			3 000			MONTHS IN YEAR			9 000					
TAR	Customer service	Basic	Access	MD (all hours)	ALL Energy	Energy Peak	Energy Off-Peak	Reactive energy	Energy Standard	Energy Peak	Energy Off-Peak	Reactive energy	Energy Standard	Energy Peak	Energy Off-Peak	Reactive energy			
TAR F	Ricustim	RIPOSIm	RKVA/m	RKVA/m	R/kWh	ckWh	ckWh	ckVarh	ckWh	ckWh	ckWh	ckVarh	ckWh	ckWh	ckWh	ckVarh			
1	TARIFF CODE																		
1	1. INDIGENT - 1 Fase 20A - Geen Dagtarief																		
1	7. INDIGENT - 1 Fase 20A - Konv																		
1	1. HUISHOUDELIK - 1 Fase 20A Alternatieve tarief																		
1	3. HUISHOUDELIK - 1 Fase 20A + Dagtarief																		
1	6. HUISHOUDELIK - 1 Fase 30A + Dagtarief																		
1	5. HUISHOUDELIK - 1 Fase 30A Alternatieve tarief																		
1	Dom 1 Fase Konv 1-30A																		
1	7. HUISHOUDELIK - 1 Fase 45A + Dagtarief																		
1	7. HUISHOUDELIK - 1 Fase 45A + Dagtarief																		
1	8. HUISHOUDELIK - 1 Fase 60A + Dagtarief																		
1	11. HUISHOUDELIK - 1 Fase 60 AMP Monthly Basic																		
1	Dom 1 Fase Konv 60A																		
1	9. HUISHOUDELIK - 3 Fase 21A - 60A + Dagtarief																		
1	Dom 3 Fase Konv 31-30A																		
1	Dom 3 Fase Konv 31-100A																		
1	BESIGHEID - 1 Fase 20A + Dagtarief																		
1	Konm 1 Fase Konv 20-30Amp																		
1	BESIGHEID - 1 Fase 30A + Dagtarief																		
1	Konm 1 Fase Konv 31-60Amp																		
1	BESIGHEID - 1 Fase 60A + Dagtarief																		
1	Konm 1 Fase Konv 30-100Amp																		
1	BESIGHEID - 3 Fase 60A + Dagtarief																		
1	Konm 3 Fase Konv 20-30Amp																		
1	Konm 3 Fase Konv 31-60Amp																		
1	Konm 3 Fase Konv 61-100Amp																		
1	SPORT GRONDE 0A - 60A - Geen Dagtarief																		
1	Sportgronde 0-30Amp																		
1	Sportgronde 31-60Amp																		
1	Skougronde																		
1	Drostdiy Water Meul																		
1	Skole 31-60Amp 1 fase																		
1	Skole 31-60Amp 3 fase																		
1	Skole Sport gronde																		
1	Standaard Verbruik: 20-30 1 phase																		
1	Standaard Verbruik: 30-60 3 phase																		
1	Munisipale grootmaatdienste																		
1	Normale grootmaatdienste																		
1	Bulk MV																		
1	TOU LV																		
1	TOU MV																		
1	Straatligte																		

Table 49

QUANTITIES CHARGEABLE FOR ALL MONTHS OF THE YEAR										HIGH SEASON QUANTITIES				LOW SEASON QUANTITIES			
CHARGEABLE FOR ALL MONTHS OF										HIGH SEASON QUANTITIES				LOW SEASON QUANTITIES			
TARIFF										TARIFF				TARIFF			
CONSUMPTION										CONSUMPTION				CONSUMPTION			
NAME										NAME				NAME			
TARIFF CODE										TARIFF CODE				TARIFF CODE			
Number of										Number of				Number of			
POD's										POD's				POD's			
Customers										Customers				Customers			
1. INDIGENT - 1 Fase 20A - Geen Daglanef										1. INDIGENT - 1 Fase 20A - Geen Daglanef				1. INDIGENT - 1 Fase 20A - Geen Daglanef			
1. INDIGENT - 1 Fase 20A - Konv										1. INDIGENT - 1 Fase 20A - Konv				1. INDIGENT - 1 Fase 20A - Konv			
1.4. HUISHOUDLIK - 1 Fase 20A Alternatiewe tarief										1.4. HUISHOUDLIK - 1 Fase 20A Alternatiewe tarief				1.4. HUISHOUDLIK - 1 Fase 20A Alternatiewe tarief			
1.3. HUISHOUDLIK - 1 Fase 20A + Daglanef										1.3. HUISHOUDLIK - 1 Fase 20A + Daglanef				1.3. HUISHOUDLIK - 1 Fase 20A + Daglanef			
1.5. HUISHOUDLIK - 1 Fase 30A + Daglanef										1.5. HUISHOUDLIK - 1 Fase 30A + Daglanef				1.5. HUISHOUDLIK - 1 Fase 30A + Daglanef			
1.6. HUISHOUDLIK - 1 Fase 30A Alternatiewe tarief										1.6. HUISHOUDLIK - 1 Fase 30A Alternatiewe tarief				1.6. HUISHOUDLIK - 1 Fase 30A Alternatiewe tarief			
1. Dom 1 Fase Konv 1-30A										1. Dom 1 Fase Konv 1-30A				1. Dom 1 Fase Konv 1-30A			
1.7. HUISHOUDLIK - 1 Fase 45A + Daglanef										1.7. HUISHOUDLIK - 1 Fase 45A + Daglanef				1.7. HUISHOUDLIK - 1 Fase 45A + Daglanef			
1.7. HUISHOUDLIK - 1 Fase 45A + Daglanef										1.7. HUISHOUDLIK - 1 Fase 45A + Daglanef				1.7. HUISHOUDLIK - 1 Fase 45A + Daglanef			
1.8. HUISHOUDLIK - 1 Fase 60A + Daglanef										1.8. HUISHOUDLIK - 1 Fase 60A + Daglanef				1.8. HUISHOUDLIK - 1 Fase 60A + Daglanef			
1.11. HUISHOUDLIK - 1 Fase 60 AMP Monthly Basic										1.11. HUISHOUDLIK - 1 Fase 60 AMP Monthly Basic				1.11. HUISHOUDLIK - 1 Fase 60 AMP Monthly Basic			
1. Dom 1 Fase Konv 60A										1. Dom 1 Fase Konv 60A				1. Dom 1 Fase Konv 60A			
1.9. HUISHOUDLIK - 3 Fase 21A - 60A + Daglanef										1.9. HUISHOUDLIK - 3 Fase 21A - 60A + Daglanef				1.9. HUISHOUDLIK - 3 Fase 21A - 60A + Daglanef			
1. Dom 3 Fase Konv 21-30A										1. Dom 3 Fase Konv 21-30A				1. Dom 3 Fase Konv 21-30A			
1. Dom 3 Fase Konv 21-100A										1. Dom 3 Fase Konv 21-100A				1. Dom 3 Fase Konv 21-100A			
1. BESIGHEID - 1 Fase 20A + Daglanef										1. BESIGHEID - 1 Fase 20A + Daglanef				1. BESIGHEID - 1 Fase 20A + Daglanef			
1. Konv 1 Fase Konv 20-30Amp										1. Konv 1 Fase Konv 20-30Amp				1. Konv 1 Fase Konv 20-30Amp			
1. BESIGHEID - 1 Fase 30A + Daglanef										1. BESIGHEID - 1 Fase 30A + Daglanef				1. BESIGHEID - 1 Fase 30A + Daglanef			
1. BESIGHEID - 1 Fase 45A + Daglanef										1. BESIGHEID - 1 Fase 45A + Daglanef				1. BESIGHEID - 1 Fase 45A + Daglanef			
1. Konv 1 Fase Konv 31-60Amp										1. Konv 1 Fase Konv 31-60Amp				1. Konv 1 Fase Konv 31-60Amp			
1. BESIGHEID - 1 Fase 60A + Daglanef										1. BESIGHEID - 1 Fase 60A + Daglanef				1. BESIGHEID - 1 Fase 60A + Daglanef			
1. Konv 1 Fase Konv 30-100Amp										1. Konv 1 Fase Konv 30-100Amp				1. Konv 1 Fase Konv 30-100Amp			
1. BESIGHEID - 3 Fase 60A + Daglanef										1. BESIGHEID - 3 Fase 60A + Daglanef				1. BESIGHEID - 3 Fase 60A + Daglanef			
1. Konv 3 Fase Konv 20-30Amp										1. Konv 3 Fase Konv 20-30Amp				1. Konv 3 Fase Konv 20-30Amp			
1. Konv 3 Fase Konv 31-60Amp										1. Konv 3 Fase Konv 31-60Amp				1. Konv 3 Fase Konv 31-60Amp			
1. Konv 3 Fase Konv 61-100Amp										1. Konv 3 Fase Konv 61-100Amp				1. Konv 3 Fase Konv 61-100Amp			
1. SPORT GRONDE 0A - 60A - Geen Daglanef										1. SPORT GRONDE 0A - 60A - Geen Daglanef				1. SPORT GRONDE 0A - 60A - Geen Daglanef			
1. Sportgronde 0-30Amp										1. Sportgronde 0-30Amp				1. Sportgronde 0-30Amp			
1. Sportgronde 31-60Amp										1. Sportgronde 31-60Amp				1. Sportgronde 31-60Amp			
1. Skougronde										1. Skougronde				1. Skougronde			
1. Drostyd Water Meul										1. Drostyd Water Meul				1. Drostyd Water Meul			
1. Skole 31-60Amp 1 fase										1. Skole 31-60Amp 1 fase				1. Skole 31-60Amp 1 fase			
1. Skole 31-60Amp 3 fase										1. Skole 31-60Amp 3 fase				1. Skole 31-60Amp 3 fase			
1. Skole 61-100Amp 3 Fase										1. Skole 61-100Amp 3 Fase				1. Skole 61-100Amp 3 Fase			
1. Skole Sport gronde										1. Skole Sport gronde				1. Skole Sport gronde			
1. Standaard Verbruik: 20-30 1 phase										1. Standaard Verbruik: 20-30 1 phase				1. Standaard Verbruik: 20-30 1 phase			
1. Standaard Verbruik: 30-100 1 phase										1. Standaard Verbruik: 30-100 1 phase				1. Standaard Verbruik: 30-100 1 phase			
1. Standaard Verbruik: 30-60 3 phase										1. Standaard Verbruik: 30-60 3 phase				1. Standaard Verbruik: 30-60 3 phase			
1. Standaard Verbruik: 60-100 3 phase										1. Standaard Verbruik: 60-100 3 phase				1. Standaard Verbruik: 60-100 3 phase			
1. Munisipale grootmaatlense										1. Munisipale grootmaatlense				1. Munisipale grootmaatlense			
1. Normale grootmaatlense										1. Normale grootmaatlense				1. Normale grootmaatlense			
1. Bulk WV										1. Bulk WV				1. Bulk WV			
1. TOULV										1. TOULV				1. TOULV			
1. TOUWV										1. TOUWV				1. TOUWV			
1. Straadligte										1. Straadligte				1. Straadligte			
1. Besikikbaarheid										1. Besikikbaarheid				1. Besikikbaarheid			
1. Tot.										1. Tot.				1. Tot.			

The following should be noted in this respect:

- The kVA for small customers represents the total maximum kVA placed on the network and not the actual installed capacity of customers. The peak values are calculated from the representative load profile quantities. This corresponds to using the individual maximum demand method for allocating network costs. If the average and access method was used, these values would be slightly different.
- The subsidised quantities: Basic and Free Basic Electricity (FBE) quantities are removed as we calculate costs.
- These quantities have been adjusted so that the same revenue as before is generated.

Table 50 shows the calculation of the total cost per tariff. It multiplies the per unit costs by the number of units to obtain total revenue.

SWELLENDAM	FROM CHARGES APPLICABLE		REVENUES FROM CHARGES APPLICABLE FOR ALL MONTHS OF THE YEAR				HIGH SEASON REVENUES				LOW SEASON REVENUES					
	Customer service	R/year	Basic		Access		ALL Energy	Energy Peak	Energy Standard	Energy Off-Peak	Reactive energy	Energy Peak	Energy Standard	Energy Off-Peak	Reactive energy	
			R/year	R/year	R/year	R/year										
TOTAL COSTS																
TARIFF F	Customer service	R/year	Basic	Access	MD (all hours)	ALL Energy	Energy Peak	Energy Standard	Energy Off-Peak	Reactive energy	Energy Peak	Energy Standard	Energy Off-Peak	Reactive energy		
NAME	TARIFF CODE	R/year	R/year	R/year	R/year	R/year	R/year	R/year	R/year	R/year	R/year	R/year	R/year	R/year	R/year	
1 INDIGENT - 1 Fase 20A - Geen Dagtarief	-	1 626 057	1 310 551	1 539 995	650 641	1 085 429	877 594	420 443	1 171	1 067 798	1 171 073	1 130 845	-	-	-	
1 INDIGENT - 1 Fase 20A - Konv	-	8 720	582	684	289	482	390	503	187	475	763	503	-	-	-	
1 HUISHOUDELIK - 1 Fase 20A Alternatiewe lanef	-	1 460 406	1 566 346	1 840 572	777 634	1 297 284	1 048 884	5 508	5 508	2 116	1 276 212	2 052 212	1 351 565	-	-	
1 HUISHOUDELIK - 1 Fase 20A + Dagtarief	-	251 921	17 357	20 396	8 617	14 375	11 623	5 568	23	14 142	22 741	14 977	-	-	-	
1 HUISHOUDELIK - 1 Fase 30A + Dagtarief	-	11 743	2 779	3 296	1 384	2 302	1 861	892	4	2 264	3 641	2 398	-	-	-	
1 HUISHOUDELIK - 1 Fase 30A Alternatiewe lanef	-	1 173 727	1 487 308	1 747 696	738 394	1 231 823	995 957	477 149	2 010	1 211 814	1 948 657	1 283 364	-	-	-	
Dom 1 Fase Konv 1 30A	-	340 934	636 842	630 828	266 522	444 625	350 489	172 226	725	437 402	703 365	463 229	-	-	-	
1 HUISHOUDELIK - 1 Fase 45A + Dagtarief	-	208 238	421 943	495 815	209 480	349 463	282 549	135 365	570	343 787	552 827	364 066	-	-	-	
1 HUISHOUDELIK - 1 Fase 45A + Dagtarief	-	1 018	618	728	307	512	414	198	1	503	810	533	-	-	-	
1 HUISHOUDELIK - 1 Fase 60A + Dagtarief	-	294 117	688 093	785 059	331 684	553 330	447 380	214 333	903	544 342	875 329	576 482	-	-	-	
1 HUISHOUDELIK - 1 Fase 60A + Dagtarief	-	3 758	2 779	3 266	1 380	2 302	1 861	892	4	2 264	3 641	2 398	-	-	-	
1 HUISHOUDELIK - 1 Fase 60 AMP Monthly Basic	-	298 208	689 514	810 230	342 319	571 072	461 724	221 205	932	561 795	903 395	594 966	-	-	-	
Dom 1 Fase Konv 60A	-	4 360	27 989	32 889	13 896	23 181	18 743	8 979	38	22 805	36 671	24 151	-	-	-	
Dom 3 Fase Konv 21-30A	-	15 881	38 745	45 529	25 945	32 090	25 945	12 430	52	31 568	50 778	33 432	-	-	-	
Dom 3 Fase Konv 31-100A	-	68 889	142 137	167 022	70 566	117 721	95 180	45 600	192	115 809	186 227	122 647	-	-	-	
1 BESIGHEID - 1 Fase 20A + Dagtarief	-	8 846	11 943	12 165	5 651	9 317	7 687	4 103	39	8 611	14 907	9 709	-	-	-	
Komm 1 Fase Konv 20-30Amp	-	22 671	40 664	48 889	18 889	31 144	25 695	13 714	131	28 782	49 828	32 454	-	-	-	
1 BESIGHEID - 1 Fase 30A + Dagtarief	-	50 181	95 403	97 417	45 251	74 612	61 557	32 854	313	68 951	119 373	77 750	-	-	-	
1 BESIGHEID - 1 Fase 45A + Dagtarief	-	14 091	26 829	27 395	12 725	20 982	17 311	9 239	88	19 390	33 569	21 864	-	-	-	
Komm 1 Fase Konv 31-60Amp	-	53 553	91 997	93 939	43 635	71 948	59 359	31 681	302	66 490	115 111	74 974	-	-	-	
1 BESIGHEID - 1 Fase 60A + Dagtarief	-	52 999	185 947	189 873	88 197	145 424	119 979	64 035	610	134 391	232 666	151 539	-	-	-	
Komm 1 Fase Konv 30-100Amp	-	872	24	19	11	15	8	30	17	17	30	19	-	-	-	
1 BESIGHE																

The following very important point must be noted:

- In the sales analysis it was shown that the calculated revenue using the sales data and tariff data does not exactly achieve the revenue as indicated in the trial balance.
- This is because of inaccurate data provided because of various reasons including journals made in Rand values but not in sales volumes.
- The target sales revenue will thus not be that in the trial balance but that calculated from current tariffs plus adjustments.
- The adjustments are to add back the income foregone from FBE if not included in “n-1” calculations.

The target revenue from the new cost reflective tariffs is shown in Table 51

Table 53

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Table 51

TARGET REVENUE	2023/2024
Previously calculated revenue	122 645 853
Equitable share 2022/2023	1 781 317
Plus add internal sales	(627 537)
Plus additional streetlight revenue	1 276 588
Total	125 076 221

The adjustments that were made to the per unit costs are shown in Table 52. This upward adjustment could be due to the fact that the simulated profiles yield higher values than the actual.

Table 52

Basic adjust	Cap/MD djust	kWh adjust
23.38%	23.38%	

The expanded summary data is shown in Table 53.

Table 53

SWELLENDAM					
TOTAL COSTS		TOTAL	REFERENCE	OVERCHARGE	% Overcharge
TARIF F NAME	TARIFF CODE	COST	TARIFF REVENUE	RAND	+% of Tariff
1	1. INDIGENT - 1 Fase 20A - Geen Dagtarief	11 428 197	5 497 815	-5 930 382	-107.9%
1	1. INDIGENT - 1 Fase 20A - Konv	13 076	2 515	-10 561	-419.8%
1	4. HUISHOUDELIK - 1 Fase 20A Alternatiewe tarief	13 175 737	11 833 837	-1 341 900	-11.3%
1	3. HUISHOUDELIK - 1 Fase 20A + Dagtarief	381 740	132 559	-249 181	-188.0%
1	5. HUISHOUDELIK - 1 Fase 30A + Dagtarief	32 528	40 097	7 569	18.9%
1	6. HUISHOUDELIK - 1 Fase 30A Alternatiewe tarief	12 297 897	11 414 861	-883 036	-7.7%
1	Dom 1 Fase Konv 1-30A	4 356 188	4 603 674	247 486	5.4%
1	7. HUISHOUDELIK - 1 Fase 45A + Dagtarief	3 364 123	3 514 755	150 632	4.3%
1	7. HUISHOUDELIK - 1 Fase 45A + Dagtarief	5 640	7 144	1 504	21.1%
1	8. HUISHOUDELIK - 1 Fase 60A + Dagtarief	5 291 052	5 583 966	292 914	5.2%
1	11. HUISHOUDELIK - 1 FASE 60 AMP Monthly Basic	24 543	30 225	5 682	18.8%
1	Dom 1 Fase Konv 60A	5 455 361	7 114 675	1 659 315	23.3%
1	9. HUISHOUDELIK - 3 Fase 21A - 60A + Dagtarief	213 703	254 976	41 273	16.2%
1	Dom 3 Fase Konv 21-30A	304 972	423 427	118 454	28.0%
1	Dom 3 Fase Konv 31-100A	1 132 063	1 984 213	852 150	42.9%
1	BESIGHEID - 1 Fase 20A + Dagtarief	92 950	124 704	31 754	25.5%
1	Komm 1 Fase Konv 20-30Amp	303 794	441 064	137 270	31.1%
1	BESIGHEID - 1 Fase 30A + Dagtarief	723 661	1 000 015	276 354	27.6%
1	BESIGHEID - 1 Fase 45A + Dagtarief	203 484	281 173	77 689	27.6%
1	Komm 1 Fase Konv 31-60Amp	702 989	1 254 256	551 266	44.0%
1	BESIGHEID - 1 Fase 60A + Dagtarief	1 365 660	1 846 508	480 848	26.0%
1	Komm 1 Fase Konv 30-100Amp	1 040	9 004	7 964	88.4%
1	BESIGHEID - 3 Fase 60A + Dagtarief	1 196 029	1 590 333	394 304	24.8%
1	BESIGHEID - 3 Fase 80A + Dagtarief	1 223 887	1 626 733	402 845	24.8%
1	Komm 3 Fase Konv 20-30Amp	3 818 212	4 517 121	698 909	15.5%
1	Komm 3 Fase Konv 31-60Amp	2 602 928	3 165 087	562 159	17.8%
1	Komm 3 Fase Konv 61-100Amp	2 718 677	2 995 787	277 109	9.2%
1	SPORT GRONDE 0A - 60A - Geen Dagtarief	63 264	69 632	6 368	9.1%
1	Sportgronde 0-30Amp	91 678	107 369	15 692	14.6%
1	Sportgronde 31-60Amp	31 744	38 344	6 600	17.2%
1	Skougronde	13 761	16 946	3 185	18.8%
1	Drostdy Water Meul	2 595	2 140	-455	-21.3%
1	Skole 31-60Amp 1 fase	723 677	901 608	177 930	19.7%
1	Skole 31-60Amp 3 fase	-	-	-	#DIV/0!
1	Skole 61-100Amp 3 Fase	495 849	611 241	115 391	18.9%
1	Skole Sport gronde	13 761	15 641	1 880	12.0%
1	Standaard Verbruik: 20-30 1 phase	1 135 456	883 325	-252 131	-28.5%
1	Standaard Verbruik: 30-100 1 phase	422 124	321 733	-100 391	-31.2%
1	Standaard Verbruik: 30-60 3 phase	95 393	68 166	-27 227	-39.9%
1	Standaard Verbruik: 60-100 3 phase	2 352 680	1 807 703	-544 977	-30.1%
1	Munisipale grootmaatsdienste	3 547 096	3 944 914	397 818	10.1%
1	Normale grootmaatsdienste	15 606 714	17 493 823	1 887 109	10.8%
1	Bulk MV	7 045 419	9 188 421	2 143 002	23.3%
1	TOU LV	1 159 202	806 794	-352 408	-43.7%
1	TOU MV	13 964 587	10 791 995	-3 172 591	-29.4%
1	Straatligte	3 902 566	2 652 575	-1 249 991	-47.1%
1	Beskikbaarheid	1 978 523	1 632 960	-345 563	-21.2%
1	Total	125 076 221	122 645 853	-2 430 368	
1		125 076 221	0.00%	-	

The results are illustrated below in **Figure 14** in % of cost and in **Figure 15** in Rand difference between cost and current revenue. The vertical axis refers to % over or under recovery and the horizontal axis refer to the tariff.

Figure 14

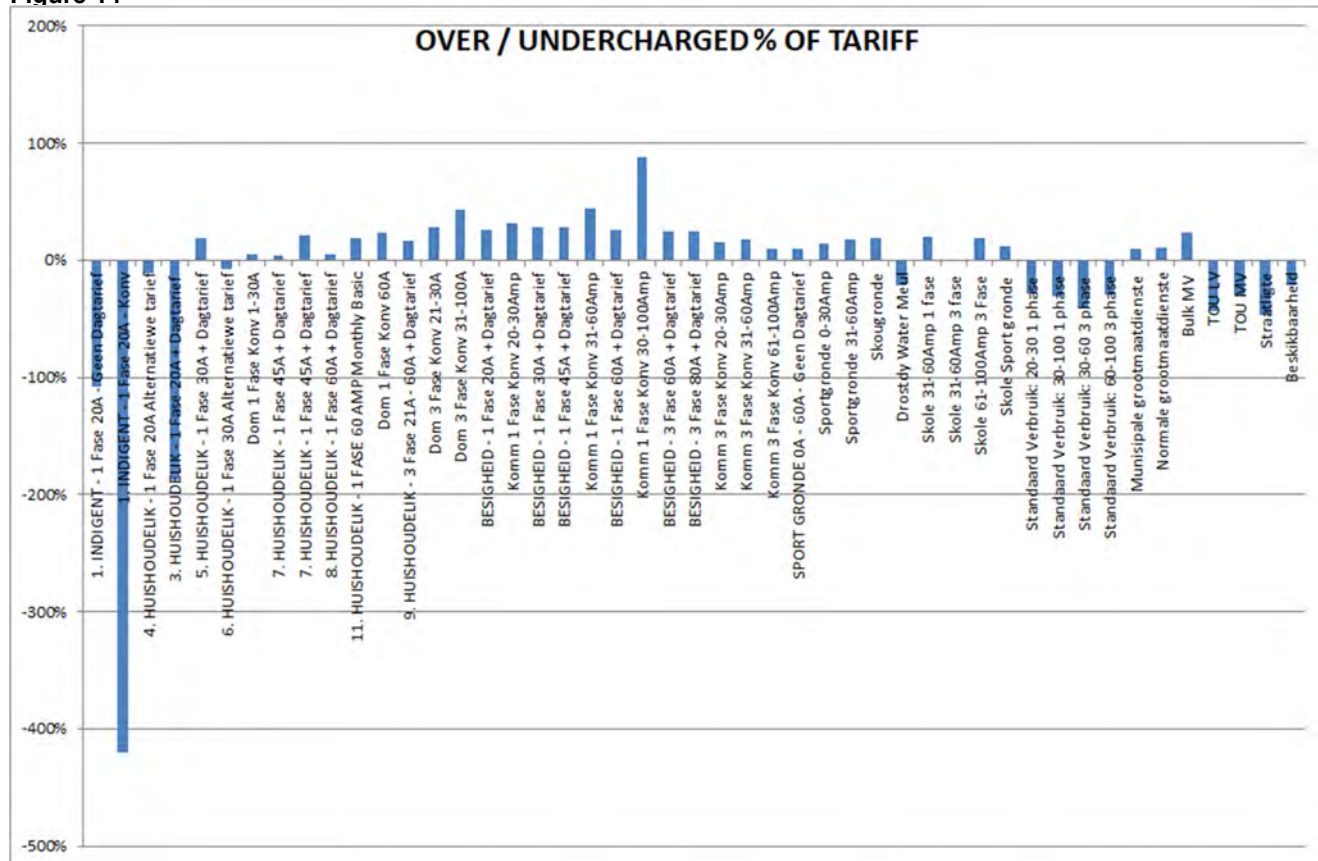
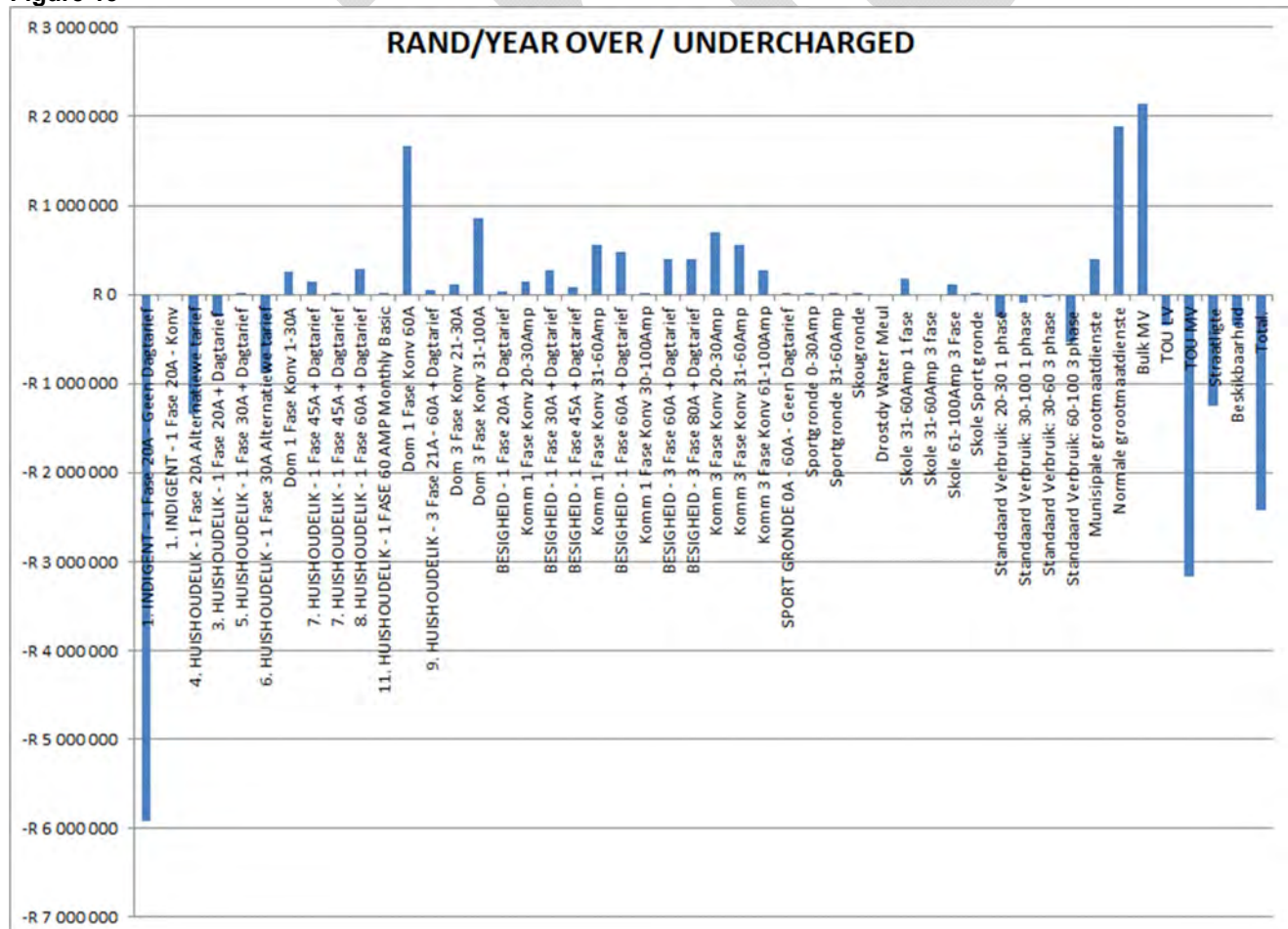


Figure 15



Tariff structure analysis

The cost of supply analysis shows the total cost vs revenue impact of the various tariffs. This section compares the current tariff components with the costs for the same tariff components. This is illustrated in Table 54.

Table 54

SWELLENDAM													
TARIFF SIMPLIFICATION		2023/2024 TARIFFS								SIMPLIFIED COSTS 2023/2024			
TARIFF CHARGES		Basic	Access	MD (aLL hours)	ALL Energy	Block 1 kWh	Block 2 kWh	Block 3 kWh	Block 4 kWh	Basic	Access	Demand	kWh All
Nr	TARIFF NAME	R/POS/m	R/kVA/m	R/kVA/m	R/ kWh	50.00	350.00	600.00	>=600	R/month	R/kVA	R/kVA	R/kWh
1	INDIGENT - 1 Fase 20A - Geen Dagtarief	-	-	-	-	-	1.93	2.74	3.23	-	-	-	3.007
1	INDIGENT - 1 Fase 20A - Konv	-	-	-	-	-	1.93	2.74	3.23	-	-	-	7.742
1	HUSHOUDELIK - 1 Fase 20A Alternatieve tarief	-	-	-	-	2.45	2.60	2.88	3.41	-	-	-	2.901
1	3 HUSHOUDELIK - 1 Fase 20A + Dagtarief	-	-	-	-	2.45	2.60	2.88	3.41	-	-	-	7.585
1	5 HUSHOUDELIK - 1 Fase 30A + Dagtarief	156.49	-	-	-	1.52	1.96	2.76	3.27	119	-	-	1.829
1	6 HUSHOUDELIK - 1 Fase 30A Alternatieve tarief	-	-	-	-	2.45	2.60	2.88	3.41	-	-	-	2.852
1	Dom 1 Fase Konv 1-30A	156.49	-	-	-	1.52	1.96	2.76	3.27	322	-	-	1.829
1	7 HUSHOUDELIK - 1 Fase 45A + Dagtarief	286.65	-	-	-	1.52	1.96	2.76	3.27	423	-	-	1.829
1	7 HUSHOUDELIK - 1 Fase 45A + Dagtarief	286.65	-	-	-	1.52	1.96	2.76	3.27	182	-	-	1.829
1	8 HUSHOUDELIK - 1 Fase 60A + Dagtarief	286.65	-	-	-	1.52	1.96	2.76	3.27	465	-	-	1.829
1	11 HUSHOUDELIK - 1 FASE 60 AMP Monthly Bar	286.65	-	-	-	1.52	1.93	2.74	3.23	204	-	-	1.829
1	Dom 1 Fase Konv 60A	478.88	-	-	-	1.52	1.97	2.77	3.28	438	-	-	1.829
1	19 HUSHOUDELIK - 3 Fase 21A - 60A + Dagtarief	386.84	-	-	-	1.52	1.96	2.76	3.27	1.553	-	-	1.829
1	Dom 3 Fase Konv 21-30A	634.55	-	-	-	1.52	1.97	2.77	3.28	638	-	-	1.829
1	Dom 3 Fase Konv 31-100A	1.188.96	-	-	-	1.52	1.97	2.77	3.28	534	-	-	1.829
1	BESIGHEID - 1 Fase 20A + Dagtarief	179.15	-	-	3.17	-	-	-	-	291	-	-	1.819
1	Komm 1 Fase Konv 20-30Amp	396.38	-	-	2.88	-	-	-	-	331	-	-	1.819
1	BESIGHEID - 1 Fase 30A + Dagtarief	179.25	-	-	3.35	-	-	-	-	379	-	-	1.819
1	BESIGHEID - 1 Fase 45A + Dagtarief	179.25	-	-	3.35	-	-	-	-	380	-	-	1.819
1	Komm 1 Fase Konv 31-60Amp	734.97	-	-	2.80	-	-	-	-	325	-	-	1.819
1	BESIGHEID - 1 Fase 60A + Dagtarief	179.25	-	-	3.35	-	-	-	-	633	-	-	1.819
1	Komm 1 Fase Konv 30-100Amp	734.97	-	-	2.80	-	-	-	-	77	-	-	1.819
1	BESIGHEID - 3 Fase 60A + Dagtarief	179.15	-	-	3.35	-	-	-	-	867	-	-	1.819
1	BESIGHEID - 3 Fase 80A + Dagtarief	179.15	-	-	3.35	-	-	-	-	895	-	-	1.819
1	Komm 3 Fase Konv 20-30Amp	396.38	-	-	2.88	-	-	-	-	1.588	-	-	1.819
1	Komm 3 Fase Konv 31-60Amp	734.97	-	-	2.80	-	-	-	-	1.584	-	-	1.819
1	Komm 3 Fase Konv 61-100Amp	951.89	-	-	2.59	-	-	-	-	-	-	-	2.575
1	SPORT GRONDE 0A - 60A - Geen Dagtarief	-	-	-	3.17	-	-	-	-	-	-	-	2.876
1	Sportgronde 0-30Amp	-	-	-	3.17	-	-	-	-	-	-	-	2.702
1	Sportgronde 31-60Amp	-	-	-	3.17	-	-	-	-	-	-	-	2.620
1	Skougronde	-	-	-	3.43	-	-	-	-	-	-	-	2.785
1	Drostdy Water Meul	-	-	-	3.17	-	-	-	-	114	-	-	1.819
1	Skole 31-60Amp 1 fase	445.94	-	-	3.08	-	-	-	-	2.930	-	-	1.819
1	Skole 31-60Amp 3 fase	1.181.65	-	-	2.88	-	-	-	-	#DIV/0!	-	-	#DIV/0!
1	Skole 61-100Amp 3 Fase	3.142.85	-	-	2.58	-	-	-	-	-	-	-	2.566
1	Skole Sport gronde	-	-	-	3.17	-	-	-	-	-	-	-	2.785
1	Standaard Verbruik 20-30 1 phase	-	-	-	2.57	-	-	-	-	-	-	-	3.298
1	Standaard Verbruik 30-100 1 phase	-	-	-	2.57	-	-	-	-	-	-	-	3.367
1	Standaard Verbruik 30-60 3 phase	-	-	-	2.57	-	-	-	-	-	-	-	3.591
1	Standaard Verbruik 60-100 3 phase	-	-	-	2.57	-	-	-	-	97.314	106.675	141.160	1.803
1	Munisipale grootmaatsdiens	1.090.07	35.14	340.94	1.36	-	-	-	-	531.578	75.017	91.324	1.710
1	Normale grootmaatsdiens	1.090.06	35.14	340.94	1.36	-	-	-	-	531.578	75.017	91.324	1.710
1	Bulk MV	1.090.06	35.14	340.94	1.36	-	-	-	-	986.888	63.305	78.273	1.683
1	TOU LV	1.090.06	49.30	63.27	-	-	-	-	-	531.578	75.017	91.324	1.670
1	TOU MV	1.090.06	49.30	63.27	-	-	-	-	-	986.888	-	-	2.389
1	Straatligte	-	-	-	2.57	-	-	-	-	63.167	14.098	-	-
1	Besikbaarheid	270.00	-	-	-	-	-	-	-	-	327.137	-	-

12.5. Key findings

The following key findings can be made in terms of the tariff levels and structures:

- Indigent customers are seriously. This is due the lack of fixed charges, the low first 2 blocks energy rates and FBE.
- Households alternative are also seriously subsidised due to the same issues as for Indigent consumers.
- Other domestic consumers are close to cost or slightly overcharged.
- Commercial customers without basic charges are overcharged when average consumption is high and undercharged when low.
- All other commercial tariffs are extensively overcharged.
- Bulk consumers at LV and LV undercharged but municipal supplies overcharged due to bad load factors.
- TOU at MV and LV customers are slightly overcharged.
- Streetlight tariffs are too low and do not cover the fixed maintenance costs.

13. PRICING STUDY

Now that the costs are known and how it differs from revenue, new tariffs can be developed. The first step in this process is to develop a new pricing policy.

13.1. Pricing Policy Drivers

It is now clear that the tariffs fall short in being cost reflective tariffs. The challenge is to determine what must guide the changes to be made to become more cost reflective. This section proposes the pricing principles and policies to be followed in making tariff changes.

The key sources used for purpose of formulating these policies are:

- The South African Constitution.
- The South African Electricity Pricing Policy (EPP).
- Municipal Finance Management Act (MFMA).
- Municipal Systems Act (MSA).

NERSA regulates the electricity tariffs in South Africa. The NERSA policies and guidelines thus have to be followed. There are however various NERSA guidelines in conflict with some of the legislation and regulations. The results of the cost of supply study must thus be used to move NERSA in accepting the municipal proposals.

2.1 General Tariff Principles

Section 16 of the Electricity Regulation Act of 2006 states that the setting of prices, charges, tariffs and the regulation of revenues:

- a. must enable an efficient licensee to recover the full cost of its licensed activities, including a reasonable margin or return;
- b. must provide for or prescribe incentives for continued improvement of the technical and economic efficiency with which services are to be provided;
- c. must give end users proper information regarding the costs that their consumption imposes on the licensee's business;
- d. must avoid undue discrimination between customer categories; and
- e. may permit the cross-subsidy of tariffs to certain categories of customers.

Principles obtained from the Municipal Systems Act are as follows:

- a. Users of municipal services should be treated equitably in the application of tariffs.
- b. The amount individual users pay for services should generally be in proportion to their use of that service.
- c. Low income households must have access to at least basic services through:
 - tariffs that cover only operating and maintenance costs;
 - special tariffs or life line tariffs for low levels of use or consumption of services or for basic levels of service; or
 - any other direct or indirect method of subsidisation of tariffs for low income households.
- d. Tariffs must reasonable reflect the costs associated with rendering the service, including capital, operating, maintenance, administration and replacement costs, and interest charges.
- e. Tariffs must be set at levels that facilitate the financial sustainability of the service, taking into account subsidisation from sources other than the service concerned.
- f. Provision may be made for the promotion of local economic development through special tariffs for categories of commercial and industrial users.
- g. The economical, efficient and effective use of resources, the recycling of waste and other appropriate environmental objectives must be encouraged.
- h. The extent of subsidisation of tariffs for low income households and other categories of users should be fully disclosed.
- i. A tariff policy may differentiate between different categories of users, debtors, service providers, services, service standards, geographical areas and other matters as long as such differentiation does not amount to unfair discrimination.

13.2. Pricing policy.

In view of the findings to date, the summarised pricing policy is provided below:

- It should be in line with the National Electricity Pricing Policy.
- All tariffs should be set as close as possible to the cost of supply.
- Indigent customers as registered in terms of indigent policy.
 - These customers limited to 20 Amps with no fixed charges.
 - The current IBT energy rates be retailed.
 - Free Basic Electricity (FBE) of 50 kWh/m off-set by equitable share.
 - The cost of FBE be based on the second block price, thus first block removed????
- Cross subsidisation of low usage domestic customers (poor but not indigent) customers should be done as follows:
 - Customers limited to 20 Amps with no fixed charges.
 - The current IBT energy rates be retailed but first block price be set equal to the second block???
 - No FBE is granted.
- All small customers (domestic / business) > 20 Amp should have a fully cost reflective tariff:
 - A basic charge to reflect the fixed metering, billing, revenue collection and customer services costs.
 - A capacity charge based on the installed / limited capacity of the customer. In other words, the total network costs as calculated for that tariff before (using the relevant demand allocation method), is now divided by the customers' actual capacity.
 - An energy charge that covers the full energy cost, losses and surplus mark-up.
- All large customers should be charged on a TOU tariff with structure and TOU slots as per the Eskom Megaflex tariff applicable to Swellendam including changes over time:
 - Basic charge.
 - Capacity charge based on the highest of the following:
 - Notified demand or highest **annual** maximum demand to cover Eskom Access charge plus dedicated municipal network costs.
 - Maximum demand charge based on **monthly** highest maximum during Peak and Standard Periods only.
 - Energy charges for:
 - High Demand (June, July and August) and Low demand (all other months)
 - Peak, Standard and Off-peak (See diagram below)
 - Reactive energy charge based on kvarh in excess of 30% of kWh during all peak and Standard period for both seasons.
 - Public holidays treated as the day they fall on.
 - The tariffs should be different small consumers (<100 kVA), LV and MV.

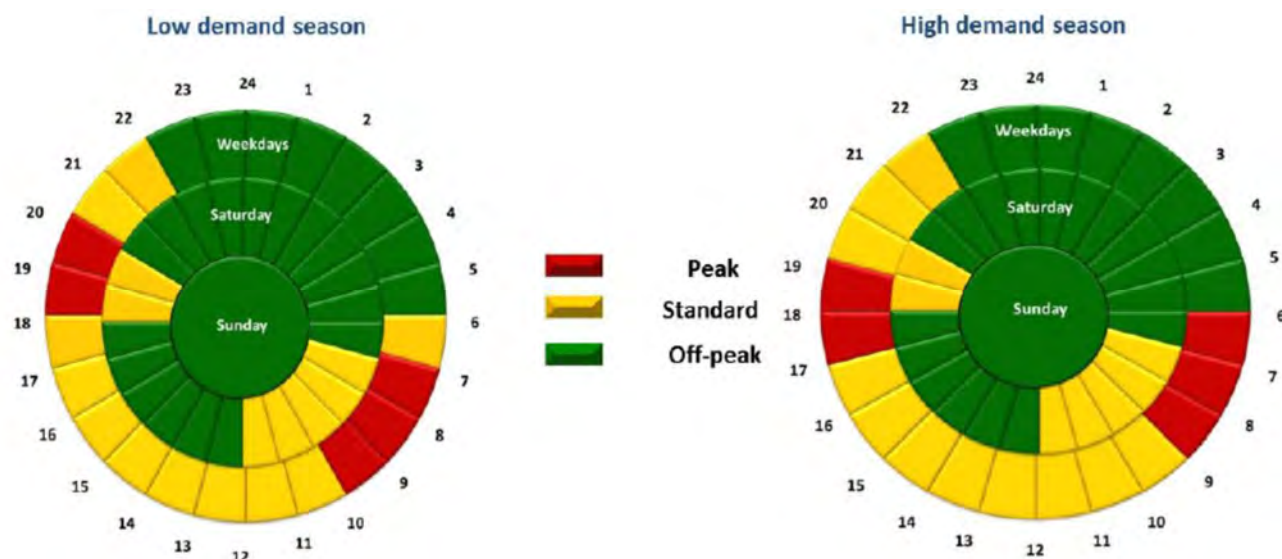
This means that each customer will pay an average price depending on its own TOU ratio's and load factor. This is the same as applied by Eskom on its TOU tariffs.

TOU periods are as shown in

Figure 16.

Final

Figure 16



- Co-generation charges. (SSEG-tariff)
 - The standard Access / Capacity charges remain.
 - Energy purchased by the customer be charged at the relevant standard tariff charges.
 - An additional basic charge be levied to cover the additional metering / billing costs.
 - The energy purchased from the customer be credited on TOU period based on 90% of Eskom TOU energy rates (excluding non-TOU energy charges such as levies). The municipality proposes to reduce this to 50% despite the fact that the current rate is very close to 80%)

13.3. Cross subsidies to the poor.

In view of the proposed pricing policy, it is further proposed that the tariffs for Indigents and 20 Amp customers are not increased structurally. The extent of the cross subsidy in this case is then calculated.

The results of these calculations are shown in Table 55.

Table 55

SUBSIDY ANALYSIS							
Tariffs to be subsidised	Customers	Tot Cost	Current revenue	Shortfall	Equitable share	Subsidy	% subsidy
1. INDIGENT - 1 Fase 20A - Geen Dagtarief	1 731	11 428 197	5 497 815	5 930 382	1 781 317	4 149 065	36%
1. INDIGENT - 1 Fase 20A - Konv	10	13 076	2 515	10 561		10 561	81%
4. HUISHOUELIK - 1 Fase 20A Alternatiewe tarief	1 555	13 175 737	11 833 837	1 341 900		1 341 900	10%
3. HUISHOUELIK - 1 Fase 20A + Dagtarief	268	381 740	132 559	249 181		249 181	65%
5. HUISHOUELIK - 1 Fase 30A + Dagtarief	13	32 528	40 097	-7 569		-7 569	-23%
6. HUISHOUELIK - 1 Fase 30A Alternatiewe tarief	1 249	12 297 897	11 414 861	883 036		883 036	7%
Dom 1 Fase Konv 1-30A	391	4 356 188	4 603 674	-247 486		-247 486	-6%
TOTAL		41 685 363	33 525 358	8 160 005	1 781 317	6 378 688	15%
Total revenue excluding subsidy customers		89 120 495					
Total subsidy as % of Base revenue						7.16%	

This subsidy % is of non-subsidised revenue. The question thus is what the charge for the indigent customers should be.

Table 56 shows the calculation of the marginal Eskom purchase costs. The marginal costs do not refer to the average Eskom purchase price but the price of the domestic customers on its own. In other words, the impact that domestic customers have on increasing the access charge, maximum demand charge, energy charges during the various periods and the reactive energy charges.

Table 56

DOMESTIC ENERGY /MARGINAL ESKOM COST ANALYSIS											
Eskom				2023/2024							
Transmission network charges [R/kVA/m]		R/kVA/m		14.72							
Distribution network charges											
Network capacity charge		R/kVA/m		28.65							
Network demand charge		R/kVA/m		54.31							
Urban low voltage subsidy charge [R/kVA/m]		R/kVA/m		-							

SUBSIDY ANALYSIS: NEW							
Tariffs to be subsidised	Customers	Tot Cost	New revenue	Shortfall	Equitable share	Subsidy	
1. INDIGENT - 1 Fase 20A - Geen Dagtarief	1 731	11 428 197	5 497 232	5 930 965	1 781 317	4 149 648	36%
1. INDIGENT - 1 Fase 20A - Konv	10	13 076	2 495	10 581		10 581	81%
4. HUISHOUELIK - 1 Fase 20A Alternatieve tarief	1 555	13 175 737	11 935 014	1 240 723		1 240 723	9%
3. HUISHOUELIK - 1 Fase 20A + Dagtarief	268	381 740	133 313	248 426		248 426	65%
TOTAL	0	41 685 363	17 568 055	7 430 695	1 781 317	5 649 378	14%
	0	0	0	0	0		
Total revenue excluding subsidy customers	0	89 120 495	-	-	0		
Total subsidy as % of Base revenue					6.34%	6.34%	

14. PROPOSED TARIFFS

In view of the proposed pricing policy the following tariffs are proposed for Swellendam as shown below:

Table 58. It shows the following:

- The current tariffs,
- The current costs escalated to 2023/2024.

Table 59. It shows the following:

- The current tariff
- The proposed rates before annual price increase and phase in.

[illegible]

[illegible]

A slight adjustment is made to achieve the revenue target as shown in green in **Table 60**.

Table 60

Basic adjust.	Access /Demand adjust.	Energy adjust.
-3.70%	-3.70%	0.00%

The following should be noted:

- The basic. Capacity and energy charges will be the same for all domestic consumers as proposed by the municipality. Although the cost of supply study indicates differences between indigent, low usage and high consumers.
- The basic charges for single and three phase consumers will not differ.

15. FINANCIAL IMPACT

The tariffs have been developed in a way that will ensure revenue neutrality from a tariff structure point of view:

- Provision has been made for customers to reduce their circuit breaker capacity thereby building in a small safety margin.
- With the application of cost reflective basic and amp charges, the net revenue loss when customers install renewable energy will be minimised.
- Some savings opportunity is opened by buying surplus renewable energy from customers at a price below that of Eskom power.
- With the more aggressive capacity charges, customers will be more inclined to reduce their peak capacity rather than energy thereby reducing Swellendam's Eskom and own network costs without sacrificing much municipal revenue thereby increasing profitability.

The proposed tariffs thus hold very little risk but real opportunities.

16. TARIFF IMPACT

Table 61 below show the overall impact on customers on each tariff on average. This is for the tariffs before phase in (in other words the whole impact). The impact of each would be about a third of this if phased in over 3 years.

- All Indigents get Basic and capacity charge and 50 kWh/m for free.
- All other poor consumers willing to accept 20 Amps get the Basic for free.
- These discounts are to be recovered via the equitable share. The impact is similar to the current equitable share amount.

Table 61

SWELLENDAM						
CALCULATED REVENUE		2022/2023 Proposed	2022/2023 Reference	Difference	Structure change	Initial cost reflectiveness
Nr	TARIFF NAME	R/year	0.00%	Rand	%	
1	1. INDIGENT - 1 Fase 20A - Geen Dagtarief	5 497 232	5 497 815	-583	-0.01%	-107.9%
1	1. INDIGENT - 1 Fase 20A - Konv	2 495	2 515	-20	-0.80%	-419.8%
1	4. HUISHOUDELIK - 1 Fase 20A Alternatiewe tarief	11 935 014	11 833 837	101 177	0.85%	-11.3%
1	3. HUISHOUDELIK - 1 Fase 20A + Dagtarief	133 313	132 559	754	0.57%	-188.0%
1	5. HUISHOUDELIK - 1 Fase 30A + Dagtarief	21 433	40 097	-18 664	-46.55%	18.9%
1	6. HUISHOUDELIK - 1 Fase 30A Alternatiewe tarief	13 253 050	11 414 861	1 838 190	16.10%	-7.7%
1	Dom 1 Fase Konv 1-30A	4 550 197	4 603 674	-53 477	-1.16%	5.4%
1	7. HUISHOUDELIK - 1 Fase 45A + Dagtarief	3 242 919	3 514 755	-271 836	-7.73%	4.3%
1	7. HUISHOUDELIK - 1 Fase 45A + Dagtarief	8 767	7 144	1 624	22.73%	21.1%
1	8. HUISHOUDELIK - 1 Fase 60A + Dagtarief	5 448 736	5 583 966	-135 230	-2.42%	5.2%
1	11. HUISHOUDELIK - 1 FASE 60 AMP Monthly Basic	39 108	30 225	8 883	29.39%	18.8%
1	Dom 1 Fase Konv 60A	5 724 757	7 114 675	-1 389 918	-19.54%	23.3%
1	9. HUISHOUDELIK - 3 Fase 21A - 60A + Dagtarief	213 020	254 976	-41 956	-16.45%	16.2%
1	Dom 3 Fase Konv 21-30A	333 937	423 427	-89 490	-21.13%	28.0%
1	Dom 3 Fase Konv 31-100A	1 267 452	1 984 213	-716 761	-36.12%	42.9%
1	BESIGHEID - 1 Fase 20A + Dagtarief	97 683	124 704	-27 021	-21.67%	25.5%
1	Komm 1 Fase Konv 20-30Amp	341 379	441 064	-99 685	-22.60%	31.1%
1	BESIGHEID - 1 Fase 30A + Dagtarief	774 153	1 000 015	-225 862	-22.59%	27.6%
1	BESIGHEID - 1 Fase 45A + Dagtarief	217 597	281 173	-63 575	-22.61%	27.6%
1	Komm 1 Fase Konv 31-60Amp	795 298	1 254 256	-458 958	-36.59%	44.0%
1	BESIGHEID - 1 Fase 60A + Dagtarief	1 423 971	1 846 508	-422 538	-22.88%	26.0%
1	Komm 1 Fase Konv 30-100Amp	7 709	9 004	-1 295	-14.38%	88.4%
1	BESIGHEID - 3 Fase 60A + Dagtarief	1 348 889	1 590 333	-241 444	-15.18%	24.8%
1	BESIGHEID - 3 Fase 80A + Dagtarief	1 506 079	1 626 733	-120 653	-7.42%	24.8%
1	Komm 3 Fase Konv 20-30Amp	3 874 639	4 517 121	-642 482	-14.22%	15.5%
1	Komm 3 Fase Konv 31-60Amp	2 642 977	3 165 087	-522 110	-16.50%	17.8%
1	Komm 3 Fase Konv 61-100Amp	2 803 190	2 995 787	-192 596	-6.43%	9.2%
1	SPORT GRONDE 0A - 60A - Geen Dagtarief	74 046	69 632	4 414	6.34%	9.1%
1	Sportgronde 0-30Amp	114 176	107 369	6 806	6.34%	14.6%
1	Sportgronde 31-60Amp	40 775	38 344	2 431	6.34%	17.2%
1	Skougronde	18 020	16 946	1 074	6.34%	18.8%
1	Drostdy Water Meul	2 275	2 140	136	6.34%	-21.3%
1	Skole 31-60Amp 1 fase	598 720	901 608	-302 888	-33.59%	19.7%
1	Skole 31-60Amp 3 fase	-	-	-	#DIV/0!	#DIV/0!
1	Skole 61-100Amp 3 Fase	496 923	611 241	-114 317	-18.70%	18.9%
1	Skole Sport gronde	17 479	15 641	1 837	11.75%	12.0%
1	Standaard Verbruik: 20-30 1 phase	1 217 505	883 325	334 180	37.83%	-28.5%
1	Standaard Verbruik: 30-100 1 phase	443 451	321 733	121 718	37.83%	-31.2%
1	Standaard Verbruik: 30-60 3 phase	93 954	68 166	25 789	37.83%	-39.9%
1	Standaard Verbruik: 60-100 3 phase	2 491 595	1 807 703	683 891	37.83%	-30.1%
1	Munisipale grootmaatdienste	3 841 007	3 944 914	-103 907	-2.63%	10.1%
1	Normale grootmaatdienste	16 914 837	17 493 823	-578 986	-3.31%	10.8%
1	Bulk MV	7 448 489	9 188 421	-1 739 932	-18.94%	23.3%
1	TOU LV	1 223 327	806 794	416 534	51.63%	-43.7%
1	TOU MV	14 637 168	10 791 995	3 845 173	35.63%	-29.4%
1	Straatligte	4 084 319	2 652 575	1 431 744	53.98%	-47.1%
1	Beskikbaarheid	2 031 842	1 632 960	398 882	24.43%	-21.2%
1	Total.	123 294 904	122 645 853	649 051	0.53%	0.0%

The income foregone is deducted as the full cost calculations include such amount as shown below.

TARGET REVENUE	2023/2024
Previously calculated revenue	125 076 221
FBE	(1 781 317)
Total	123 294 904

The following impacts will be experienced over the phase in period using the second option.

- Indigent customers will be limited to 20 Amp only.
- Domestic 20 Amp lifeline consumers will pay more for the first block.
- The general trend for other tariffs is as follows:
 - The category will move closer to cost reflective but still retaining the cross subsidy.

The impact for each customer will however be different. It will depend on the utilisation of the capacity provided to customers and the extent to which electricity is used in the peak times:

- The following customers will generally see increased bills:
 - Those that are not utilising their capacity and are not willing to reduce / manage their capacity, due to the Capacity/Access charges.

- Customers who need large capacity only for a few months in the year.
- TOU customers who use a lot of electricity during the expensive Winter Peak times and are not willing / able to shift load out of these periods.

If these tariffs are phased in over 3 years, customers will have time to adapt to the new rates and thus manage their bills. The impacts shown in the table above will thus be 1/3 for each of the 3 years.

17. CUSTOMER IMPACT

The detailed impact on domestic customers have been further analysed and is illustrated.

Table 62 shows the revenue on existing and proposed tariffs, then the Rand impact of the % change. It also shows the number of consumers on each tariff and the average consumption and selected capacity of these.

Table 62

DOMESTIC TARIFF IMPACT:											
RESTRUCTURED WITHOUT PRICE INCREASE AND PHASE IN											
Existing Tariff	Capacity Amps	Basic Per month R/m	Capacity Per A (installed) R/A/m	Energy Block 1 rate c/kWh	Block 1 size kWh/m	Block 2 rate c/kWh	Block 2 size kWh/m	Block 3 rate c/kWh	Block 3 size kWh/m	Block 4 rate c/kWh	Block 4 size kWh/m
Dom Deernis 1 fase 20 A	20	-		-	50.00	1.933	350.00	2.739	600	3.234	100000
Dom 1 Fase PP 1-20A Alternatief	20			2.451	50.00	2.601	350.00	2.877	600	3.406	100000
Dom 1 Fase PP 0-30A	30	156.49		1.519	50.00	1.956	350.00	2.762	600	3.268	100000
Dom 1 Fase PP 45A	45	286.65		1.519	50.00	1.956	350.00	2.762	600	3.268	100000
Dom 1 Fase PP 60A	60	286.65		1.519	50.00	1.956	350.00	2.762	600	3.268	100000
Dom 3 Fase PP 21-60A	180	386.84		1.519	50.00	1.956	350.00	2.762	600	3.268	100000
Dom 1 Fase Konv 1-30A	30	247.70		1.519	50.00	1.968	350.00	2.773	600	3.280	100000
Dom 1 Fase Konv 45A	40	478.88		1.519	50.00	1.968	350.00	2.773	600	3.280	100000
Dom 1 Fase Konv 60A	45	478.88		1.519	50.00	1.968	350.00	2.773	600	3.280	100000
Dom 3 Fase Konv 21-30A	90	634.55		1.519	50.00	1.968	350.00	2.773	600	3.280	100000
Dom 3 Fase Konv 31-100A	300	1 188.96		1.519	50.00	1.968	350.00	2.773	600	3.280	100000
Proposed											
Dom Deernis 1 fase 20 A	20			0.000	50.00	1.933	350.00	2.739	600	2.739	100000
Dom 1 Fase PP 1-20A Alternatief	20			2.601	50.00	2.601	350.00	2.877	600	2.877	100000
Dom 1 Fase PP 0-30A	30	77.88	8.17	0.000	100000.00						
Dom 1 Fase PP 45A	45	77.88	8.17	0.000	100000.00						
Dom 1 Fase PP 60A	60	77.88	8.17	-	100000.00						
Dom 3 Fase PP 21-60A	180	77.88	8.17	-	100000.00						
Dom 1 Fase Konv 1-30A	30	77.88	8.17	-	100000.00						
Dom 1 Fase Konv 45A	40	77.88	8.17	-	100000.00						
Dom 1 Fase Konv 60A	45	77.88	8.17	-	100000.00						
Dom 3 Fase Konv 21-30A	90	77.88	8.17	-	100000.00						
Dom 3 Fase Konv 31-100A	300	77.88	8.17	-	100000.00						
IMPACT: TOTAL IMPACT EXCLUDING PRICE INCREASE											
Amps	Exis										
Amps	CHANGE IN REVENUE										
20.00	Prop-Dom Deernis 1 fase 20 A20 to Prop-Dom Deernis 1	0	0	0	0	0	0	0	-50	-99	-149
20.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 1-20A Alt	0	8	8	8	8	8	8	-45	-98	-151
30.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 0-30A30	166	90	-7	-203	-495	-911	-1 187	-1 514	-1 840	-2 167
45.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 45A45	159	83	-15	-211	-504	-918	-1 195	-1 521	-1 848	-2 175
60.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 60A60	281	205	107	-88	-382	-796	-1 072	-1 399	-1 726	-2 052
20.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	1 161	1 085	987	792	498	84	-192	-519	-846	-1 173
30.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	75	-1	-99	-296	-591	-1 007	-1 284	-1 612	-1 940	-2 268
45.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	-74	-150	-249	-446	-741	-1 157	-1 434	-1 762	-2 090	-2 418
60.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	-34	-109	-208	-405	-700	-1 116	-1 393	-1 721	-2 049	-2 377
120.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 3 Fase PP	178	102	4	-193	-488	-904	-1 181	-1 509	-1 837	-2 165
Amps	CHANGE %										
20.00	Prop-Dom Deernis 1 fase 20 A20 to Prop-Dom Deernis 1 fase 20 A20			0.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-5.2%	-6.6%
20.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 1-20A Alternatief20		6.1%	3.0%	1.5%	0.8%	0.6%	0.5%	-2.3%	-4.3%	-5.7%
30.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 0-30A30	106.3%	38.9%	-2.2%	-38.6%	-60.6%	-73.8%	-78.6%	-82.4%	-85.1%	-87.0%
45.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 45A45	55.4%	22.8%	-3.3%	-32.1%	-53.1%	-67.3%	-72.8%	-77.4%	-80.6%	-83.0%
60.00	Dom 1 Fase PP 0-30A to Prop-Dom 1 Fase PP 60A60	98.1%	56.6%	23.3%	-13.4%	-40.2%	-58.4%	-65.4%	-71.1%	-75.2%	-78.3%
20.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	300.1%	234.4%	176.1%	104.7%	47.5%	5.7%	-11.1%	-25.1%	-35.3%	-43.1%
30.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	30.3%	-0.2%	-23.5%	-47.8%	-64.7%	-75.7%	-79.9%	-83.3%	-85.7%	-87.5%
45.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	-15.5%	-27.1%	-38.1%	-52.4%	-64.7%	-74.1%	-78.0%	-81.3%	-83.8%	-85.7%
60.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 1 Fase PP	-7.0%	-19.7%	-31.8%	-47.6%	-61.1%	-71.5%	-75.8%	-79.4%	-82.1%	-84.2%
120.00	Dom 1 Fase PP 1-20A Alternatief to Prop-Dom 3 Fase PP	28.1%	14.4%	0.5%	-19.2%	-37.5%	-52.7%	-59.2%	-65.0%	-69.3%	-72.7%

The average percentages only represent the average. The case will be different for each customer. It will depend largely on how effective customers utilise their capacity. In other words, customers with large capacity and low consumption will see higher increases and those with low capacity and high consumption will see lower increases. This clearly shows that only customers that are not willing to reduce / manage their capacity or have irregular usage over the months in the year will pay significantly more. If these tariffs are phased in over 3 years customers will have time to adapt to the new rates and thus manage their bills.

The impact on Business consumers is illustrated here. Table 63 below show the existing and proposed tariffs.

Table 63

Commercial														
RESTRUCTURED WITHOUT PRICE INCREASE AND PHASE IN			Basic	Capacity	Energy									
Existing Tariff	Capacity		Per month	Per A	R/kWh	Block 1 size								
2023/2024	Amps		R/m	R/A/m	c/kWh	kWh/m								
Komm 1 Fase PP 30A		30	R179.15	R0.00	R3.165	100000.00								
Komm 1 Fase PP 60A - 80A		80	R179.25	R0.00	R3.349	100000.00								
Komm 3 Fase PP 60A - 80A		240	R179.15	R0.00	R3.349	100000.00								
Komm 1 Fase Konv 20-30Amp		30	R396.38	R0.00	R2.877	100000.00								
Komm 1 Fase Konv 31-60Amp		60	R734.97	R0.00	R2.796	100000.00								
Komm 3 Fase Konv 20-30Amp		90	R951.89	R0.00	R2.589	100000.00								
Komm 3 Fase Konv 31-60Amp		180	R1 887.34	R0.00	R2.589	100000.00								
Komm 3 Fase Konv 61-100Amp		240	R3 142.63	R0.00	R2.543	100000.00								
Proposed														
Komm 1 Fase PP 30A		30	R77.88	R11.04	R1.934	100000.00								
Komm 1 Fase PP 60A - 80A		80	R77.88	R11.04	R1.934	100000.00								
Komm 3 Fase PP 60A - 80A		240	R103.04	R11.04	R1.934	100000.00								
Komm 1 Fase Konv 20-30Amp		30	R77.88	R11.04	R1.934	100000.00								
Komm 1 Fase Konv 31-60Amp		60	R77.88	R11.04	R1.934	100000.00								
Komm 3 Fase Konv 20-30Amp		90	R103.04	R11.04	R1.934	100000.00								
Komm 3 Fase Konv 31-60Amp		180	R103.04	R11.04	R1.934	100000.00								
Komm 3 Fase Konv 61-100Amp		240	R103.04	R11.04	R1.934	100000.00								
IMPACT: TOTAL IMPACT EXCLUDING PRICE INCREASE			kWh/m	200										
Amps	EXISTING REVENUE		0	200	400	600	800	1000	1200	1400	1600	1800	2000	2200
Amps	CHANGE IN REVENUE													
30.00	Komm 1 Fase PP 30A to Komm 1 Fas	230	-16	-262	-509	-755	-1 001	-1 247	-1 493	-1 740	-1 986	-2 232	-2 478	
80.00	Komm 1 Fase PP 60A - 80A to Komm	782	499	216	-67	-350	-633	-916	-1 199	-1 482	-1 765	-2 048	-2 331	
240.00	Komm 3 Fase PP 60A - 80A to Komm	2 574	2 291	2 008	1 725	1 442	1 159	876	593	310	27	-256	-539	
30.00	Komm 1 Fase Konv 20-30Amp to Kon	13	-176	-364	-553	-742	-930	-1 119	-1 307	-1 496	-1 685	-1 873	-2 062	
60.00	Komm 1 Fase Konv 31-60Amp to Kon	5	-167	-339	-512	-684	-857	-1 029	-1 201	-1 374	-1 546	-1 719	-1 891	
90.00	Komm 3 Fase Konv 20-30Amp to Kon	145	14	-117	-248	-379	-510	-641	-772	-903	-1 034	-1 165	-1 296	
180.00	Komm 3 Fase Konv 31-60Amp to Kon	203	72	-59	-190	-321	-452	-583	-714	-845	-976	-1 107	-1 238	
240.00	Komm 3 Fase Konv 61-100Amp to Ko	-389	-511	-633	-755	-877	-998	-1 120	-1 242	-1 364	-1 486	-1 607	-1 729	
Amps	CHANGE %		0	200	400	600	800	1 000	1 200	1 400	1 600	1 800	2 000	Customers
30.00	Komm 1 Fase PP 30A to Komm 1 Fas	128.4%	-2.0%	-18.2%	-24.5%	-27.8%	-29.9%	-31.4%	-32.4%	-33.2%	-33.8%	-34.3%	-34.7%	
80.00	Komm 1 Fase PP 60A - 80A to Komm	436.3%	58.8%	14.2%	-3.1%	-12.2%	-17.9%	-21.8%	-24.6%	-26.8%	-28.4%	-29.8%	-30.9%	
240.00	Komm 3 Fase PP 60A - 80A to Komm	1436.8%	269.9%	132.2%	78.8%	50.5%	32.9%	20.9%	12.2%	5.6%	0.4%	-3.7%	-7.1%	
30.00	Komm 1 Fase Konv 20-30Amp to Kon	3.2%	-18.1%	-23.6%	-26.1%	-27.5%	-28.4%	-29.1%	-29.6%	-29.9%	-30.2%	-30.5%	-30.7%	
60.00	Komm 1 Fase Konv 31-60Amp to Kon	0.7%	-12.9%	-18.3%	-21.2%	-23.0%	-24.3%	-25.2%	-25.8%	-26.4%	-26.8%	-27.2%	-27.5%	
90.00	Komm 3 Fase Konv 20-30Amp to Kon	15.2%	1.0%	-5.9%	-9.9%	-12.5%	-14.4%	-15.8%	-16.9%	-17.7%	-18.4%	-19.0%	-19.5%	
180.00	Komm 3 Fase Konv 31-60Amp to Kon	10.8%	3.0%	-2.0%	-5.5%	-8.1%	-10.1%	-11.7%	-12.9%	-14.0%	-14.9%	-15.7%	-16.3%	
240.00	Komm 3 Fase Konv 61-100Amp to Ko	-12.4%	-14.0%	-15.2%	-16.2%	-16.9%	-17.6%	-18.1%	-18.5%	-18.9%	-19.2%	-19.5%	-19.8%	

It is believed that if phased in over 3 years this impact should be acceptable and the results should be very good for the municipality.

18. BULK TOU TARIFFS

TOU tariffs must continue to be applied to Bulk consumers and even be applied to small customers. This is because:

- It offers opportunities for customers to shift load thereby reducing their own costs without any detrimental financial impact on the municipality.
- It offers savings to the municipality when the system peaks are reduced due to customer load shifting.
- Municipal own purchase costs can be reduced when the tariff is applied to internal consumption points such as sewerage works.
- This is a requirement in terms of the EPP.

The Cost of Supply study follows an approach of applying % surcharges to achieve the required revenue. When this is applied to the TOU energy rates, the tariffs are seriously distorted. This is because the same % surcharge on the more expensive Peak energy charges cause a very high c/kWh mark-up compared with that on the cheaper off-peak period. This means that when customers shift load from the Peak to Standard or Off-peak, the loss in revenue far exceeds the savings in Eskom purchase costs.

The tariffs are then redesigned by applying the same c/kWh on all energy rates but to still achieve the same revenue as shown in Table 64. It also shows the load shifting impact of the initial tariffs. Under the proposed tariffs the load shift impact is zero as the mark-up in the different periods are the same and thus no net revenue (change in revenue minus charge in purchase cost) is lost.

Table 64

TOU TARIFF REDESIGN				HIGH SEASON CHARGES			LOW SEASON CHARGES			Reactive energy	Total
	Basic	Access	MD (all hours)	Energy Peak	Energy Standard	Energy Off-Peak	Energy Peak	Energy Standard	Energy Off-Peak		
	R/month	R/kVA	R/kVA	kWh	kWh	kWh	kWh	kWh	kWh	kvarh	
ESKOM MEGAFLEX			Increase	0							0
Megaflex at MV	2023/2024	43.37	82.96		5.851	1.874	1.085	2.007	1.427	0.958	0.2511
With escalation	2023/2024	43.37	82.96		5.851	1.874	1.085	2.007	1.427	0.958	0.251

				HIGH SEASON CHARGES			LOW SEASON CHARGES			Reactive energy	Total
	Customer service	Access	MD (all hours)	All Energy	Energy Peak	Energy Standard	Energy Off-Peak	Energy Peak	Energy Standard	Energy Off-Peak	
	Customers	kVA	kVA	kWh	kWh	kWh	kWh	kWh	kWh	kWh	Rand
Bulk TOU at LV	Markup	0.3447									
Consumption	5	498	4 597		68 873	175 213	205 991	163 381	417 386	517 205	37 751
Initial tariff	544	77	94	-	6.9123	2.2141	1.2814	2.3708	1.6856	1.1321	0.2785
R/kWh markup					1.0617	0.3401	0.1968	0.3641	0.2589	0.1739	0.0274
% Markup					18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	10.9%
Revenue: Initial T	32 661	459 070	429 891	-	476 070	387 933	263 961	387 351	703 545	585 518	10 514
New tariff	544.35	76.82	93.52	-	6.195	2.219	1.429	2.351	1.771	1.303	0.251
Revenue: New ta	32 661	459 070	429 891	-	426 690	388 747	294 425	384 175	739 362	673 872	9 479
R/kWh markup				R/kWh	0.345	0.345	0.345	0.345	0.345	0.345	
% Markup				%	5.89%	18.39%	31.78%	17.18%	24.16%	35.97%	
Load shift impact initial tariff:				R/kWh	Savings in Eskom cost	Lost revenue	Net impact	Savings in Eskom cost	Lost revenue	Net impact	
		Peak to Standard			3.98	4.70	0.72	0.58	0.69	0.11	
		Peak to Off-Peak			4.77	5.63	0.86	1.05	1.24	0.19	
		Standard to Off-peak			0.79	0.93	0.14	0.47	0.55	0.09	

				HIGH SEASON CHARGES			LOW SEASON CHARGES			Reactive energy	Total
	Customer service	Access	MD (all hours)	All Energy	Energy Peak	Energy Standard	Energy Off-Peak	Energy Peak	Energy Standard	Energy Off-Peak	
	Customers	kVA	kVA	kWh	kWh	kWh	kWh	kWh	kWh	kWh	Rand
Bulk TOU at MV	Markup	0.2426									129.6890872
Consumption	34	1 901	20 060	480 768	308 225	784 125	921 867	731 172	1 867 915	2 314 632	6 927 938
Initial tariff	986.89	63.31	78.27		6.7280	2.1550	1.2473	2.3076	1.6407	1.1019	0.2785
R/kWh markup					0.8774	0.2810	0.1627	0.3009	0.2140	0.1437	0.0274
% Markup					15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	10.9%
Revenue: Initial T	402 650	1 444 245	1 570 151	-	2 073 741	1 689 822	1 149 804	1 687 283	3 064 613	2 550 492	17 562 223
New tariff	986.89	63.31	78.27	-	6.093	2.117	1.327	2.249	1.669	1.201	0.251
Revenue: New Ta	402 650	1 444 245	1 570 151	-	1 878 092	1 659 715	1 223 543	1 644 658	3 118 194	2 779 513	17 460 366
R/kWh markup				R/kWh	0.243	0.243	0.243	0.243	0.243	0.243	
% Markup				%	4.15%	12.95%	22.37%	12.09%	17.01%	25.32%	0.00%
Load shift impact initial tariff:				R/kWh	Savings in Eskom cost	Lost revenue	Net impact	Savings in Eskom cost	Lost revenue	Net impact	
		Peak to Standard			3.98	4.57	0.60	0.58	0.67	0.09	
		Peak to Off-Peak			4.77	5.48	0.71	1.05	1.21	0.16	
		Standard to Off-peak			0.79	0.91	0.12	0.47	0.54	0.07	

The following is important to note from this change to TOU tariffs:

- The basic, capacity and demand charges remain the same.
- The energy charges are set with the same c/kWh markup on each Eskom TOU energy charge.
- The revenue from each TOU tariff remains the same (difference in yellow)
- This is done by adjusting the c/kWh markup (in green).

18.1. Bulk TOU tariff impact study

Although the cost of supply study proposes tariffs that are cost reflective with subsidies for the poor it is important to get an idea of the impact on individual customers. Normally individual impact studies are done for all Bulk customers. Not all load profile data available to the municipality was made available for analysis. There was also an argument that the load profile data may not be displayed with any customer names. The data that was made available was analysed to illustrate the individual customer impact.

The tariffs used for the analysis is shown in Table 65. The existing maximum demand charges that are different for each TOU period has been recalculated to reflect one demand charge by using the relative demands of consumers in the different periods times the rate for each period.

Table 65

TOU TARIFFS FROM COS		Actual 2023/2024				Proposed 2023/2024			
All rates include surcharges.		BASIC	ACCESS	MAXIMUM	ENERGY	BASIC	ACCESS	MAXIMUM	ENERGY
SEGMENT		CHARGE	DEMAND	DEMAND	CHARGE	CHARGE	DEMAND	DEMAND	CHARGE
Tariff Name	Code	R/C/m	R/kVA/m	R/A/m	R/kWh	R/C/m	R/kVA/m	R/A/m	R/kWh
3.A. Low voltage consumers (Tariff code)	LLV	1 090.07	35.14	340.94	1.358				
3.B. Medium voltage consumers Existing	LV	1 090.07	35.14	340.94	1.358				
3.B. Medium voltage consumers New c	MV	1 090.06	35.14	340.94	1.358				
3.C. Medium voltage at the HV to MV sub	MV At HV sub								
						Proposed tariffs with same R/kWh markup			
TOU TARIFFS		Basic	Access	Demand		Basic	Access	Demand	
LLV		Basic: MD (Hi / Low): MD/Acc		-					
		Energy: High: P/St/OP (R/kWh)							
		Energy: Low: P/St/OP : R/kvarh							
LV		Basic: MD (Hi / Low): MD/Acc	1 090.06	49.30	63.27	544.35	76.82	93.52	
		Energy: High: P/St/OP (R/kWh)	6.0770	1.9450	1.1270	6.1953	2.2187	1.4293	0.251
		Energy: Low: P/St/OP : R/kvarh	2.0940	1.4960	1.0010	2.351	1.771	1.303	
MV		Basic: MD (Hi / Low): Acc/MD	1 090.06	49.30	63.27	1 010.59	64.83	80.15	
		Energy: High: P/St/OP (R/kWh)	6.0770	1.9450	1.1270	6.0932	2.1166	1.3272	0.251
		Energy: Low: P/St/OP : R/kvarh	2.0940	1.4960	1.0010	2.249	1.669	1.201	

The ½ hourly load profile of all the profiles that were sent were analysed. The result of this analysis is illustrated in Table 66 for one customer.

Table 66

One		ENERGY			DEMAND					TOTAL	TOTAL				
		P	S	O	MD - KVA ALL	MD - KW ALL	MD P&S	MD highest	MD highest	ENERGY	P&S	KVA LOAD FACTOR	P	S	O
MONTH	Days	kWh (for)	kWh (for)	kWh (for)	kVA	kW	kVA	kVA	kW	kWh (for)	kvarh	%	kWh (for)	kWh (for)	kWh (for)
2022/07/31	31	1 188	3 958	2 949	34.00	34.00	34.00	37	37	8 098	0	32.00%	14.68%	48.89%	36.43%
2022/08/31	31	1 312	4 502	3 122	35.88	35.88	35.88	37	37	8 930	1	33.48%	14.68%	50.36%	34.94%
2022/09/30	30	1 382	3 137	2 253	31.42	31.28	30.28	37	37	6 772	4	29.94%	20.41%	46.32%	33.27%
2022/10/31	31	1 107	3 054	2 322	27.96	27.88	27.12	37	37	6 484	7	31.17%	17.08%	47.10%	35.82%
2022/11/30	30	1 232	3 088	2 329	27.76	27.76	27.76	37	37	6 649	8	33.27%	18.53%	46.45%	35.02%
2022/12/31	31	1 192	3 431	2 795	37.00	37.00	37.00	37	37	7 417	7	26.94%	16.06%	46.26%	37.68%
2023/01/31	31	1 120	3 241	2 525	32.96	32.96	32.96	37	37	6 886	19	28.08%	16.26%	47.06%	36.67%
2023/02/28	28	1 065	2 816	2 321	28.08	28.08	28.08	37	37	6 202	2	32.87%	17.17%	45.40%	37.43%
2023/03/31	31	1 164	3 044	2 449	28.64	28.64	28.64	37	37	6 657	0	31.24%	17.49%	45.72%	36.79%
2023/04/30	30	727	2 168	2 790	33.80	33.80	33.80	37	37	5 684	4	23.50%	12.79%	38.13%	49.08%
2023/05/31	31	909	3 120	2 249	33.56	33.56	33.56	37	37	6 278	6	25.14%	14.46%	49.70%	35.82%
2023/06/30	30	834	3 590	2 467	33.04	33.04	33.04	37	37	6 891	9	28.97%	12.10%	52.09%	35.81%
TOTALS		13 232	39 148	30 573	383.90	383.68	381.92	37	37	82 952	69	25.59%	15.95%	47.19%	36.88%

The calculation of the revenue for each of the tariff components for each month is shown in Table 67. This is done for each of the tariff options.

Table 67

One'	New TOU											
	Admin Charge	Network access charge:	Network demand charge:	Peak c/kWh	Standard c/kWh	Off-peak c/kWh	Reactive energy (c/kvarh)	Total	c/kWh			
31-Jul-22	544.35	3 480	4 201	12 924	11 750	10 927	66	43 893	292			
31-Aug-22	544.35	3 480	4 178	17 409	15 047	13 285	52	53 996	286			
30-Sep-22	544.35	3 480	3 384	4 905	8 537	8 201	-	29 052	220			
31-Oct-22	544.35	3 480	3 346	3 976	9 339	7 933	-	28 618	219			
30-Nov-22	544.35	3 480	4 074	4 296	9 632	6 188	-	28 215	235			
31-Dec-22	544.35	3 480	4 034	3 713	8 990	6 112	-	26 873	237			
31-Jan-23	544.35	3 480	4 237	4 150	9 305	5 875	-	27 590	239			
28-Feb-23	544.35	3 480	3 820	3 546	8 106	6 110	-	25 607	238			
31-Mar-23	544.35	3 480	3 964	3 712	8 080	5 783	-	25 564	242			
30-Apr-23	544.35	3 480	3 182	2 040	4 805	6 174	-	20 226	243			
31-May-23	544.35	3 480	3 315	3 133	6 690	6 548	-	23 711	234			
30-Jun-23	544.35	3 480	2 811	9 056	8 783	6 585	15	31 275	312			
Total	6 532	41 762	44 545	72 862	109 085	89 720	134	364 621	252			
							25.8	86 931	60			

This is then done for all customers. The results are shown in Table 68. It shows the following impact for each customer. The table shows the impact for the consumers who's load profiles were provided. This represents about 25% of the total bulk sales. The names have been hidden for privacy.

- Old MD to new TOU and Old to New TOU

Negative (-) amounts shown reduction in bill and positive (+) amounts show increases.

Table 68

	+ INCREASE		IMPACT SUMMARY							
Voltage	Old MD to new TOU		Old to New TOU		Annual	Monthly				
Voltage	Old MD to new TOU	%	Old to New TOU	Diff %	LF	LF	Energy cost	kWh	c/kWh	Highest M
LV	(29 853)	-14.34%			19.8%	31.1%	112 436	62 842	178.92	36
LV	(14 393)	-38.53%			5.8%	9.5%	6 079	3 423	177.60	7
LV			16 373	20.88%	6.3%	11.7%	36 541	18 622	196.23	34
LV	(28 853)	-3.74%			33.9%	44.4%	557 663	297 286	187.58	100
LV	(32 229)	-25.37%			6.3%	11.7%	36 541	18 622	196.23	34
LV	(28 853)	-3.74%			33.9%	44.4%	557 663	297 286	187.58	100
LV	(131 991)	-7.82%			25.6%	33.1%	1 092 035	566 642	192.72	253
LV	(20 551)	-34.59%			8.7%	11.6%	14 390	7 797	184.56	10
LV	(25 009)	-22.89%			16.3%	20.0%	47 247	24 120	195.88	17
LV	(76 990)	-5.71%			32.1%	35.0%	938 158	469 320	199.90	167
LV	(12 328)	-31.08%			8.9%	15.6%	9 921	5 426	182.83	7
LV	(25 808)	-20.21%			13.8%	20.3%	55 513	28 558	194.38	24
MV			430 538	18.00%	10.6%	16.7%	1 541 519	840 291	183.45	906
LV	(10 724)	-2.41%			30.0%	49.9%	320 914	176 256	182.07	67
LV	(13 066)	-28.58%			12.3%	19.2%	14 460	7 805	185.25	7
MV			2 680 007	17.58%	50.9%	55.3%	14 314 815	8 288 712	172.70	1 859
LV	(48 743)	-2.38%			41.9%	47.4%	1 555 664	828 385	187.79	226
LV	(49 358)	-6.10%			32.4%	37.4%	560 558	289 094	193.90	102
LV	(309 369)	-36.98%			5.6%	6.7%	176 060	89 493	196.73	184
LV	(32 904)	-15.68%			14.4%	23.1%	102 727	52 936	194.06	42
LV	(47 886)	-27.23%			12.0%	14.7%	64 038	32 976	194.19	31
LV	(15 050)	-18.85%			28.9%	29.7%	41 168	21 544	191.09	9
LV	(61 877)	-15.91%			22.7%	29.9%	215 270	120 058	179.30	60
LV	(92 548)	-18.02%			9.6%	15.7%	213 259	103 681	205.69	123
LV	(6 972)	-11.06%			25.3%	45.4%	36 815	19 389	189.88	9
LV	(56 630)	-22.34%			11.7%	16.4%	102 689	52 024	197.39	51
LV	(42 687)	-16.25%			16.5%	20.6%	133 152	63 776	208.78	44
LV	(62 917)	-11.06%			33.2%	36.1%	368 415	198 887	185.24	68
-	-2 142 960		3 949 273							

This shows a total decrease in revenue higher than on the main study. This is because this is only a part of the total consumer base.

The impacts are illustrated graphically in Figure 17 and Figure 18.

Figure 17

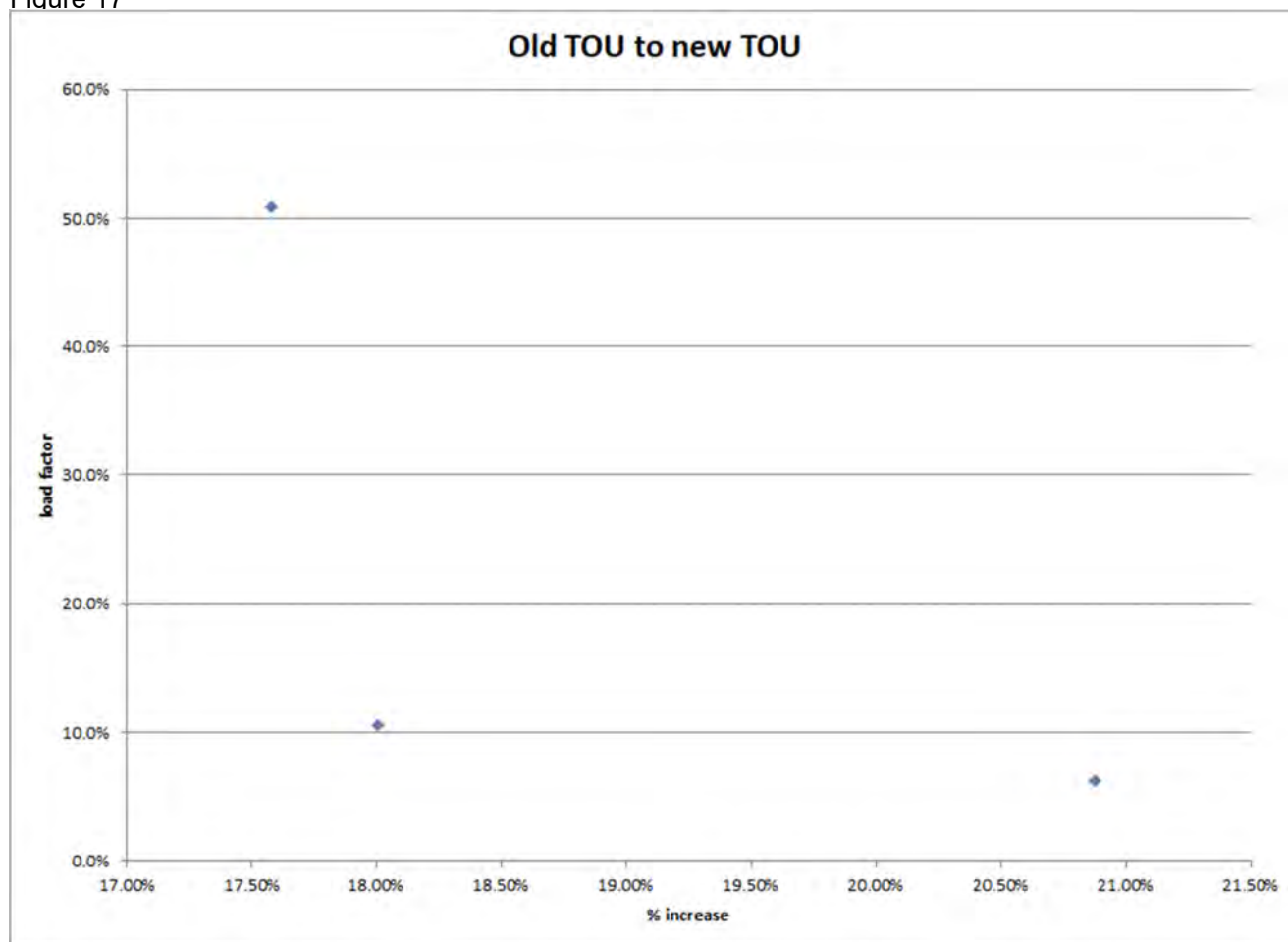
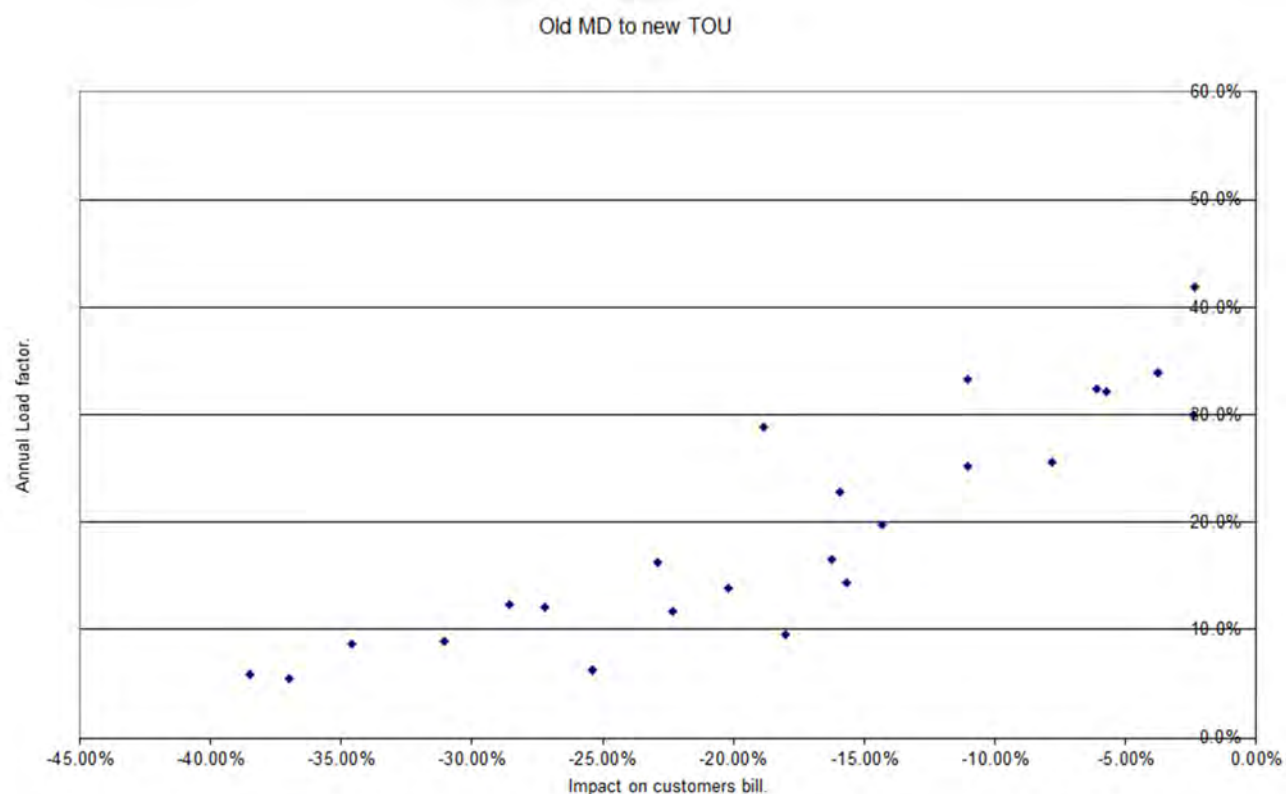


Figure 18



The main reason for the big savings for many of these consumers is because the current demand charges are too high and the energy rates are too low. Those customers with low load factors were thus heavily overcharged in the past.

18.2. TOU tariff recommendations

The following is thus proposed in this respect:

- The tariffs thus be developed based on the cost of supply results.
- The differentiation will be set as per cost differences.
- The markup on energy will be in R/kWh and not in %.
- The surcharges be removed and be replaced with new tariff rates to achieve the desired revenue.
- A TOU tariff also needs to be created for small consumers.

19. AVAILABILITY CHARGES

The municipality uses the incorrect terminology by referring to availability charges when they mean Basic charges. The terms availability charges is generally refer to in the industry as stands where the supply is available but not taken by the owner. Basic charges refer to the charge levied to consumers to covered the following costs:

- Meter kiosk with circuit breakers, supply cable / line and meter.
- Meter reading, billing, revenue collection, vending, customer services.
- Meter repairs, replacement, maintenance, auditing, fault replies, etc.

The calculation of availability charges is done in the following way:

- No contribution is made to the costs covered by the basic charge.
- No contribution is made to the Maximum demand charge which include:
 - The Eskom maximum demand charge
 - 50% of the municipal network costs
- The full contribution is made to the Access charge which include:
 - 50% of the municipal network costs (the more dedicated portion)
 - The Eskom Access charge as capacity has to be reserved to Eskom.
- The demand on the network to calculate the access charge is based on the following:
 - The design capacity of the network. This refer to the so called ADMD (After Diversity maximum Demand) which is usually about 1 to 5 kVA depending on the type of area.
 - This can be expressed by the installed capacity before diversity. For these calculations a 40 Amp single phase supply with a 30% co-incident factor is used which comes to:
 - $40 \text{ Amps} \times 230 \text{ Volts} = 8.2 \text{ kVA} \div 3 \text{ (Diversity)} = 3.1 \text{ kVA (ADMD)}$.

This represents the minimum that should be charged as the whole network still needs to be maintained and be paid for whether consumers use electricity or not.

20. SMALL SCALE EMBEDDED GENERATION (SSEG)

The important issue in respect of SSEG customers is that they must be on a cost reflective tariff with fixed and capacity / demand charges close to cost.

Ideally all SSEG consumers should be on a TOU tariff with 4 quadrant meters:

- A new TOU tariff for small consumers, <100 kVA, has been developed.
- Any consumer can select this tariff, but all SSEG consumers must be on this tariff.
- It is subject to an application and payment for the supply and installation of a 4 wire, 4 quadrant TOU meter.
- The tariff has been designed as follows:
 - The basic charge equal to the average of a 1 and 3 phase TOU meter supply.

- The capacity charge is set at the average of the Domestic and Commercial tariff capacity charge.
- The energy rates are set equal to the Bulk LV plus the additional losses on the LV network.
- No reactive any charge is levied.

The SSEG Feed-in tariff, which caters for consumers who want to feed-in to the network, is as follows:

- An additional basic charge to cater for the additional metering & administration costs to administer the feed-in.
- The energy credit rates are set at 90% of Eskom Megaflex TOU energy rates (excluding the non-TOU energy rates) applicable to Swellendam.
- This tariff applies to any customer wanting to feed-in irrespective of whether they have a LV or MV connection.
- Various other conditions apply.

Realistically the municipality does not currently have the resources to manage many electronic meters.

An alternative option is as follows:

- SSEGS consumers pay the standard domestic tariff plus the additional SSEG basic charge.
- The energy charge for consumption remains the same.
- The export tariff be set as a single energy rate.
- The standard Ferraris disc meters cannot be used as these meters turn backwards when any energy is exported. The consumer will thus at least have to pay for any electronic meter that will block / not record any export energy.
- These consumers must at least take a 30/40 Amp supply.

It is realised that many SSEG consumers use very little energy. In terms of the current industry accepted norm consumers can only export so much energy as the value of their energy consumed. This seriously limits any exports. Cape Town has obtained approval from NERSA to buy more than the value of what the consumer buys from National Treasury.

The potential to buy massive amounts of energy from SSEG consumers is very real. It is therefore proposed that the TOU option with 4 quadrant meters be the preferred way to address these consumers. In terms of managing the electronic meters with remote access it is strongly proposed that an external contractor be appointed to do this management. The additional cost can be the basis for the additional SSEG basic charge and thus it would not have a negative financial impact on the municipality.

TOU < 80 kVA LV (SSEG)				0			0		
Customer service	Access	MD (all hours)	All Energy	Energy Peak	Energy Standard	Energy Off-Peak	Energy Peak	Energy Standard	Energy Off-Peak
Customers	kVA	kVA	kWh	kWh	kWh	kWh	kWh	kWh	kWh
Markup	0.4659								
Consumption		-	33 924						
Initial tariff	80.22	8.17	-						
R/kWh markup									
% Markup									
Revenue: Initial Tariff			-	-	-	-	-	-	-
New tariff	80.22	8.17	-	-	6.316	2.340	1.550	2.473	1.893
Revenue: New Tariff			-	-	-	-	-	-	-
R/kWh markup			R/kWh	0.466	0.466	0.466	0.466	0.466	0.466
% Markup			%	7.96%	24.86%	42.95%	23.22%	32.65%	48.62%

21. PHASE IN

It is accepted that the proposed tariff structure changes will have a marked impact on customers. Some customers will pay much less and others much more. For this reason, the possibility to phase the changes in evenly over 3 years could be considered. This can be done as follows:

- Calculate the difference between the current charge and the proposed charge. (Basic, Amp, R/kVA, energy).
- Divide the difference by 3 and add to the current charge.
- Then add annual price increase %.

- In year two add 1/3 of the difference and year three the full difference.
- Continue this trend to the end of the 3 year phase in.
- In some cases, combine different tariffs to reduce the total number.

This phase in plan has many difficulties:

Domestic.

- Indigents and 20 Amp will see no change.
- Those with supplies > 20 Amp single phase will see basic charges reducing and capacity charges increasing and the higher energy block prices reducing.

Commercial

- They will see basic charges reducing and capacity charges increasing and the energy charges reducing.

Bulk.

- Two Bulk tariffs will exist during the phase in period:
 - TOU either LV or MV

All of this will create careful administration.

The following is proposed for implementation with no phase in:

- All SSEG consumer go to the full cost reflective tariffs.
- Streetlight tariff.
- Internal supplies. (own use)

The phased in rates including the annual price increase of 11.42% is shown in

Table 69 below.

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[illegible]

The revenue forecast for year one phase in with the average increase in shown in Table 70 below.

Table 70

SWELLENDAM						
CALCULATED REVENUE		2022/2023 Proposed	2022/2023 Reference	Difference	Structure change	Initial cost reflectiveness
Nr	TARIFF NAME	R/year	0.00%	Rand	%	
1	INDIGENT - 1 Fase 20A - Geen Dagtarief	5 497 232	5 497 815	-583	-0.01%	-107.9%
1	INDIGENT - 1 Fase 20A - Konv	2 495	2 515	-20	-0.80%	-419.8%
1	HUISHOUDELIK - 1 Fase 20A Alternatiewe tarief	11 935 014	11 833 837	101 177	0.85%	-11.3%
1	HUISHOUDELIK - 1 Fase 20A + Dagtarief	133 313	132 559	754	0.57%	-188.0%
1	HUISHOUDELIK - 1 Fase 30A + Dagtarief	21 433	40 097	-18 664	-46.55%	18.9%
1	HUISHOUDELIK - 1 Fase 30A Alternatiewe tarief	13 239 182	11 414 861	1 824 321	15.98%	-7.7%
1	Dom 1 Fase Konv 1-30A	4 545 857	4 603 674	-57 817	-1.26%	5.4%
1	HUISHOUDELIK - 1 Fase 45A + Dagtarief	3 240 459	3 514 755	-274 296	-7.80%	4.3%
1	HUISHOUDELIK - 1 Fase 45A + Dagtarief	8 752	7 144	1 609	22.52%	21.1%
1	HUISHOUDELIK - 1 Fase 60A + Dagtarief	5 443 945	5 583 966	-140 021	-2.51%	5.2%
1	HUISHOUDELIK - 1 FASE 60 AMP Monthly Basic	39 042	30 225	8 816	29.17%	18.8%
1	Dom 1 Fase Konv 60A	5 719 523	7 114 675	-1 395 152	-19.61%	23.3%
1	HUISHOUDELIK - 3 Fase 21A - 60A + Dagtarief	212 863	254 976	-42 113	-16.52%	16.2%
1	Dom 3 Fase Konv 21-30A	333 608	423 427	-89 819	-21.21%	28.0%
1	Dom 3 Fase Konv 31-100A	1 266 124	1 984 213	-718 089	-36.19%	42.9%
1	BESIGHEID - 1 Fase 20A + Dagtarief	97 586	124 704	-27 118	-21.75%	25.5%
1	Komm 1 Fase Konv 20-30Amp	341 014	441 064	-100 050	-22.68%	31.1%
1	BESIGHEID - 1 Fase 30A + Dagtarief	773 403	1 000 015	-226 612	-22.66%	27.6%
1	BESIGHEID - 1 Fase 45A + Dagtarief	217 387	281 173	-63 786	-22.69%	27.6%
1	Komm 1 Fase Konv 31-60Amp	794 435	1 254 256	-459 821	-36.66%	44.0%
1	BESIGHEID - 1 Fase 60A + Dagtarief	1 422 751	1 846 508	-423 758	-22.95%	26.0%
1	Komm 1 Fase Konv 30-100Amp	7 688	9 004	-1 316	-14.62%	88.4%
1	BESIGHEID - 3 Fase 60A + Dagtarief	1 347 534	1 590 333	-242 799	-15.27%	24.8%
1	BESIGHEID - 3 Fase 80A + Dagtarief	1 504 338	1 626 733	-122 395	-7.52%	24.8%
1	Komm 3 Fase Konv 20-30Amp	3 871 702	4 517 121	-645 419	-14.29%	15.5%
1	Komm 3 Fase Konv 31-60Amp	2 640 970	3 165 087	-524 117	-16.56%	17.8%
1	Komm 3 Fase Konv 61-100Amp	2 801 019	2 995 787	-194 768	-6.50%	9.2%
1	SPORT GRONDE 0A - 60A - Geen Dagtarief	74 046	69 632	4 414	6.34%	9.1%
1	Sportgronde 0-30Amp	114 176	107 369	6 806	6.34%	14.6%
1	Sportgronde 31-60Amp	40 775	38 344	2 431	6.34%	17.2%
1	Skougronde	18 020	16 946	1 074	6.34%	18.8%
1	Drostdy Water Meul	2 275	2 140	136	6.34%	-21.3%
1	Skole 31-60Amp 1 fase	598 567	901 608	-303 040	-33.61%	19.7%
1	Skole 31-60Amp 3 fase	-	-	-	#DIV/0!	#DIV/0!
1	Skole 61-100Amp 3 Fase	496 572	611 241	-114 669	-18.76%	18.9%
1	Skole Sport gronde	17 479	15 641	1 837	11.75%	12.0%
1	Standaard Verbruik: 20-30 1 fase	1 217 505	883 325	334 180	37.83%	-28.5%
1	Standaard Verbruik: 30-100 1 fase	443 451	321 733	121 718	37.83%	-31.2%
1	Standaard Verbruik: 30-60 3 fase	93 954	68 166	25 789	37.83%	-39.9%
1	Standaard Verbruik: 60-100 3 fase	2 491 595	1 807 703	683 891	37.83%	-30.1%
1	Munisipale grootmaatdienste	3 838 372	3 944 914	-106 542	-2.70%	10.1%
1	Normale grootmaatdienste	16 903 826	17 493 823	-589 997	-3.37%	10.8%
1	Bulk MV	7 442 488	9 188 421	-1 745 934	-19.00%	23.3%
1	TOU LV	1 221 472	806 794	414 678	51.40%	-43.7%
1	TOU MV	14 625 263	10 791 995	3 833 267	35.52%	-29.4%
1	Straatligte	4 079 045	2 652 575	1 426 471	53.78%	-47.1%
1	Beskikbaarheid	2 026 048	1 632 960	393 088	24.07%	-21.2%
1	Total	123 203 596	122 645 853	557 743	0.45%	0.0%

22.2. FISCAL SCHEDULE

The proposed tariff schedule is shown in Table 71. It shows the following rates:

- The current tariffs
- The fully cost reflective rates for 2023/2024 without phase in or annual price increase
- The proposed rates for 2024/2025 including 3 year phase in and annual increase is shown for 2024/2025.

Table 71

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SWELLEN DAM MUNISIPALITEIT							SWELLEN DAM MUNICIPALITY
2023 / 2024 FINANSIËLE JAAR Alle fooie sluit BTW uit.	2022/2023	2023/2024	2023/2024 Proposed (exc increase and phase in)	Structure change	2024/2025 Proposed including phase in & increase	Increase form actual 2023/2024	2023 / 2024 FINANCIAL YEAR All fees exclude VAT
Gelde vir die verskaffing van elektrisiteit:	Rand	Rand	Rand	%	Rand	11.42%	Electricity tariffs and charges
Huishoudings							Domestic
Voorafbetaalde meters							Pre-paid
Deernis / arm huishoudings (Hierdie tarief geld ook vir hierdie huishoudings met konvensionele meters)							Indigent consumers
Dom Deernis 1 fase 20 A							Indigent 1 Phase 20 A
Basiese Dagtarief		Geen / None					Basic charge: R/month
Blok 1: 0 - 50kWh (Gratis eenhede)	R1.31	R1.51	R1.93	28.27%	R2.15	42.92%	Block 1: 0 - 50kWh (Gratis eenhede)
Blok 2: 51 - 350kWh	R1.68	R1.93	R1.93	0.00%	R2.15	11.42%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.38	R2.74	R2.74	0.00%	R3.05	11.42%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.81	R3.23	R2.74	-15.31%	R3.05	-5.63%	Block 4: >600kWh
Gewone huishoudings							Normal Households
Dom 1 Fase PP							Dom 1 Phase PP
Dom 1 Fase PP 0-30A							Dom 1 Phase PP 0-30A
Basiese Dagtarief	R4.47	R5.15	R2.58	-49.84%	R7.98	54.69%	Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1: 0-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1: 0-50kWh
Blok 2: 51 - 350kWh	R1.70	R1.96	R0.00	-100.00%	R2.18	11.22%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.40	R2.76	R0.00	-100.00%	R2.77	0.44%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.84	R3.27	R0.00	-100.00%	R3.15	-3.61%	Block 4: >600kWh
Dom 1 Fase PP 1-20A Alternatief							Dom 1 Phase PP 1-20A Alternative
Basiese Dagtarief		Geen / None					Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m							Capacity charge: R/Amp/Phase/m
Blok1: 0-50kWh	R2.13	R2.45	R2.60	6.12%	R2.90	18.24%	Block1: 0-50kWh
Blok 2: 51 - 350kWh	R2.26	R2.60	R2.60	0.00%	R2.90	11.42%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.50	R2.88	R2.88	0.00%	R3.21	11.42%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.96	R3.41	R2.88	-15.53%	R3.21	-5.88%	Block 4: >600kWh
Dom 1 Fase PP 45A							Dom 1 Phase PP 45A
Basiese Dagtarief	R8.19	R9.42	R2.58	-72.62%	R7.98	-15.55%	Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1: 0-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1: 0-50kWh
Blok 2: 51 - 350kWh	R1.70	R1.96	R0.00	-100.00%	R2.18	11.22%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.40	R2.76	R0.00	-100.00%	R2.77	0.44%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.84	R3.27	R0.00	-100.00%	R3.15	-3.61%	Block 4: >600kWh
Dom 1 Fase PP 60A							Dom 1 Phase PP 60A
Basiese Dagtarief	R8.19	R9.42	R2.58	-72.62%	R7.98	-15.55%	Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1: 0-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1: 0-50kWh
Blok 2: 51 - 350kWh	R1.70	R1.96	R0.00	-100.00%	R2.18	11.22%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.40	R2.76	R0.00	-100.00%	R2.77	0.44%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.84	R3.27	R0.00	-100.00%	R3.15	-3.61%	Block 4: >600kWh
3 Fase							3 Phase
Dom 3 Fase PP 21-60A							Dom 3 Phase PP 21-60A
Basiese Dagtarief	R11.06	R12.72	R2.77	-78.21%	R10.48	-17.63%	Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1: 0-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1: 0-50kWh
Blok 2: 51 - 350kWh	R1.70	R1.96	R0.00	-100.00%	R2.18	11.22%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.40	R2.76	R0.00	-100.00%	R2.77	0.44%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.84	R3.27	R0.00	-100.00%	R3.15	-3.61%	Block 4: >600kWh
Konvensionele Meters							Conventional meters
1 Fase							1 Phase
Dom 1 Fase Konv 1-30A							Dom 1 Phase Conv 1-30A
Basiese fooi per maand	R215.39	R247.70	R77.88	-68.56%	R162.00	-34.60%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1B: 21-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1B: 21-50kWh
Blok 2: 51 - 350kWh	R1.71	R1.97	R0.00	-100.00%	R2.18	10.54%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.41	R2.77	R0.00	-100.00%	R2.77	0.04%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.85	R3.28	R0.00	-100.00%	R3.15	-3.96%	Block 4: >600kWh
Dom 1 Fase Konv 45A							Dom 1 Phase Conv 45A
Basiese fooi per maand	R416.42	R478.88	R77.88	-83.74%	R242.08	-49.45%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1B: 21-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1B: 21-50kWh
Blok 2: 51 - 350kWh	R1.71	R1.97	R0.00	-100.00%	R2.18	10.54%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.41	R2.77	R0.00	-100.00%	R2.77	0.04%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.85	R3.28	R0.00	-100.00%	R3.15	-3.96%	Block 4: >600kWh
Dom 1 Fase Konv 60A							Dom 1 Phase Conv 60A
Basiese fooi per maand	R416.42	R478.88	R77.88	-83.74%	R384.87	-19.63%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1B: 21-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1B: 21-50kWh
Blok 2: 51 - 350kWh	R1.71	R1.97	R0.00	-100.00%	R2.18	10.54%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.41	R2.77	R0.00	-100.00%	R2.77	0.04%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.85	R3.28	R0.00	-100.00%	R3.15	-3.96%	Block 4: >600kWh
3 Fase							3 Phase
Dom 3 Fase Konv 21-30A							Dom 3 Phase Conv 21-30A
Basiese fooi per maand	R551.78	R634.55	R84.28	-86.72%	R502.66	-20.79%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1B: 21-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1B: 21-50kWh
Blok 2: 51 - 350kWh	R1.71	R1.97	R0.00	-100.00%	R2.18	10.54%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.41	R2.77	R0.00	-100.00%	R2.77	0.04%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.85	R3.28	R0.00	-100.00%	R3.15	-3.96%	Block 4: >600kWh
Dom 3 Fase Konv 31-100A							Dom 3 Phase Conv 31-100A
Basiese fooi per maand	R1 033.88	R1 188.96	R84.28	-92.91%	R914.48	-23.09%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R8.17	New	R3.03		Capacity charge: R/Amp/Phase/m
Blok1B: 21-50kWh	R1.32	R1.52	R0.00	-100.00%	R1.85	21.85%	Block1B: 21-50kWh
Blok 2: 51 - 350kWh	R1.71	R1.97	R0.00	-100.00%	R2.18	10.54%	Block 2: 51 - 350kWh
Blok 3: 351 - 600kWh	R2.41	R2.77	R0.00	-100.00%	R2.77	0.04%	Block 3: 351 - 600kWh
Blok 4: >600kWh	R2.85	R3.28	R0.00	-100.00%	R3.15	-3.96%	Block 4: >600kWh

Final

SWELLENDAM MUNISIPALITEIT							SWELLENDAM MUNICIPALITY
2023 / 2024 FINANSIËLE JAAR Alle fooie sluit BTW uit.	2022/2023	2023/2024	2023/2024 Proposed (exc increase and phase in)	Structure change	2024/2025 Proposed including phase in & increase	Increase form actual 2023/2024	2023 / 2024 FINANCIAL YEAR All fees exclude VAT
Gelde vir die verskaffing van elektrisiteit:	Rand	Rand	Rand	%	Rand	11.42%	Electricity tariffs and charges
Kommersiële Verbruikers							Commercial consumers
Besighede, kantoorgeboue, hotelle, B&B's, klubs (uitgesluit portklubs), tydelike aansluitings met h breker van meer as 60A vir enkel fase of 100A vir drie fase.							
Vooruitbetaalde Meters							Prepaid meters
1 Fase							1 Phase
Komm 1 Fase PP 30A							Comm 1 Phase PP 30A
Basiese Dagtarief	R5.12	R5.89	R2.56	-56.53%	R5.33	-9.57%	Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.7522	R3.1650	R1.9339	-38.90%	R3.0693	-3.02%	Energy
Komm 1 Fase PP 60A - 80A							Comm 1 Phase PP 60A - 80A
Basiese Dagtarief	R5.12	R5.89	R2.56	-56.55%	R5.33	-9.58%	Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.9122	R3.3490	R1.9339	-42.25%	R3.2060	-4.27%	Energy
3 Fase							3 Phase
Komm 3 Fase PP 60A - 80A							Comm 3 Phase PP 60A - 80A
Basiese Dagtarief	R5.12	R5.89	R3.39	-42.49%	R5.63	-4.36%	Basic day tariff: R/day
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.9122	R3.3490	R1.93	-42.25%	R3.2060	-4.27%	Energy
Konvensionele Meters							Conventional meters
1 Fase							1 Phase
Komm 1 Fase Kony 20-30Amp							Comm 1 Phase Conv 20-30Amp
Basiese fooi per maand	R344.68	R396.38	R77.88	-80.35%	R323.38	-18.42%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.5017	R2.8770	R1.9339	-32.78%	R2.8554	-0.75%	Energy
Komm 1 Fase Kony 31-60Amp							Comm 1 Phase Conv 31-60Amp
Basiese fooi per maand	R639.10	R734.97	R77.88	-89.40%	R332.09	-54.82%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.4313	R2.7960	R1.9339	-30.83%	R2.8554	2.12%	Energy
3 Fase							3 Phase
Komm 3 Fase Kony 20-30Amp							Comm 3 Phase Conv 20-30Amp
Basiese fooi per maand	R827.73	R951.89	R103.04	-89.18%	R583.60	-38.69%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.2513	R2.5890	R1.9339	-25.30%	R2.7952	7.96%	Energy
Komm 3 Fase Kony 31-60Amp							Comm 3 Phase Conv 31-60Amp
Basiese fooi per maand	R1.641.17	R1.887.34	R103.04	-94.54%	R744.74	-60.54%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.2513	R2.5890	R1.9339	-25.30%	R2.6414	2.03%	Energy
Komm 3 Fase Kony 61-100Amp							Comm 3 Phase Conv 61-100Amp
Basiese fooi per maand	R2.732.72	R3.142.63	R103.04	-96.72%	R583.60	-81.43%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.2113	R2.5430	R1.9339	-23.95%	R2.7952	9.92%	Energy
Grootmaatsdienste							Bulk Supplies
Normale grootmaatsdienste: LV							Normal Bulk Supplies
Basies heffing per maand	R947.88	R1.090.06	R544.35	-50.06%	R606.53	-44.36%	Basic charge: R/month
Netwerk beskikbaarheid heffing (KVA)	R30.56	R35.14	R76.82	118.61%	R85.59	143.58%	Network Access charge: R/kVA/month
Netwerk vraag heffing (KVA)	R296.47	R340.94	R93.52	-72.57%	R104.20	-69.44%	Maximum Demand charge: R/kVA/m
Energie heffing	R1.1809	R1.3580					Energy charge: R/kWh
Hoe aanvraag (Junie tot Augustus)							High Demand (June to August)
Piek-tye	R1.1809	R1.3580	R6.0770	347.50%	R6.9030	408.32%	Peak
Standaard	R1.1809	R1.3580	R1.9450	43.23%	R2.4721	82.04%	Standard
Buite piek-tye	R1.1809	R1.3580	R1.1270	-17.01%	R1.5926	17.27%	Off-peak
Lae aanvraag							Low Demand
Piek-tye	R1.1809	R1.3580	R2.0940	54.20%	R2.6200	92.93%	Peak
Standaard	R1.1809	R1.3580	R1.4960	10.16%	R1.9738	45.34%	Standard
Buite piek-tye	R1.1809	R1.3580	R1.0010	-26.29%	R1.4517	6.90%	Off-peak
Reaktiewe elektrisiteit fooi (R / kvarh)					R0.2798	New	Reactive energy charge: R/kvarh
Normale grootmaatsdienste: MV							Normal Bulk Supplies
Basies heffing per maand	R947.88	R1.090.06	R1.010.59	-7.29%	R1.185.06	8.72%	Basic charge: R/month
Netwerk vraag heffing (KVA)	R296.47	R340.94	R64.83	-80.99%	R50.18	-85.28%	Maximum Demand charge: R/kVA/m
Netwerk beskikbaarheid heffing (KVA)	R30.56	R35.14	R80.15	128.10%	R283.03	705.42%	Network Access charge: R/kVA/month
Energie heffing	R1.1809	R1.3580	TOU				Energy charge: R/kWh
Hoe aanvraag (Junie tot Augustus)							High Demand (June to August)
Piek-tye	R1.1809	R1.3580	R6.0932	348.69%	R2.2631	66.65%	Peak
Standaard	R1.1809	R1.3580	R2.1166	55.86%	R0.7861	-42.11%	Standard
Buite piek-tye	R1.1809	R1.3580	R1.3272	-2.26%	R0.4930	-63.70%	Off-peak
Lae aanvraag							Low Demand
Piek-tye	R1.1809	R1.3580	R2.2493	65.64%	R0.8354	-38.48%	Peak
Standaard	R1.1809	R1.3580	R1.6693	22.93%	R0.6200	-54.34%	Standard
Buite piek-tye	R1.1809	R1.3580	R1.2008	-11.57%	R0.4460	-67.16%	Off-peak
Reaktiewe elektrisiteit fooi (R / kvarh)					R0.0933	New	Reactive energy charge: R/kvarh
Tyd Van Gebruik: LV							Time of Use: LV
Basies heffing per maand	R947.88	R1.090.06	R544.35	-50.06%	R1.011.69	-7.17%	Basic charge: R/month
Netwerk beskikbaarheid heffing (KVA)	R55.02	R63.27	R76.82	21.41%	R54.63	-13.65%	Network Access charge: R/kVA/month
Netwerk vraag heffing (KVA)	R42.87	R49.30	R93.52	89.69%	R287.99	484.16%	Maximum Demand charge: R/kVA/m
Energie heffing							Energy charge: R/kWh
Hoe aanvraag (Junie tot Augustus)							High Demand (June to August)
Piek-tye	R5.2843	R6.0770	R6.1953	1.95%	R3.3097	-45.54%	Peak
Standaard	R1.6913	R1.9450	R2.2187	14.07%	R1.8328	-5.77%	Standard
Buite piek-tye	R0.9800	R1.1270	R1.4293	26.82%	R1.5396	36.61%	Off-peak
Lae aanvraag							Low Demand
Piek-tye	R1.8209	R2.0940	R2.3514	12.29%	R1.8821	-10.12%	Peak
Standaard	R1.3009	R1.4960	R1.7714	18.41%	R1.6667	11.41%	Standard
Buite piek-tye	R0.8704	R1.0010	R1.3029	30.16%	R1.4927	49.12%	Off-peak
Reaktiewe elektrisiteit fooi (R / kvarh)	R0.2102	R0.2417	R0.2511	3.89%	R0.0933	-61.41%	Reactive energy charge: R/kvarh
Tyd Van Gebruik: MV							Time of Use: MV
Basies heffing per maand	R947.88	R1.090.06	R1.010.59	-7.29%	R1.185.06	8.72%	Basic charge: R/month
Netwerk beskikbaarheid heffing (KVA)	R55.02	R63.27	R64.83	2.46%	R60.70	-4.07%	Network Access charge: R/kVA/month
Netwerk vraag heffing (KVA)	R42.87	R49.30	R80.15	62.58%	R76.77	55.72%	Maximum Demand charge: R/kVA/m
Energie heffing							Energy charge: R/kWh
Hoe aanvraag (Junie tot Augustus)							High Demand (June to August)
Piek-tye	R5.2843	R6.0770	R6.0932	0.27%	R6.7772	11.52%	Peak
Standaard	R1.6913	R1.9450	R2.1166	8.82%	R2.2309	14.70%	Standard
Buite piek-tye	R0.9800	R1.1270	R1.3272	17.77%	R1.3301	18.02%	Off-peak
Lae aanvraag							Low Demand
Piek-tye	R1.8209	R2.0940	R2.2493	7.42%	R2.3909	14.18%	Peak
Standaard	R1.3009	R1.4960	R1.6693	11.59%	R1.7313	15.73%	Standard
Buite piek-tye	R0.8704	R1.0010	R1.2008	19.96%	R1.1896	18.84%	Off-peak
Reaktiewe elektrisiteit fooi (R / kvarh)	R0.2102	R0.2417	R0.2511	3.89%	R0.2728	12.87%	Reactive energy charge: R/kvarh

SWELLENDAM MUNISIPALITEIT							SWELLENDAM MUNICIPALITY
2023 / 2024 FINANSIËLE JAAR Alle fooie sluit BTW uit.	2022/2023	2023/2024	2023/2024 Proposed (exc increase and phase in)	Structure change	2024/2025 Proposed including phase in & increase	Increase form actual 2023/2024	2023 / 2024 FINANCIAL YEAR All fees exclude VAT
Gelde vir die verskaffing van elektrisiteit:	Rand	Rand	Rand	%	Rand	11.42%	Electricity tariffs and charges
Tyd van Gebruik: Klein Verbruikers, <50 kVA: Verpligtend vir SSEG							Time of Use: Small customers, <50 kVA: Compulsary for SSEG
Basiese heffing per maand			R222.95	New	R248.41	New	Basic charge: R/month
Kapasiteits heffing (R/Amp/phase/month)			R9.60	New	R10.70	New	Capacity charge: (R/Amp/phase/month)
Energie heffing							Energy charge: R/kWh
Hoë aanvraag (Junie tot Augustus)							High Demand (June to August)
Piek-tye			R6.1074	New	R6.8050	New	Peak
Standaard			R2.1308	New	R2.3742	New	Standard
Buite piek-tye			R1.3414	New	R1.4946	New	Off-peak
Lae aanvraag							Low Demand
Piek-tye			R2.2635	New	R2.5221	New	Peak
Standaard			R1.6835	New	R1.8758	New	Standard
Buite piek-tye			R1.2150	New	R1.3538	New	Off-peak
Ander elektrisiteitstariewe							Other Electricity charges
Straatligte							Streetlights
Fixed charge: R/light/m			R1 010.59	New	R1 185.06	New	Fixed charge: R/light/m
Energy charge	R2.2313	R2.5660	R2.1618	-15.75%	R2.4088	-6.13%	Energy charge
Sportgronde: R/kWh							Sportsgrounds: R/kWh
Sportgronde 0-30Amp	R2.7522	R3.1650	R3.3656	6.34%	R3.6010	13.78%	Sportsgrounds 0-30Amp
Sportgronde 31-60Amp	R2.7522	R3.1650	R3.3656	6.34%	R3.6010	13.78%	Sportsgrounds 31-60Amp
Skougronde	R2.9817	R3.4290	R3.6464	6.34%	R3.9014	13.78%	Showgrounds
Drostdy Water Meul	R2.7522	R3.1650	R3.3656	6.34%	R3.6010	13.78%	Drostdy Water Mill
Skole							Schools
Skole 31-60Amp 1 fase							Schools 31-60Amp 1 Phase
Basiese fooi per maand	R387.77	R445.94	R77.88	-82.54%	R360.18	-19.23%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.6817	R3.0840	R1.9339	-37.29%	R3.0091	-2.43%	Energy
Skole 31-60Amp 3 fase							Schools 31-60Amp 3 Phase
Basiese fooi per maand	R1 027.52	R1 181.65	R77.88	-93.41%	R360.18	-69.52%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.5017	R2.8770	R1.9339	-32.78%	R3.0091	4.59%	Energy
Skole 61-100Amp 3 Fase							Schools 61-100Amp 3 Phase
Basiese fooi per maand	R2 732.91	R3 142.85	R103.04	-96.72%	R916.02	-70.85%	Basic charge: R/ Month
Kapasiteit heffing: R/Amp/fase/m			R11.04	New	R4.10	New	Capacity charge: R/Amp/Phase/m
Energie	R2.2417	R2.5780	R1.9339	-24.98%	R3.0091	16.72%	Energy
Skole Sport gronde	R2.75	R3.17	R3.54	11.75%	R3.66	15.79%	Schools Sportsgrounds
Munisipale verbruik							Municipal use
Standaard Verbruik	R2.23	R2.57	R3.54	37.83%	R3.66	42.81%	Standard use
Munisipale grootmaatsdiens					New BULK now TOU		Municipal Bulk
Basiese heffing per maand	R947.88	R1 090.07			New BULK now TOU		Basic charge: R/month
Netwerk beskikbaarheid heffing (KVA)	R30.56	R35.14			New BULK now TOU		Network Access charge: R/kVA/month
Netwerk vraag heffing (KVA)	R296.47	R340.94			New BULK now TOU		Maximum Demand charge: R/kVA/m
Energie heffing	R1.18	R1.36			New BULK now TOU		Energy charge: R/kWh
Beskikbaarheids fooie	234.58	R270.00	R 334.9947	24.07%	R 324.9808	20.36%	Availability: R/Stand/month
SSSEG heffings							SSEG charges:
Addisionale basiese heffing per maand			R 100.0000	New	R111.42		Additional basic charge: R/month
Export energy credit							Export Energy credit: R/kWh
Hoë aanvraag (Junie tot Augustus)							High Demand (June to August)
Piek-tye			-R4.4175	New	-R4.9794		Peak
Standaard			-R1.2362	New	-R1.3935		Standard
Buite piek-tye			-R0.6047	New	-R0.6816		Off-peak
Lae aanvraag							Low Demand
Piek-tye			-R1.3424	New	-R1.5131		Peak
Standaard			-R0.8784	New	-R0.9901		Standard
Buite piek-tye			-R0.5036	New	-R0.5676		Off-peak

23. CONCLUSIONS

This detailed Ringfencing, Cost of supply and Pricing study presented many different challenges. All these have been addressed and the results obtained are considered 95% accurate. The current tariffs were found needing major changes. These will send a clear signal about the value of capacity which in time will assist the municipality in controlling its costs which are largely dictated by capacity.

The COS study must now be workshopped internally and be approved by Council and then be submitted to NERSA. Once the budget process starts the proposed tariffs need to be submitted to proper public participation. Only once NERSA approval and public participation process is completed can implementation begin.

ANNEXURE**23.1. Allocation of network costs to tariff categories.**

Before proceeding to calculation of unit costs the issues of how to allocate network costs to different tariff categories need to be explored. NRS058 explores various methods. It is the consultant's expert view that the method that best allocates costs to the category of customers who cause the high demand and thus high costs should be based on each category of customer's contribution to the system peak. Various approaches could be followed in this respect such as not just using one single peak demand but maybe the average of the highest week or average of the 12 highest demands etc. The problem is that this requires very accurate data. The work in previous sections have already illustrated the problems with the data obtained reflected mainly in the fact the peak in the Eskom profile data and that from the simulated profile differ such that one is in the morning and the next in the evening. This caused the requirement to analyse the impact using the different methods. The results for the allocation of network costs at the highest voltage level network are reflected in Table 72.

Table 72

DEMAND ALLOCATER METHODS COMPARED							
AVERAGE AND ACCESS METHOD							
Customer group demand responsibility ratio							
N2	D	L	A	B	C	E	
		An LF	P kWh/y	Tot kWh/y	P Ex MD	Σ Ex MD	Ex MD%
1Bulk							
2MVInd(kWh+)	0.0%	43.40%	1	41 496 915	1.000	21 818.819	#DIV/0!
3LVMUN(kWh+)	7.6%	43.40%	2 967 362	41 496 915	1 737.152	21 818.819	461.5%
4LVInd(kWh+)	33.4%	43.40%	7 657 506	41 496 915	9 777.946	21 818.819	1006.7%
5LVComm(kWh+)	10.1%	43.40%	6 889 551	41 496 915	1 114.903	21 818.819	134.7%
6LVDom(kWh+)	24.4%	43.40%	6 741 882	41 496 915	6 689.503	21 818.819	851.8%
7Res Poor	22.8%	43.40%	16 094 968	41 496 915	2 294.627	21 818.819	112.4%
8Lights	1.7%	43.40%	1 145 643	41 496 915	202.687	21 818.819	139.5%
9	0.0%	43.40%	1	41 496 915	1.000	21 818.819	#DIV/0!
TOTAL			41 496 915				
Customer group excess demand							
N2							
	C - excess demand kVA	Ave MD kVA	Group energy kWh/y	Hours in year 8760	PF %	Non-co- incidental MD kVA	Group energy kWh/y
1Bulk							
2MVInd(kWh+)	1.00	-	-	8 760.0	90%	0.0	1
3LVMUN(kWh+)	1 737.15	376.38	2 967 362	8 760.0	90%	2 113.5	2 967 362
4LVInd(kWh+)	9 777.95	971.27	7 657 506	8 760.0	90%	10 749.2	7 657 506
5LVComm(kWh+)	1 114.90	827.87	6 889 551	8 760.0	95%	1 942.8	6 889 551
6LVDom(kWh+)	6 689.50	785.33	6 741 882	8 760.0	98%	7 474.8	6 741 882
7Res Poor	2 294.63	2 041.47	16 094 968	8 760.0	90%	4 336.1	16 094 968
8Lights	202.69	145.31	1 145 643	8 760.0	90%	348.0	1 145 643
9	1.00	-	-	8 760.0	90%	-	-
Total	21 818.82	5 147.63	50 034 101	70 080.0		26 964.5	41 496 914
NON CO-INCIDENTAL MD DEMAND ALLOCATER METHODS COMPARED							
N2		NON CO- INCIDENTAL MD	AVERAGE AND ACCESS METHOD	ENERGY RATIO	CO- INCIDENTAL PEAK DEMAND METHOD	Monthly LF	Ave & Access Adjustment factor
1Bulk							
2MVInd(kWh+)		0.0%	0.0%	0.0%	0.0%	40.0%	107682.4%
3LVMUN(kWh+)		7.8%	7.6%	7.2%	0.0%	34.0%	106.4%
4LVInd(kWh+)		39.9%	33.4%	18.5%	0.0%	10.2%	180.8%
5LVComm(kWh+)		7.2%	10.1%	16.6%	0.0%	52.5%	60.8%
6LVDom(kWh+)		27.7%	24.4%	16.2%	0.0%	27.6%	150.2%
7Res Poor		16.1%	22.8%	38.8%	0.0%	47.7%	58.7%
8Lights		1.3%	1.7%	2.8%	0.0%	40.4%	62.4%
9		0.0%	0.0%	0.0%	0.0%	0.0%	107682.4%

The following in this respect:

- All methods yield similar results.
- The energy ratio method seems out of line with the other methods, as is to be expected.
- The average and access method and Non-co-incidental methods are almost identical.
- From the profiles it is clear that the annual peak demands are mainly caused by residential customers.
- The co-incidental peak demand methods best reflect this reality which will show domestic costs even higher.

For simplicity's sake and close results with the Average and access method the non-co-incidental peak demand method was used as basis to allocate all network costs.

23.2. Definitions.

Ampere (A): The unit in which electric current is measured being the rate of flow of electric current through a conductor and which is comparable to the rate of volume of water flow through a pipe.

Capacity utilisation. – This refers to the extent to which the capacity that has been installed for a customer has been utilised by the customer.

Charges. – This refers to different charges that a customer has to pay such as a charge for energy or charge for installed capacity.

Clients. – This refers to other contacts of the utility such as contractors, consultants, etc.

Connection fee: The minimum, once-off, up-front payment for new or additional capacity

Consumers. – This refers to any user of electricity whether it be an illegal connected supply, unpaid supply or third-party person.

Cross subsidy. – This refers to cases where one set of customers are subsidised by another set of customers because their tariff does not cover their cost of supply.

Customer. – This refers to a consumer that is legally connected to the electricity network, is contracted with the supply utility and is paying their dues.

Demand charge: A R/kVA or R/kW charge which is time and/or seasonally differentiated and is applied to the chargeable demand registered during the month.

Demand tariffs. – This refers to tariffs that charge for the maximum demand taken by the customer every month.

Diversity Factor: This is defined as the ratio of the sum of individual consumers' non-coincident maximum demands to the total maximum demand of a group, which is an indication of the extent to which the same capacity can be used for different consumers

Electrical Energy – This refers to the amounts of units of electricity consumed. This is normally measured for a month.

Gigawatt (GW): Equal to one thousand MW or one million kW.

Inter tariff cross subsidies. – This is where one category of customers is cross-subsidising another category of customers.

Intra tariff cross subsidies. – This is where there is cross subsidisation between the different customers within a particular customer category such as high usage customers cross-subsidising low usage customers.

kWh (kilo Watt hour) – This is the unit of measure for energy. It means 1000 of Watt hours. In other words, if a 100 Watt globe was burning for 10 hours.

Kilovolt-Ampere (kVA): The product of volts and amperes times 1 000, i.e. $V \times A \times 1\,000$. This is a measure of "apparent" electrical power.

Kilowatt (kW): The product of kVA and power factor which is a measure of "true" electrical power. The expression for kW is $V \times A \times \text{power factor} \times 1\,000$.

Kilowatt-hour (kWh): The total amount of energy used in one hour by a device that requires one kilowatt of power for continuous operation, i.e. the product of kilowatts and hours.

kVA (kilo Volt Ampere) – This is the unit of measure for maximum demand. It includes the real and reactive components of power.

kW (kilo Watt) – This is also a unit of measure for maximum demand but only the real component. Here the calculation is done over a 1-hour period. The maximum demand taken by ten 100-Watt globes equals to 1 kW.

Load factor. – This refers to the amount of electricity consumed by a customer in a billing period relative to the amount of energy that could have been consumed had the appliances been kept on all the time. This indicates how effective the capacity had been used.

Load factor (LF) annual: Total kWh/y divided by the highest maximum demand in the year times 12 times the total hours in the year. $(\text{Total kWh for year}) \div (\text{Highest maximum demand in year} \times 12 \times \text{hours in year})$.

Load factor (LF) average monthly: Total kWh/y divided by the sum of the maximum demands of all months in the year times 12 times the total hours in the year. $(\text{Total kWh for year}) \div (\text{Sum of 12 maximum demands in year} \times \text{hours in year})$.

Life line. – This refers to a tariff that provides support, subsidy, discount to customers. This is usually not available to all customers and provide more support at low consumption levels and become more expensive at high consumption levels.

Maximum demand. – This refers to the maximum demand that the customer places on the network normally averaged over a half hour period.

Megawatt (MW): Equal to one million Watts or 1 000 kW.

Network voltage. – This refers to the voltage at which the network operates. This voltage is usually higher to transfer large amounts of power.

Network capacity. – This refers to the maximum rating of the network equipment that has been installed to supply a customer. This is expressed as kVA or A (Amperes).

Point of delivery (POD): A physical point on the electrical network, where electricity is delivered to a customer, usually the metering point.

Point of supply: It could be a single point of delivery to a customer or a specific group of points of delivery on the System from where electricity is supplied to the customer.

Power Factor (PF): The ratio kW / kVA indicates the ratio of “true” electrical power to “apparent” electrical power, i.e. the ratio of useful work to the total quantity of volts and amperes supplied.

Reactive energy charge: In case of Megaflex, it is levied on every kvarh which is registered in excess of 30% of the kWh supplied during the specified periods of the month.

Supply voltage. – This refers to the voltage at which customers are supplied. The supply voltage for households is usually 240 V (volt).

Single energy rate tariff. – This refers to a tariff that only has one charge and that is a simple energy charge eg. 25 c/kWh.

Seasonal tariffs. - This refers to tariffs where the price for electricity consumed during different seasons of the year is different. This is because there is a much higher demand for electricity typically in Winter making it more expensive to provide.

Tariff. – A tariff is the combination of various charges as mentioned above to make up a tariff applicable for a specific customer category.

Tariff structure. – This refers to the type of charges in the tariff as well as the relative sizes of the different charges.

Tariff restructuring. – This refers to the process of changing the charges in a tariff but also the relationship with other tariffs.

Two part tariff. - This refers to a tariff that has a single energy rate plus a fixed charge, sometimes called a basic charge. For example, the tariff has a basic charge of R100/month and an energy rate of 105 c/kWh.

TOU (Time of Use) tariffs. - This refers to tariffs where the electricity consumed at different times of the day is measured separately and are charged for differently.

Time-of-use (TOU) tariff: A tariff that has different energy rates for different time periods and seasons in order to reflect different cost of supply at different times more accurately.

Voltage discount. – This refers to a discount applied to customers supplied at higher voltages because it is cheaper to supply, and the customer incurs more costs to transfer the energy for their own applications.

Voltage (V): Measure of electric pressure that drives electric current through a conductor.

Watt (W): The unit of electrical power or energy transfer equivalent to one ampere flowing due to an electrical pressure of one volt at unity power factor, $W = V \times A$

23.3. Abbreviations

<	less than	CRC	Current replacement cost.
≤	less than or equal to	ROA	Return on Assets
>	greater than	HV	High Voltage ≥ 40 kV
≥	greater than or equal to	MV	Medium Voltage ≥ 1000 V < 40 kV
A	ampere	LV	Low Voltage < 1000 V
c	cents	COS	Cost Of Supply
c/kvarh	cents / reactive kilovolt-ampere-hour	POD	Point of delivery
c/kWh	cents per kilowatt-hour	POS	Point of Supply
CPI	consumer price index	EPP	South African Electricity Pricing Policy
GWh	gigawatt-hour	MFMA.	Municipal Finance Management Act
km	kilometre	MSA	Municipal Systems Act
kVA	kilovolt-ampere	IBT	Inclining Block Rate Tariff
kvarh	reactive kilovolt-ampere-hour	CRC	Current replacement cost.
kV	kilovolt	LF	Load factor
kW	kilowatt	FBE.	Free Basic Electricity
kWh	kilowatt-hour		
MVA	megavolt-ampere		
N/A	Not applicable		
NERSA	National Electricity Regulator of South Africa		
NMD	Notified Maximum Demand		
PF	Power factor		
R	Rand		
R/kVA	Rand per kilovolt-ampere		
R/kW	Rand per kilowatt		
TOU	Time-of-Use		
V	volt		
VAT	value added tax		
W	watt		
