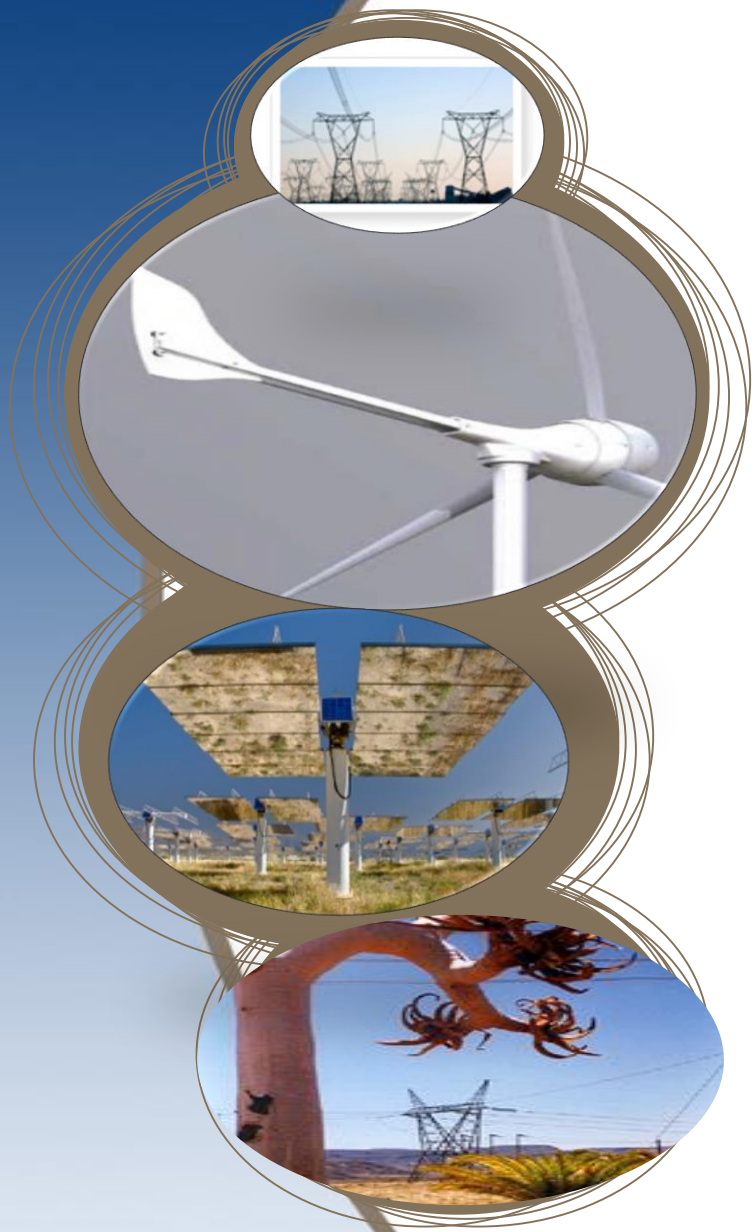


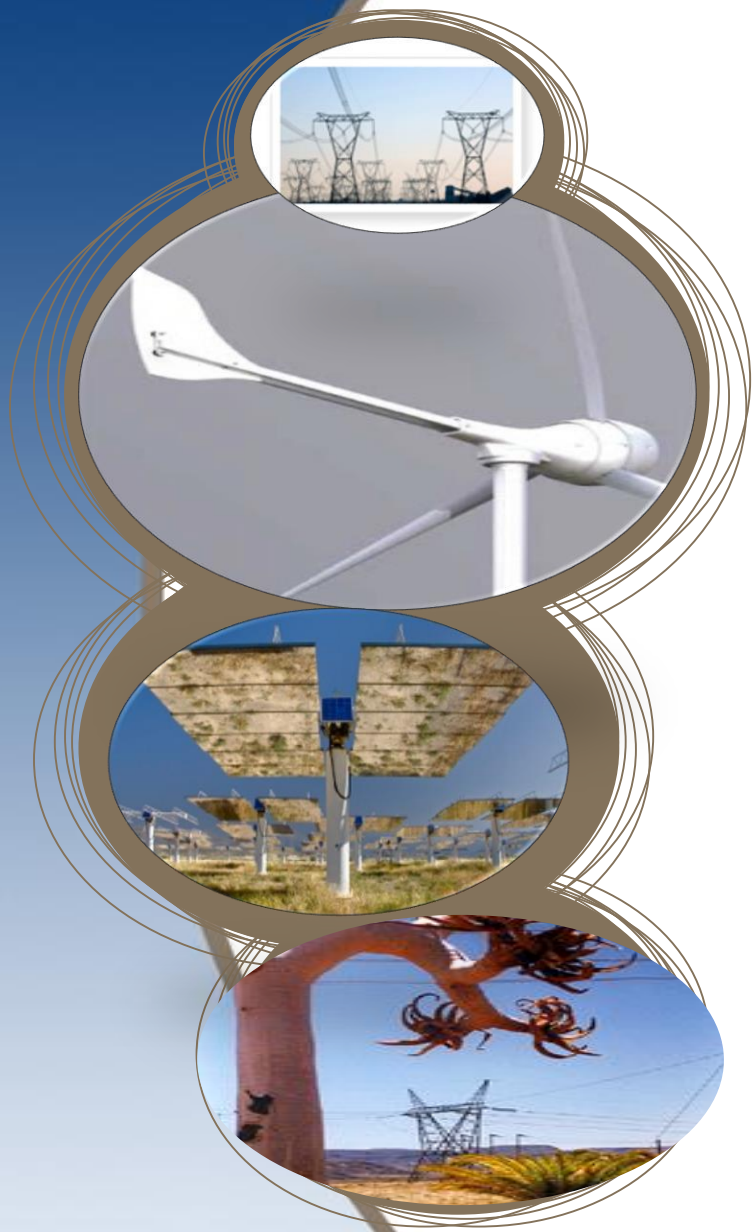
Generator use-of-system charges
Wheeling of energy
Offset (net-billing) of energy
Banking of excess energy

January 2020

Background

- Generators connecting to the grid have necessitated the development of pricing structures for:
  - Use-of-system by generators that are using the Eskom network for the energy produced by the generator.
  - Facilitation or reconciliation of energy exported onto the grid due to wheeling, offset (net-billing) and banking of energy
- The slides that follow explain how it works and the charges applicable.

Please take note of disclaimer on the first slide

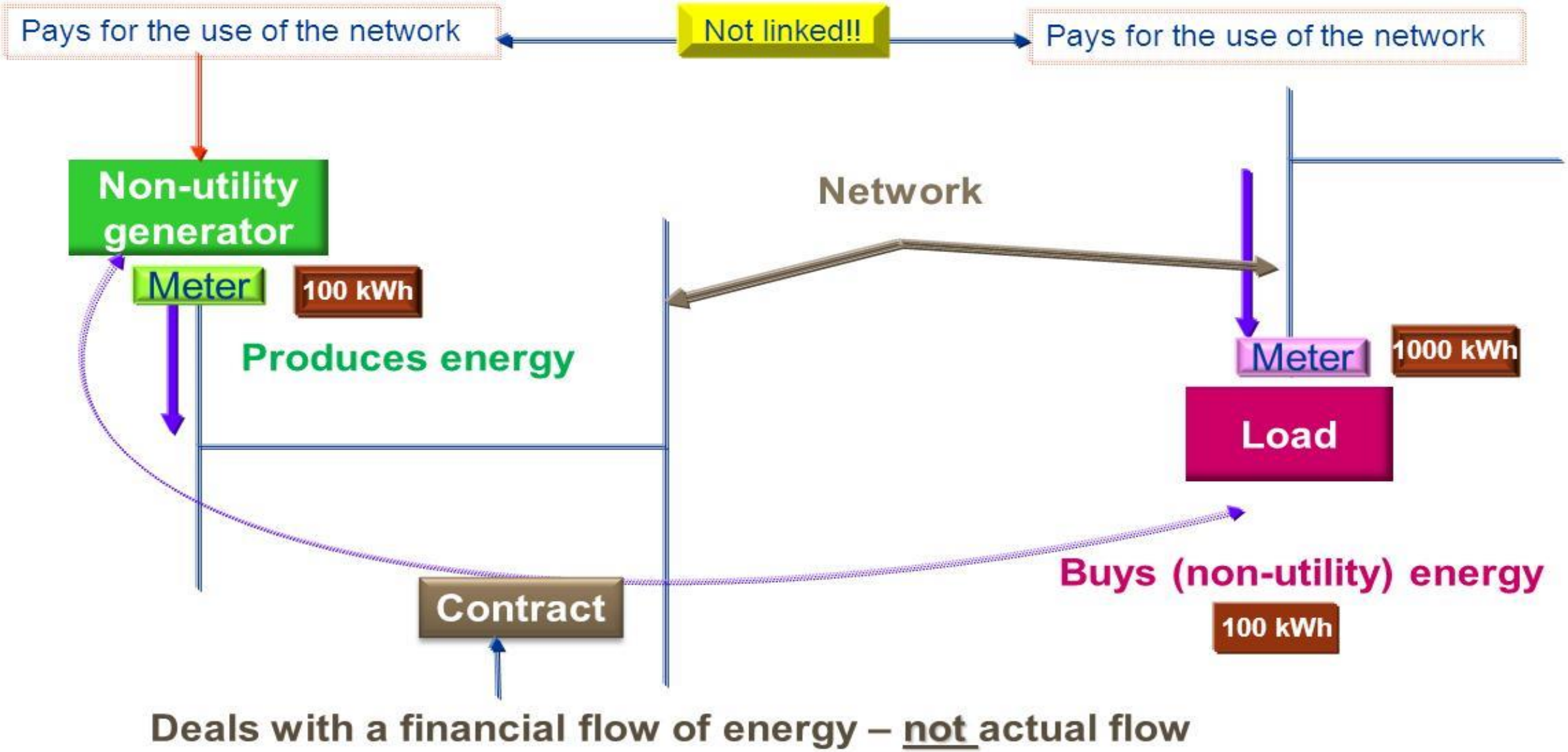


Generator use-of-system tariffs and charges

What are use-of-system charges?

- Use-of-system charges are tariff structures and rates that recover the costs associated with the delivery and making capacity available on an electricity network.
- Use-of systems charges recover:
  - Capital (rate base/shared infrastructure)
  - Operation and maintenance costs
  - The transmission and distribution losses
  - Cost of ancillary services
  - Retail costs
  - Subsidies
- The connection charges are recovered upfront and recover costs not recovered through use-of-system charges.
- Use-of-system charges are payable by both generators and loads.

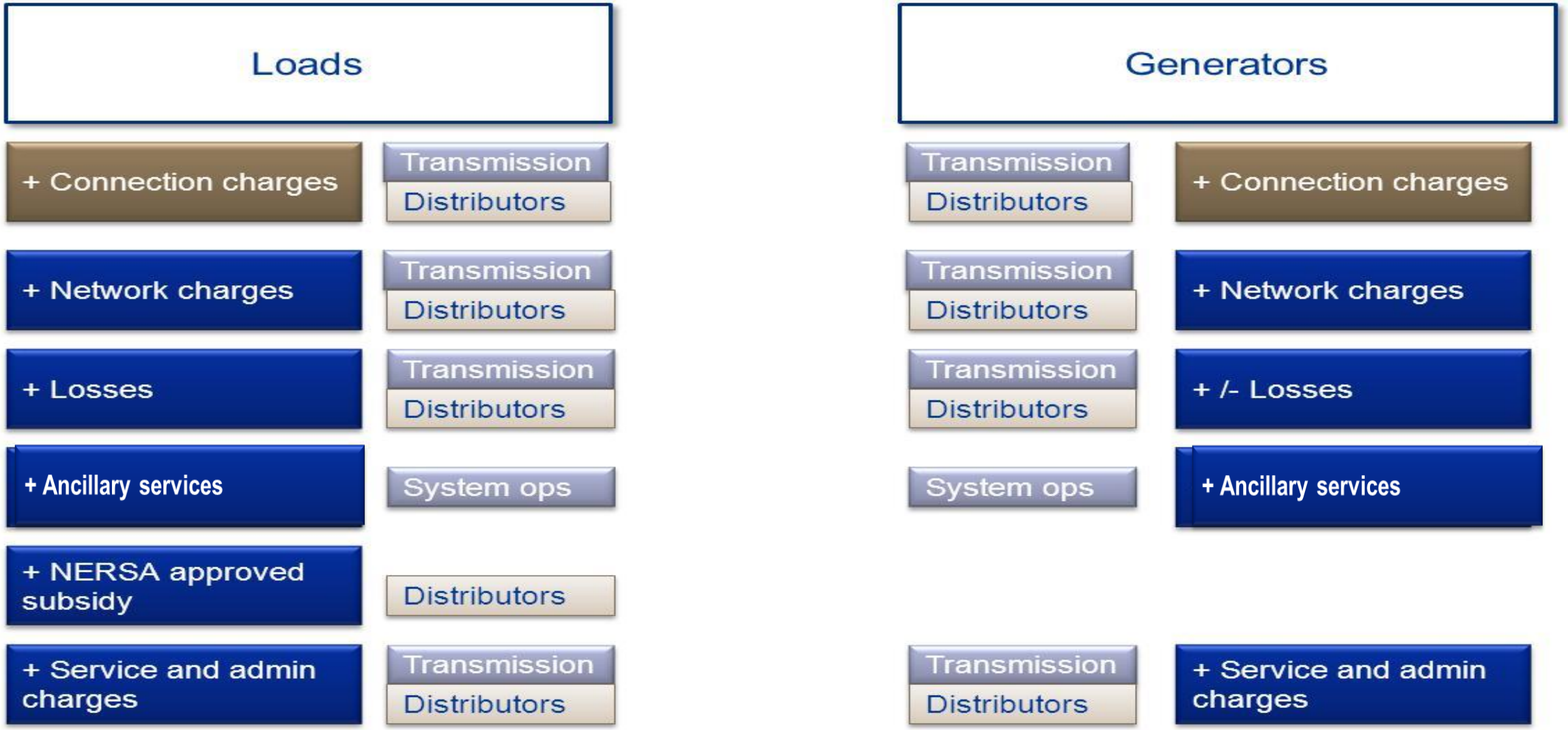
Who pays for using the network?



Published use-of-system charges (DUoS)

- Loads
  - DUoS and ETUoS network charge based on voltage and urban rural differentiation
  - Ancillary service charge
  - Losses
  - Contribution to subsidies (for wheeling customer could be different that other customers – as per NERSA rules on the third party transportation of energy)
  - Service and administration
- Generators
  - A network charge based on voltage.
    - Use-of-system network charges for generators will be the cost-reflective high-voltage (>22kV) charge.
    - There will no DUoS network charges for 22 kV or less connected generators at this stage
  - A network charge losses charge (rebate) based on the approved loss factors, the amount of energy produced on a TOU basis and the wholesale energy rate
    - Losses formula = Consumption in peak, standard and off-peak periods x wholesale energy rate in peak, standard and off-peak periods x (Distribution loss factor x Transmission loss factor-1)
  - An ancillary service charge (same charge as for loads)
  - An administration charge (same charge as for loads).
  - A service charge, if applicable (same charge as for loads) for each transaction.

Comparison of use-of-system charges payable – loads and generators



Tariffs for generator use-of-system charges only

Tariff name
Gen-DUOS urban
Gen-DUOS rural
Gen-TUOS

Gen-DUoS & Gen-TUoS (extract from 2019/20 schedule of standard prices)

TARIFFS APPLICABLE FOR GENERATOR USE-OF-SYSTEM CHARGES

38. Gen-DUoS urban

A use of system tariff for Urban$_p$ Distribution connected generator customers with the following charges:

1. the R/kW/month **Distribution network capacity charge** (generators) based on the voltage of the supply and the **maximum export capacity** measured at the **POD** applicable during all time periods; less
2. a **distribution losses charge** based on **loss factors**, which shall rebate the **network capacity charge,** but not beyond extinction,
3. a c/kWh **ancillary service charge** applied on the total active energy produced in the month based on the voltage of the supply applicable during all time periods ;
4. a R/**account**/day **service charge** based on the **maximum export capacity** of all points of supply/points of delivery linked to an account;
5. a R/**POD**/point of supply/day **administration charge** based **maximum export capacity** of each **POD**/point of supply linked to an account;
6. additional charges in the event of an **MEC** exceedance in accordance with the **NMD and MEC rules.**

The structure is given in the table below:

Table 43: Gen DUoS Urban structure

Charge	Rate
DUoS network capacity charge	**Table 37: DUoS network charge for Distribution connected generators**
Losses charge	**(Energy in each TOU period x WEPS rate excluding losses in each TOU period x (Distribution loss factor x Transmission loss factor (for loads) - 1), not beyond extinction** **Refer to WEPS energy rate excluding losses in paragraph 11, Paragraph 35 and paragraphs 25.1 and 25.2**
Ancillary service charge	**Table 32: Ancillary service charge for Distribution connected generators and loads (Urban)**
Service charge	**Table 38: Urbanp Service and administration charges**
Administration charge	**Table 38: Urbanp Service and administration charges**

39. Gen-DUoS rural

A use of system tariff for Rural$_p$ Distribution connected generator customers with the following charges:

1. a c/kWh **ancillary service charge** applied on the total active energy produced in the month based on the voltage of the supply applicable during all time periods;
2. a R/**account**/day **service charge** based on the **maximum export capacity** of all points of supply/points of delivery linked to an account;
3. a R/**POD**/point of supply/day **administration charge** based **maximum export capacity** of each **POD**/point of supply linked to an account ;
4. additional charges in the event of an **MEC** exceedance in accordance with the **NMD and MEC rules.**

The structure is given in the table below:

Table 44: Gen DUoS rural structure

Charge	Rate
DUoS network capacity charge	**NA**
Losses charge	**NA**
Ancillary service charge	**Table 32: Ancillary service charge for Distribution connected generators and loads (Rural)**
Service charge	**Table 39: Ruralp service and administration charges**
Administration charge	**Table 39: Ruralp service and administration charges**

40. Gen-TUoS

A use of system tariff for Transmission connected generator customers with the following charges:

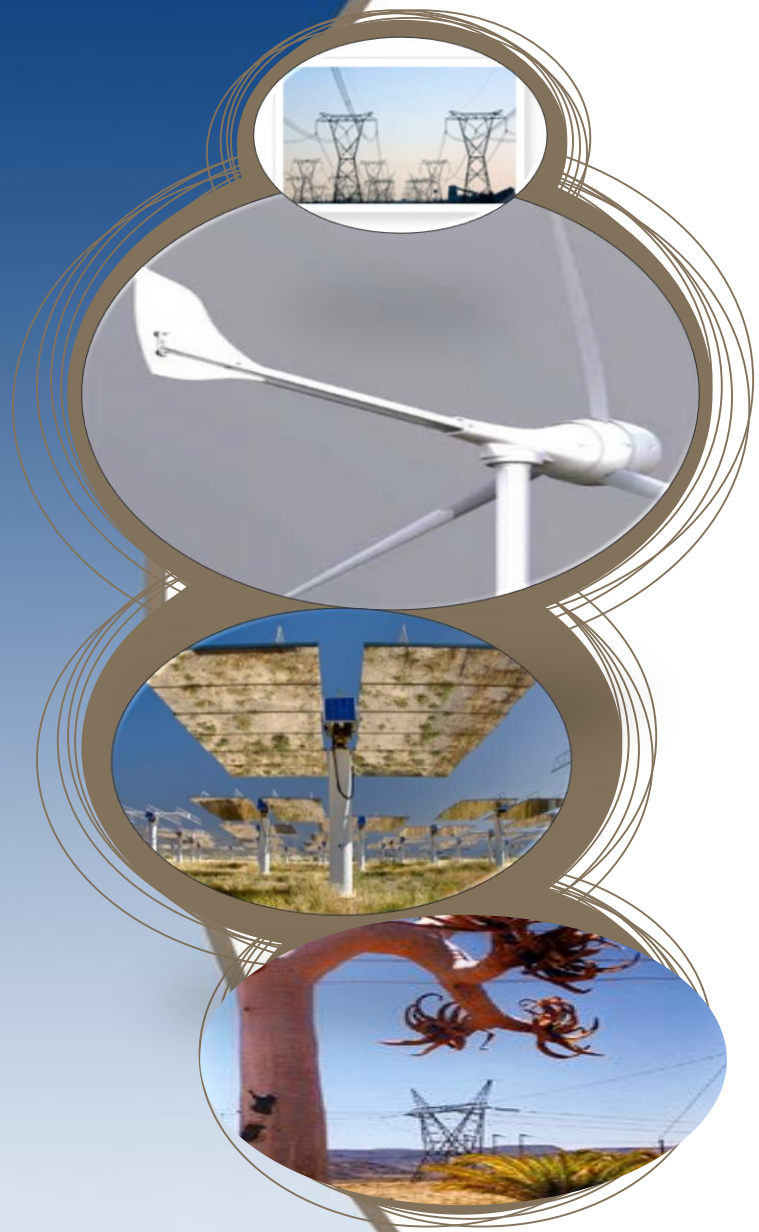
1. the R/kW/month **Transmission network charge** (generators) based on the voltage of the supply and the **maximum export capacity** measured at the **POD** applicable during all time periods; less
2. a **Transmission losses charge** based on **loss factors (may be positive or negative)**;
3. a c/kWh **ancillary service charge** applied on the total active energy produced in the month based on the voltage of the supply applicable during all time periods ;
4. a R/**account**/day **service charge** based on the **maximum export capacity** of all points of supply/points of delivery linked to an account.
5. a R/**POD**/point of supply/day **administration charge** based **maximum export capacity** of each **POD**/point of supply linked to an account;
6. additional charges in the event of an **MEC** exceedance in accordance with the **NMD and MEC rules.**

The structure is given in the table below:

Table 45: Gen TUoS structure

Charge	Rate
TUoS network charge	**Table 30: TUoS network charge for Transmission connected generators**
Losses charge	**(Energy in each TOU period x WEPS rate excluding losses in each TOU period) x (Transmission loss factor-1)/Transmission loss factor for generators** **Refer to WEPS energy rate excluding losses in paragraph 11, paragraph 25.2 and paragraph 25.4**
Ancillary service charge	**Table 31: Ancillary service charge for Transmission connected generators and loads**
Service charge	**Table 38: Urbanp Service and administration charges**
Administration charge	**Table 38: Urbanp Service and administration charges**

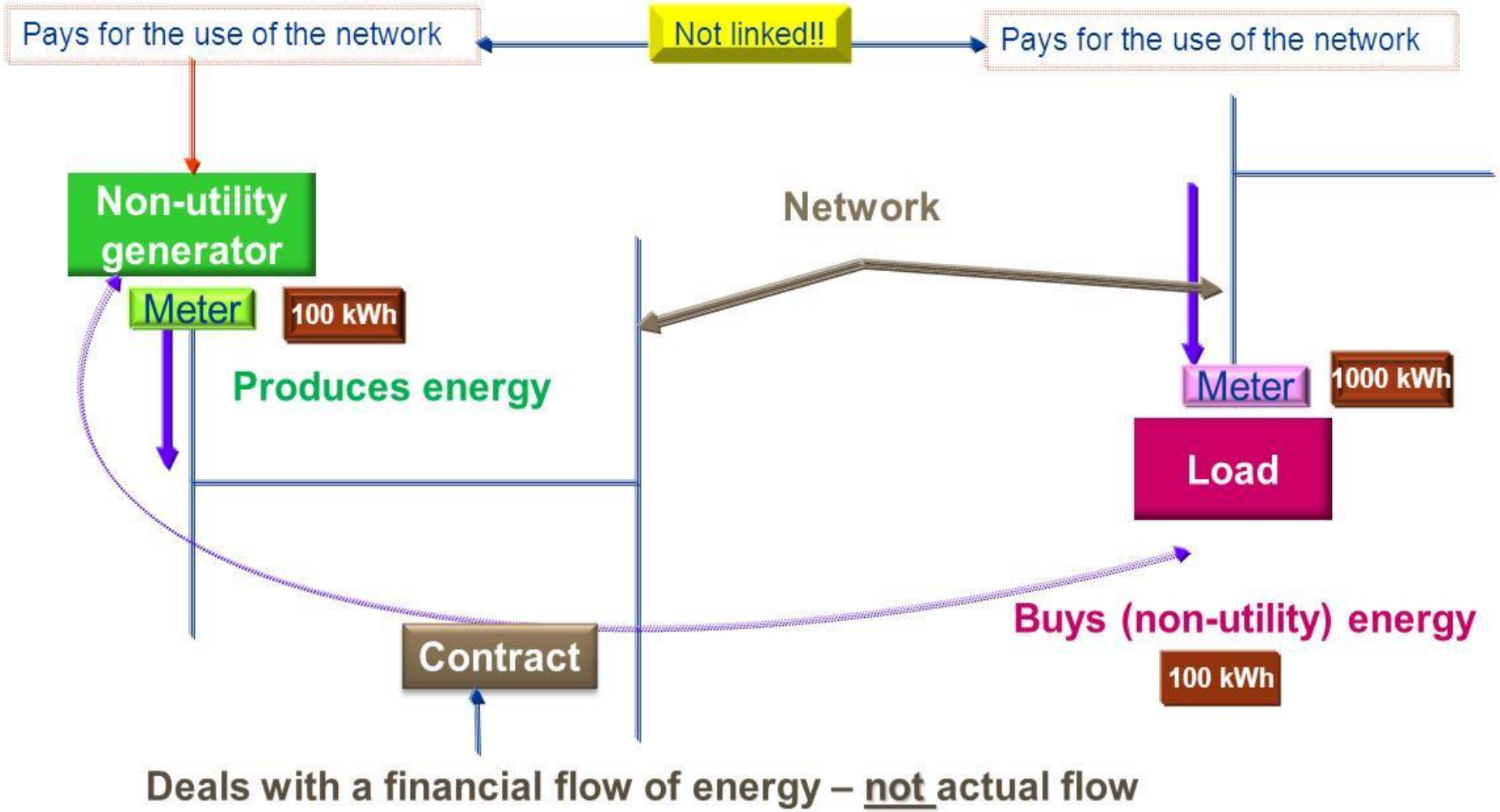
Please refer to Eskom website www.eskom.co.za/tariffs for Eskom latest schedule of standard prices
Please note: Eskom may from time to time amend the its tariffs subject to Nersa approval



Wheeling of energy

What is wheeling of energy?

Wheeling providing access between a non-Eskom Generator and a third party to facilitate the trading of energy



Conditions for providing wheeling by Eskom

- ERA and the licence requires that a Licencee must provide non-discriminatory access
- Eskom does not make the decision who is allowed to wheel energy – this is done by Nersa in terms of ERA
- Eskom conditions:
  - The generator must have an approved licence or be registered in terms of Schedule 2 of ERA, by Nersa
  - The generator must sign the connection and use of system agreement (a connection must be possible (also a Nersa requirement) and the applicable connection charges paid).
  - The account(s) where the energy will be wheeled to, will be adjusted in terms of Eskom's policy on the reconciliation of accounts (refer to next section).
  - Not applicable to generators or loads connected at low-voltage (<1 kV)
  - Reconciliation is done on a TOU basis (must convert to TOU)
  - All third party access allocations shall be made on a calendar month basis (typically with a delay of one month)
  - The party purchasing the energy must sign an amendment agreement to the supply agreement or if this party is within a municipal supply are, then the amendment agreement is with the municipality
  - The municipality in turn would need an amendment agreement with the buyer of the energy.

Eskom's "Wheeling" charges

- "Wheeling charges" are not special charges – are the standard Nersa approved unbundled network related tariff charges for the use of the network
- No link between charges related to what the generator produces and what the load buys – charges are NOT dependant on ownership of energy
  - The generator is charged for what is exported - at standard GUOS tariffs
  - The load is charged for what is delivered over the network - at standard tariffs – same as any other customer
  - Any use-of-system benefit /cost associated with a generator's location accrues to that generator and not to the buyer
- These charges are: network charges, the cost of losses, reliability services and for loads the associated subsidy contribution
  - Contribution to socio-economic subsidies not avoided by a wheeling arrangement
- No "credit' given for network related charges – only energy!
- A wheeling arrangement does not reduce the capacity required on the network!

Misconceptions and facts about wheeling

Misconceptions

The wheeling charges are additional charges and they make wheeling unaffordable!

The wheeling charges discourage open access and competition and unfairly penalise bilateral trade

Wheeling is very difficult to do!

There is no regulatory framework to allow wheeling!

Wheeling charges should not be raised as I am helping Eskom/SA/the municipality with generation!

Facts

Wheeling charges are not additional charges – all customers buying from Eskom or through bilateral trade will pay the same “wheeling charges”

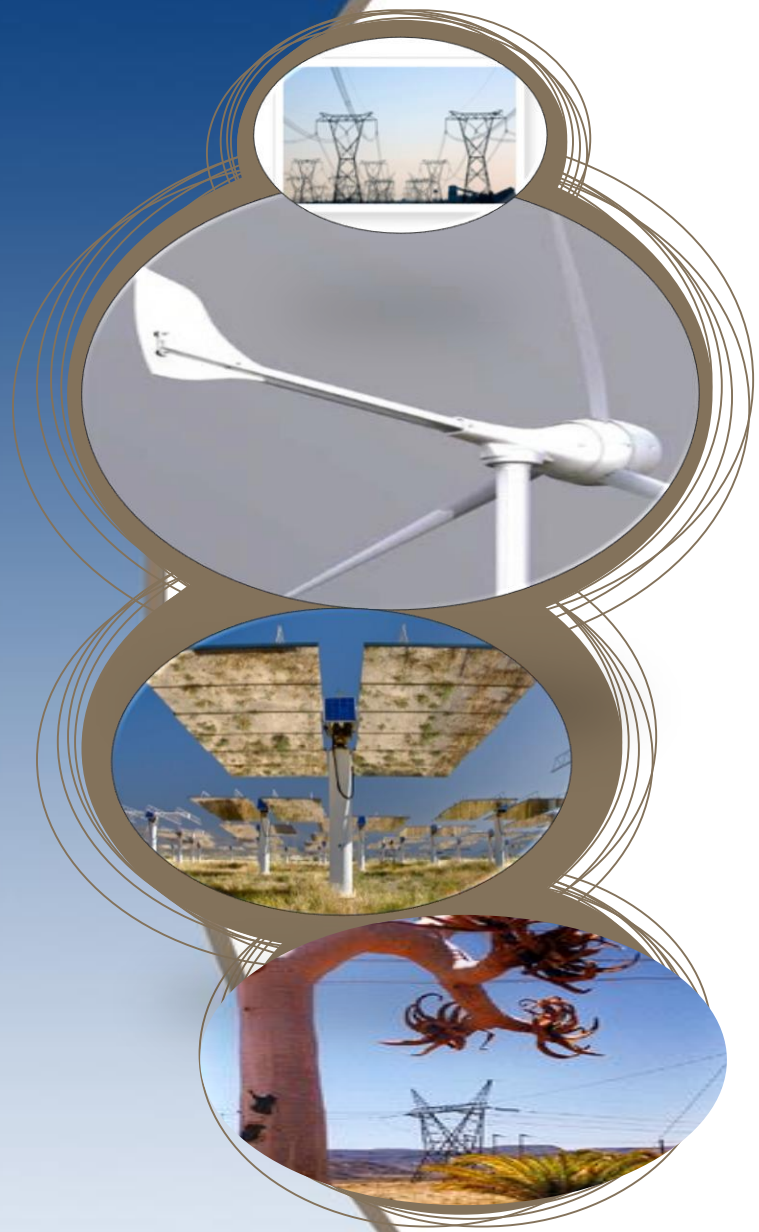
All customers that use the network are equitably treated – open access with non discriminatory charges are applied- including a fair contribution to network subsidies

Wheeling transactions are quite simple

There is a regulatory framework – NERSA rules for the third party transportation of energy

BUT Not all distributors have unbundled tariffs or wheeling policies to allow wheeling and that can be used to determine wheeling charges

Wheeling deals with the use of the network and the cost of delivering the energy. It does not deal with energy sales or energy costs.



Wheeling of energy – how its done on the bill

Gen-Wheeling (extract from 2019/20 schedule of standard prices)

TARIFFS APPLICABLE FOR THE RECONCILIATION OF ACCOUNTS FOR ESKOM CUSTOMERS RECEIVING ENERGY FROM NON-ESKOM GENERATORS

41. Gen-wheeling tariff

A reconciliation electricity tariff for local and non-local electricity customers connected at >1kV on $Urban_p$ or $Rural_p$ networks on the Megaflex, Megaflex Gen, Miniflex, Ruraflex or Ruraflex Gen TOU electricity tariffs that have entered into a wheeling transaction with a generator

1. A credit raised on the total wheeled energy and seasonally and time-of-use differentiated c/kWh **active energy charges** excluding losses and based on whether the main account is a local authority or non-local authority account;
2. three time-of-use periods namely **peak, standard and off-peak**, as specified in paragraph 3.2;
3. the treatment of **public holidays** for the raising of the credit active energy charge shall be as specified in paragraph 10;
4. a R/POD/day **administration charge** based on the **monthly utilised capacity** of each POD linked to an account; and
5. a credit raised on the total wheeled energy and the c/kWh **affordability subsidy charge** (applicable to non-local authority tariffs only.)

Below is the summary of the charges:

Table 46: Gen-wheeling tariff structure

Tariff name	Type of charge	Rate
Gen-wheeling non Munic urban	Energy charge (credit)	**Table 1: WEPS non-local authority tariff - energy rate excluding losses**
	Affordability subsidy charge (credit)	**Table 1: WEPS non-local authority tariff - affordability subsidy charge**
	Administration charge	**Table 1: WEPS non-local authority tariff - administration charge**
	All other tariff charges	**NA**
Gen-wheeling non Munic rural	Energy charge (credit)	**Table 1: WEPS non-local authority tariff - energy rate excluding losses**
	Administration charge	**Table 21: Ruraflex non-local authority tariff - administration charge**
	All other tariff charges	**NA**
Gen-wheeling Munic urban	Energy charge (credit)	**Table 2: WEPS local authority tariff - energy rate excluding losses**
	Administration charge	**Table 2: WEPS local authority tariff - administration charge**
	All other tariff charges	**NA**
Gen-wheeling Munic rural	Energy charge (credit)	**Table 2: WEPS local authority tariff - energy rate excluding losses**
	Administration charge	**Table 22: Ruraflex local authority tariff -administration charge**
	All other tariff charges	**NA**

Please refer to Eskom website www.eskom.co.za/tariffs for Eskom latest schedule of standard prices
Please note: Eskom may from time to time amend the its tariffs subject to Nersa approval

How wheeling is done on the bill

The following charges are payable on the wheeled energy on the consumer's (the buyer's) bill

- All use of system charges
  - Losses on the wheeled energy at the standard loss factors
  - The electrification and rural subsidy charge on the wheeled energy
  - The ancillary service charge on the wheeled energy
  - The administration charge to cover the cost of wheeling transaction (an administration charge is raised for each transaction raised on the bill)
  - The network capacity charge, the network demand charge and the low voltage subsidy charge on the full demand registered at the customer's meter (wheeled plus Eskom supplied energy)
- Energy
  - The energy that is metered at the buyer's POD is credited by the wheeled energy @ the wheeled energy rate (Gen-wheeling tariff) on a new virtual POD allocated to a named account (as nominated by the generator)
  - In a month wheeled energy per TOU period that is greater than that metered at the buyer's POD shall be ignored - unless banking approved
- The charges that are not raised are:
  - An additional service as the wheeling transaction is done under a main account
  - The affordability subsidy on the wheeled energy (based on current Nersa rules)
- The generator will pay all use-of-system charges associated with the exported energy

Gen-Wheeling (extract from 2019/20 schedule of standard prices)

TARIFFS APPLICABLE FOR THE RECONCILIATION OF ACCOUNTS FOR ESKOM CUSTOMERS RECEIVING ENERGY FROM NON-ESKOM GENERATORS

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1. A credit raised on the total wheeled energy and seasonally and time-of-use differentiated c/kWh **active energy charges** excluding losses and based on whether the main account is a local authority or non-local authority account;
2. three time-of-use periods namely **peak, standard and off-peak**, as specified in paragraph 3.2;
3. the treatment of **public holidays** for the raising of the credit active energy charge shall be as specified in paragraph 10;
4. a R/POD/day **administration charge** based on the **monthly utilised capacity** of each POD linked to an account; and
5. a credit raised on the total wheeled energy and the c/kWh **affordability subsidy charge** (applicable to non-local authority tariffs only.)

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	Administration charge	**Table 2: WEPS local authority tariff - administration charge**
	All other tariff charges	**NA**
Gen-wheeling Munic rural	Energy charge (credit)	**Table 2: WEPS local authority tariff - energy rate excluding losses**
	Administration charge	**Table 22: Ruraflex local authority tariff -administration charge**
	All other tariff charges	**NA**

Please refer to Eskom website www.eskom.co.za/tariffs for Eskom latest schedule of standard prices
Please note: Eskom may from time to time amend the its tariffs subject to Nersa approval

Reconciliation and costs for the buyer

Assumptions				Legend
- Notified maximum demand (kVA)	20,000			Lookups
- Maximum demand (kVA)	18,000			Inputs
- No. of days in high demand season	92	Loss factors		Selection
- Supply voltage	≥ 500 V & < 66 kV	1.0957		
- Transmission zone	> 900 km	1.0413		
- Munic	No			
- Size of supply	> 1 MVA			

Calculations		High Demand Season		Charge
A) Network charges	**kVA/kWh**	**R/kVA/c/kWh**		
Transmission network capacity charge/Network capacity charge	60,000	8.98		R 538,800
Distribution network capacity charge	60,000	17.39		R 1,043,400
Distribution network demand charge	54,000	32.98	R/kVA	R 1,780,920
LV subsidy charge	60,000	0.00		R 0
A) Total network charges				**R 3,363,120**
B) Total Energy through customer meter				
(High-demand season)	**kWh**	c/kWh	**Charge**	
Peak consumption	3,146,400	338.22	R 10,641,754	
Standard consumption	8,390,400	102.45	R 8,595,965	
Off-Peak consumption	9,439,200	55.61	R 5,249,139	
A) Sub-total	**20,976,000**	**116.74**	**R 24,486,858**	
Ancillary service charge on Total energy	20,976,000	0.43		R 90,197
	kvarh	**c/kvarh**		
Reactive energy charge	0	15.34		R 0
	kWh	c/kWh		
Electrification and rural subsidy charge (on Total energy)	20,976,000	8.48		R 1,778,765
Affordability subsidy charge (on total energy)	20,976,000	3.82		R 801,283
	Days	**R/day**		
Service charge		R 217.67		R 20,026
Administration charge		R 98.10		R 9,025
C) Total other charges				**R 2,699,296**
Total excl VAT				**R 30,549,274**
VAT				R 4,582,391
D) Total account				**R 35,131,665**

C) Gen Wheeling Credit			
Adjustment for energy Recon (- or +)			Total
	kWh	**c/kWh**	(IPP energy)
Peak	-1,104,000	296.43	-R 3,272,587
Standard	-2,760,000	89.79	-R 2,478,204
Off-Peak	-1,656,000	48.77	-R 807,631
Total Wheeled/Offset energy	-5,520,000	**118.81**	-R 6,558,422
Administration charge	R 98.10	1	R 9,025
Affordability subsidy credit	-5,520,000	3.82	-R 210,864
B) (b_1-b_2) Credit per TOU period (may never be < 0 unless banking approved)			**-R 6,760,261**
Total bill excl VAT after Gen-wheeling/offset			**R 23,789,012**

Please note: Eskom may from time to time amend the Gen-wheeling tariff subject to Nersa approval
Please refer to Eskom website www.eskom.co.za/tariffs for Eskom latest schedule of standard prices

Will depend on load factors and profiles of generator and load

Will not be allowed to go negative – refer to banking slides

Amount payable before reconciliation

			April
Transmission network charge	R	R	181,600
Distribution network capacity charge	R	R	353,600
Distribution network demand charge	R	R	593,640
Distribution network demand charge	R	R	-
LV subsidy charge	R	R	-
Total network charge	**R**	**R**	**1,128,840**
Peak energy rate	R	R	1,177,951
Standard energy rate	R	R	2,161,987
Off peak energy rate	R	R	1,542,386
Total energy charge	**R**	**R**	**4,882,324**
ERS charge	R	R	586,872
Affordability charge	R	R	-
Ancillary service charge	R	R	30,096
Service charge	R	R	6,607
Administration charge	R	R	2,978
Total bill	**R/month**	**R**	**6,637,717**
Average c/kWh	**c/kWh**		**97.04**

Reconciliation

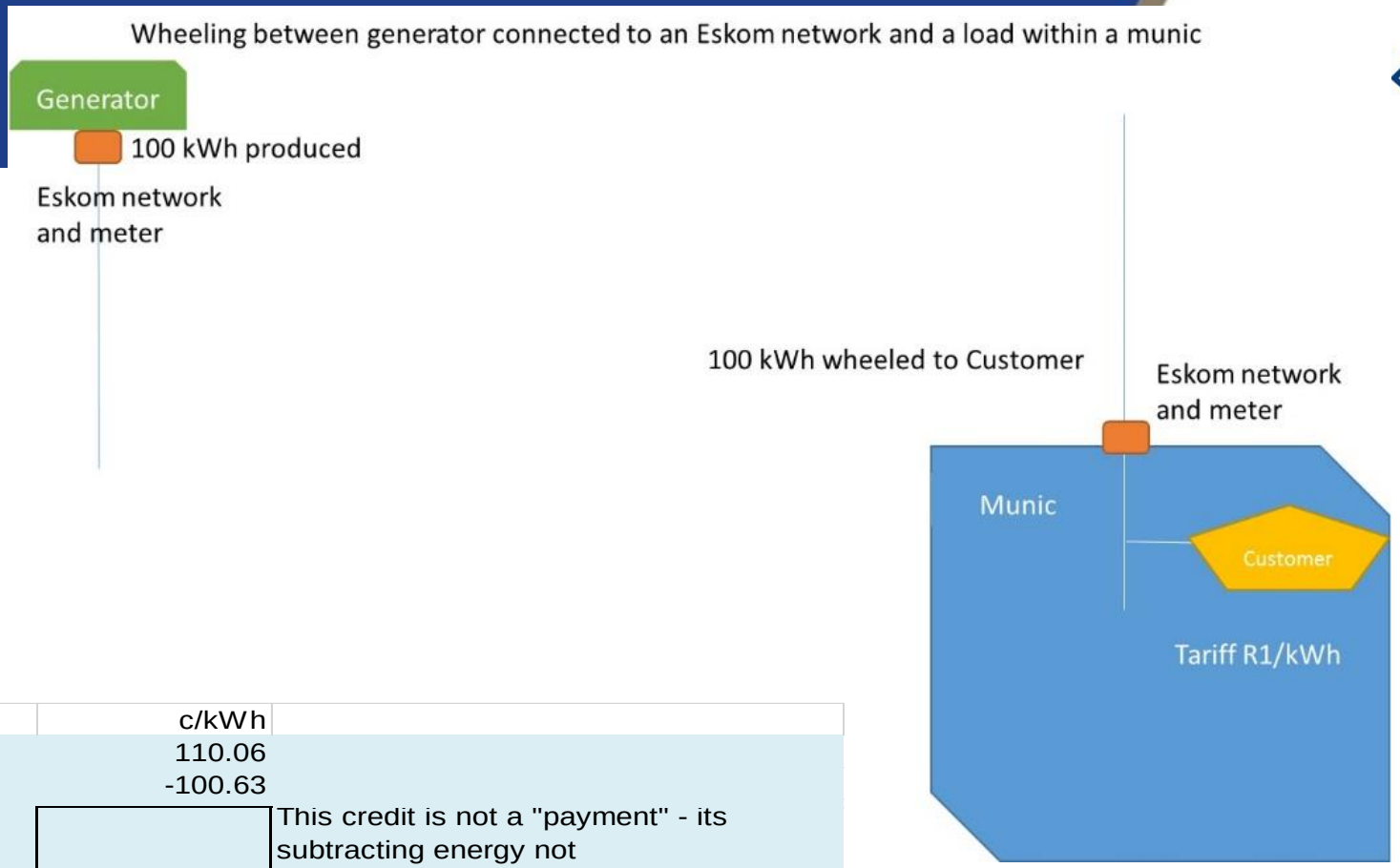
Peak energy value reconciled	kWh		-360,000
Standard energy value reconciled	kWh		-900,000
Off-peak energy value reconciled	kWh		-540,000
Total reconciled	kWh		**-1,800,000**
Administration charge	R	R	2,978
Energy charge credit/add-back Peak	R	R	-362,268
Energy charge credit/add-back Stand	R	R	-623,340
Energy charge credit/add-back Off-Pe	R	R	-237,276
Affordability subsidy charge	R	R	-
ERS charge	R	R	-
Total		**R**	**-1,219,906**

Amount payable after reconciliation

Total	**R**	**R**	**5,417,812**

No reduction of network charges or contributions to subsidies!

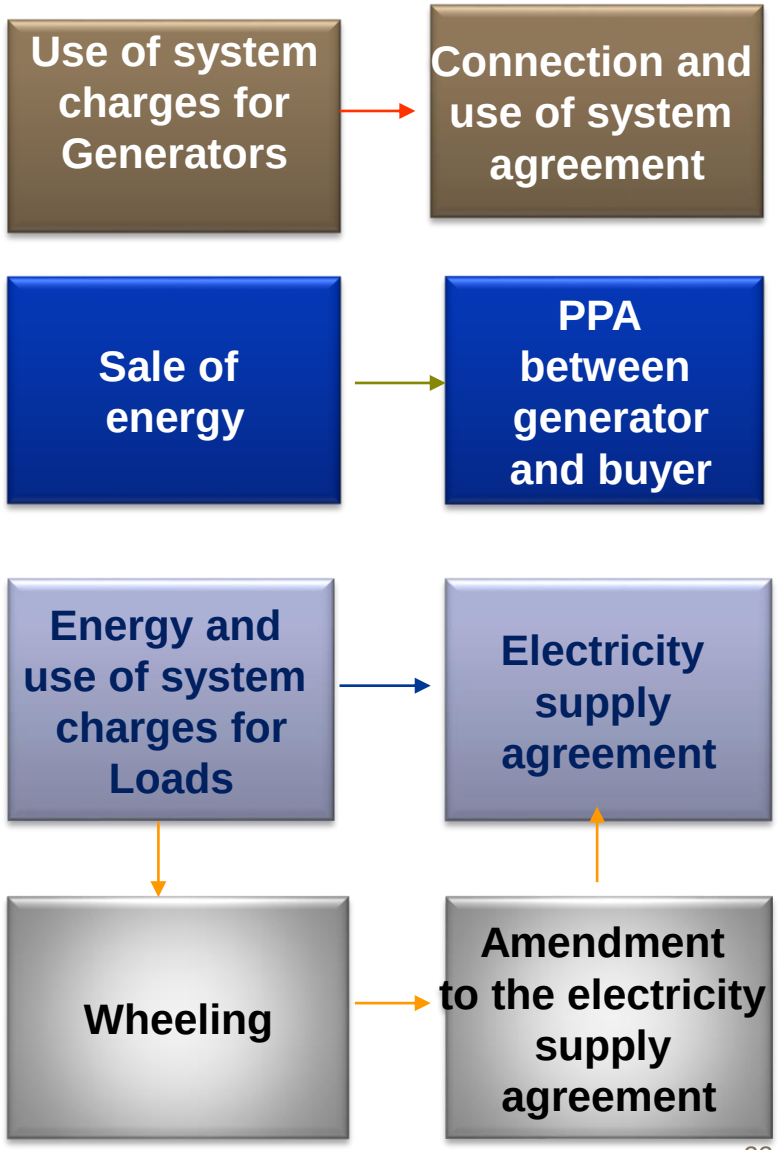
Wheeling Model in munics

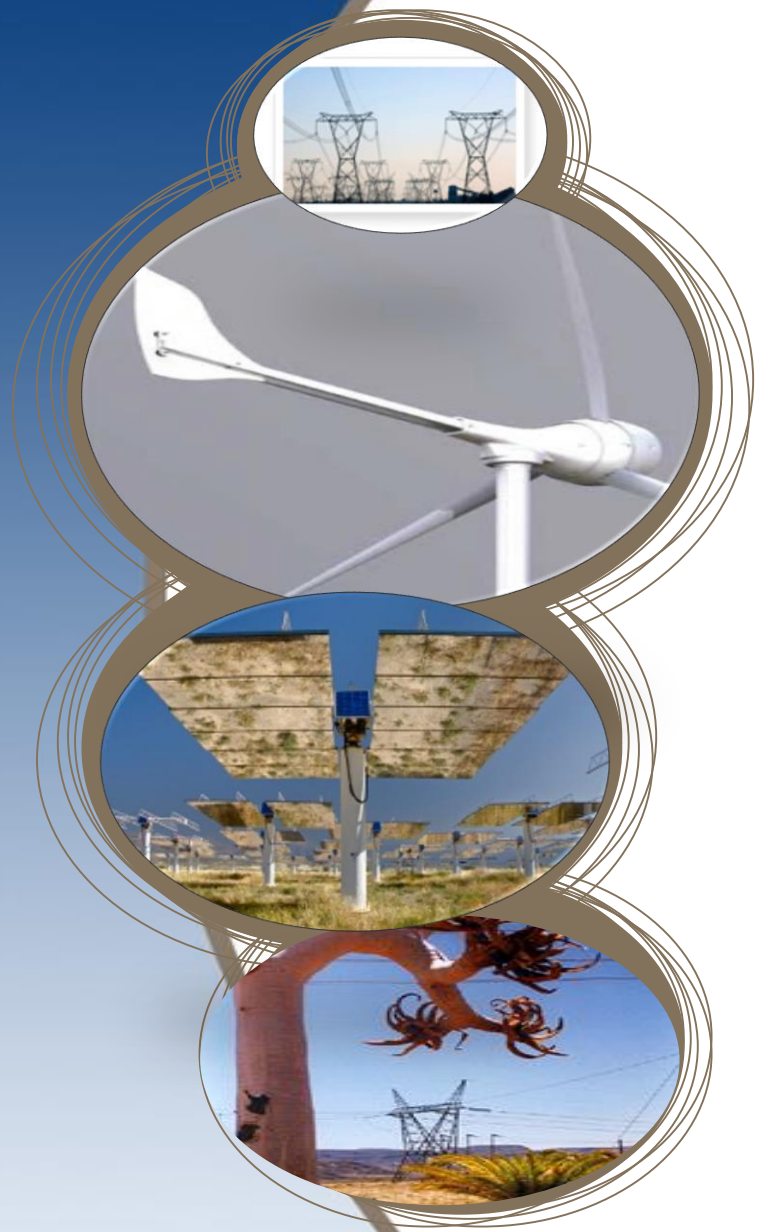


		c/kWh	
Example	Eskom normal rate	110.06	
	Less Megaflex less losses	-100.63	
	Therefore credit provided by Eskom due to wheeled energy	-100.63	This credit is not a "payment" - its subtracting energy not produced/purchased by Eskom less losses
	Payment for wheeled energy	10.00	This is over an above network and retail charges (unbundled)
	Say munic tariff =	150.00	Rate including Eskom purchases, munic losses, network and retail costs plus
	Munic then credits same rate as Eskom credit value	100.63	This credit is not a "payment" - its subtracting energy not
	Payment for wheeled energy over the munic network	49.37	This covers the munic wheeling costs "hidden" in the energy rate

Contracts to facilitate wheeling

- The generator will contract with the network provider to provide network services. The network provider will raise charges for these services.
- The generator will contract with the entity purchasing the energy through a PPA and this may be with Eskom, a third party or for own generation.
- If the energy is sold to a third party, the electricity bill must be adjusted for the wheeled energy through a supplementary contract. The customer will pay the standard tariffs associated with the cost of delivering the energy.
- All of the above transactions are separate contracts and deal with different issues.



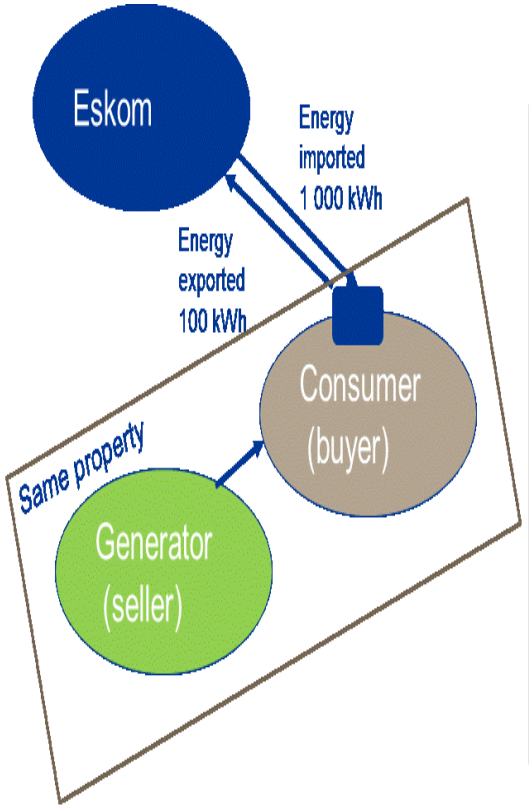


Offset/net-billing of energy

Offset/net-energy metering

Eskom allows customers with own generation to allow offset of energy exported.

- Offset is where there is import and export at the same point of supply – the customer produces more than they can use in real time and consumes this at another time - and some compensation is provided for this energy
- Must have a “legal” grid connection i.e. application, quote, payment of connection charges (if any), signing of an amendment agreement to the supply agreement or new supply agreement (to permit offset and banking) and/or connections and use-of-system agreement (to permit connection)
- A bi-directional meter must be installed – the meter is NOT allowed to go backwards.
- An illegal connection will result in a disconnection
- There will be no compensation for energy exported and for banking without the required agreements being signed, irrespective and for whatever reason there is permission given by Eskom to technically allow export, or not.
- Eskom will not effect any agreement without Nersa licencing/registration of the generator



1) Generator supplies portion of its energy directly to its customer via its network.

2) The energy surplus produced and exported by the generator is measured on a time-of-use through a bidirectional meter 1.

3) The energy consumed also measured on a time-of-use through a bidirectional meter 1.

4) The energy produced by the generator is then subtracted on the bill of the customer.

How offset is done on the bill

- Normal charges will be raised for consumption and export
  - The customer must be on a time-of-use tariff or convert to a time-of-use tariff
  - Export energy may also be subject to use-of-system charges
- Offset is done for energy exported (kWh) per TOU period only @ the Gen-offset tariff – all other charges are payable
  - In a month, any offset energy that is greater than that consumed shall be ignored - unless banking approved
  - The customer shall never be allowed to go into credit
  - Energy produced in a specific TOU period (e.g peak) shall be credited in that TOU period
- An administration will be raised for offset
- An administration charge will be raised for banking if approved
- The charges that are not raised are:
  - The service charge as this is raised per account and the energy off-set transaction is done under a main account
  - The affordability subsidy on the energy off-set
  - Losses on the energy off-set at the standard loss factors
  - The ancillary service charge on the energy off-set

Gen-offset (extract from 2019/20 schedule of standard prices)

42. Gen-offset tariff

A reconciliation electricity tariff for non-local authority electricity customers connected to $Urban_p$ or $Rural_p$ networks on the Megaflex, Megaflex Gen, Miniflex, Ruraflex or Ruraflex Gen TOU tariffs where there is a net-metering/offset transaction:

1. A credit raised on the total active energy exported and seasonally and time-of-use differentiated **active energy charges** including losses based on the voltage of supply and the **Transmission zone;**
2. three time-of-use periods namely **peak, standard and off-peak**, as specified in paragraph 3.2;
3. the treatment of **public holidays** for the raising of the credit active energy charge shall be as specified in paragraph 10;
4. a credit raised on **total active energy** exported and the **ancillary service charge**, based on the voltage of the supply;
5. a R/POD/day administration charge based on the **monthly utilised capacity** of each POD linked to an account; and
6. a credit raised on the **total active energy** exported and the **affordability subsidy charge** (applicable to non-local authority tariffs only.)

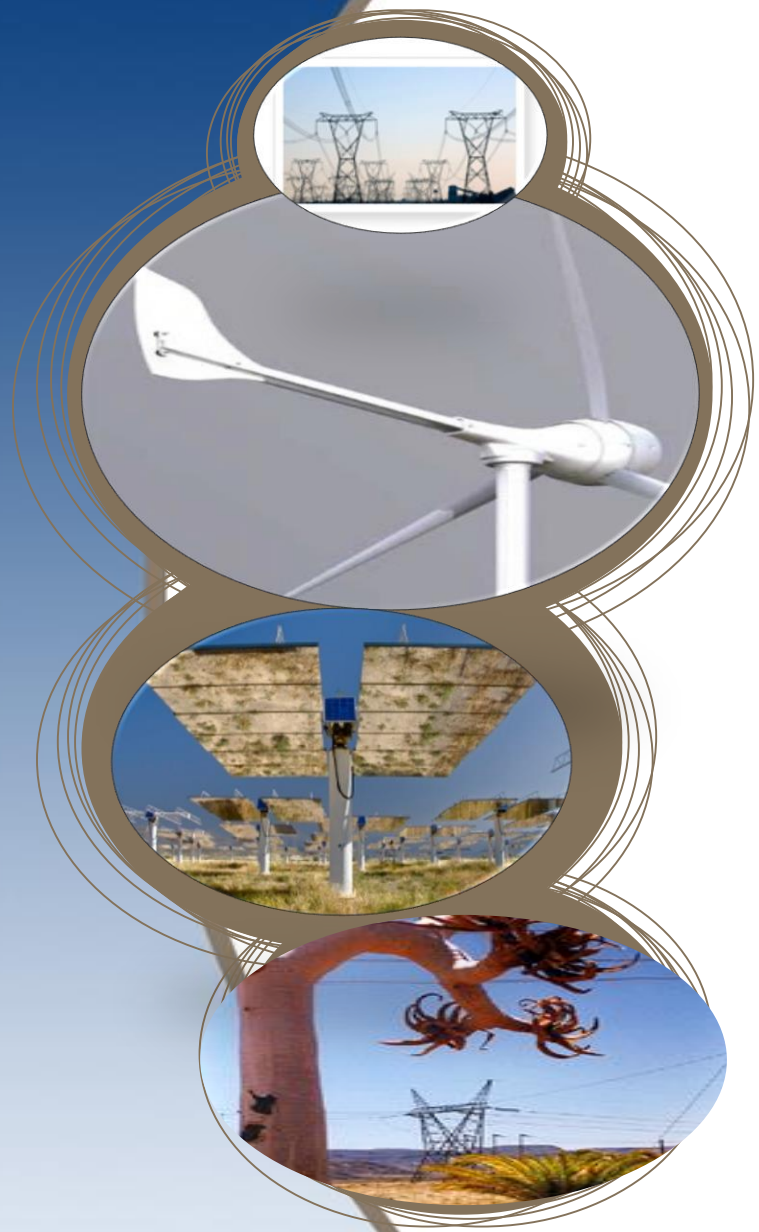
Below is the summary of the charges:

Table 47: Gen-offset tariff structure

Tariff name	Type of charge	Rate
Gen-offset urban	Energy charge (credit)	**Table 1: WEPS non-local authority tariff - energy rate per Transmission Zone and voltage**
	Ancillary service charge (credit)	**Table 1: WEPS non-local authority tariff - ancillary service charge**
	Affordability subsidy charge (credit)	**Table 1: WEPS non-local authority tariff - affordability subsidy charge**
	Administration charge	**Table 1: WEPS non-local authority tariff - administration charge**
	All other tariff charges	**NA**
Gen-offset rural	Energy charge (credit)	**Table 21: Ruraflex non-local authority tariff -energy rate per Transmission Zone and voltage**
	Ancillary service charge (credit)	**Table 21: Ruraflex non-local authority tariff -ancillary service charge**
	Administration charge	**Table 21: Ruraflex non-local authority tariff -administration charge**
	All other tariff charges	**NA**

Eskom is currently in the approval process for a residential TOU tariff with offset – to be submitted to Nersa for implementation in 2019/2020

Please refer to Eskom website www.eskom.co.za/tariffs for Eskom latest schedule of standard prices
Please note: Eskom may from time to time amend the its tariffs subject to Nersa approval



Banking of excess energy

Banking policy

- Banking is defined as the treatment and carrying over of Banked Energy into the Eskom system, recorded within a specific TOU period and month, which the customer is not able to consume within that month for whatever reason.
  - Banking is an add-on when there is wheeling or net-billing offset
  - E.g -the customer imports (consumes) say 100 kWh, exports 120 kWh in a month
    - 100 kWh is offset (credited on the bill), and 20 kWh is banked (carried over to the next month) – this per TOU period
- Banking is provided at Eskom's discretion
- The main concepts of the banking policy are:
  - That Eskom will compensate customers for energy exported that is used by Eskom, but belongs to the customer. This compensation will be at a Nersa approved offset/wheeling rate.
  - Banking is only allowed for supplies 1MW and less, unless otherwise approved.
  - Banking is only allowed where it does not cause system or network constraints.
  - Banking is done on kWh and not R values and Eskom never goes into credit with banking.
  - Customers are required to be on a TOU tariff.
- How it works…

Banking policy (1)

- Banking is not applicable to Independent Power Producers (IPP) selling energy in terms of government procurement programmes or to non- Eskom Generators greater than 1 MW (unless otherwise approved in terms of this policy.
- Month-to-month banking, offset and wheeling shall only be allowed, if the generator has been registered or licensed by Nersa and a connection and use of system agreement has been signed by both parties.
- Eskom reserves the rights to not allow banking or offset of energy if this causes network or system constraints. If this can be resolved through strengthening or upgrading, this will be for the customer's cost.
- If metering has to be changed to accommodate offset and banking, this will be for the customer's cost.
- The conditions for month-to-month banking will be included in the electricity supply agreement or amendment to the supply agreement and will be subject to the signing of these agreements and an offset or wheeling amendment agreement also being in place.
- Where banking has not been applied for, not agreed to by Eskom, no banking amendment agreement has been signed by both parties, or the customer has breached any of the conditions set out in the banking policy, all energy exported that is greater than energy consumed per TOU period in a billing month, shall be forfeited.
- If the MEC is exceeded, all exported energy for the month shall be forfeited, unless permission to do so has been provided by Eskom.
- Month to month banking will only be applicable to qualifying connected loads on TOU tariffs and profile metering

How it works*

		April	May	June	July	August	Sep	Oct	Nov	Dec	Jan	Feb	March	
kWh	Import (**active energy**)	1000	1200	800	1200	1000	1000	500	1500	1000	1200	600	700	**Consumed kWh**
	Export (**offset energy**)	-800	-1200	-1400	-600	-400	-1200	-1500	-2000	-1600	-500	-200	-2000	**Exported (generated) kWh**
	Net	200	0	-600	600	600	-200	-1000	-500	-600	700	400	-1300	**Net kWh**
	Billable kWh - sum of offset energy and banked energy balance no greater than active	**800**	**1200**	**800**	**1200**	**400**	**1000**	**500**	**1500**	**1000**	**1200**	**600**	**700**	**Total allowed to be offset**
	Banked energy balance kWh	0	0	-600	0	0	-200	-1200	-1700	-2300	-1600	-1200	**-2500**	**Residual kWh forfeited**
R	Consumption bill	R 999	R 1,199	R 2,450	R 3,676	R 3,063	R 999	R 500	R 1,499	R 999	R 1,199	R 599	R 699	**Consumption R**
	Offset credit	-R 799	-R 1,199	-R 2,450	-R 3,676	-R 1,225	-R 999	-R 500	-R 1,499	-R 999	-R 1,199	-R 599	-R 699	**Offset R**
	Total payable	R 200	R 0	R 0	R 0	R 1,838	R 0	R 0	R 0	R 0	R 0	R 0	R 0	**Bill never goes into credit**
	Banked "R value " - not reflected	*R 0*	*R 0*	*-R 1,838*	*R 0*	*R 0*	*-R 200*	*-R 1,199*	*-R 1,698*	*-R 2,298*	*-R 1,599*	*-R 1,199*	***-R 2,498***	**Residual R value forfeited**

**example is for one TOU period only*

Please refer to Eskom website www.eskom.co.za/tariffs for Eskom latest schedule of standard prices for the offset and wheeling rate

Banking policy (2)

- For generators above 1 MW
  - Banking is not be allowed unless approved otherwise on a case-by-case basis by Eskom.
  - If allowed, shall only be limited to infrequent and inadvertent over-generation i.e. not every month or more than 2 consecutive months.
  - The customer should demonstrate that it will generally absorb the generated energy itself or deliver (wheel) to another load
  - If any of the above conditions are not met, all energy exported in a billing month shall be forfeited.
- For generators ≤ 1 MW
  - Banking shall be allowed, provided all the conditions of this policy are met.
- The banked energy shall be treated as follows;
  - Applied over a banking cycle of 12 months starting from the 1 April of each Eskom financial year (the banking year)
  - the banked energy per TOU period in a month shall accumulate and be carried over to the following month as a banked energy balance until the end of that banking year;
  - in a billing month, no financial credit will be received on the customer's account for the banked energy in that month;
  - the sum of the offset energy (energy exported in that month) together with the banked energy balance up until a value no greater than the active energy (energy consumed), shall be converted to a financial credit (the offset credit) ;
  - if the sum of the offset energy and the banked energy is greater than the active energy, then this will be added to the banked energy balance;
  - the banked energy balance shall reduce to the extent included in the offset credit, per TOU period in any month, and the reduced banked energy balances, together with any banked energy in the month shall be carried over to the following month ;
  - at the end of the banking year any remaining banked energy and banked energy balance shall be forfeited and not be carried over to following month; and
  - the total banked energy per TOU period may not exceed the total active energy per TOU period in that banking year ('the banked energy limit'); in which case the exceeded exported energy shall be forfeited.

Banking policy (3)

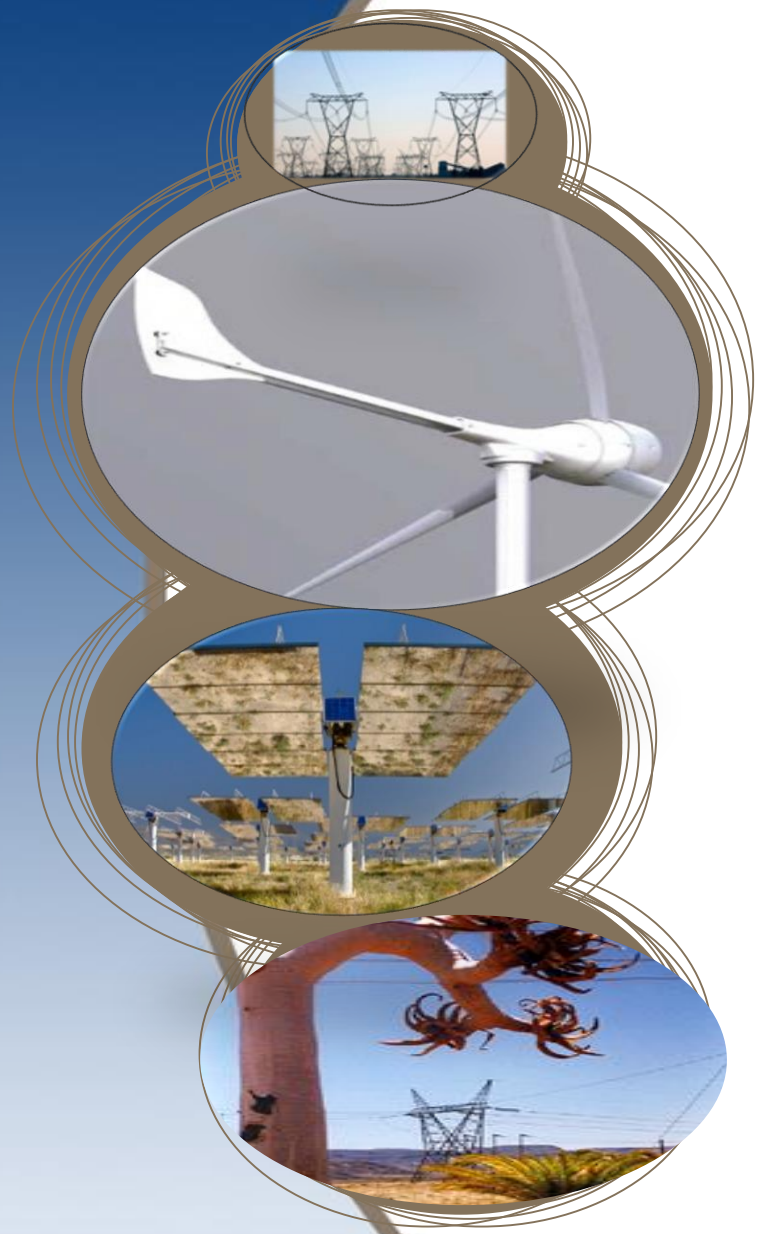
- The consumer/buyer of the energy will bank the energy and not the generator.
- Rights of the System Operator under banking conditions (where permission has been provided for >1MW)
  - The rights of the System Operator to dispatch shall be in compliance with the Scheduling and Dispatch Rules of the Code.
  - If either the generator or the load is not available for more than 24 hours the System Operator must be informed.
  - The System Operator may limit the amount of energy permitted to be banked or issue an instruction to not credit the energy banked.
  - Banking will not be allowed where the power system is placed at risk by “dumping” energy at times when not required by the System Operator or requiring other generators to operate sub-optimally.
  - In cases where the banking of energy places the Eskom grid/system at risk, then this would be considered an emergency condition and it will be necessary to issue instructions to the generator to reduce its generation.
- Where banking is approved for a customer, this does not enable a customer to avoid load shedding if general load shedding is in effect in the area.
- Where due to an Eskom outage or fault on the Eskom network:
  - The load under a wheeling scenario is not able to use the energy generated but the generator is still able to generate and export onto the Eskom network, there will be no energy banking limit unless advised otherwise by the system or network operator.

Banking policy(4)

- Charges
  - An Administration Charge will be payable to recover the costs of administering the banking process
    - This is in addition to the consumption related administration charges and the Offset/wheeling administration charge.
  - This Administration Charge will be the charge set out in the Gen-wheeling or Gen-offset schedule of standard prices.
  - All DUoS and TUoS charges (network related charges) shall be payable and not be reduced by banking.
  - A once-off standard charge will be payable to provide access to the banking arrangement.
- All relevant provisions of the Consumer Protection Act and application of VAT where credits are provided will be adhered to.

Summary

- Non-discriminatory access
  - The Licensee does not have the right to refuse a generator to wheel (unless there are technical constraints) – if Nersa and the law allows for it
- Generators must pay to use the grid (this is their wheeling charge)
- The buyer/load pays for the energy to be delivered over the grid (this is their wheeling charge)
  - This is NOT an additional charge
- Wheeling charges (network charges/use of system charges) should be approved by Nersa if they are not already unbundled
- Wheeling should not avoid contribution to subsidies/surpluses



The end