NDLAMBE: NEW ELECTRICITY TARIFFS: QUESTIONS AND ANSWERS

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1 General Tariff questions

1.1 Q What is proposed for the electricity tariffs in July 2024?

A Ndlambe Municipality will be implementing:
Firstly: an average NERSA approved electricity price increase
Secondly: various electricity tariff structure changes from 1 July 2024

1.2 Q: What will the next average electricity price increase be?

A The price increase from Eskom to the municipality will be 12.72% as from 1 July 2024. Based on this the municipal increase will be 13% to cover the Eskom increase plus own cost increases.

1.3 **Q.** What tariff structural changes are planned for 1 July 2024?

A The following:

- Small Domestic and Commercial tariffs (pre-paid and non-pre-payment) will, in future be linked to the capacity limit of supply chosen.
- All consumers who require more than 20 Amp capacity will be charged a phased-in Cost Reflective Tariff with:
  - Fixed Basic Charge,
  - Capacity Charge depending on the capacity limit of the supply and
  - lower Energy Charges.
- Consumers who are willing to manage their loads within a capacity limited to 20 Amps single phase will be offered a tariff with no fixed charges.
- Indigent consumers' capacity will also be limited to 20 Amps.
- Bulk consumers will charged on a new Time of Use tariff.
- Small Scale Embedded Generators (SSEG) consumers will also be subject to Basi can Capacity charge and Time of Use energy charges.

1.4 **Q:** Why are there such major tariff restructuring proposed?

A Ndlambe Municipality has to change the current tariff structure in order to be more cost reflective. The current tariffs do not reflect the actual cost of supplying different consumers accurately and do not address the changing energy space. In view of this and as per the National Electricity Pricing Policy (EPP) and NERSA requirements a detailed cost of supply (COS) study was conducted and was approved by NERSA and Council.

1.5 **Q:** What were the key results from the cost of supply study?

A It firstly showed that the Average Ndlambe electricity tariff levels were in line with the NERSA guidelines. It also indicated that Indigent consumers, Low usage domestic consumers and some Bulk consumers were undercharged but that high usage domestic consumers and most commercial consumers were overcharged.

1.6 **Q.** What does a cost reflective tariff consist of?

A The cost of supplying electricity to a consumer consists of the following components

- Fixed consumer costs (meter and service connection, meter reading and billing or vending for pre-payment, revenue management).
- Network (capacity / demand) costs. These costs include: The Eskom access charges and maximum demand charges as well as the Ndlambe network costs including operational and maintenance costs.
- Energy costs. This is the actual energy consumed by the consumer in kWh but could be by the time of use.

1.7 **Q:** What did the cost of supply study say about the Ndlambe electricity loads?

A It firstly showed that the Ndlambe load profile is very peaky, meaning very high loads during the early morning and early evenings co-incidental with the Eskom national system peaks when electricity is very expensive. This is normal for a town like Ndlambe but is also a sign that there is no / very little signal / incentives for consumers to manage their loads, specifically the maximum burden they place on the network.

1.8 **Q:** What did the cost of supply study indicate about the Ndlambe tariff structures?

A It showed clearly identifiable fixed costs associated with metering, billing, service connection and other consumer services which is independent of consumer consumption and is fixed in nature per consumer. It also clearly identified the Eskom Access and Maximum demand charges and the network costs which depend on the peak demand place on the networks and on the Eskom supply which is again independent on the level of consumption. Finally, the energy costs which is mainly from Eskom and differ significantly between the Hi-season (June to August) and the Low season (rest) and by time per weekday and weekend days by Peak, Standard and Off-peak periods.

1.9 Q: Do the Ndlambe tariff structures follow the costs as per the cost of supply study?

A In respect of small consumer tariffs, less than 100 kVA, largely not. Only a few small consumers have some fixed charges, but none have any capacity charges. Most small consumers are on 60 Amp supplies which is in many cases providing 10 times more capacity than what is actually required. This means that although consumers have an incentive to save on energy consumption there is no incentive to manage their peak demand.
In respect of Bulk consumers, more than 55 kVA, the Time Of Use tariff s are restructured to reflect the new cost of supply.

1.10 Q: What are the key changes proposed to the Ndlambe tariff structures?

A Indigent consumers: A subsidised tariff for indigent consumers with no fixed charges. This will be limited in capacity to 20 Amps and the first energy block price be set equal to the second energy block price.

A Domestic and Commercial consumers 20 Amps single phase. These subsidised tariffs with no fixed charges but with a capacity limit of 20 Amps will be available for low usage consumers.

A Domestic and commercial consumers exceeding 20 Amp single phase. These tariffs will feature a fixed monthly charge to cover the consumer service costs in Rand/month. A capacity charge based on the capacity limit selected in Rands/Amp/phase/month. The basic and capacity charge be levied through the rates bill. A lower energy charge to cover the energy cost.

A Bulk consumers. These are consumers with capacity usually exceeding 55 kVA. These consumers will all be moved to Time of Use tariffs. These tariffs all feature a Basic, Access, Maximum demand, TOU energy rates and a reactive energy charge.

A SSEG tariffs. All consumers who install renewable energy generators or so called Small Scale Embedded Generation (SSEG) at their premises will be on a tariff with Basic, Capacity and TOU energy charges.

1.11 Q: What is Ndlambe doing to inform consumers?

A. Ndlambe is rolling out a comprehensive communications strategy as follows:

- Presentations. Various presentations have already been done to personnel, council members and other interest groups and more are being planned.
- Workshops / demonstrations. As part of the annual budget workshops with communities, detailed feedback and practical demonstrations will be done.
- News articles. The press is being invited to the work sessions and they will be assisted in placing practical details.
- Radio. Various radio sessions are being planned to inform consumers.
- Website. Complete set of documents and papers are being made available on the municipal website.
- Letters. Letters will be sent with the municipal bills detailing consumers decision with an application form to be completed.
- Social media: facebook, twitter, whatsApp groups.

It is realised that these new tariffs present a challenge to consumers. If we all work together the municipal costs can be reduced and thus better service delivery can be ensured with lower costs to consumers.

1.12 Q: What are the benefits of the new tariffs to Ndlambe and Consumers?

A There are two big savings for Ndlambe which will in time benefit consumers:
These benefits stem from the shifting of loads by consumers to reduce their bills by having no, or low capacity charges. These benefits will result in the following savings for Ndlambe:

- Firstly is the savings in Eskom purchase costs.
    - A reduction in Eskom maximum demand charge as the monthly peak demands on Eskom should reduce.
    - In time the notified demand to Eskom should also have to be increased at a lower rate thus also reducing the Eskom Access charge.
    - Furthermore, the energy costs should be reduced as loads are shifted from the more expensive times to the cheaper times (from peak to both standard and off-peak as well as from standard to off-peak).

- Secondly the peak demands on various of the networks will reduce.
  - This will reduce the technical network losses which would results in lower Eskom charges,
  - This will extend the life of all the network assets as they would not go through such heavily loadings to light loadings thus causing rising and dropping in temperature and thus expansion and retraction of the materials
  - This will reduce network outages relating to overloading as the chance for overloading will reduce.

The benefits for consumers are as follows:

- Small and Bulk consumers will immediately see a lowering in their Capacity and Demand charges.
- For TOU consumers immediately experience lower energy costs in respect of loads shifted to the cheaper Time of Use (TOU) periods.
- For all consumers the network and Eskom costs will result in lower average price increases or increased profitability leading to increased service levels.

1.13 Q: How will the proposed tariffs be phased in?

A The tariff structure changes will be phase in over a three-year period. This means that the basic and capacity and energy charges will be moved from existing levels to the proposed levels in three equal steps plus the respective annual price increases.

2 Small consumer Tariff questions

2.1 Q: What is Amps and how does it relate to electricity units?

A The basics of electricity are as follows.

Amp (A) - Unit for electricity current. Same as the flowrate of water depending on size of pipe.
Volt (V) - Unit for electricity potential or Voltage. Same as pressure in a water pipe.
Watt (W) - Unit of electricity power. Same as pressure in a pipe and the size of the water pipe.
Kilowatt (kW) - This is 1 000 Watts.
Kilowatt-hour (kWh) - Unit of electricity consumption. Similar to (KL) Kilo litre of water.

The Watts are calculated by multiplying the Volts times the Amps. This depends on the power usage of electrical appliances. For example:

- The Voltage in South African households is 230 Volts.
- A typical hot plate uses about 4.4 Amps.
- Thus, the power used is equal to: 230 Volts X 4.4 Amps = 1 000 Watts or 1 kW.
- If the hot plate is used for one for 1 hour it will consume: 1 kW x 1 hour = 1 kWh or one unit.
- The energy price sold is set in R/kWh or R/unit.

This is similar to water. If a water supply with a 25 mm pipe and a pressure of 6 bar is opened for 1 hour you will use about 3000 litre or 1 kL of water.

2.2 Q. Which appliances can be supplied from a 20 Amp limited supply?

A **The big issue with a capacity limited supply is not so much how many units (kWh) can be consumed but how many appliances can be switched on at the same time.** For example, A 20 Amp supply is equal to 4.6 kW. The rating of appliances is mostly stated in Watts or kW but sometimes in Amps. This is sometimes shown in the face of the appliance or box in which it is displayed but will be on the technical information label usually at the back or bottom of the appliance. A list of typical appliance Watt / Amp ratings will be available on the Ndlambe Website.

Typical appliances than can all be switched on at the same time with 20 Amps are as follows: Ten LED lights, radio, TV with decoder, fridge, freezer, fan, Computer, all types of chargers (phone, watch, internet modem, lights, etc). The appliances which generate heat are the ones using a lot of power and that care need to be taken when switching these on. Such as kettle, tumble dryer, washing machines, dish-washer, heater, stove, geyser, air-conditioner, hair dryer, underfloor heating, etc.

2.3 Q. How should one then manage the load within a limited capacity?

A A typical scenario is as follows: When people arrive at home after work.

- Switch on lights, radio, TV, chargers, fan. Fridges and freezers would be on the whole day.
- Now to schedule the heavy usage appliances: Switch in the kettle and wait under it has boiled. Only then use the microwave oven to unfreeze or warm some food, then switch on the stove plates and complete all the food preparation. Once this is done one can switch on a heater, hair dryers, etc.
- The washing machines and tumble dryers should only be switched on when cooking and space heating is done, Dishwashers could be loaded and switched on when people go to bed.
- Geysers have elements of generally 2 to 3 kW. These can also be switched on and off using the geyser circuit breaker in the distribution board, but it is recommended to install a timer to only switch them on during the night and some time during the day. Recommended timer switch on times are shown below.
    - 24h00-04h00. Night time on. Main heating of water.
    - 14h00-16h00 Daytime boost Top up if required.
- The ovens in big stoves sometimes have very big elements as much as 4 kW which would be difficult to run with a 20 Amp supply when using the main and grill elements at the same time.

2.4 Q: What will happen if the capacity is exceeded?

A The circuit breaker will trip when the demand is higher than the selected capacity: Do the following:

- While the supply is off, switch off certain heavy consumption supplies.
- Conventional meter supply: Reset the breaker in your house DB.
- Prepayment meter. The supply will automatically switch on again after a few minutes.
- If the pre-payment meter trips a few (3) consecutive times the supply will remain off until reset manually.
- If the demand is not reduced the circuit breaker will keep on tripping.
- Do not call the municipality during the time when the breaker is off due to overloading. You could be subject to a call out charge.
- If it is unacceptable to manage the load within the chosen capacity apply for an increased capacity.

2.5 Q: How will the capacity be determined?

A The selection of capacity will be done as follows:

- Indigent supplies: 20 Amps.
- All other consumers will be given the choice of selecting their capacity through a formal application process. The application form and details will be available on the website.

The table below indicates at what consumption level the different domestic capacity tariffs will break even or be cheaper with the current single energy rate tariff after price increase and these capacities are recommended.

Average Monthly Electricity Consumption of the Consumer (kWh/m)	Recommended capacity
Between 0 kWh and 400kWh	20 Ampere 1 phase
Between 400kWh and 600kWh	30 Ampere 1 phase
Between 600kWh and 800kWh	40 Ampere 1 phase
Between 800kWh and 1000kWh	50 Ampere 1 phase
Between 800kWh and 1000kWh	60 Ampere 1 phase
More than 1000kWh	60 Ampere 1 phase plus 10 Amps per 200 kWh/m

In cases where consumers do not select their capacity the historic consumption pattens will be used and consumers be placed on the recommended capacity as indicated above.
Consumers who are unable to manage their load within the applied capacity, will have an option to choose a higher capacity and be subjected to the applicable tariff.

2.6 Q: What is the impact of the new tariffs?

A. The tariffs were so developed that the total electricity income from all consumers remains the same before the annual price increase. This does however mean that some consumers will pay more, and others will pay less. Currently some domestic consumers do not pay the basic charge and thus their impact would be different. Detailed impact tables will be available on the municipal website. The majority of domestic consumers are currently on the single energy rate pre-payment tariff. The cost for consumers on the recommended capacity will experience increases close to the average increase. If consumers downgraded to 20 Amp they would experience an increase slightly more than the average increase. Consumers with low consumption and high capacity and irregular usage will experience increases above the average increase. Consumers with consumption levels above that stated for each capacity will experience increases below the average increase.

2.7 Q. How will the capacity limit actually be changed in the supply?

A Consumers will be charged at the capacity as was selected as from 1 July 2024. The actual capacity limit will however take some time to be changed physically.
For pre-payment consumers.

- The tariff will be set per the decision by the consumer / municipality as from 1 July 2024.
- The capacity will however only be set in the meter by the municipality over the months after 1 July 2024.
- This will give consumers some time to manage their demand within the selected capacity.

For conventional meter consumers:

- The tariff will be set per the decision by the consumer / municipality as from 1 July 2024.
- Consumers need to change their capacity (circuit breaker) by an electrician.
- A certificate of compliance (COC) together with an application for the new capacity then needs to be given to Ndlambe.
- This application will then be processed, and the capacity charge be set according to the new capacity.
- Consumers have until November 2024 to change their capacity after which the current capacity will be levied.
- These consumers will also be offered the option to convert to pre-payment.
- The Municipality will change the capacity of their breakers in the meter boxes to match the consumer's capacity but with slower trip curve over a period of time.

2.8 Q. Why are Basic and Capacity charges introduced?

A. There are various reasons for this:

- Firstly: The Government Policy and municipal legislation require that cost reflective charges be applied and that fixed, capacity and energy costs be charged for separately.
- Secondly: The municipal own costs are largely determined by the capacity taken from Eskom and the capacity required on the municipal networks. It is therefore important that consumers receive a capacity signal so that they can react thereon by controlling their loads.
- Thirdly: When all costs are recovered by way of energy charges only, it has the following impact:
  - Low usage consumers are subsidised.
  - High usage consumers are overcharged.
- Consumers with irregular usage do not pay their fair portion of cost if all costs re recovered through the energy charges. For example, a consumer with a 3 phase 60 amp supply can cause a massive 42 kW load on the network and increase in Eskom maximum demand. In the month/s of occupation, the consumer may pay a large bill but for the rest of the year make no contribution to the on-going costs.
- Fourthly: There are various factors causing electricity consumption to reduce:
  - Rising prices cause more care and thus usage.
  - The major drive to become more environmentally friendly especially in the Western Cape.

- Gas offers a reliable and cheap option to cook, and consumers are converting.
- More energy efficient appliances are on the market and consumers are buying them.
- Solar water geysers are becoming more common.
- More and more consumers are installing solar electricity or so-called photo voltaic (PV) systems to supplement their usage. The biggest problem with many of these measures is that it does not necessary reduce the network or peak Eskom capacity. When all costs are covered in the energy charges, the loss in revenue exceeds the saving in costs, mainly Eskom energy cost.

It is therefore important that all tariffs reflect the different cost components as far as possible so that when energy is reduced on the energy revenue is reduced and when demand on the network is reduced that the network charges reduce thus limiting the municipality against undue revenue losses.

2.9 Q. Why must pre-payment consumers pay Basic and Capacity charges?

A. The electricity supply function feature 3 types of costs namely:

- Fixed consumer costs (meter and service connection, meter reading and billing or vending for pre-payment, marketing, revenue management etc). These costs are:
  - fixed every month and
  - are similar for pre-payment and conventional consumers and
  - are independent of how much energy consumers use.
- Network (capacity / demand) costs. These costs include: The Eskom access charges and maximum demand charges. The Ndlambe network costs operations and maintenance costs including materials of the electricity team. These costs are:
  - Fixed and not dependant in amount of energy used.
  - Are dependent on the maximum demand placed on the network:
    - This is the local networks based on local peaks.
    - The Eskom supply points based on the town peaks.
- Energy costs. Although a single energy rate is charged to all consumers the costs actually vary by Eskom season and time of day:

Pre-payment consumers also contribute to all three these costs and should thus pay towards all of these. In fact, experience has shown that it is actually more expensive to manage a pre-payment metering / payment system than to do a conventionally metered service despite the fact that the energy revenue is received before consumption takes place.

2.10 Q. Why do 20 Amp supplies not pay fixed charges?

A The 20 Amp supply is a subsidised supply. This is considered a necessity due to the amount of poor people in Ndlambe that are not indigent. With a 20 Amp supply the costs to the municipality are however limited because the capacity is limited:

- The peaks that these supplies can put on the local network and the total supply from Eskom is limited and thus costs are limited.
- When consumers move loads to the off-peak times, because their capacity is limited during the peak times, the municipal and Eskom costs are reduced.

This helps to keep the subsidies under control.

2.11 Q. How much is payable when capacity is changed?

A. Consumers will be allowed to make one selection change of capacity. The second selection will be subject to the standard change of capacity fee will be charged.

2.12 Q. How will the fixed charges (basic and capacity) be recovered?

A. The Basic charge and capacity charge will be recovered by way of the normal billing system for both conventional and pre-payment consumers. This is the same as the fixed charges for sewerage; refuse removal and water (if applicable). The reason for not recovering this through the vending system for pre-payment consumers is because:

- When a prepayment consumer does its first purchase in a month, the Basic and Amp charge will first be deducted before any energy is vended. This has been found to be problematic for most consumers especially if they just want to buy a small quantity at the beginning of a new month.
- When prepayment consumers do not buy any energy during any period of month/s, they will be faced with paying the full Basic and Amp charges for all the previous months during which no purchases were made thus facing a potentially massive amount before obtaining any energy.

2.13 Q. What will happen if the fixed charges are not paid?

A. If consumers do not pay their normal municipal bill, including the fixed electricity charges,

- The pre-payment vending will be blocked. This is a current practice and is applied by most municipalities in the country.
- Conventional consumer supply will be subject to cut-off.

2.14 Q. What happens where properties are sub-let to tenants?

A. The municipality will only provide one point of supply to a registered property. As with all other services, the owner of the property is responsible for the municipal bill including all Basic and Capacity charge and energy charges as per the point of supply. In case of one property with multiple tenants, the owner must supply his own sub-meters and recover the cost from the tenants.

3 Bulk Tariff questions

3.1 Q: What changes are proposed for Bulk consumers?

A Bulk consumers have capacity usually exceeding 55 kVA. All these consumers will on new TOU tariff with the Access charge and reactive energy charge. The Access charge will be based on the installed circuit breaker size of each point of supply. Previously the Bulk tariffs were subject to a 24% surcharge for LV supplies and a 12% surcharge on MV supplies. These surcharge are now removed and the rates include any surcharges. Effectively the demand charge is reduced in real terms but a new Access charge is raised. The energy charges are also reduced slightly in real terms.

3.2 Q: What would the impact be for Bulk consumers?

A The impact will differ for each consumer depending on their load factor and time of use consumption.

- Consumers with very irregular annual loads would experience increases above the average.

Detailed analysis has been undertaken for most of the consumers and a workshop will be held to discuss the changes with these consumers.

4 SSEG Tariff questions

4.1 Q: What is being proposed for consumers with their own generating capacity?

A It is important to note that such consumers have to apply to the municipality so that the required technical analysis, certification and registration can be done as per the NERSA requirements. Many such consumers have ignored this requirement despite the fact that all the system installers know what the requirements are.

- All these consumers have to be on the relevant Ndlambe TOU tariffs.
- A TOU tariff has been developed for small the SSEG consumers.
- All these tariffs contain a Basic charge, capacity charge, (Demand charge for Bulk) and TOU real energy and reactive energy charges for bulk consumers.
- A small additional basic charge is levied to cover the additional administration costs relating to these supplies.
- It is a requirement that the consumer pay for the installation of a 4 quadrant 4 wire meter plus modem. This is required to bill the TOU tariffs but also to measure feedback of surplus energy by the consumer into the Ndlambe network.
- Ndlambe will buy this feedback energy at a price equal to 80% of Eskom energy rates as applied to Ndlambe up to zero energy cost for the consumer each month.

4.2 **Q:** Is this new approach not going to discourage installation of renewable generation?
A Ndlambe encourages consumers to install renewable power at their properties. The problem with the existing tariffs without fixed charges and thus very high energy charges is that they provide a non-cost reflective and inflated incentive for these consumers to install these systems. When they use less electricity from Ndlambe, the loss in revenue exceeds the saving in cost, which is mainly energy cost. Especially with Solar Electricity systems so call Photo Voltaic (PV) systems without batteries (grid tied), the systems only generate power during the day and thus consumers still buy their power from Ndlambe during the peak times when it is very expensive from Eskom and the peak demand on the network is thus not reduced. This situation cannot be sustained and thus Ndlambe is following the National guidelines in this respect.

4.3 **Q:** What will happen to those consumers who had systems installed but did not register?
A Ndlambe will not penalise these consumers. They will however be required to follow the registration process, have their system meet the technical requirements and pay for the 4 quadrant 4 wire meter and modem. Ndlambe is considering granting a period of time for registration before such supplies could become subject to disconnection.

4.4 **Q:** Why do these consumers have to be on TOU tariffs?
A The installation of SSEG changes the consumption pattern of consumers. That means that the proportion of units purchased in the various Eskom TOU periods change and thus the average cost. The single energy rates applicable to domestic and commercial consumers thus cannot be applied to these consumers. Furthermore, the TOU meter allows Ndlambe to meter the Feed-in energy and compensate consumers therefor. This additional savings for consumers will assist in off-setting the cost of the meter.