energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

SUITE OF SUPPLY POLICY GUIDELINES FOR INTEGRATED NATIONAL ELECTRIFICATION PROGRAMME (INEP)

Title	Suite of Supply Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	26 November 2018
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1. BACKGROUND

In line with the energy White Paper and the Electricity Pricing Policy (EPP), cognizance is taken of the fact that many people in South Africa are living below the poverty line and have limited ability to pay for goods and services. This fact guides the application of subsidies to lower the barriers of entry and reduce the price to low usage customers.

Supply to residential customers must meet the customers' basic essential electricity needs. This should be done at the lowest possible cost using appropriate technologies, supply sizes, and customer service options.

This policy must be read in conjunction with other policies.

2. INTRODUCTION

The Department has a responsibility to co-ordinate the electrification programme including

- policy (procedures, guidelines),
- planning,
- setting of realistic targets,
- source funding,
- criteria for allocation,
- allocation of funds,
- contracts/MOU with implementing agencies,
- monitoring and evaluation,
- reporting and auditing

This document will highlight issues related to capital expenditure; the suite of supply options; connection fees; the subsidies; options for an upgrade or down-grade; and the technical motivation for supplies that are current limited.

3. OBJECTIVE

The objective of this document is to develop and provide a suite of supply framework in line with the Energy White Paper, thus providing a uniform set of guidelines.

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4. SCOPE

The suite of supply policy guidelines are applicable to all licensed entities implementing the Integrated National Electrification Programme (INEP) on behalf of the Department of Energy.

5. PROJECT CATEGORIES

- Bulk Infrastructure (substations and lines)
- Households connections (Fully subsidized low cost, Communal Rental Units)
- Informal settlements
- Farm dweller houses
- Communal Property Associations (CPA's)
- Transit Facilities

Electrification customers exclude the following:

- Street lighting
- Commercial use of electricity typically requiring 3 phase supply
- Commercial farming
- Backyard dwelling (formal and informal)

6. GUIDING PRINCIPLES FROM THE ENERGY WHITE PAPER

The framework for this policy guideline is in line with the following principles from the Energy White Paper which states the following:

- Government will determine a minimum standard for basic energy services.
- Suite of capacity-differentiated connection fees is offered to residential customers.
- Poor households demonstrate low levels of electricity consumption, therefore only requiring low capacity supply, and can only afford low connection fees and subsidized tariffs at low consumption levels.
- The Department will prioritize energy provision in previously disadvantaged and rural areas.
- The allocation criteria for subsidies must aim to maximize the economic benefit of electricity subsidies.

- The Department should promote energy efficiency and conservation through demand side management (DSM).
- The National Energy Regulator of South Africa (NERSA) will regulate the Electricity Supply Industry (ESI) tariffs.
- Pricing signals should result in economically optimal investments in electricity infrastructure and consumption of electrical energy.

The capital that government will spend on electrification will be limited to an amount that will be reviewed annually. In remote areas, where a grid supply cannot be made available within the set capital expenditure per connection, the viability of non-grid supply option would be investigated. If viable, the non- grid supply option will be used to make basic electrical supply available.

For electrification to achieve the maximum number of connections based on available capital resources there should be a mixture of differentiated supply capacities, based on customer needs and affordability within the area. Lower supply capacities linked to actual customer requirements will allow for the optimal allocation of resources and the maximum number of connections to be achieved with the available funding.

In order to make the costs per connection cheaper, a high number of connections need to be made in one area.

6.1 Electrification of Infills

Infills in this policy, refers to the houses that qualify to be electrified through INEP, but were not electrified during the electrification of the respective area due to various reasons such as; the house not yet existing during electrification (house built on a stand that was not occupied during electrification) or the house not being occupied during electrification.

The Department requires clear identification of an infills project in order to account for the connections.

6.2 Electrification of backyard dwellings

Electrification of backyard dwellers will imply that 60A connection must be installed of which the Department is not funding, the relevant Service Authority should take responsibility.

7. SUITE OF SUPPLY OPTIONS

Optimal pricing for electrification customers plays a most important role in linking affordability, customer needs and effective management of scarce capital resources. Where customers are subsidized, the pricing signal should encourage appropriate supply choices.

The rationale behind the suite of supply options:

- Reasonably assess and approve required network capacity optimize investments in electrification capital infrastructure through the building of appropriate networks based on customer needs.
- The need for government to meet the goal of universal access when providing basic electricity services within acceptable cost parameters.

In support of the above, a maximum limit on the capital expenditure will be set per type of supply to ensure that the defined economic viability criterion, subject to the stated subsidies, is met. Where customers require more than the minimum supply size, the additional costs will be charged to them.

Table 1: Grid Current Supplies

Supply	**Typical appliances**
20A	Radio + lights + television + fridge and one of the following at any one time: (iron + double hotplate) or (kettle + single bar heater) or (iron + two bar heater) or small geyser.

The 20 Amp limited supply is considered to be the basic service for the poorest sector where grid extension is feasible. Its availability allows settlements of sufficient density to be electrified by maximizing the number of connections, thereby bringing the average cost per connection within accepted norms.

Table 2 below outlines a supply size with typical appliances that can be used with the non-grid supply.

Table 2: Non- grid Current Supplies

Supply	Typical appliances
95Wp	Indoor lighting comprising of 6 x lights for 4 hrs./day Outdoor lighting of 2 x external lights for 12 hrs./day Energy for 1 x DC colour TV for 5hrs/day. 2 x DC socket outlets providing energy for cell-phone charging (4hrs/day), audio-visual appliances and TV, or other small appliances (radio for 4hrs/day).

8. CONNECTION FEES AND TARIFFS

Table 3: Guiding principles for the different supply sizes

Size	Principles applied
20A	Nil connection fee is applied based on affordability thus catering for the target market, which is the poor. As the entry-level tariff, this tariff option will address the current backlog in response to Universal Access and quickly assist blanket connections without the delay of collecting connection fees.
40A	Affordability is considered to be less of an issue. The connection fee or contribution to be paid by the customer to the capital costs covers a portion of the difference between the total cost of providing electricity and the subsidy provided by the department. Eskom has to consider bringing back the same tariff, especially in urban areas, but excluding the cost of infrastructure as it would have been provided for by the Department
60A	Affordability is not an issue. This supply size needs the biggest pricing signal due to potential impact on the network. Therefore the connection fee must cover the cost of full service connection but excluding the cost of infrastructure as it would have been provided for by the Department

8.1 Supply options, connection fees

Table 4 below outlines the connection fees and the tariff rate per supply option for electrification.

Table 4: Connection fees

Supply type	Connection fee: (ZAR incl. VAT)	Tariff rate (ZAR incl. VAT)
NON GRID		
Non-grid 95Wp (intention is to have the majority of the CAPEX subsidized)	NIL	Monthly fixed service fee as based on the Business Plan of the approved service provider.
Non-grid higher service capacity	NIL	Monthly fixed service fee as based on the Business Plan of the approved service provider.
GRID (lower level)		
Grid 1φ system 20A (typical consumption 60kWh - 120kWh)	Nil	kWh Tariffs as approved by NERSA

No customer will be forced to take a specific supply option as customers will always be given a choice. This, however, will be limited to what the local licensed entity or utility provides. Once a choice has been made, it is upgradable on application and payment of the relevant connection fee. Where grid supply is not possible, non-grid supply options will be offered.

8.2 Designs

Cost has been an issue in implementing the programme due to designs that are not standard and a Universal design standard approach must be adopted, the following must be taken into consideration:

1. Road reserves to accommodate all services (Medium Voltage reticulation lines/cables, Low Voltage and service connection cables/lines, clean water reticulation, sewage pipelines and storm

water drainage) – Human Settlements to take serious consideration of these as they impact on the electrification cost per connection.

2. Stands that have rental stock (formalized backyard dwellers), should not be accommodated in the designs for electrification and the relevant service authority should address the challenge through their Electricity By-Laws, these are also impacting on the electrification cost resulting in a very high cost per connection
3. In built up areas (urbanized environments). Pole mounted transformers should be dealt away with and miniature substations with protective structures be installed, where theft of electricity is assumed to be rife
4. Pole mounted boxes housing meters should also be of a protective structure nature to curb electricity theft,
5. Electricity Split-Prepaid meters must be adopted and implemented as a measure to deal with meter tampering (by-passing), leading to revenue loss
6. Where distribution boards are supplied due to houses being internally wired (by Human Settlements) a CoC must be made available. No need to install ready boards and costs to be channeled into the electrification programme.
7. 9m poles suspending the LV ABC (low voltage aerial bundled conductor), in built up areas (formalized townships/suburbs), and should be used to avoid easy access to pole mounted meter boxes.

Firm and premium supplies

8. The electrification programme does not allow for firm supply in that one transformer unit per substation is allowed and will be approved. This applies to high voltage lines as well (132, 88, 66, 44, 33kV).

N.B. Recommendations

- Electrification in rural formations will continue as per the current practice
- Medium voltage dual phase systems to be considered strictly in rural setups where villages to be electrified cannot develop further (informed by spatial development framework). Where rivers, forests, mountains gorges/cliffs are a hindrance to electrification, single and dual phase systems must be employed.

9. SUBSIDIES

INEP subsidizes a portion of the capital costs (bulk infrastructure) for the connections to be realized towards meeting the electrification targets. This has been done in the attempt to support municipalities in the light of funding constraints that Municipalities face.

A level of service of 0.8kVA to 2.4kVA ADMD should be provided in each household, i.e. 10A full utilization. No connection fee will be charged to the customers, as this is a minimum level of service.

Table 5 below outlines the respective approved subsidy levels for 2018/19 financial year. These subsidies shall be reviewed annually.

Table 5: Subsidy levels for 2018/19

Type of connection	**Subsidy (2018/19)**	**Subsidy (2019/20)**
Rural connection	R 16 500	R17 200
Urban connection	R 15 500	R16 200
Infill/ post connection	R 7 000	R 7 300

NB: it will be reviewed annually based on Consumer Price Index

Where the cost per connection is higher than the approved subsidy, Municipalities are expected to top-up funding for those connections; licensed municipalities should provide a full design report justifying the high cost per connection where designs are beyond the acceptable scope.