



energy

Department:
Energy
REPUBLIC OF SOUTH AFRICA

ELECTRIFICATION BULK INFRASTRUCTURE

POLICY GUIDELINES

TABLE OF CONTENTS

CONTENTS	PAGE
1. INTRODUCTION.....	3
2. OBJECTIVE	4
3. SCOPE OF APPLICATION	4
4. BULK INFRASTRUCTURE	5
4.1 New bulk infrastructure.....	6
4.2 Maintenance and refurbishment	6
4.3 Upgrading of bulk infrastructure.....	8
5. CRITERIA FOR FUNDING	8
6. APPLICATION FOR FUNDING	10
6.1 Business Plan	10
7. SUBSIDY LEVELS.....	11
8. MONITORING AND EVALUATION.....	11
9. SKILLS DEVELOPMENT AND JOB CREATION.....	12

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

1. INTRODUCTION

South Africa's electricity network is made up of more than 300 000 kilometers of power lines, 27 000 kilometers of transmission grid and over 7.5 million electrification connections.

The Department of Energy (DoE) has a mandate to ensure secure and sustainable provision of energy for socioeconomic development. To foster the country's economic growth, reliable supply of electricity is essential. The Department has also been tasked to ensure universal access to electricity of households. Some of the challenges to achieving universal access include insufficient programme funding; the building of new bulk infrastructure in urban and rural areas; and inadequate refurbishment and rehabilitation of electrical infrastructure. The electricity sector is facing a few barriers to electrification, and these include lack of access to capital, lack of skills and a lack of supply infrastructure.

The Department also has to ensure affordable and reliable electricity to all, including the poor in rural areas. The responsibility for the distribution of electricity is shared between Eskom and approximately 187 municipalities.

Infrastructure investment patterns under apartheid resulted in highly differential levels of access to services and differentiated quality of service between racial groups, and across the country. Government is committed to remedy the situation in order to meet the demands of a growing economy and population.

Without adequately performing assets and sound electricity infrastructure, South Africa would not be able to support its targets, inspire investor confidence, or meet customer expectations. Government must expand access to basic services to all citizens through building new assets or extending them, while local licensed utilities also have to maintain, rehabilitate or replace existing infrastructure assets so that their value is protected over time.

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

Since the inception of Integrated National Electrification Programme (INEP), the DoE had only funded household connections. The Department now sets aside 30% of the annual allocation to INEP for bulk infrastructure projects.

This policy document will cover the various phases of bulk infrastructure which includes new bulk infrastructure; the maintenance and refurbishment of bulk infrastructure; and the upgrading of bulk infrastructure. The document will further outline the criteria for bulk infrastructure funding; the subsidy and application process; as well as the monitoring and evaluation of bulk projects.

2. OBJECTIVE

The objective of this document is to provide policy guidelines for the provision of electrification bulk infrastructure as part of the Integrated National Electrification Programme (INEP). Alignment of the bulk infrastructure policy guidelines with other related government policies is critical, given the complimentary nature of the activities of various departments. In this regard, the INEP programme supports the Department of Human Settlements in the provision of new settlements (housing), to maximize the impact of the subsidies provided by government in providing decent human settlements.

3. SCOPE OF APPLICATION

These policy guidelines are applicable to all licensed entities providing bulk infrastructure as part of the electrification programme of the Department of Energy.

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

4. BULK INFRASTRUCTURE

In this document electrification bulk infrastructure refers to the backbone infrastructure required to fulfil the Department's mandate of reaching universal access to electricity. This includes sub-transmission substations, link and Medium Voltage (MV) lines ranging between 22kV - 132kV.

The Department has made remarkable progress in increasing access to electricity. Prior to 1990, less than a third of households had access. A decade later, that proportion had doubled. In the recent past, South Africa experienced a shortage in electricity. This shortage was due to the imbalance in supply and demand for electricity. The mass electrification through INEP has brought power to the rural areas, which means increased demand for electricity and an overburdened electricity infrastructure.

The demand for electricity is ever increasing. Capital investment in electricity infrastructure is required to meet the increasing demand from households, agriculture, commerce and industry for additional capacity. The demand growth exceeds the loading capacity of many networks.

The power shortages experienced are also caused by the increased demand caused by many years of economic growth and the provision of electricity to townships and rural areas that were not connected in the apartheid era.

A reliable electricity network must consider and prepare for the impact of equipment breakdowns before they occur.

Whilst the INEP programme has been very successful in increasing access to electricity by the population, not enough attention has been given to improving the state of the distribution assets and their ability to guarantee reliable service in future. The distribution industry is in a dilapidated state, posing a very real threat to the security of electricity supply to the end-user.

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

4.1 New bulk infrastructure

A lack of adequate bulk infrastructure puts a strain on the delivery pace of the electrification programme. The current electrification infrastructure is overloaded in most parts of the country and cannot accommodate further connections. In addition, electrification projects in most urban areas are constrained by the lack or inability of the bulk infrastructure to continue to connect additional houses to the grid.

A focused approach on bulk infrastructure would cause a slight decrease in current connection figures, but would have a very positive effect within the next 3 years.

Bulk infrastructure is required to electrify an area that has never had grid electricity; or to upgrade the capacity of existing infrastructure to facilitate the connection of more households; this will include substations, transmission lines and/or distribution lines. Bulk infrastructure projects will be funded should they meet the criteria set in this policy document.

4.2 Maintenance and refurbishment

While backlogs continue to mount, assets continue to deteriorate. Many networks are in poor condition, falling short of the substantial investment required to maintain and rehabilitate assets, and are perceived as unable to cope with the load of electricity demand.

Assets age over time. Assets are considered 'old' in relation to the useful life of the asset. Most of the electricity assets are older than 40 years and at least 50% of the networks require immediate attention and major refurbishment/replacement.

Poorly maintained infrastructure is prone to collapse and is unable to keep up with the surging demand. Insufficient refurbishment and maintenance of electrical networks has adverse impacts on the reliability and quality of supply for customers/ end users.

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

Weak maintenance practices have led to a rise in the number of network failures, particularly with older infrastructure. This can result in resources being diverted from planned new connections, or can result in serviced households losing access to services.

A number of municipalities have high backlogs and this directly impacts on the state of the infrastructure, as most of the networks are in very poor and deteriorated conditions. Municipalities are often faced with having to deal with the wear and tear of the electricity network, and the infrastructure might need upgrading before any new connections are added. Municipalities are hindered not only by insufficient funds for refurbishment, but also by the fact that many of their sub-stations are almost 100% overloaded. The end result is that as long as the maintenance backlog increases, the sub-stations and networks will be worked almost to a state of collapse, worsened by their already deteriorated state. The reality is that municipalities do not have the revenue required to rehabilitate their infrastructure.

Research indicates that unplanned outages occur due to assets not being well maintained and lack of capacity to perform preventative maintenance. The continued underinvestment in upgrading and maintaining of bulk infrastructure poses a threat to energy security.

The need for refurbishment of infrastructure varies and depends on the initial quality of infrastructure that was installed. A balance is required between construction of new bulk infrastructure and the refurbishment of existing infrastructure to avoid adversely impacting the INEP programme.

In 2007, the National Energy Regulator of South Africa (NERSA) released the findings of an audit into 11 major distributors in the country. Only 15% of the distribution networks were found to be in an acceptable state. The audit recommended that Government spends at least R400 million annually on the refurbishment of infrastructure. NERSA requires that all electricity distributors monitor and maintain their networks to ensure the provision of good quality electricity supply.

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

Critical assets need to be identified and prioritized. Priorities should be developed to ensure coordination of bulk power system reliability and the potential impacts on downstream loads such as infrastructure with critical national security implications.

Refurbishment of bulk infrastructure will not be funded through INEP, unless it meets the criteria outlined below.

4.3 Upgrading of bulk infrastructure

To ensure sustainability and quality of supply, it is crucial that the existing electricity infrastructure be upgraded and strengthened when necessary.

The rapid rate of urbanization is increasing the overloading of the networks. An increased number of households that need to be connected warrant bulk infrastructure upgrade, should the current network not be able to cater for the increased number of connections.

Bulk infrastructure upgrading projects will be considered for funding should they meet the criteria set below.

5. CRITERIA FOR FUNDING

The bulk electricity infrastructure projects must meet the following criteria to qualify for government subsidies:

A. In rural areas bulk infrastructure (substations, link and medium voltage lines) projects will be prioritised for funding provided they:-

- 1) Will result in the reduction of the national electrification backlog, or

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

2) Are aligned with the Transmission Development Plan under the Integrated Resource Plan.

B. In urban areas, bulk infrastructure projects will be prioritised for funding provided they :-

- 1) Have already commenced with the installation of civil and other infrastructure,
- 2) Are aligned with the policies set by the Department of Human Settlements for integrating low cost, gap and bonded housing development; or
- 3) Are proven to be critical by the municipality for unblocking housing delivery programmes which are stranded due to the lack of bulk electricity infrastructure; and
- 4) Already enjoy the benefit of committed funding from other government subsidy programmes (especially from the municipality and the Department of Human Settlements).

C. Where the INEP funding allocation is insufficient to cover all the bulk infrastructure projects in that financial year, provision may be made to redeem the funding requirement in the next financial years. In this instance the INEP may provide a written undertaking for the municipality to provide the bridging funds and for INEP to reimburse in future allocations.

D. Bulk infrastructure projects that are funded must comply with the 70:30 principle. This means that 70% of the funding allocation to a project should benefit new electrification connections (RDP and gap houses) and the remaining 30% may benefit bonded houses and commercial activities.

E. The municipal manager takes accountability for the project.

F. Industry agreed technical specifications for building electrification infrastructure should be adhered to.

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

G. A project must be on the municipal Integrated Development Plan before it can be approved.

H. Licensed distributors will be responsible for the maintenance of the infrastructure.

I. The following considerations will form a major role in deciding the allocation of funding to licensed distributors.

- Past performance
- Licensed authority support and capacity
- Network capacity availability

6. APPLICATION FOR FUNDING

- All applications should be submitted to DoE via the regional offices.
- Every application form should be accompanied by a detailed business plan.
- DoE will assess every application submitted and make a recommendation.
- A site visit may be conducted before any project can be approved for funding.
- The decision to fund any project will be made by the DoE in line with the prescribed policy guidelines.
- The outcome of the evaluation of projects will be communicated to municipalities in writing.

6.1 Business Plan

No application for bulk infrastructure will be considered unless a business plan is also submitted. The business plan should contain the following information:

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

- Why the project should be done;
- What will happen if the project is not done;
- Clear description of a project;
- Existing backlog;
- Total estimated cost for the full project;
- Beneficiaries;
- Load studies;
- Projected cash flow;
- Project milestones;
- Project manager.

7. SUBSIDY LEVELS

The available capital budget is insufficient to cater for growth and to address the backlog simultaneously.

- The Department will fully fund all qualifying and approved bulk infrastructure projects until further notice.
- The INEP shall provide funding for bulk infrastructure to a maximum of R2.5m per MVA.
- The fund shall be administered by the DoE as prescribed by existing national legislative framework (such as the PFMA and DoRA).

8. MONITORING AND EVALUATION

Effective monitoring and evaluation of the programme to ensure compliance with the policy guidelines will require reports on:

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released

- Monthly capital expenditure per individual project;
- Monthly social indicator report (such as BEE, BWO);
- Progress in line with the project plan.

9. SKILLS DEVELOPMENT AND JOB CREATION

The INEP shall be implemented in accordance with the Energy White Paper of 1998 with a greater focus on local skills development, local job creation and poverty alleviation through the integration of electrification into municipal IDPs; this is to facilitate greater participation of previously disadvantaged communities in the operations and management of sector activities with particular emphasis on women, youth and the disabled.

It is the responsibility of the municipalities to ensure that their constituencies receive the best value out of INEP. The extent to which municipalities participate in the INEP will determine the success of the programme. Proper project management, planning, monthly reporting and communication are some of the major elements that will lead to the positive change in the quality of life of our communities.

Title	Electrification Bulk Infrastructure Policy Guidelines
Responsibility	Department of Energy
Date Last Updated	22 September 2015
Status	Released