

**Annex A**  
(informative)

***Distribution environmental screening document (DESD)***  
**Reticulation Powerlines and Ancillary Services**

Ratified and accepted by  
Environmental Practitioner  
Environmental Specialist  
Head of Engineering Survey .....  
(one signature please)

Accepted by Land Owner/s/Users .....  
I have seen the completed document and accept the  
recommendations made

**Assessor/s**

Form completed by: **Thabelo Mugwedi** ..... Signature: .....

in consultation with: ..... Signature: .....

CAPACITY (e.g. land owner, specialist): **Environmental officer (Eskom)** .....

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**Instructions**

1. Fill the report in as neatly and completely as possible.
2. Where the question / statement is not applicable mark N/A.
3. The form must be completed in consultation with someone who knows the area well and who can also predict if any future development is envisaged (e.g. a land owner, land user, specialist, etc.).
4. Indicate sensitive areas on a map and/or spanning plans.
5. When in doubt, consult the Environmental Practitioner in your region.

The purpose of this *DESD* is to:

1. Determine whether or not the project should be subject to R544, R545 or R546, published in terms of the National Environmental Management Act No. 107 of 1998.
2. Identify and mitigate the negative impact of Eskom's activities to a minimum in line with both Legislation and Eskom's Environmental Policies.
3. This report is a guide to Route Selection, Construction and Field Services.

NOTE Complete the report before the survey!!!

This is not an office exercise.

Extra sheets of paper may be added and referenced if insufficient space has been provided.

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**Annex A**  
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**1 Project description**

Project name/Survey ... **Vrede Munic - Thembalihle 11kV Hare line**.....

Area **Vrede**.....

Project number **NW-EBC-1410-2538-00002**  
**NW-EBC-1410-2538-00003** .... File number .....

Rural scheme/  
Feeder ..... Voltage **11kV**.....

Supply from **Vrede Munic substation**.....  
(scheme name, pole numbers for tee-off)

Supply to **New Thembalihle Ext 4 Township**.....  
(Farm name, etc.)

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**2 Properties traversed**

Farm name **N/A**.....

Registration number and Division ..... Sub-division.....

Compilation number ..... Line length/Site area (m<sup>2</sup>).....

Farm name .....

Registration number and Division ..... Sub-division.....

Compilation number ..... Line length/Site area (m<sup>2</sup>) .....

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**3 Brief description of the surrounding area**

The area in which the entire line spans is mainly grasslands with short grass. There are blue-gum trees in the area that need to be removed before the line can be constructed. The area also consists of a small stream that runs through a portion of the line. A portion of the line also crosses the R546 road in Vrede. ....

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Could the proposed project have an impact on or be constrained by any of the following environmental aspects ?

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ENVIRONMENTAL  
ASSESSMENT OF RETICULATION AND SUB-  
TRANSMISSION PROJECTS:  
ANNEX Q OF CAPITAL INVESTMENT IN THE  
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Encircle the appropriate aspect, giving a description of the present state as well as an indication of the possible negative impact. **Note that mitigating measures for these impacts are to be included in the Environmental Management Programme.**

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**4 Physical environment**

**4.1 Water:** streams rivers dams wetlands springs floodplains OTHER Marsh and Vlei.....

Present condition: There is currently a stream running through a portion of the line that was observed during the site visit. There are also wetlands that were observed during the site visit.

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Potential impact (e.g. threat of pollution): Potential to contravene the Water Act. There is also a threat of pollution to the wetlands and the stream in the vicinity. ....

Comments/mitigation measures: Follow the EMP approved by Water Affairs with regards to work in the vicinity if the wetlands and the associated stream .....

**4.2 Soil:** sandy rocky clayey OTHER Loam soil.....

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Present condition: The soil in the area is mainly clay and some loam soil present. ....

Potential impact (e.g. of erosion): Erosion due to construction traffic. Clay soil also poses a potential to machinery and vehicles when wet to get stuck in the mud. ....

Comments/mitigation measures: Erosion should be minimized by using one access road/path to enter and exit the site. Working during rain should be avoided or minimized as far as possible as this poses a potential for erosion and possible damage to machinery. ....

**4.3 Topography:** mountains ridges hills valleys ravines dongas OTHER .....

Present condition: N/A

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.....  
Potential impact (e.g. of erosion): [N/A](#).....

Comments/mitigating measures:

[N/A](#).....  
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**5 Natural environment**

**5.1 Flora:** indigenus protected **exotic** OTHER .....

Brief description and conservation status (e.g. rare, etc., mention trees/bush/grass): .....

There are a few Bluegum trees that are along the path and will need to be trimmed/cut for the new line to be constructed. ....

Potential impact (e.g. permit applications): N/A .....

Comments/mitigation measures: Contractors used for the removal of vegetation should be accredited to do the work of vegetation/tree removal.....

**5.2 Fauna:** **mammals** birds OTHER .....

Brief description and conservation status:  
(e.g. rare, protected, etc., mention giraffe, elephants, eagles, vultures, etc., mention migratory paths)

There are signs of mammals that were observed within the vicinity of the area where the construction is to take place (dung).....

Potential impact (e.g. threat of electrocution, collision, etc)

Disturbance to the normal livelihood of the livestock in the area due to construction activities..

Comments/mitigating measures:

Owners of the livestock should be informed before commencement of activities and minimal to no disturbance of the mammals should take place during the construction of this line.....

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**6 Social environment**

<b>6.1 Restricted areas:</b>	nature/game reserves	hiking trails	tourism routes	parks	recreational areas
residential-areas	green belts	sacred/holy grounds	OTHER ...Nature conservancies.....		

Brief description

N/A .....

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Potential impact e.g. threat of encroachment, etc.: N/A .....

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Comments/mitigation measures: N/A.....

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**6.2 Visual aesthetics:** easily seen hidden partially.....

Brief description: The proposed 11kV line will be visible from the main road as it crosses the main road between the substation and the new Thembalihle Ext 4 Township. ....

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Potential impact: During construction phase, this has a potential to create visual and traffic disturbances to the main road as there will be construction on both sides of the road and spanning the line to cross the road. ....

Comments/mitigation measures: Construction activities that span across the road should take place during the day when traffic flow is not at peak and disturbance can be kept at a minimum.....

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**6.3 Sensitive areas:** historical sites archaeological monuments natural heritage sites  
graves landmarks ruins OTHER.....

Present condition:

No sensitive areas/ landmarks were observed on site and during the desktop study .....

Potential impact (possible impact on heritage resources): .N/A.....

Comments/mitigating measures: In line with the National Heritage Resources Act, SAHRA should be notified since the line length is longer than 300m. ....



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**7 Economic environment**

<b>7.1 Land use:</b>	crops	orchards	grazing	crop spraying
	game farming	forestry areas	mining	OTHER .....

Brief description: There are signs of grazing that were observed within the vicinity where the construction of this line is to take place. ....  
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.....

Potential impact: The construction process poses a potential to disturb the grazing that occurs within the area as there will be an influx of people and human activities within the area. ....  
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Comments/mitigation measures: Owners of any live-stock grazing next to the construction site should be informed before the project is to commence and there should also be minimal disturbance to any live stock. Poaching of live stock is not allowed. ....  
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<b>7.1.1 Commercial:</b>	factories	shops	OTHER .....
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Brief description: N/A .....  
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Potential impact: N/A .....  
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Comments/mitigation measures: N/A.....  
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7.1.2 Infrastructure: roads railways communications power lines air fields  
pipelines sewage OTHER .....

Brief description: The portion of land where the line is going to span has a clearly marked Transnet pipeline. There are also a few existing Eskom power lines that are from the existing Vrede substation to the other Extensions of Thembalihle. The line will be crossing the road that is between the Vrede Substation and Themablihle township. ....

Potential impact: Encroaching into clearance distances of the infrastructure in the area. ....

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**Comments/mitigating measures:**

.Clearance distances should be established and clearly adhered to before any construction can commence. ....  
 .....  
 .....  
 .....

**7.1.3 Impact**

What impact will this project have on elements 4 to 7?

1. Physical

No impact (0)                      **Medium impact (2)**                      High impact (4)

2. Natural

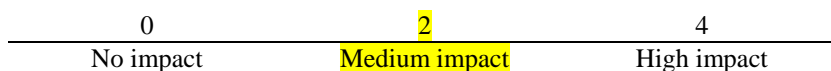
No impact (0)                      **Medium impact (2)**                      High impact (4)

3. Social

No impact (0)                      **Medium impact (2)**                      High impact (4)

Overall impact:

This section addresses the overall environmental impact of the project. The impacts as assessed in the above three spheres (physical, natural and social) need to be considered to determine the overall impact



If the overall impact is between 2 and 4, contact the Environmental Practitioner or specialist.

**Alternatives**

Have alternative routes been discussed with the relevant land owner/s or users?

Yes      X, as part of the survey process \_\_\_\_\_

No     \_\_\_\_\_

**Detailed study**

Is an *environmental scoping* required in terms of regulation 544?

Yes     \_\_\_\_\_

No     \_\_\_\_\_X\_\_\_\_\_

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(continued)

## **Environmental Management Plan**

### **1 General conditions**

- 1.1** The Eskom project manager or co-ordinator shall be responsible for ensuring that the land owners have been informed before any work is carried out on site. Contractors shall find out if the land owners have been informed before moving onto site.
- 1.2** No fences, gates or locks shall be damaged to obtain access onto a line route. Arrangements shall be made in advance to obtain permission for access.
- 1.3** Use of private roads shall be arranged in advance. Any damage to private roads shall be repaired at the contractor's expense and to the satisfaction of the land owner. This shall be the responsibility of the project manager or co-ordinator.
- 1.4** Gates shall be left as they are found, i.e. closed gates shall be kept closed and open gates shall be left open. Gates to adjacent properties or onto public roads shall be closed at all times. Any Eskom gates installed on the line route shall be kept closed and locked except while stringing is taking place. Open gates shall be guarded to prevent animals straying and unauthorized persons and vehicles entering into adjacent camps or properties.
- 1.5** Permission shall be obtained from land owners before any water is used.
- 1.6** No fires shall be lit on private property. If fires are lit on Eskom's property or in the construction camp, provision shall be made that no accidental fires are started. No fire wood shall be collected in the veld.
- 1.7** If activities that can cause a fire are carried out, fire extinguishers shall be available on site and in the construction camp.
- 1.8** No property may be accessed after normal working hours except with the permission of the land owner. Privacy shall be respected at all times.
- 1.9** Eskom, Eskom's contractors and their employees shall at all times be courteous towards land owners, tenants and the local community.
- 1.10** Eskom, Eskom's contractors and their employees shall not cause damage to property, crops or animals. Activities that may cause conflict with land owners, tenants, the local work force or the local community shall be avoided. Should conflict arise it shall be immediately reported to the Eskom project manager or co-ordinator.
- 1.11** Vehicles shall be driven at a moderate speed on private roads and stay within the statutory speed limit on public roads.
- 1.12** All movement of vehicles shall take place on the established Eskom servitude road or on private roads as agreed in advance. Keep to existing tracks. No movement shall take place through the veld. Special care shall be taken to prevent excess damage during wet weather.

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- 1.13 If any vehicle should get stuck, the damage shall be repaired immediately so that no deep ruts remain.
- 1.14 Any damage to private property shall immediately be reported to Eskom and the owner. The damage shall be rectified immediately if possible and/or appropriate compensation shall be paid to the owner at the discretion of the project manager/co-ordinator in consultation with the property owner. A record of damages and rectifying action shall be kept. The land owner's satisfaction with the outcome of rectifying action shall be obtained in writing.
- 1.15 A proper system of waste management shall be instituted in the construction camp. This entails that sufficient waste bins are available on site and in the construction camp. The waste shall be dumped at an approved waste disposal site. No containers, scrap metal, conductor etc. shall be left on site.  

All scrap shall be removed and taken to an appropriate disposal site. No oil, diesel or other chemicals shall be spilled or discarded anywhere. If an accidental spill occurs, it shall be reported immediately and cleaned to the satisfaction of Eskom and the land owner. No waste shall be left in the veld or on the line route.
- 1.16 Washing and toilet facilities shall be provided on site and in the construction camp. The facilities shall comply with Eskom standards and shall have the approval of the land owner.
- 1.17 No human excrement shall be left in the veld. If no toilet facilities are available such waste shall be buried *immediately*.
- 1.18 Herbicides shall only be applied with Eskom's permission and in accordance with the Eskom Policy on Herbicides **EPL\_32-288**.
- 1.19 Camp and office sites shall be dismantled and removed after completion of the construction phase of the project. The site shall be rehabilitated to as close as possible to its original condition to the satisfaction of the land owner which shall be in writing.
- 1.20 All excavations shall be enclosed to prevent animals or people from accidentally falling into excavations.
- 1.21 No trees shall be cut or removed without prior permission from the landowner. Permits shall be obtained for the cutting and removal protected trees (protected trees shall be dealt with in 2, **Special conditions**).

**2 Special conditions**

(Specific issues identified during the scoping as needing attention i.e. erosion berms, bird flappers, protected trees. etc.).

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**TYPICAL MITIGATION MEASURES**

<b>ENVIRONMENTAL CONCERNS</b>	<b>MITIGATION MEASURES</b>
<b>AGRICULTURE</b>	
Loss of standing crop due to access road and tower work site.	<ul style="list-style-type: none"> <li>- limit width of access and size of tower site.</li> <li>- avoidance of crop areas.</li> <li>- monetary compensation for crop loss.</li> <li>- time construction to avoid growing season.</li> </ul>
Soil Compaction	<ul style="list-style-type: none"> <li>- scheduling activities to times of the year when soils are least susceptible to compaction.</li> <li>- stop activities when ground conditions are poor.</li> <li>- use of equipment with low bearing capacity.</li> <li>- chisel ploughing.</li> </ul>
Construction of new lines	<ul style="list-style-type: none"> <li>- locate access roads along existing traffic routs.</li> </ul>
Topsoil – subsoil mixing/soil rutting	<ul style="list-style-type: none"> <li>- scheduling activities.</li> <li>- stop activity when ground conditions are poor.</li> <li>- use of equipment with low bearing capacity.</li> <li>- use of gravel roads.</li> <li>- addition of manures to offset fertility loss.</li> <li>- compensation for reduced soil productivity.</li> <li>- removal of spoil and/or bentonite from foundation operations.</li> <li>- Segregation of topsoil and subsoil.</li> </ul>
Disturbance to farm operations	<ul style="list-style-type: none"> <li>- maintain contact with landowner/tenant regarding preferences.</li> </ul>
Loss of livestock	<ul style="list-style-type: none"> <li>- employ noise control measures near sensitive livestock.</li> <li>- Construction of farm gates.</li> <li>- Securing farm gates.</li> <li>- Clean-up construction materials which could be ingested.</li> <li>- Compensation for lost, injured livestock.</li> </ul>
<b>SOCIAL IMPACTS</b>	
Noise and Vibration	<ul style="list-style-type: none"> <li>- limit this type of work to daylight hours.</li> <li>- observe protocol or applicable municipal by-laws.</li> <li>- use of appropriate methods where available.</li> </ul>
Mud and Dust	<ul style="list-style-type: none"> <li>- wetting down dry soils.</li> <li>- chemical control of dust.</li> <li>- cleaning roads to remove mud.</li> <li>- temporary planting of grasses.</li> </ul>
Aesthetics	<ul style="list-style-type: none"> <li>- screen with natural or planted vegetation restoration.</li> <li>- avoid linear access down the right-of-way.</li> <li>- addition of topsoil to gravel access roads.</li> <li>- hoarding construction sites.</li> </ul>

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	<ul style="list-style-type: none"> <li>- installation of landscaping in advance of site completion.</li> </ul>
Inconvenience	<ul style="list-style-type: none"> <li>- select route and method of installation to suit landowners' conditions.</li> <li>- select timing of activity.</li> </ul>
Heritage resources	<ul style="list-style-type: none"> <li>- avoidance/isolation.</li> <li>- design measures to make facility less obtrusive.</li> <li>- screening.</li> <li>- alternate methods of equipment.</li> <li>- protection by use of enclosures, barrier fencing, covering.</li> <li>- salvage in conjunction with SAHRA.</li> <li>- relocation in conjunction with SAHRA.</li> </ul>
Tourism and recreation resources	<ul style="list-style-type: none"> <li>- design measures to make facility less obtrusive of disruptive.</li> <li>- screening and restoration.</li> <li>- minimise noise and dust.</li> <li>- safety precautions to protect the public.</li> <li>- scheduling to avoid peak use periods.</li> </ul>
<b>WATER QUALITY</b>	
Sedimentation of streams due to erosion from the right-of way.	<ul style="list-style-type: none"> <li>- minimise use of slopes adjacent to streams during soils testing, construction and maintenance.</li> <li>- maintain a cover crop.</li> <li>- retain buffers.</li> </ul>
Stream bank erosion.	<ul style="list-style-type: none"> <li>- mechanical erosion control.</li> <li>- retain shrubby stream bank vegetation and selectively cut or prune trees during line clearing/maintenance.</li> <li>- selective spraying of herbicides.</li> <li>- Mechanical erosion control.</li> </ul>
Impedance of natural flow streams/others surface waters.	<ul style="list-style-type: none"> <li>- use and maintenance of appropriate stream crossing device.</li> </ul>
Ponding or channelization of surface waters due to rutting.	<ul style="list-style-type: none"> <li>- timing activities to stable ground conditions.</li> <li>- use of gravel roads.</li> </ul>
Contamination of surface or ground waters through spills or leaks of toxic substances.	<ul style="list-style-type: none"> <li>- spill control material and procedures readily available.</li> <li>- site selection where possible.</li> </ul>
Soil compaction/topsoil-subsoil mixing.	<ul style="list-style-type: none"> <li>- avoidance of rutting by vehicles where possible.</li> <li>- construction timing.</li> <li>- use of gravel roads.</li> <li>- use of vehicles with low bearing pressures.</li> <li>- stop activities when ground conditions are poor.</li> </ul>
Wind/water erosion.	<ul style="list-style-type: none"> <li>- avoidance of areas with high erosion potential.</li> <li>- timing activities to the most stable ground conditions.</li> <li>- slope stabilisation.</li> <li>- mechanical erosion control.</li> </ul>

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	<ul style="list-style-type: none"><li>- vegetation erosion control.</li><li>- recompaction of trenches.</li><li>- avoid trenching parallel to the fall of a slope.</li></ul>
Contamination by petrochemicals.	<ul style="list-style-type: none"><li>- spill control material and procedures made readily available.</li><li>- restoration methods investigated.</li></ul>