ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
BASIC ASSESSMENT REPORT

PROPOSED EXPANSION OF THE KOMSBERG MAIN TRANSMISSION SUBSTATION AND ASSOCIATED INFRASTRUCTURE NEAR SUTHERLAND, NORTHERN CAPE

FINAL BASIC ASSESSMENT REPORT
January 2016

Prepared for:
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REPUBLIC OF SOUTH AFRICA

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File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submited to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

PROJECT DETAILS

Title	:	Environmental Assessment Process Basic Assessment Report for the Proposed expansion of the Komsberg Main Transmission Substation (MTS) and associated infrastructure near Sutherland within the Karoo Hoogland Local Municipality in the Northern Cape Province
Authors	:	Savannah Environmental Tebogo Mapinga Karen Jodas
Specialists	:	Gabriele Wood: Savannah Environmental Gerhard Botha: Savannah Environmental John Almond: Natura Viva cc Celeste Booth: Booth Heritage Consulting Andrew Pearson: Arcus Consulting Services
Applicant	:	Eskom Holdings SOC Ltd
Report Status	:	Final Basic Assessment Report for submission to DEA
Review period	:	January 2016

When used as a reference this report should be cited as: Savannah Environmental (2016) Basic Assessment Report: Proposed expansion of the Komsberg Main Transmission Substation and associated infrastructure near Sutherland, Northern Cape Province.

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SUMMARY AND OVERVIEW OF THE PROPOSED PROJECT

Eskom Holdings SOC Ltd is proposing to expand the existing Komsberg Main Transmission Substation (MTS). The expansion area (approximately 19.8ha), will fall within the Eskom property and is located next to and between the positions of the existing capacitor banks installation. The existing infrastructure on site (e.g. capacitor banks) will form part of the proposed expanded substation footprint and some downscaling / relocation of the existing infrastructure will take place. The total footprint of the proposed expanded Komsberg MTS is likely to be approximately 440m x 450m, all on Eskom property.

The proposed development entails the following:

- Expansion of the Komsberg MTS to a total footprint of 19.8ha (440m x 450m);
- Establishment of 400/132kV transformation and 132kV feeder bays for line connections;
- Downscaling / Relocation of capacitor banks; and
- The upgrading of the existing access road into the substation.

Site Location

The Komsberg MTS is located approximately 30km north of Matjiesfontein and 50km south of Sutherland within the Karoo Hoogland Local Municipality in the Northern Cape Province (refer to Table 1.1 below). The following property forms part of the application for the proposed expansion of the Komsberg MTS:

- Portion 2 of the Farm Standvastigheid 210

Table 1.1: Location of the study area

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Karoo Hoogland Local Municipality
Ward number(s)	Ward 4 - Karoo Hoogland Local Municipality
Nearest town(s)	~30km north of Matjiesfontein and ~50 km south of Sutherland
Farm name(s) and number(s)	Standvastigheid 210
Portion number(s)	Portion 2
SG 21 Digit Code	C07200000000021000002
Co-ordinates	32°56'1.37"S 20°35'40.39"E

1.1. NEED AND DESIRABILITY FOR THE PROPOSED INFRASTRUCTURE

The need and justification for the proposed expansion of the Komsberg MTS stems from the need to accommodate embedded generation projects proposed and authorised in the region and to facilitate their connection to the Eskom national electricity grid. There are currently nine (9) embedded generation (renewable energy) projects in different stages of development within a 50km radius of the MTS, three (3) of which are preferred bidder projects (refer to Figure 1.2 and Table 1.2). The expansion of the MTS is expected to result in minimal environmental impacts as the Komsberg Site has been disturbed due to the operation of the existing MTS.

From an overall environmental sensitivity and planning perspective, the proposed expansion supports the broader strategic context of the municipality as it is linked to renewable energy facilities which are considered drivers for economic growth in the region as per the Namaqua District Municipality's Integrated Development Plan. It is also in line with broader societal needs and the public interest as it is linked to renewable energy facilities, for which there is a national policy and support. No exceedance of ecological, heritage, palaeontological or avifaunal limits will result from the expansion of the MTS and no significant disturbance of biological diversity is anticipated, as detailed in this Basic Assessment Report.

Table 1.2: The renewable energy projects/ developments within 50km from the Komsberg MTS

Project Name	Project Status
Soetwater Wind Energy facility	Preferred Bidder Round 4
Karusa Wind Energy Facility	Preferred Bidder Round 4
Suurplaat Wind Energy Facility	Received Authorisation
Mainstream Sutherland Wind Energy Facility	Received Authorisation
Roggeveld Wind Energy Facility	Preferred Bidder Round 4
Roggeveld Wind Farm 3	Proposed
Great Karoo Wind Farm	Received Authorisation
Kareebosch Wind Farm (Proposed)	Proposed
Gunstfontein Wind Energy Facility	Proposed

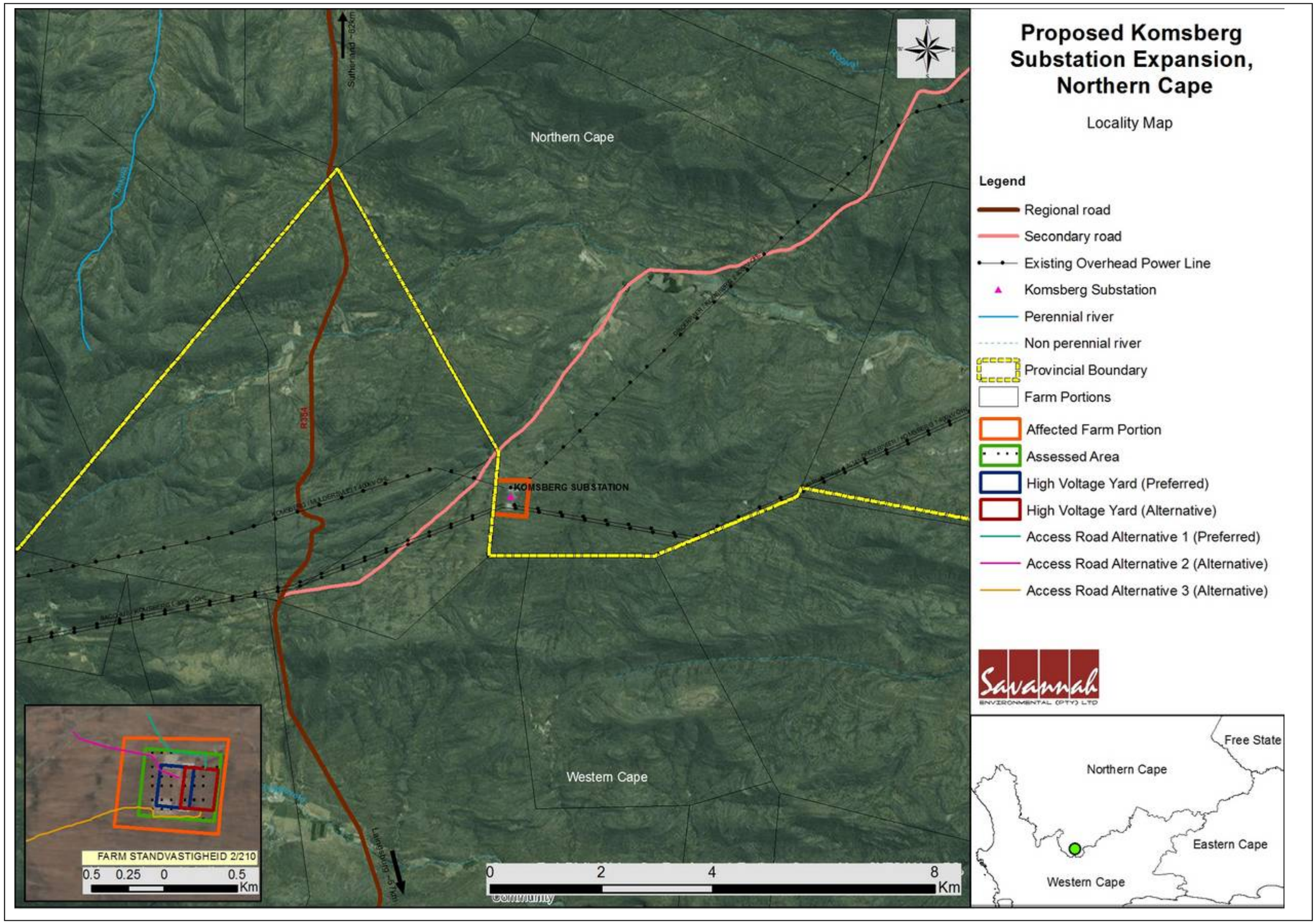

Figure 1.1: Locality Map indicating the assessed footprint, the location of Komsberg MTS and the proposed expansion area. Refer to Appendix A for A3 map.

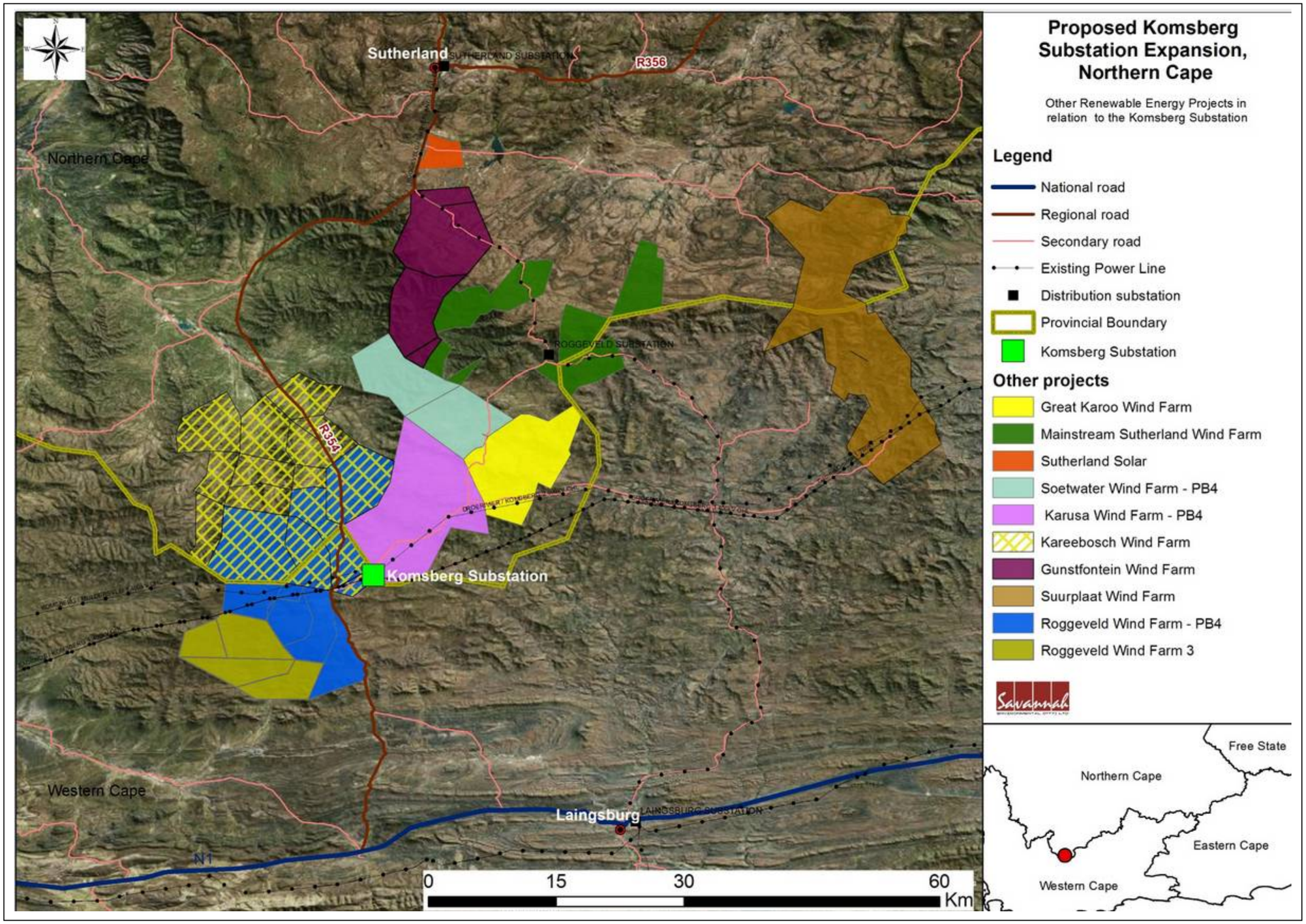

Figure 1.2: Wind and solar energy projects, in different stages of development, surrounding the Komsberg MTS (these project areas were identified using the Department of Environmental Affairs Geographic Information System digital data developed by the CSIR. It must be noted that this secondary product has not yet been verified by DEA)

1.2. REQUIREMENTS FOR A BASIC ASSESSMENT PROCESS

In terms of the Environmental Impact Assessment (EIA) Regulations of December 2014, published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Eskom Holdings SOC Ltd requires authorisation for the expansion of the Komsberg MTS and the widening/upgrading of the existing access road. Although the establishment of 400/132kV transformation and 132kV feeder bays for line connections and the relocation of capacitor banks form part of the project description they do not trigger any listed activities, therefore they have not been assessed in this report. In terms of Sections 24 and 24D of NEMA (No 107 of 1998), as read with the EIA Regulations of GN R982 – R985, a Basic Assessment process is required to be undertaken in support of the application for authorisation for the proposed project.

In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these activities must be considered, investigated, assessed and reported on to the competent authority that has been charged by NEMA with the responsibility of granting Environmental Authorisations. As the application is made by an Organ of State and as this is related to energy, the National Department of Environmental Affairs (DEA) is the competent authority[1] and the Northern Cape Department of Environment and Conservation (NC DENC) will act as the commenting authority. This project will be registered with the DEA.

The nature and extent of the proposed expansion of the Komsberg MTS is explored in more detail in this Basic Assessment Report. This report has been compiled in accordance with the requirements of the EIA Regulations of December 2014 (as per Table A below), and includes details of the activity description; the site, area and property description; the public participation process; the impact assessment; and the recommendations of the Environmental Assessment Practitioner.

TABLE A: LEGAL REQUIREMENTS OF SECTION 19 OF THE EIA REGULATIONS

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(1) A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include— (a) details of— (i) the EAP who prepared the report; and	Section 1.2
(ii) the expertise of the EAP, including a curriculum vitae;	Section 1.2 Appendix H
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel;	Section B
(ii) where available, the physical address and farm name;	Section B

[1] In terms of the Energy Response Plan, the DEA is the competent authority for all energy related applications.

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1	CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section A (2) (a)
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix A1 and A2 Appendix C
or, if it is— (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Appendix J1
(d) a description of the scope of the proposed activity, including— (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure ;	Section A (1) a, b
(e) a description of the policy and legislative context within which the development is proposed including— (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and	Section 11
(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	Section 11
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 1.1
(g) a motivation for the preferred site, activity and technology alternative;	Section 1.1 Section 2
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Section 2 Section C Appendix E
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section B Section D
(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	Section D Appendix F
(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of	Appendix F

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1		CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
	potential environmental impacts and risks associated with the alternatives;	
(vii)	positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Appendix F Section D
(viii)	the possible mitigation measures that could be applied and level of residual risk;	Appendix F Section D
(ix)	the outcome of the site selection matrix;	N/A. *The proposed project is for the expansion of an existing MTS and therefore only the current footprint was considered, i.e. the existing Eskom property.*
(x)	if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	Section 2
(xi)	a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section D2
(i)	a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including— (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	Appendix F Appendix D
(ii)	an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Appendix F Appendix D
(j)	an assessment of each identified potentially significant impact and risk, including— (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Appendix F Appendix D
(k)	where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section D2
(l) (i) (ii)	an environmental impact statement which contains— a summary of the key findings of the environmental impact assessment; a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	Section D2 Appendix A3

NEMA REGULATION GNR 982, SECTION 19 REQUIREMENTS FOR THE CONTENT OF BASIC ASSESSMENT REPORTS AS PER APPENDIX 1		CROSS REFERENCE IN THIS REPORT (refer to the following parts in the report)
(iii)	a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
(m)	based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Section D2
(n)	any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section E
(o)	a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 1.4
(p)	a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section D
(q)	where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A. *"The project includes operational aspects".*
(r)	an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Appendix H
(s)	where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A. *"Rehabilitation will be required in terms of the Environmental Management Plan, which will be legally binding to the Contractor. The Contractor would therefore need to make financial provision for rehabilitation when quoting for construction of the project".*
(t)	any specific information that may be required by the competent authority; and	N/A
(u)	any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

1.3. DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER AND EXPERTISE TO CONDUCT THE BASIC ASSESSMENT

Eskom Holdings SOC Ltd has appointed Savannah Environmental as the independent environmental consultant to undertake the required Basic Assessment process and to

identify and assess all the potential environmental impacts associated with the proposed project and propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). As part of these environmental studies, Interested & Affected Parties (I&APs) have been actively involved through the public involvement process. Neither Savannah Environmental nor any of the specialist sub-consultants on this project are subsidiaries of or are affiliated to Eskom Holdings SOC Ltd. In addition, Savannah Environmental does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Savannah Environmental is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessment and planning to ensure compliance and evaluate the risk of development and the development and implementation of environmental management tools. Savannah Environmental benefits from the pooled resources, diverse skills and experience in the environmental field held by its team that has been actively involved in undertaking environmental studies for a wide variety of projects throughout South Africa and neighbouring countries. Strong competencies have been developed in project management of environmental processes, as well as strategic environmental assessment and compliance advice, and the assessment of environmental impacts, the identification of environmental management solutions and mitigation/risk minimising measures.

The Savannah Environmental team has considerable experience in environmental impact assessments and environmental management, and have been actively involved in undertaking environmental studies for a wide variety of projects throughout South Africa, including those associated with electricity generation and transmission.

The Environmental Assessment Practitioners (EAPs) and Public Participation consultants from Savannah Environmental who are responsible for this project are:

» *Tebogo Mapinga* - is a Senior Environmental Consultant, holds a BSc degree with 8 years of experience in the environmental field in both public and private sectors. Her competencies lie in environmental impact assessments, compliance monitoring and public participation for small and large scale projects. She is currently in the process of completing her honours degree in Environmental Management
» *Gabriele Wood* - holds a Honours Degree in Anthropology, obtained from the University of Johannesburg. She has 6 years consulting experience in public participation and social research. Her experience includes the design and implementation of public participation programmes and stakeholder management strategies for numerous integrated development planning and infrastructure projects. Her work focuses on managing the public participation component of Environmental Impact Assessments and Basic Assessments undertaken by Savannah Environmental.
» *Karen Jodas* - the principle Environmental Assessment Practitioner (EAP) for this project, is a registered Professional Natural Scientist and holds a Master of Science degree. She has 17 years of experience consulting in the environmental field. Her

key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. She is currently responsible for the project management of EIAs for several renewable energy projects across the country.

Savannah Environmental has gained extensive knowledge and experience on potential environmental impacts associated with electricity generation and transmission/ distribution projects through their involvement in related EIA processes over the past 10 years. Savannah Environmental has completed the EIA process and received environmental authorisations for numerous energy generation and transmission projects and their associated infrastructure. In order to adequately identify and assess potential environmental impacts associated with the proposed project, Savannah Environmental has appointed the following specialists to conduct specialist impact assessments:

» Ecology – Gerhard Botha (Savannah Environmental);
» Heritage - Celeste Booth (Booth Heritage Consulting);
» Palaeontology – John Almond (Natura Viva); and
» Avifauna – Andrew Pearson (Arcus Consulting Services).

Curricula Vitae for the Savannah Environmental project team and specialist consultants are included in **Appendix H**.

1.4. ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are applicable to the studies undertaken within this Basic Assessment Process:

» All information provided by the proponent to the environmental team was correct and valid at the time it was provided.
» It is assumed that the development site identified by the proponent represents a technically suitable site for the establishment of the proposed project.
» Studies assume that any potential impacts on the environment associated with the proposed development will be avoided, mitigated, or offset.
» This report and its investigations are project-specific, and consequently the environmental team did not evaluate any other site alternatives.

Refer to the specialist studies in **Appendices D1 – D4** for specific limitations.

BASIC ASSESSMENT REPORT FOR PUBLIC REVIEW

This Basic Assessment Report for public review has been prepared by Savannah Environmental in order to assess the potential environmental impacts associated with proposed expansion of the Komsberg MTS and associated infrastructure near Sutherland in the Northern Cape Province. This process is being undertaken in support of an application for environmental authorisation to the National DEA. The 30-day period for review was from **13 October 2015 - 12 November 2015**. The report was available for public review at the following locations:

» **Sutherland Public Library;**
» **Laingsburg Public Library;**
» **www.savannahsa.com**

Comments were received through written submission via fax, post or e-mail. Changes made to this Final Report are underlined for ease of reference.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	**YES**	**NO**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

Eskom Holdings SOC Ltd is proposing to expand the existing Komsberg Main Transmission Substation (MTS). The expansion area (approximately 19.8ha), will fall within the Eskom property and is located next to and between the positions of the existing capacitor banks installation. The existing infrastructure on site (e.g. Capacitor banks) will form part of the proposed expanded MTS footprint and some downscaling / relocation of existing infrastructure will be required. The total footprint of the proposed expanded Komsberg MTS is likely to be approximately 440m x 450m, all on Eskom property.

The proposed development entails the following:

- » Expansion of the Komsberg MTS to a total footprint of 19.8ha (440m x 450m);
- » Establishment of 400/132kV transformation and 132kV feeder bays for line connections; and
- » The downscaling / relocation of existing capacitor banks; and
- » The upgrading of the existing access road into the substation.

Site Location

The Komsberg MTS is located approximately 30km north of Matjiesfontein and 50 km south of Sutherland within the Karoo Hoogland Local Municipality in the Northern Cape Province (refer to Table 1.1 below). The following property forms part of the application for the proposed expansion of the Komsberg MTS:

- » Portion 2 of the Farm Standvastigheid 210

Table 1.1: Location of the study area

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Karoo Hoogland Local Municipality
Ward number(s)	Ward 4 - Karoo Hoogland Local Municipality
Nearest town(s)	~30km north of Matjiesfontein and ~50 km south of Sutherland
Farm name(s) and number(s)	Standvastigheid 210
Portion number(s)	Portion 2
SG 21 Digit Code	C07200000000021000002

Co-ordinates	32°56'1.37"S 20°35'40.39"E

Expansion of the Komsberg MTS:

The expansion of the MTS will be required to enable already approved and proposed future renewable energy facilities within close proximity to the Komsberg MTS to connect to the Eskom national grid. The MTS will be constructed in the following simplified sequence:

Step 1: Conduct site survey;
Step 2: Conduct geotechnical investigations to determine founding conditions;
Step 3: Vegetation clearance (where and if required) and upgrading of the existing access road;
Step 4: Construction of a terrace for the infrastructure to be installed;
Step 5: Installation of foundations;
Step 6: Delivery of materials and transformers;
Step 7: Construction of the expansion of the MTS and control buildings;
Step 8: Installation of a double security parameter fence around the footprint of the Komsberg MTS;
Step 9: Rehabilitation of disturbed areas and protection of erosion sensitive areas; and
Step 10: Testing and commissioning.

Operation and Maintenance Phase

The Komsberg MTS will require routine maintenance work throughout the operation period, as is already the case for the existing infrastructure. During operation, the Komsberg MTS will be accessed via the existing provincial gravel access road and existing or upgraded access roads established during the construction phase.

The upgraded Komsberg MTS will form part of the Eskom Western Grid and the operational maintenance will be included into the Eskom ISO14001 Management System. During this operation phase maintenance activities within the Komsberg MTS property will require management only if it impacts on the safety and operational objectives of the Komsberg MTS and the surrounding environment.

Decommissioning Phase

The Komsberg MTS and expansion is expected to have a lifespan of more than 25 years (with maintenance) and the infrastructure would only be decommissioned once it has reached the end of its economic life or is no longer required. During decommissioning the relevant legislation at the time would need to be complied with.

Decommissioning would include:

a) Disassemble Components

The components would be disassembled, and reused and recycled (where possible), or disposed of in accordance with regulatory requirements at the time of decommissioning.

b) Rehabilitation

Disturbed areas (where infrastructure has been removed) will be rehabilitated, if required, depending on the future land-use of the site and the relevant legislation applicable at the time of decommissioning.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R.983 and 985	Description of project activity
GN R.983, Activity 12 (xii)(a) The development of (xii) infrastructure or structures with a physical footprint of 100 square meters or more (a) within a watercourse (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse	The widening/upgrading of the access road required for the construction and maintenance activities of the Komsberg MTS could have a physical footprint of up to 100m^2 or more within or within 32m of a watercourse.
GN R.983, Activity 19 (i) The infilling or depositing of any material of more than 5 cubic metres into, or the dredging excavation, removal or moving of soil, sand, shell, shell grit, pebbles or rock of more than 5 cubic metres from- (a) a watercourse	The widening/upgrading of the access road required for the construction and maintenance activities of the Komsberg MTS would require infilling or removal of 5m^3 or more of material into/from a watercourse, i.e. non-perennial drainage line, for the placement of culverts.
GN 983, 27 (ii): The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.	The expansion of the Komsberg MTS would require the clearance, of indigenous vegetation where and if necessary. The development site is ~ 19.8ha in extent. Considering the expansion is proposed in an area already disturbed by the existing MTS, the full extent of the 19.8ha would not necessarily have to be cleared.
GN 983, 47: The expansion of facilities or infrastructure for the transmission and distribution of electricity	The project would require the expansion of the existing Komsberg MTS which is directly related to the distribution of electricity and

Listed activity as described in GN R.983 and 985	Description of project activity
where the expanded capacity will exceed 275 kilovolts and the development footprint will increase.	would increase the footprint of the MTS, albeit within the existing Eskom property.
GN 983, 56 (i): The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre— (i) where no reserve exists, where the existing road is wider than 8 metres;	The expansion of the Komsberg MTS would require the widening of an access road by potentially more than 6m where no reserve exists, where the existing road is wider than 8m in some sections. The upgrading of the road might also exceed 1km.
R985, Activity 14 (xii) (c) The development of – (xii) infrastructure or structures with a physical footprint of 10 square metres or more Where such development occurs- (a) within a watercourse (c) If no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of the watercourse. (a) In Northern Cape Province: (ii) Outside urban areas, in: (dd) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority.	The infrastructure, e.g. access road, required for the proposed project would exceed 10 square metres in size and falls within the Succulent Karoo Ecosystems Programme (SKEP) planning domain and within 32m of a non-perennial drainage line.
R985, Activity 18 (a) (ii) (cc) The widening of a road by more than 4 metres; or the lengthening of a road by more than 1 kilometre (a) In Northern Cape Province (ii) Outside urban areas, in: (dd) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority.	The expansion of the Komsberg MTS will require the widening/upgrading of an access road by more than 4m, outside the urban area and falls within the Succulent Karoo Ecosystems Programme (SKEP) planning domain.
R985, Activity 23 (xii) (c) The expansion of – (xii) infrastructure or structures with a physical footprint of 10 square metres or more Where such development occurs- (a) within a watercourse (c) If no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of the watercourse.	The expansion of infrastructure, e.g. access road, required for the proposed project would exceed 10 square metres in size and falls within the Succulent Karoo Ecosystems Programme (SKEP) planning domain and within 32m of a non-perennial drainage line. A culvert or similar structure would also be required to be placed within the drainage line and could exceed 10 square metres in size.

Listed activity as described in GN R.983 and 985	Description of project activity
(a) In Northern Cape Province: (ii) Outside urban areas, in: (dd) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority.	

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Regulation 22(2) (h) of GN R.982. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

No Site alternative was considered as the expansion of the MTS is required to be associated with the existing MTS. The majority of the site has been disturbed mainly due to activities relating to the existing Komsberg MTS infrastructure and the maintenance thereof that is still taking place. The expansion of the substation will result in minimal environmental impacts refer to Section D of this report.

Alternative 1: technically preferred alternative		
Description	**Lat (DDMMSS)**	**Long (DDMMSS)**
Komsberg MTS site	32°56'1.37"	20°35'40.39"
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

b) Layout alternatives

The proposed development will entail expanding the existing Komsberg MTS. The expansion area (approximately 19.8ha), will fall within the Eskom property and is located next to and between the positions of the existing capacitor banks installation.

Two alternative layouts, within the assessed footprint, have been proposed for the expansion of the MTS.

- Alternative 1 - is the proponent's preferred layout for the expansion of the substation (blue outline, Figure 1.3). The layout is located within the existing substation MTS footprint between the positions of the existing capacitor banks installation. The existing capacitor banks will form part of the expanded substation footprint. This layout allows for the capacitor banks to remain in their current position and reduces the amount of electrical and cabling work required for the new infrastructure required to expand the MTS.
- Alternative 2 (red outline, Figures 1.3) - is located immediately to the east within the footprint (fence line) of the existing substation MTS and extends east to cover an area of approximately 19.8 ha. The existing capacitor banks position will form part of the expanded substation footprint and hence these will need relocating in advance of constructing the expanded MTS. This alternative is therefore not preferred considering that it would require substantially more electrical work and additional cabling which would be more expensive and not optimal.

Layout alternative 1 has been identified as the preferred technical and most optimal alternative as the existing capacitor banks will not first need re-locating as they do not conflict with the position of the expanded MTS. The alternative 1 position will also best accommodate the connection of the many power lines into the MTS. Layout alternative 2

will only allow construction of the MTS to commence after first having moved the existing capacitor banks and is therefore not preferred as it is not considered technically optimal nor financially prudent.

Alternative 1 (preferred alternative)		
Description	**Lat (DDMMSS)**	**Long (DDMMSS)**
The layout is located within the existing substation MTS footprint between the positions of the existing capacitor banks installation. The existing capacitor banks will form part of the expanded substation footprint.	32°56'1.94"	20°35'46.44"
Alternative 2		
Description	**Lat (DDMMSS)**	**Long (DDMMSS)**
The layout is located immediately to the east within the footprint (fence line) of the existing substation MTS and extends east to cover an area of approximately 19.8 ha.	32°56'1.45"	20°35'41.07"
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

Access Alternatives

The Komsberg MTS can be accessed using the following existing access roads (refer to figure 1.3):

- The Northern Access Road (preferred access road for the development – turquois line in figure 1.3): the access road is approximately 592m in length and follows an existing road of ~5m wide;
- The Western Access Road (pink line in figure 1.3 currently referred to as the main access road): the access road is approximately 727m in length and is routed under existing overhead power lines, and
- The Southern Access Road (yellow line in figure 1.3): the access road is approximately 1.4km in length and is also routed under existing overhead power lines.

These access roads will be required for the transportation of equipment during the construction phase and for maintenance purposes during the operational phase. The preferred access road (i.e. the turquoise line in figure 1.3) would need to be widened/upgraded during the construction phase to accommodate the transportation of

equipment, e.g. the transformer(s), to the site. The western and southern access roads are routed under existing overhead transmission lines. Due to the height limitation of some of the trucks transporting equipment, e.g. the transformer, would not be able to pass under the overhead power lines and it will not be feasible to relocate the lines for this purpose. Therefore the northern access road is the preferred alternative (turquoise line in figure 1.3) as there is no existing infrastructure that could potentially hinder the transportation of equipment during the construction phase and it also follows an existing road.

c) Technology alternatives

The technology for the expansion of the MTS would be chosen based on the principle of best technology available and suited for the purpose of expanding the MTS. It will further be chosen to comply with industry standards and does not significantly affect the environmental impact of the proposed development in any way as its footprint will not exceed the specifications or extend beyond the assessed site boundaries.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

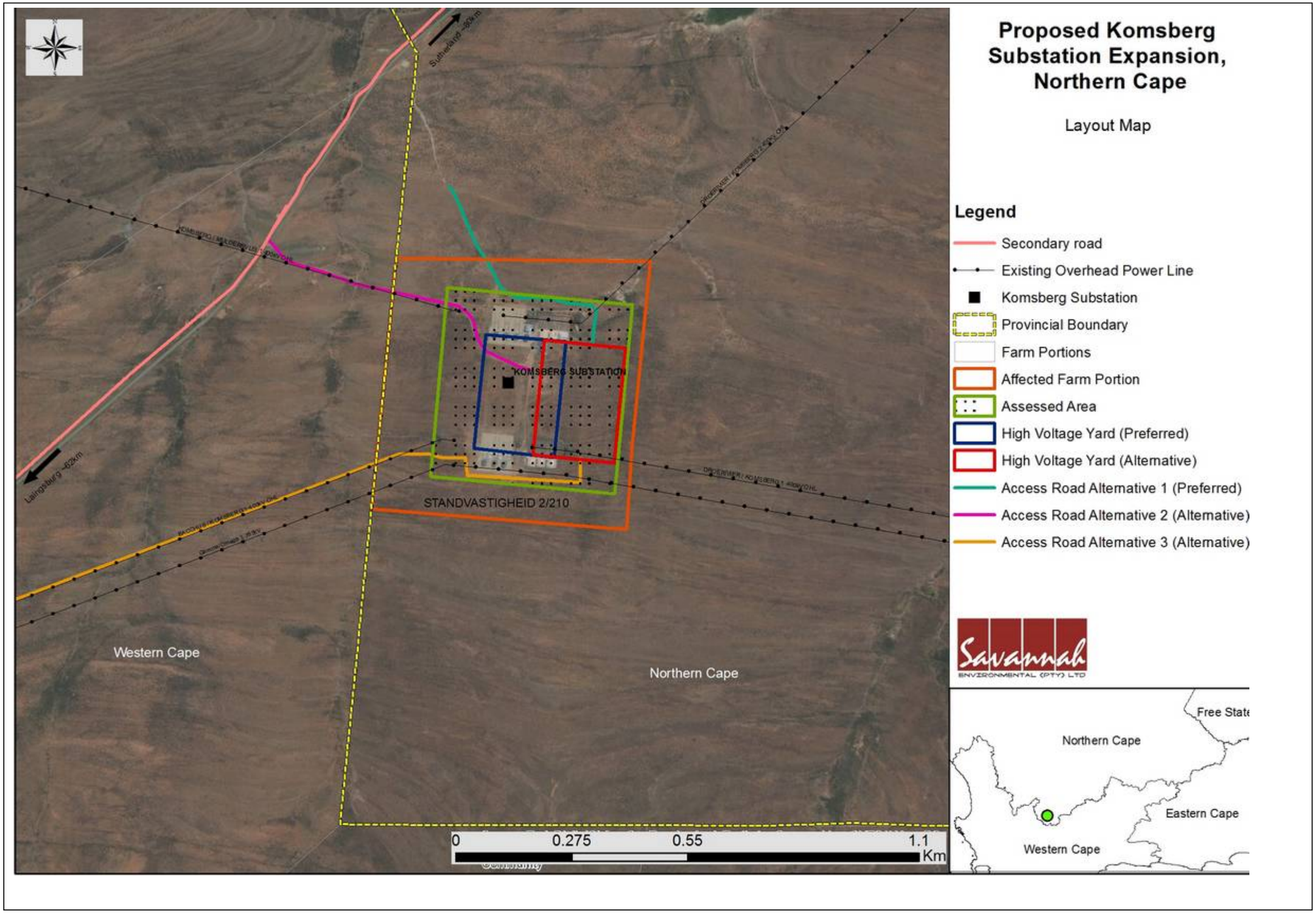

Figure 1.3: Map indicating the development footprint, layout alternatives of the expansion area and the alternative access roads leading to the Komsberg MTS

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

The design of the MTS will be based on industry standards and does not significantly affect the environmental impact of the proposed development in any way as its footprint will not exceed the specifications or extend beyond the assessed site boundaries.

Alternative 1 (preferred alternative)
.
Alternative 2
Alternative 3

e) No-go alternative

This is the option of not expanding the Komsberg MTS. This option is assessed as the "no go alternative" in this Basic Assessment Report (also refer to Appendix F).

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Layout alternative 1	440m x 450m = 198,000 m^2 (i.e. 19.8ha)
Alternative SS22 (if any)	m^2
Alternative SS33 (if any)	m^2

or, for linear activities (Access road):

Alternative:	**Length of the activity:**
Alternative 1 (preferred)	584m
Alternative A2(if any)	698m
Alternative A3 (if any)	1.4km

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur)

Alternative:	**Size of servitude:**
Komsberg MTS	Up to 440m x 450m
Alternative A2 (if any)	
Alternative A3 (if any)	

4. SITE ACCESS

Does ready access to the site exist?	**YES**
If NO, what is the distance over which a new access road will be built	m

Describe the type of access road planned:

The site can be accessed via an existing provincial gravel access road. Sections of the northern access road (preferred access road) would need to be widened/upgraded during the construction phase to accommodate the transportation of equipment, e.g. transformer(s), to the site as some of the equipment would have height limitations that would render other existing access roads unusable as they are routed under existing overhead power lines. Where possible, existing roads will be used.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site (refer to Appendix A1).

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 km, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;

- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

A3 Locality maps have been attached as **Appendix A1 and A2**

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

Refer to **Appendices A1 and A2**

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

An A3 Sensitivity map and a CBA map has been attached as **Appendix A3**.

Ecological Sensitivity

The broader study site is located within vegetation containing both elements of Central Mountain Shale Renosterveld and Koedoesberge-Moordenaars Karoo Vegetation Types. There are sections within the broader study area that contain stronger relationships to Central Mountain Shale Renosterveld and other areas in contrast relates stronger to Koedoesberge-Moordenaars Karoo. Thus the study site can be regarded as a crossover (ecotone) area between Koedoesberge-Moordenaars Karoo and Central Mountain Shale Renosterveld. To the north-east of the study site a non-perennial drainage line is present running in a north-easterly direction towards a small earthen dam. Apart from the "Koedoesberg-Moordenaars Karoo – Central Mountain Shale Renosterveld crossover" variation, rocky patches with shallow to little soil also provides a variation in vegetation composition of the study area.

No species of conservation concern, in terms of the Threatened Species Program, were observed during the site investigation. A few species however were noted that are Protected according to Schedule 2 of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009).

(Please refer to the Ecological Report in **Appendix D** for more information).

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Site photographs are attached within **Appendix B.**

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A facility illustration is included within **Appendix C.**

10.ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	**YES**		Please explain
The proposed MTS expansion will take place within the existing Komsberg MTS boundary. The property on which the expansion is proposed is zoned for this purpose.			
2. Will the activity be in line with the following?			
(a) **Provincial Spatial Development Framework (PSDF)**	**YES**		Please explain
The Northern Cape Provincial Spatial Development Framework (NCPSDF) makes reference to the need to ensure the availability of inexpensive energy. The section notes that in order to promote economic growth in the Northern Cape the availability of electricity to key industrial users at critical localities at rates that enhance the competitiveness of their industries must be ensured. At the same time, the development of new sources of energy through the promotion of the adoption of energy applications that display a synergy with the province's natural resource endowments must be encouraged. In this regard the NCPSDF includes the reference to renewable energy resources in "the development of energy sources such as solar energy, the natural gas fields, bio-fuels, etc., could be some of the means by which new economic opportunity and activity is generated in the Northern Cape". The NCPSDF also highlights the importance of close co-operation between the public and private sectors in order for the economic development potential of the Northern Cape to be realised. The proposed project will facilitate the connection of authorised and proposed renewable energy projects in the region to the electricity grid, which will contribute towards this objective.			
(b) Urban edge / Edge of Built environment for the area		**NO**	Please explain
The Komsberg MTS site falls outside the urban edge. Therefore the proposed project does not impact upon the urban edge.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**YES**		Please explain
The project will not compromise IDP objectives but will assist in reaching these objectives as the IDP of the municipality aims to ensure that the quality of life of the Namakwa community through purposeful and quality service, and the effective and optimal utilisation of resources is achieved. This project will assist in supporting the local electricity supply through facilitation of connection of renewable energy projects to the			

national Eskom grid. The project will further assist in direct and indirect job creation which will further help achieve IDP objectives.			
(d) Approved Structure Plan of the Municipality	**YES**		Please explain
The municipality is aware of the existing Komsberg MTS. The proposed expansion will supports the functioning of the existing Komsberg MTS and will not compromise the structure of the municipal plan.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)		**NO**	Please explain
The approval of this application will not compromise the Namakwa District Municipality Environmental Management Framework especially considering that the proposed expansion is within the existing footprint of the Komsberg MTS.			
(f) Any other Plans (e.g. Guide Plan)	**YES**		Please explain
An Environmental Implementation Plan (EIP) was compiled by the Northern Cape Province. In order to encourage cooperative governance across departments, NEMA calls for the development of a national and provincial Environmental Implementation Plans (EIPs) and Environmental management plans (EMPs). The EIP aims to ensure that land use decision-making is carried out using adequate available environmental resource information in order to ensure sustainable and appropriate environmental management to the benefit of its residents. One of the set goals for the Programme is ensuring that all environmental issues are appropriately addressed. This is achieved for this project through the execution of this Basic Assessment process.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES**		Please explain
The main purpose of the proposed expansion of the Komsberg MTS is to accommodate the numerous renewable energy projects proposed and authorised in the region in order to facilitate connection to the national grid. This project is not specifically considered within the existing approved SDF.			

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES**		Please explain
The main purpose of the proposed expansion of the Komsberg MTS is to accommodate the numerous renewable energy projects proposed and authorised in the region in order to facilitate connection to the national grid. The proposed project will enable the renewable energy facilities proposed in the region to connect to the national electricity grid, which will have a positive economic impact at a local and regional level in terms of job creation (directly and indirectly) as well as contributing to alleviate South Africa's existing energy supply shortage.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES**		Please explain
All the services needed for the project have been adequately provided for and should any need for other services arise the relevant authority will be communicated with.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)		**NO**	Please explain
The proposed project is to be developed by a State-owned Entity (i.e. Eskom) and not the municipality. It therefore does not fall within the infrastructure planning of the municipality. The project will not have any implications for the municipality apart from assisting them in their achievement of their IDP objectives, as detailed previously.			
7. Is this project part of a national programme to address an issue of national concern or importance?	**YES**		Please explain
The proposed expansion of the Komsberg MTS is aimed at accommodating numerous renewable energy projects proposed and authorised in the region in order to facilitate connection to the national grid. Within a policy framework, the development of renewable energy in South Africa is supported by the White Paper on Renewable Energy (November 2003). In order to meet the long-term goal of a sustainable renewable energy industry, a goal of 17,8GW of renewables by 2030 has been set by the Department of Energy (DoE) within the Integrated Resource Plan (IRP) 2010. The energy will be produced mainly from wind, solar, biomass, and small-scale hydro (with			

wind and solar comprising the bulk of the power generation capacity). This amounts to ~42% of all new power generation being derived from renewable energy forms by 2030. This is however dependent on the assumed learning rates and associated cost reductions for renewable options.

Renewable Energy projects also form a key part of the National Development Plan which aims to "*speed up and expand renewable energy…*" in order to facilitate the transition of South Africa to low-carbon economy. Three of the renewable energy facilities in the area have been selected as preferred bidder projects in bid window four in terms of the DoE's Renewable Energy Independent Power Producer Procurement Process (REIPPPP). In order to integrate the power generated at these facilities and other authorised and proposed future projects into the national electricity grid, the facilities are required to be connected to the Komsberg MTS. The proposed expansion will facilitate this connection and therefore forms a key component of these renewable energy projects, and the NDP, without which they will not be able to connect to the National grid.

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES**		Please explain

The development site is considered to be the most feasible options for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration. As the proposed project falls within the boundaries of of the existing Komsberg MTS, the location of this infrastructure is considered the best practicable option to minimise environmental impacts while also taking technical requirements into account.

9. Is the development the best practicable environmental option for this land/site?	**YES**		Please explain

The development site is considered to be the most feasible options for the location of this infrastructure, taking technical and environmental (social and biophysical) issues into consideration. As the proposed project falls within the boundaries of of the existing Komsberg MTS, the location of this infrastructure is considered the best practicable option to minimise environmental impacts while also taking technical requirements into account.

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**		Please explain

The specialist studies undertaken as part of this Basic Assessment conclude that the expansion of the MTS will have low environmental impacts. The project is proposed within the boundaries of the existing Komsberg MTS within an area previously disturbed. The proposed project will facilitate the connection of the renewable energy projects in the area to the National electricity grid thereby facilitating the distribution of the energy generated at these facilities nationally. This will have a positive impact at a local,

regional and national level. The benefits of the project are considered to outweigh the low negative impacts. Further direct and indirect benefits in the form of job creation and direct and indirect economic benefits will also be realised.

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		**NO**	Please explain

The proposed expansion is located within the development boundary of the existing Komsberg MTS. Any other similar activities in the area would depend on the feasibility of developing additional substations in this area.

12. Will any person's rights be negatively affected by the proposed activity/ies?		**NO**	Please explain

The Komsberg MTS site is owned by Eskom. A private landowner would be affected by the proposed widening of the access road. This landowner has been consulted by the proponent and the environmental team and is well aware of the proposed project and does not object to it.

13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		**NO**	Please explain

The proposed project falls outside the urban edge. Therefore the proposed project does not impact upon the urban edge.

14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**YES**		Please explain

The project will **indirectly** support the objectives for Strategic Infrastructure Projects (SIP):

- SIP 9: Electricity generation to support socioeconomic development.
- Accelerate the construction of new electricity generation capacity in accordance with the IRP2010 to meet the needs of the economy and address historical imbalances. - The expansion of the Komsberg MTS will aid the connection of renewable energy projects in the area, which in turn will assist in promoting balanced economic development, economic opportunity, assist in achieving socio-economic needs, promote jobs through direct and indirect job creation and assist with economic development. The proposed expansion from a construction perspective will give people living in the area opportunities to gain employments which would address the socio economic needs of individuals to some extent. The proposed project in operation will support the renewable energy facilities which will result in an increase of sustainable electricity supply in the Northern Cape and nationally, which will aid in meeting the electricity demand of the country. This will increase and balance economic development, which in effect will address the socio-economic needs of the people in the area.

15. What will the benefits be to society in general and to the local communities?	Please explain

The main purpose of the proposed of the expansion of the Komsberg MTS is to accommodate numerous renewable energy projects proposed and authorised in the

region in order to facilitate connection to the national grid. The proposed project will enable the renewable energy facilities to connect to the national electricity grid, which will have a positive economic impact at a National, local and regional level. Three of the projects identified that require connection to the Komsberg MTS are Preferred Bidder projects, therefore social responsibility requirements of the projects in terms of the REIPPPP will be implemented for these projects. This will result in direct and indirect job creation and inject money into the local and regional economy.

16. Any other need and desirability considerations related to the proposed activity?	Please explain

The need and desirability of the Komsberg MTS stems from the need to accommodate numerous renewable energy projects proposed and authorised in the region in order to facilitate connection to the national grid. The Project will contribute to the distribution of power to the national grid once the renewable energy facilities are constructed under the REIPPPP.

17. How does the project fit into the National Development Plan for 2030?	Please explain

By 2030 South Africa aims to reduce carbon emissions, promote economic development and increase the GDP. To achieve this, the Province has aimed to improve Infrastructure and Basic Services; Socio-economic Development; Institutional Transformation; Good Governance and Public Participation; Financial viability and Management. The expansion of the Komsberg MTS will aid in providing Basic services (electricity) and facilitate the infrastructure growth in the area including job creation, local content, enterprise development and other socio-economic benefits and the positive impacts will therefore be realised. The NDP further considers renewable energy projects a key objective in order for South Africa to make its transition to a low-carbon economy. The project would therefore indirectly contribute to the aforementioned.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

The general objectives of Integrated Environmental Management have been taken into account for this Basic Assessment report by means of identifying, predicting and evaluating the actual and potential impacts on the biophysical environment, socio-economic conditions and cultural heritage.

The risks, consequences, alternatives as well as options for mitigation of activities have also been considered with a view to minimise negative impacts, maximise benefits, and promote compliance with the principles of environmental management.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

Section 2 of NEMA states that environmental management must place people and their needs at the forefront, and serve their physical, psychological, developmental, cultural and social interests equitably. These principles of NEMA include the following:

- » Development must be sustainable;
- » Pollution must be avoided or minimised and remedied;
- » Waste must be avoided or minimised, reused or recycled;
- » Negative impacts must be minimised; and
- » Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

The principles of NEMA have been considered in this assessment through compliance with the requirements of the relevant legislation in undertaking the assessment of potential impacts, as well as through the implementation of the principle of sustainable development where appropriate mitigation measures have been recommended for impacts which cannot be avoided. In addition, the successful implementation and appropriate management of this proposed project will aid in achieving the principle of minimisation of pollution and environmental degradation. The project also directly forms part of renewable energy projects which contributes to reducing the release of CO_2 into the atmosphere through energy production by means of coal and thereby helping to curb climate change.

This process has been undertaken in a transparent manner and all effort has been made to involve interested and affected parties, stakeholders and relevant Organs of State such that an informed decision regarding the project can be made by the Competent Authority.

11.APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Table 1.1: Applicable Legislation, Policies and/or Guidelines

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	National Legislation		
National Environmental Management Act (Act No. 107 of 1998)	The EIA Regulations have been promulgated in terms of Chapter 5 of the Act. Listed activities which may not commence without an environmental authorisation are identified within these Regulations. In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be assessed and reported on to the competent authority charged by NEMA with granting of the relevant environmental authorisation. In terms of GNR 983 and 985 of June 2010 a Basic Assessment Process is required to be undertaken for the proposed project.	» National Department of Environmental Affairs (DEA) » Northern Cape Department of Environment and Nature Conservation (NC DENC) – commenting authority	The listed activities triggered by the proposed MTS expansion and road widening have been identified and assessed in the EIA process being undertaken (i.e. Basic Assessment). This Basic Assessment Report will be submitted to the competent and commenting authority in support of the application for authorisation.
National Environmental Management Act (Act No. 107 of 1998)	In terms of the Duty of Care provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to ensure that any pollution or degradation of the environment associated with a project is avoided, stopped or minimised.	DEA	While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed project has found application in the EIA process. The implementation of mitigation measures are included as part of the Draft EMPr and will continue to

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
			apply throughout the life cycle of the project.
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	In terms of S57, the Minister of Environmental Affairs has published a list of critically endangered, endangered, vulnerable, and protected species in GNR 151 in Government Gazette 29657 of 23 February 2007 and the regulations associated therewith in GNR 152 in GG29657 of 23 February 2007, which came into effect on 1 June 2007. In terms of GNR 152 of 23 February 2007: Regulations relating to listed threatened and protected species, the relevant specialists must be employed during the EIA Phase of the project to incorporate the legal provisions as well as the regulations associated with listed threatened and protected species (GNR 152) into specialist reports in order to identify permitting requirements at an early stage of the EIA Phase. » The Act provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The first national list of threatened terrestrial ecosystems has	» DEA » NC DENC	As the applicant will not carry out any restricted activity, as is defined in S1 of the Act, no permit is required to be obtained in this regard. A Specialist Ecological Assessment was undertaken as part of the Basic Assessment process (refer to Appendix D). As such the potential occurrence of critically endangered, endangered, vulnerable, and protected species, as well as critically endangered (CR), endangered (EN), vulnerable (VU) or protected ecosystems and species and the potential for them to be affected has been considered. No such species were identified to be affected by the proposed project.

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	been gazetted, together with supporting information on the listing process including the purpose and rationale for listing ecosystems, the criteria used to identify listed ecosystems, the implications of listing ecosystems, and summary statistics and national maps of listed ecosystems (National Environmental Management: Biodiversity Act: National list of ecosystems that are threatened and in need of protection, (GG 34809, GN 1002), 9 December 2011).		
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	The Minister may by notice in the *Gazette* publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment. The Minister may amend the list by – » Adding other waste management activities to the list. » Removing waste management activities from the list. » Making other changes to the particulars on the list. In terms of the Regulations published in terms of this Act (GN 921), A Basic Assessment or Environmental Impact	» DEA » NC DENC	As no waste disposal site is to be associated with the proposed project, no permit is required in this regard. Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of the Act, as detailed in the EMPr (refer to Appendix G).

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	Assessment is required to be undertaken for identified listed activities (Category A and B) while Category C Activities (such as storage of waste) must be undertaken in accordance with the necessary norms and standards. Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that: » The containers in which any waste is stored, are intact and not corroded or in any other way rendered unlit for the safe storage of waste. » Adequate measures are taken to prevent accidental spillage or leaking. » The waste cannot be blown away. » Nuisances such as odour, visual impacts and breeding of vectors do not arise; and » Pollution of the environment and harm to health are prevented.		
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	S18, S19, and S20 of the Act allow certain areas to be declared and managed as "priority areas." Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards.	» DEA » Karoo Hoogland Local Municipality	» Dust Control Regulations describe the measures for control and monitoring of dust, including penalties. These regulations might be applicable during the construction phase of the project. Dust

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	» GN R 827 – National Dust Control Regulations prescribes general measures for the control of dust in all areas		management have also been accounted for in the EMPr (see Appendix G)
National Water Act (Act No. 36 of 1998)	Water uses under S21 of the Act must be licensed unless such water use falls into one of the categories listed in S22 of the Act or falls under the general authorisation. In terms of S19, the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to prevent and remedy the effects of pollution to water resources from occurring, continuing, or recurring.	» National Department of Water and Sanitation » Northern Cape Department of Water and Sanitation	A General Authorisation (GA) might be required in terms of Section 21 of the Act due to the drainage line which will be impacted by the proposed widening of the existing access road.
Environment Conservation Act (Act No. 73 of 1989)	» National Noise Control Regulations (GN R154 dated 10 January 1992)	» DEA » NC DENC	Noise impacts are expected to be associated with the construction phase of the project and are not likely to present a significant intrusion to the local community as any potential receptors are far away. There is no requirement for a noise permit in terms of the legislation.
Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)	» A mining permit or mining right may be required where a mineral in question is to be mined (e.g. materials from a borrow pit) in accordance with the provisions of the Act.	» Department of Mineral Resources	The expansion/upgrading of the access road would make use of commercial sources. Therefore no borrow pits are expected to be required for the expansion of the

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	» Requirements for Environmental Management Programmes and Environmental Management Plans are set out in S39 of the Act. » S18, S19, and S20 of the Act allow certain areas to be declared and managed as "priority areas." » Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards. » GN R 827 – National Dust Control Regulations prescribes general measures for the control of dust in all areas		Komsberg MTS, no mining permit or right is required to be obtained.
National Heritage Resources Act (Act No. 25 of 1999)	» S38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including » The construction of a road, power line, pipeline, canal or other similar linear development or barrier exceeding 300 m in length; » Any development or other activity which will change the character of a site exceeding 5 000 m^2 in extent » The relevant Heritage Authority must be notified of developments such as linear developments (i.e. roads and power lines), bridges exceeding 50 m, or any development or other activity which will change the character of a	» South African Heritage Resources Agency » Northern Cape Heritage Resources Authority	A permit may be required should any identified cultural/ heritage sites on site be required to be disturbed or destroyed as a result of the proposed development. No cultural of heritage sites were identified during the site inspection by the Heritage specialists but it is possible that some may be unearthed during construction.

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	site exceeding 5 000 m²; or the re-zoning of a site exceeding 10 000 m² in extent. This notification must be provided in the early stages of initiating that development, and details regarding the location, nature and extent of the proposed development must be provided. » Standalone HIAs are not required where an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils the provisions of S38. In such cases only those components not addressed by the EIA should be covered by the heritage component.		
National Forests Act (Act No. 84 of 1998)	» In terms of S5(1) no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a license granted by the Minister to an (applicant and subject to such period and conditions as may be stipulated". » The list of protected tree species was published in GN 877 of 22 November 2013.	» Department of Agriculture, Forestry and Fisheries » NC DENC	A permit could be required from NC DENC to relocate protected plants and to clear natural vegetation.

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
National Veld and Forest Fire Act (Act 101 of 1998)	» In terms of S12 the landowner would be obliged to burn firebreaks to ensure that should a veldfire occur on the property, that it does not spread to adjoining land. » In terms of S12 the firebreak would need to be wide and long enough to have a reasonable chance of preventing the fire from spreading, not causing erosion, and is reasonably free of inflammable material. » In terms of S17, the applicant must have such equipment, protective clothing, and trained personnel for extinguishing fires.	Department of Agriculture, Forestry and Fisheries	While no permitting or licensing requirements arise from this legislation, this Act will find application during the construction and operational phase of the project.
Conservation of Agricultural Resources Act (CARA) (Act No 43 of 1983)	» Prohibition of the spreading of weeds (S5). » Classification of categories of weeds & invader plants (Regulation 15 of GN R1048) & restrictions in terms of where these species may occur. » Requirement & methods to implement control measures for alien and invasive plant species (Regulation 15E of GN R1048).	Department of Agriculture, Forestry and Fisheries	An Ecology study was undertaken (refer to Appendix D1) and CARA was taken into account. The relevant mitigations measures were identified and are included in the EMPr (Appendix G).
Hazardous Substances Act (Act No. 15 of 1973)	This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitising, or inflammable nature or the generation of pressure thereby in	» Department of Health » Karoo Hoogland Local Municipality	It is necessary to identify and list all the Group I, II, III, and IV hazardous substances that may be on the site and in what operational context they are used, stored or

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products. » Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared to be Group I or Group II hazardous substance; » Group IV: any electronic product; » Group V: any radioactive material. The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.		handled. If applicable, a license could be required to be obtained from the Department of Health.
National Road Traffic Act (Act No 93 of 1996)	The technical recommendations for highways (TRH 11): "Draft Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for other Events on Public Roads" outline the rules and conditions which apply to the transport of abnormal loads and vehicles on	» Provincial Department of Transport (provincial roads) » South African National Roads Agency Limited (national roads)	» An abnormal load/vehicle permit may be required to transport the various components to site for construction. These include route clearances and permits for vehicles carrying

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	public roads and the detailed procedures to be followed in applying for exemption permits are described and discussed. Legal axle load limits and the restrictions imposed on abnormally heavy loads are discussed in relation to the damaging effect on road pavements, bridges and culverts. » The general conditions, limitations and escort requirements for abnormally dimensioned loads and vehicles are also discussed and reference is made to speed restrictions, power/mass ratio, mass distribution and general operating conditions for abnormal loads and vehicles. Provision is also made for the granting of permits for all other exemptions from the requirements of the National Road Traffic Act and the relevant Regulations.		abnormally heavy or abnormally dimensioned loads. » Depending on the trailer configuration and height when loaded, some of the components may not meet specified dimensional limitations (height and width) and would need to apply for the relevant permit/ clearance
Provincial Legislation			
Northern Cape Nature Conservation Act (Act No. 9 of 2009)	» Provides inter alia for the sustainable utilisation of wild animals, aquatic biota and plants as well as permitting and trade regulations regarding wild fauna and flora within the province. In terms of this act the following section may be	» NC DENC	» A permit is required for any activities which involve species listed under schedule 1 or 2. The DENC permit office provides an integrated permit which can be used for all provincial and Threatened or

Legislation	Applicable Requirements	Relevant Authority	Compliance requirements
	relevant with regards to any security fencing the development may require. **Manipulation of boundary fences** 19. No Person may – (a) erect, alter remove or partly remove or cause to be erected, altered removed or partly removed, any fence, whether on a common boundary or on such person's own property, in such a manner that any wild animal which as a result thereof gains access or may gain access to the property or a camp on the property, cannot escape or is likely not to be able to escape therefrom; The Act also lists protected fauna and flora under 3 schedules ranging from Specially protected (Schedule 1), protected (schedule 2) to common (schedule 3). The majority of mammals, reptiles and amphibians are listed under Schedule 2, except for listed species which are under Schedule 1.		Protected Species (TOPS)-related permit requirements. » Provincially protected species were found within the study area therefore, permits would be required for removal of such species. A permit would be required from NC DENC to relocate protected plants and to clear natural vegetation.

12.WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES**
If YES, what estimated quantity will be produced per month?	Not determined at this time. Minimal waste is expected to be generated by the activity

How will the construction solid waste be disposed of (describe)?

It is anticipated that construction waste will be comprised mainly of soil material from excavation activities as well as metal and cabling offcuts. Non-recyclable waste will be removed from site by a suitable contractor and will be transported to the nearest registered waste disposal facility for appropriate disposal.

Where will the construction solid waste be disposed of (describe)?

In order to comply with legal requirements, should there be excess solid construction waste after recycling options have been exhausted, the waste will be transported to the nearest registered waste disposal facility for appropriate disposal.

Will the activity produce solid waste during its operational phase?	**NO**
If YES, what estimated quantity will be produced per month?	

How will the solid waste be disposed of (describe)?

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? **NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? **NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? **NO**

If YES, what estimated quantity will be produced per month? m^3

Will the activity produce any effluent that will be treated and/or disposed of on site? **NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? **NO**

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?		**NO**
If YES, is it controlled by any legislation of any sphere of government?		

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

During the construction phase, it is expected that there will be short term, localised dust generation and exhaust emissions from vehicles and machinery. However the dust and emissions will be of short term duration and have limited impact in terms of extent and severity. Appropriate dust suppression measures must be implemented to reduce the impacts. It is recommended that construction vehicles be serviced and kept in good mechanical condition in order to minimise possible exhaust emission. In this regard the EMPr includes the relevant mitigation measures (refer to Appendix G).

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?		**NO**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?		**NO**
If YES, is it controlled by any legislation of any sphere of government?		

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the noise in terms of type and level:

Short term noise impacts are anticipated during the construction phase of the project. It is however anticipated that the noise will be localised and contained within the construction area and its immediate surroundings. There are no sensitive receptors nearby (nearest receptor, i.e. farmstead, is approximately 4.5km away) and the limit amounts of noise expected would not impact on receptors. The operation phase will not generate any noise.

13.WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	**The activity will not use water**

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:		
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	**YES**	

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

There is a non-perennial drainage line to the north-east of the site that would potentially be affected by the widening/upgrading of the preferred access road. The drainage line is however already crossed by an existing road. The widening/upgrading of the road could potentially increase flow, which is currently somewhat impeded. The crossing, if decided upon, would require a General Authorisation (GA) from the DWS. An official from the DWS was taken to the proposed crossing. The GA would be applied for in due time.

14.ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

Not applicable. The project in its very nature is aimed at electricity distribution in the most energy efficient manner. Furthermore it facilitates the grid connection of numerous renewable energy facilities, which are also inherently energy efficient

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Not applicable. The project in its very nature is aimed at facilitating distributing alternative (renewable) electricity to the National grid.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc.) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? **YES**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in **Appendix I**. All specialist reports must be contained in **Appendix D**.

Property description/ physical address:

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Karoo Hoogland Local Municipality
Ward Number(s)	4
Farm Name & Portion number	Standvastigheid 210
SG Code	C07200000000021000002

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

The proposed site has been rezoned Special Zone.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? **NO**

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Layout Alternative 1 - Expansion of the Komsberg MTS (preferred alternative)

Flat	**1:50 – 1:20**	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Layout Alternative 2 – Expansion of the Komsberg MTS

Flat	**1:50 – 1:20**	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative 2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (**both alternatives**):

2.1 Ridgeline	2.4 Closed valley	**2.7 Undulating plain / low hills**	**X**
2.2 Plateau	2.5 Open valley	2.8 Dune	
2.3 Side slope of hill/mountain	2.6 Plain	2.9 Seafront	

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Layout Alternative- Komsberg MTS 1 (Preferred):		**Layout Alternative - Komsberg MTS 2:**		**Alternative 2 (if any):**	
Shallow water table (less than 1.5m deep)		**NO**		**NO**	YES	NO
Dolomite, sinkhole or doline areas		**NO**		**NO**	YES	NO
Seasonally wet soils (often close to water bodies)		**YES**		**YES**	YES	NO
Unstable rocky slopes or steep slopes with loose soil		**NO**	YES	**NO**	YES	NO
Dispersive soils (soils that dissolve in water)		**NO**		**NO**	YES	NO

	Layout Alternative- Komsberg MTS 1 (Preferred):		**Layout Alternative - Komsberg MTS 2:**		**Alternative 2 (if any):**	
Soils with high clay content (clay fraction more than 40%)		**NO**		**NO**	YES	NO
Any other unstable soil or geological feature		**NO**		**NO**	YES	NO
An area sensitive to erosion	**YES**		**YES**		YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition^{E}	**Natural veld with scattered aliens^{E}**	Natural veld with heavy alien infestationE	Veld dominated by alien speciesE	Gardens
Sport field	Cultivated land	Paved surface	**Building or other structure**	Bare soil

If any of the boxes marked with an "^{E} "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise. **(Refer to the Ecological Report in Appendix D)**

The wider study area is located within vegetation containing both elements of Central Mountain Shale Renosterveld and Koedoesberge-Moordenaars Karoo Vegetation Types. There are sections within the wider study area that contain stronger relationships to Central Mountain Shale Renosterveld and other areas in contrast which relate stronger to Koedoesberge-Moordenaars Karoo. Therefore the study site can be regarded as a crossover (ecotone) area between Koedoesberge-Moordenaars Karoo and Central Mountain Shale Renosterveld.

To the north-east of the study site a non-perennial drainage line is present running in a north-easterly direction towards a small gravel / soil dam. Apart from the "Koedoesberg-Moordenaars Karoo – Central Mountain Shale Renosterveld crossover" variation, rocky patches with shallow to little soil also provides a variation in vegetation composition of the study area.

The extent of the development footprint area in this study is very limited and furthermore restricted to an area already transformed by the existing infrastructure.

No species of conservation concern, in terms of Threatened Species Program, was observed during the site investigation. A few species however were noted that are Protected according to Schedule 2 of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009). Disturbance of the aforementioned species would require the relevant permits to be applied for to the NC DENC. Most of these protected species are capable of colonizing previously disturbed areas at an effective rate, either via the seedbank or from surrounding species which means that rehabilitation can be expected to have a high success rate. Species such as *Holothrix aspera, Babiana* spp. and mesembs such as *Hammeria salteri and Cheiridopsis namaquensis* occur less frequently within the surrounding landscape and should preferably be avoided or, if not possible, be removed prior to the development and transplanted outside the footprint area within a similar habitat type. The aforementioned would require the relevant permitting to be applied for from the NC DENC.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		**NO**	
Non-Perennial River	**YES**		
Permanent Wetland		**NO**	
Seasonal Wetland		**NO**	
Artificial Wetland		**NO**	
Estuarine / Lagoonal wetland		**NO**	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

There is a non-perennial drainage line to the north-east of the site that would potentially be affected by the widening/upgrading of the preferred access road. The drainage line is however already crossed by an existing road. The widening/upgrading of the road could potentially increase flow, which is currently somewhat impeded. The crossing, if decided

upon, would require a General Authorisation (GA) from the DWS. An official from the DWS was taken to the proposed crossing. The GA would be applied for in due time.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	**Agriculture**
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other:

If any of the boxes marked with an "[N] "are ticked, how will this impact / be impacted upon by the proposed activity?

N/A

If any of the boxes marked with an "[An]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "[H]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		**NO**
Core area of a protected area?		**NO**
Buffer area of a protected area?		**NO**
Planned expansion area of an existing protected area?		**NO**
Existing offset area associated with a previous Environmental Authorisation?		**NO**
Buffer area of the SKA?		**NO**

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A3 **(Refer to the Sensitivity Map in Appendix A3)**

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:		**NO**

N/A

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist: **(Heritage impact assessment in Appendix D)**

The overall area is considered as having a **low** archaeological significance. No archaeological heritage remains were observed within both the site layout alternatives (Alternative 1 and Alternative 2), the assessed area, nor within the vicinity for the widening of the access road during the survey.

Will any building or structure older than 60 years be affected in any way?		**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		**NO**

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

According to the 2011 Census data, 3 655 people are employed, 623 are unemployed, and 395 are classified as discouraged work-seekers. The unemployment rate is ~14,6%. Amongst the youth (aged 15 – 34 years), 1 317 people are employed, 329 are unemployed, 218 are classified as discouraged work-seekers, and 1 433 are not economically active. The unemployment rate is thus relatively high.

Economic profile of local municipality:

Stock farming (mostly sheep) is the traditional mainstay of the economies of Karoo Hoogland Local Municipality areas. Economically viable farming units are spatially extensive (around Sutherland, around ~7 000 ha). In the case of Sutherland, the Sutherland Observatory, located approximately 15km east of Sutherland, is internationally renowned, and attracts both local and international visitors and scientists. The town itself has seen some modest growth as a lifestyle resettlement destination over the past decade. Tourist flows into the study area municipality is currently limited, and mainly associated with the town of Sutherland (observatory) and the small Victorian rail siding of Matjiesfontein, which is located approximately 30 km west of Laingsburg.

Level of education:

The level of education within the Municipality is poor. Approximately 8.4% of the population aged 20+ has no schooling, while only 16.9% have matriculated. Approximately 8.7 % go on to obtain an education at University/Technikon level.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R430 Million	
What is the expected yearly income that will be generated by or as a result of the activity?	N/A	
Will the activity contribute to service infrastructure?	**YES**	
Is the activity a public amenity?		**NO**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Development- 0 Construction- Eskom (0), Temporary job for construction workers (50)	

What is the expected value of the employment opportunities during the development and construction phase?	Five Million
What percentage of this will accrue to previously disadvantaged individuals?	90%
How many permanent new employment opportunities will be created during the operational phase of the activity?	Zero, existing resources will operate and maintain the plant.
What is the expected current value of the employment opportunities during the first 10 years?	N/A
What percentage of this will accrue to previously disadvantaged individuals?	N/A

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report. **(Refer to the Ecological Report in Appendix D)**

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	**Other Natural Area (ONA)**	No Natural Area Remaining (NNR)	

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc.).
Natural	0%	N/A
Near Natural (includes areas with low to moderate level of alien invasive plants)	15%	The study area comprises of limited natural habitat which has been disturbed to some extent due to activities relating to the existing Komsberg MTS infrastructure and the maintenance thereof.
Degraded (includes areas heavily invaded by alien plants)	45%	The majority of the site has been exposed to some sort of disturbance, mainly due to activities relating to the existing Komsberg MTS infrastructure and the maintenance thereof.
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	40%	The majority of the site has been exposed to some sort of disturbance, mainly due to activities relating to the existing Komsberg MTS infrastructure and the maintenance thereof. The site has also been transformed by several access roads and several overhead power lines connecting to the Komsberg MTS. The provincial gravel road also runs nearby.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems					
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical Endangered Vulnerable **Least Threatened**	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)		Estuary		Coastline	
		YES	**NO**	[redacted]	**NO**	[redacted]	**NO**

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

Vegetation types

The broader study site is located within vegetation containing both elements of Central Mountain Shale Renosterveld and Koedoesberge-Moordenaars Karoo Vegetation Types. There are sections within the study area that contain stronger relationships to Central Mountain Shale Renosterveld and other areas in contrast relate stronger to Koedoesberge-Moordenaars Karoo. Thus the study site can be regarded as a crossover (ecotone) area between Koedoesberge-Moordenaars Karoo and Central Mountain Shale Renosterveld. To the north-east of the study site a non-perennial drainage line (relatively degraded) is present running in a north-easterly direction towards a small gravel / soil dam. Apart from the "Koedoesberg-Moordenaars Karoo – Central Mountain Shale Renosterveld crossover" variation, rocky patches with shallow to little soil also provides a variation in vegetation composition of the study area.

Site Sensitivities

No species of conservation concern, in terms of Threatened Species Program, was observed during the site investigation. A few species were noted that are Protected according to Schedule 2 of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009). These species are as follows:

- All species of the family Mesembryanthemaceae: *Ruschia centrocapsula, Ruschia cradockensis* subsp. *triticiformis, Antimima pumila, Hammeria salteri, Cheiridopsis namaquensis* and *Lampranthus uniforus.*
- All species of the genus *Colchicum* (Family Colchicaceae): *Colchicum coloratum, C. cuspidatum*
- All species of the family Crassulaceae: *Crassula deltoidea, Crassula muscosa, Crassula glomerata*
- All species of the genus *Euphorbia* (Family Euphorbiaceae): *Euphorbia mauritanica*
- All species of the family Iridaceae: *Romulea atrandra*, *Romulea luteoflora, Lapeirousia plicata, Morea* spp. and *Babiana* spp.
- All species of the family Orchidaceae: *Holothrix aspera*
- All species of the genus *Oxalis* (Oxalidaceae): *Oxalis obtuse, Oxalis* spp.

Most of these protected species are capable of colonizing previously disturbed areas at an effective rate, either via the seedbank or from surrounding species which means that the success rate of rehabilitation can be expected to be high. Species such as *Holothrix aspera, Babiana* spp. and mesembs such as *Hammeria salteri and Cheiridopsis namaquensis* occur less frequently within the surrounding landscape and should preferably be avoided or, if not possible, be removed prior to the development and transplanted outside the footprint area within a similar habitat type. A permit will be required to be obtained from the NC DENC for the removal/relocation of any protected species that may be affected by the development.

Drainage lines

There is a non-perennial drainage line located to the north-east of the study area running in a north-easterly direction towards a small gravel / soil dam. This drainage line would be affected by the proposed widening/upgrading of the northern preferred access road. As noted in other sections of this report, the drainage line is crossed by an existing access road. The drainage line is relatively degraded and flow is somewhat impeded. The upgrading of the access road could increase flow conditions of the drainage line which would be a positive impact.

Refer to the Ecological Report in **Appendix D** for more detail.

SECTION C: PUBLIC PARTICIPATION

1.3.1. ADVERTISEMENT AND NOTICE

Publication name	Noordwester Uitgewers and Die Burger	
Date published	14 and 16 October 2015	
Site notice position	**Latitude**	**Longitude**
	32°55'50.1''S	20°35'18.2''E
	32°55'34.4''S	20°35'32.7''E
	32°56'55.7''S	20°33'05.4''E
Public Notice location	Along the provincial access road and on the boundary of the Komsberg MTS.	
Date placed	8 September 2015	

Include proof of the placement of the relevant advertisements and notices in Appendix E1. **(Refer to Appendix E1)**

1.3.2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.982.

» A2 Site notices were placed at conspicuous places around the Komsberg MTS boundary.
» An advert was placed in one local newspaper to notify the public about the availability of the Basic Assessment Report.
» No stakeholder or public meetings were held as no significant issues are anticipated and due to the project scale being small and within the boundaries of an already disturbed area.
» Any stakeholder and I&AP issues and comments will be included in the Comments and Responses Report.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.982 – ***Refer to I&AP database contained in Appendix E3***.

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)

Include proof that the key stakeholder received written notification of the proposed activities as **Appendix E2**. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- any other proof as agreed upon by the competent authority.

1.3.3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Comments were received from the DEA, South African Astronomy Observatory (SAAO), DENC and the Karoo Hoogland Municipality during the public review of the Basic Assessment Report. All comments received during the review period of the Basic Assessment report, as well as responses provided will be captured and recorded within the Comments and Response Report attached as **Appendix E** in the submission of the Basic Assessment Report.

Summary of main issues raised by I&APs	Summary of response from EAP

1.3.4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the BAR is submitted to DEA. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the BAR as **Appendix E4**. No comments have been received to date and that any comments received will be included in the BAR submission to DEA.

1.3.5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders - ***Refer to I&AP database contained in Appendix E3***.

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address

Include proof that the Authorities and Organs of State received written notification of the proposed activities as **Appendix E2.**

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

1.3.6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as **Appendix E3**.

Copies of any correspondence and minutes of any meetings held have been included in **the final BAR**.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A (2) of this report.

1.1 Planning and/or Design Phase

Activities associated with the design and pre construction phase pertains mostly to feasibility assessments undertaken at a desktop level. Geotechnical surveys are usually undertaken in this phase and could result in impacts mainly associated with disturbance of vegetation and soils at localised areas where they drill.

1.1.1. Preferred Layout Alternative 1 (Preferred) - Komsberg MTS

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
Drilling at localised areas for geotechnical surveys	***Direct impacts:*** » Potential disturbance of vegetation » Potential disturbance of soil	Low	» Keep disturbance of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the construction footprint.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» It is recommended that areas containing protected plant species, be noted and every effort made to reduce the impacts of disturbance on these sections of vegetation. Protected plant species in any area to be cleared should be identified and relocated. Permits will be required to relocate or remove these protected plant species. » Implement erosion control measures if required to minimise erosion. » Remove all equipment from site and rehabilitate any disturbed areas once activities are completed.
	Indirect impacts: » Potential biodiversity loss of floral and faunal species » Potential disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not disturbed
	Cumulative impacts: » The expansion will also impact the Central Mountain Shale Renosterveld and Koedoesberge-Moordenaars Karoo Vegetation Types, leading to localised or a slight reduction in the overall extent of this vegetation type. Where this vegetation type has already been affected due to degradation and transformation at a regional level,	Low	» Keep vegetation disturbance to a minimum. » Control storm water runoff. » Control soil erosion. » Control alien invasive plants.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	further losses may lead to increased vulnerability. » The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact.		

1.1.2. Layout Alternative 2 - Komsberg MTS

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
Drilling at localised areas for geotechnical surveys	***Direct impacts:*** » Potential disturbance of vegetation » Potential disturbance of soil	Low	» Keep disturbance of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the construction footprint. » It is recommended that areas containing protected plant species, be noted and every effort made to reduce the impacts of disturbance on these sections of vegetation. Protected plant species in any area to be cleared should be identified and relocated. Permits will be required to relocate or remove these protected plant species. » Implement erosion control measures if required to minimise erosion. » Remove all equipment from site and rehabilitate any disturbed areas once activities are completed.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Indirect impacts: » Potential biodiversity loss of floral and faunal species » Potential disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not disturbed
	Cumulative impacts: » The expansion will also impact the Central Mountain Shale Renosterveld and Koedoesberge-Moordenaars Karoo Vegetation Types, leading to localised or a slight reduction in the overall extent of this vegetation type. Where this vegetation type has already been affected due to degradation and transformation at a regional level, further losses may lead to increased vulnerability. » The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact.	Low	» Keep vegetation disturbance to a minimum. » Control storm water runoff. » Control soil erosion. » Control alien invasive plants.

1.2 Construction Phase

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the Construction Phase of the proposed expanded Komsberg MTS and widening/upgrading of the access road are provided in the tables which follow.

1.2.1. Layout Alternative 1 (Preferred) - Komsberg MTS

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
The expansion of the Komsberg substation and the widening of the access road	***Direct impacts:*** » Potential loss of Central Mountain Shale Renosterveld and Koedoesberge-Moordenaars Karoo Vegetation Types. » Potential limited disturbance to wildlife in the surrounding area. » Potential disturbance of the drainage lines.	Low	» Keep removal of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the construction footprint. » Educate staff to keep construction activities within the demarcated areas. » Vegetation impacted on during the construction phase in areas not required during the operation phase must be rehabilitated. It is likely that this will occur naturally but given the presence of alien species, active rehabilitation and the removal of alien species will be required to ensure that only indigenous species remain. » The engineering team must provide effective means to minimise the potential downstream effects of sedimentation and erosion (erosion protection) as well as minimise the loss of vegetation responsible of stabilising the soil.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» No vehicles to refuel within 32m of the drainage line identified in the vicinity of the site. » Construction must not cause the width of the watercourse to be narrowed. » Where possible culvert bases must be placed as close as possible with natural levels in mind so that these don't form additional steps / barriers. » Disturbed areas should be rehabilitated and re-vegetated as soon as possible (given the findings of the Ecologist, vegetation species within the assessed area are known to re-establish effectively if disturbed – re-vegetation might therefore effectively occur naturally). **Dust** » Implement appropriate dust suppression measures such as wetting of the affected project area during dry, windy periods; » Limit the height of stockpiles to 2m where possible; » Where practical, do not leave large cleared areas exposed for longer than necessary; and » Enforce speed limits for vehicles associated with the construction activities (40 km/h is recommended).

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			Noise » Mitigation of this impact is difficult, but noise reduction measures (such as silencers that are in good working order) should be implemented in all sensitive areas, where possible, at sensitive times (e.g. at night). » As far as possible, no construction activities should take place between sunset and sunrise. » Machinery that generates noise must be regularly maintained to ensure that no unnecessary additional noise is produced. » Equipment with lower sound levels should be selected where feasible.
	Indirect impacts: » Potential loss of floral and faunal species » Potential disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not cleared unnecessarily, especially for roads. » Where possible, access roads and tracks should be aligned with existing roads on site.
	Cumulative impacts: » The expansion of the Komsberg MTS and the widening/upgrading of the access road will also impact vegetation, leading to localised or more extensive reduction in the overall extent of this vegetation type. A number of impacts in the surrounding areas have already impacted this vegetation. Other similar projects in the adjacent areas could	Low	» Keep vegetation clearance to a minimum. » Control storm water runoff. » Control soil erosion. » Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	cause further losses and may lead to increased vulnerability. » The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact. » The expansion of the Komsberg MTS and the widening/upgrading of the access road will also cause increased noise and dust levels in the immediate area, possibly exacerbating the current impacts.		species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose.
The clearance of vegetation	***Direct Impacts*** » Potential loss of fauna and flora (vegetation and provincially protected plant species) over the project footprint, including all vegetation community types. » Limited increased erosion risk » Limited influx of alien invader species. ***Indirect Impacts*** » Limited loss of Biodiversity » Potential loss of animal species ***Cumulative Impacts*** The further loss of habitat from other developments may exacerbate the impact.	Low	» Vegetation clearing to be kept to a minimum. » Protected plant species in the vicinity should be avoided as far as possible. Where not possible to avoid, permits should be obtained prior to impacting on these species from the NC DENC. » A preconstruction survey for the species protected under provincial legislation should be undertaken in the final approved footprint of the proposed development to determine which species and how many could be affected by the development. The relevant permitting should then be applied for from NC DENC. » Since a large proportion of the listed species at the site are geophytes or succulent species, the potential for successful translocation is high. Therefore, it is recommended where

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	The expansion of the Komsberg MTS could increase the impact on the provincially protected plant species at a larger scale.		avoidance is not possible, that individuals of listed species to be affected by the development footprint should be marked and trans-located to similar habitat outside the development footprint before construction commences and under the supervision of an ecologist or someone with experience in plant translocation. » Permits (Authorisation) from the relevant department, i.e. NC DENC, should be obtained prior to the commencement of any activities relating to the disturbance, destruction or removal and transplanting of these specimens. » Preconstruction environmental induction for all construction staff on site to ensure that basic environmental principles are adhered to. This includes awareness as to no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimizing wildlife interactions, remaining within demarcated construction areas etc. » Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person, e.g. the Contractor's Environmental Officer (EO). » Construction staff should undergo an environmental induction at the start of the

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			project to ensure that they are aware of the appropriate response to the presence of fauna at the site and not to kill or harm fauna such as snakes or other reptiles which are often feared. » All hazardous materials used during construction should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. » All construction vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises. » Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Visual impacts		
The potential visual impact of the proposed expansion of the Komsberg MTS on observers to the proposed project	***Direct impacts:*** » Potential visual impact of construction on visual receptors to the proposed expansion of the Komsberg MTS and associated infrastructures.	Low	**Mitigation** The following mitigation may lower potential visual impacts, which is already considered low: » Retain / re-establish, if affected, natural vegetation in all areas outside of the development footprint. » Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever practically possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and use existing access roads where practically possible. » Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Reduce and control construction generated dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Where practically possible, rehabilitate all disturbed areas immediately after the completion of construction works. Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities.
	Indirect impacts: » None	N/A	» N/A
	Cumulative impacts: » The construction will slightly increase the visual impact associated with the existing MTS.	Low	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and use existing access roads where practically possible.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities. » Reduce and control construction generated dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Rehabilitate all disturbed areas immediately after the completion of construction works.
	Avifauna impacts		
The Construction activities of the Komsberg MTS and associated infrastructure	***Direct impacts:*** » Potential destruction of bird habitat	Low	» Minimise disturbance to vegetation as far as practically possible. » A site specific Construction Environmental Management Programme (CEMPr) must be implemented, which gives appropriate and detailed description of how construction activities must be conducted to reduce unnecessary destruction of habitat. All contractors are to adhere to the CEMPr and should apply good environmental practice during construction. » The appointed ECO must be trained by an avifaunal specialist to identify the potential Red Data species as well as the signs that indicate possible breeding by these species.
	Indirect impacts: » Potential displacement of birds from the area » Habitat loss	Low	
	Cumulative impacts: » Construction activities associated with several developments in the area at one time is likely to increase the potential cumulative impact on avifauna within the region.	Low	

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			The ECO must then, during his/her regular audits/site visits, make a concerted effort to look out for breeding activities of Red Data species, and such effort may include the training of construction staff (e.g. in Toolbox talks) to identify Red Data species, followed by regular questioning of Staff as to the regular whereabouts on site of these species. » If any of the Red Data species are confirmed to be breeding (e.g. if a nest site is found) within 500m of construction activities an avifaunal specialist is to be contacted and called to site immediately for further assessment of the situation and instruction on how to proceed. » Minimise generation of noise as far as possible.
	Social impacts		
The proposed expansion of the Komsberg MTS and associated infrastructure.	***Direct impacts:*** » Potential influx of construction workers employed on the project and job seekers (if not local). » Potential impact of heavy vehicles, including damage to roads, safety, noise and dust. » Job creation (positive impact).	Low	» The movement of construction workers on and off the site should be closely managed and monitored by the contractor and all construction workers must be restricted to within the construction footprint. » Incoming and outgoing vehicles should be monitored to control traffic. » Use dust suppressing measures on all gravel access roads used throughout the construction phase. » Employ local staff, as far as possible.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Attempt to provide skills development/ training for local employees.
	Indirect impacts: » Local employed people during the construction phase may learn new skills thereby making them more employable in the future (positive impact).	Low (positive)	» The proponent should employ locals as much as possible and ensure skills transfer and development is fostered as much as possible during the construction phase.
	Cumulative impacts: » Impacts on family and community relations. » Unplanned / unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDS.	Low	» Attention should be given to the extension and improvement of the existing HIV / Aids awareness programmes in the area.
Heritage and Palaeontology			
The proposed expansion of the Komsberg MTS and associated infrastructure.	***Direct impacts:*** Potential impact of the expansion of the Komsberg MTS and associated infrastructure on the archaeological, historical, fossil heritage resources and heritage remains including formal and informal burials.	Low	» No mitigation is proposed before construction starts because the archaeological remains in the area are of low significance (excluding human remains). However, if concentrations of archaeological materials are exposed during construction then all work must stop in the immediate area affecting the find for an archaeologist to investigate. » If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are potentially uncovered during construction, all work in the immediate area affecting the

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			find must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) and/or the McGregor Museum, Kimberly, so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts would then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue. » A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers /foremen and/or the EO should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. » All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency. » The palaeontologist concerned with potential mitigation work will need a valid fossil

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			collection permit from SAHRA and any material collected would have to be curated in an approved depository (*e.g.* museum or university collection). » All potential palaeontological specialist work would have to conform to international best practice for palaeontological fieldwork and the study (*e.g.* data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies recently developed by SAHRA (2013).
	Indirect impacts: ***N/A***	NA	» NA
	Cumulative impacts: The number of renewable facilities proposed in the area can potentially increase the risk of impact on archaeological sites (if any), but in general it will be negligible.	Low	» None required as all proposed projects would have accounted for the potential impacts on heritage.

1.2.2. Layout Alternative 2- Komsberg MTS

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Ecological impacts		
The expansion of the Komsberg substation and the widening of the access road	***Direct impacts:*** » Potential loss of Central Mountain Shale Renosterveld and Koedoesberge-Moordenaars Karoo Vegetation Types. » Potential limited disturbance to wildlife in the surrounding area. » Potential disturbance of the drainage lines.	Low	» Keep removal of vegetation and trampling to a minimum. » Do not remove vegetation in areas outside of the construction footprint. » Educate staff to keep construction activities within the demarcated areas. » Vegetation impacted on during the construction phase in areas not required during the operation phase must be rehabilitated. It is likely that this will occur naturally but given the presence of alien species, active rehabilitation and the removal of alien species will be required to ensure that only indigenous species remain. » The engineering team must provide effective means to minimise the potential downstream effects of sedimentation and erosion (erosion protection) as well as minimise the loss of vegetation responsible of stabilising the soil. » No vehicles to refuel within 32m of the drainage line identified in the vicinity of the site. » Construction must not cause the width of the watercourse to be narrowed. » Disturbed areas should be rehabilitated and re-vegetated as soon as possible (given the findings of the Ecologist, vegetation species

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			within the assessed area are known to re-establish effectively if disturbed – re-vegetation might therefore effectively occur naturally). **Dust** » Implement appropriate dust suppression measures such as wetting of the affected project area during dry, windy periods; » Limit the height of stockpiles to 2m where possible; » Where practical, do not leave large cleared areas exposed for longer than necessary; and » Enforce speed limits for vehicles associated with the construction activities (40 km/h is recommended). **Noise** » Mitigation of this impact is difficult, but noise reduction measures (such as silencers that are in good working order) should be implemented in all sensitive areas, where possible, at sensitive times (e.g. at night). » As far as possible, no construction activities should take place between sunset and sunrise. » Machinery that generates noise must be regularly maintained to ensure that no unnecessary additional noise is produced.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» Equipment with lower sound levels should be selected where feasible.
	Indirect impacts: » Potential loss of floral and faunal species » Potential disruption of ecosystem functions i.e. fragmentation	Low	» Ensure that large areas of vegetation are not cleared unnecessarily, especially for roads. » Where possible, access roads and tracks should be aligned with existing roads on site.
	Cumulative impacts: » The expansion of the Komsberg MTS and the widening/upgrading of the access road will also impact vegetation, leading to localised or more extensive reduction in the overall extent of this vegetation type. A number of impacts in the surrounding areas have already impacted this vegetation. Other similar projects in the adjacent areas could cause further losses and may lead to increased vulnerability. » The further loss of habitat from other developments and the invasion of alien plant species may exacerbate the impact. » The expansion of the Komsberg MTS and the widening/upgrading of the access road will also cause increased noise and dust levels in the immediate area, possibly exacerbating the current impacts.	Low	» Keep vegetation clearance to a minimum. » Control storm water runoff. » Control soil erosion. » Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
The clearance of vegetation	***Direct Impacts*** » Potential loss of fauna and flora (vegetation and provincially protected plant species) over the project footprint, including all vegetation community types. » Limited increased erosion risk » Limited influx of alien invader species. ***Indirect Impacts*** » Limited loss of Biodiversity » Potential los of animal species ***Cumulative Impacts*** The further loss of habitat from other developments may exacerbate the impact. The expansion of the Komsberg MTS could increase the impact on the provincially protected plant species at a larger scale.	Low	» Vegetation clearing to be kept to a minimum. » Protected plant species in the vicinity should be avoided as far as possible. Where not possible to avoid, permits should be obtained prior to impacting on these species from the NC DENC. » A preconstruction survey for the species protected under provincial legislation should be undertaken in the final approved footprint of the proposed development to determine which species and how many could be affected by the development. The relevant permitting should then be applied for from NC DENC. » Since a large proportion of the listed species at the site are geophytes or succulent species, the potential for successful translocation is high. Therefore, it is recommended where avoidance is not possible, that individuals of listed species to be affected by the development footprint should be marked and trans-located to similar habitat outside the development footprint before construction commences and under the supervision of an ecologist or someone with experience in plant translocation. » Permits (Authorisation) from the relevant department, i.e. NC DENC, should be obtained prior to the commencement of any activities relating to the disturbance, destruction or

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			removal and transplanting of these specimens. » Preconstruction environmental induction for all construction staff on site to ensure that basic environmental principles are adhered to. This includes awareness as to no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimizing wildlife interactions, remaining within demarcated construction areas etc. » Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person, e.g. the Contractor's Environmental Officer (EO). » Construction staff should undergo an environmental induction at the start of the project to ensure that they are aware of the appropriate response to the presence of fauna at the site and not to kill or harm fauna such as snakes or other reptiles which are often feared. » All hazardous materials used during construction should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» All construction vehicles should adhere to a low speed limit to avoid collisions with susceptible species such as snakes and tortoises. » Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose.
Visual impacts			
The potential visual impact of the proposed expansion of the Komsberg MTS on observers to the proposed project	***Direct impacts:*** » Potential visual impact of construction on visual receptors to the proposed expansion of the Komsberg MTS and associated infrastructures.	Low	**Mitigation** The following mitigation may lower potential visual impacts, which is already considered low: » Retain / re-establish, if affected, natural vegetation in all areas outside of the development footprint. » Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever practically possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and use existing access roads where practically possible. » Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities. » Reduce and control construction generated dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Where practically possible, rehabilitate all disturbed areas immediately after the completion of construction works. Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Indirect impacts: » None	N/A	» N/A
	Cumulative impacts: » The construction will slightly increase the visual impact associated with the existing MTS.	Low	» Ensure that vegetation is not unnecessarily removed during the construction period. » Reduce the construction period as far as practically possible through careful logistical planning and productive implementation of resources. » Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e. in already disturbed areas) wherever possible. » Restrict the activities and movement of construction workers and vehicles to the immediate construction site and use existing access roads where practically possible. » Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed of regularly at appropriately licensed waste facilities. » Reduce and control construction generated dust using approved dust suppression techniques as and when required. » Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. » Rehabilitate all disturbed areas immediately after the completion of construction works.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	Avifauna impacts		
The Construction activities of the Komsberg MTS and associated infrastructure	***Direct impacts:*** » Potential destruction of bird habitat	Low	» Minimise disturbance to vegetation as far as practically possible. » A site specific Construction Environmental Management Programme (CEMPr) must be implemented, which gives appropriate and detailed description of how construction activities must be conducted to reduce unnecessary destruction of habitat. All contractors are to adhere to the CEMPr and should apply good environmental practice during construction. » The appointed ECO must be trained by an avifaunal specialist to identify the potential Red Data species as well as the signs that indicate possible breeding by these species. The ECO must then, during his/her regular audits/site visits, make a concerted effort to look out for breeding activities of Red Data species, and such effort may include the training of construction staff (e.g. in Toolbox talks) to identify Red Data species, followed by regular questioning of Staff as to the regular whereabouts on site of these species. » If any of the Red Data species are confirmed to be breeding (e.g. if a nest site is found) within 500m of construction activities an avifaunal specialist is to be contacted and called to site immediately for further
	Indirect impacts: » Potential displacement of birds from the area » Habitat loss	Low	
	Cumulative impacts: » Construction activities associated with several developments in the area at one time is likely to increase the potential cumulative impact on avifauna within the region.	Low	

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			assessment of the situation and instruction on how to proceed. » Minimise generation of noise as far as possible.
	Social impacts		
The proposed expansion of the Komsberg MTS and associated infrastructure.	***Direct impacts:*** » Potential influx of construction workers employed on the project and job seekers (if not local). » Potential impact of heavy vehicles, including damage to roads, safety, noise and dust. » Job creation (positive impact).	Low	» The movement of construction workers on and off the site should be closely managed and monitored by the contractor and all construction workers must be restricted to within the construction footprint. » Incoming and outgoing vehicles should be monitored to control traffic. » Use dust suppressing measures on all gravel access roads used throughout the construction phase. » Employ local staff, as far as possible. » Attempt to provide skills development/ training for local employees.
	Indirect impacts: » Local employed people during the construction phase may learn new skills thereby making them more employable in the future (positive impact).	Low (positive)	» The proponent should employ locals as much as possible and ensure skills transfer and development is fostered as much as possible during the construction phase.
	Cumulative impacts: » Impacts on family and community relations. » Unplanned / unwanted pregnancies occur or members of the community	Low	» Attention should be given to the extension and improvement of the existing HIV / Aids awareness programmes in the area.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	are infected by an STD, specifically HIV and or AIDS.		
	Heritage and Palaeontology		
The proposed expansion of the Komsberg MTS and associated infrastructure.	***Direct impacts:*** Potential impact of the expansion of the Komsberg MTS and associated infrastructure on the archaeological, historical, fossil heritage resources and heritage remains including formal and informal burials.	Low	» No mitigation is proposed before construction starts because the archaeological remains in the area are of low significance (excluding human remains). However, if concentrations of archaeological materials are exposed during construction then all work must stop in the immediate area affecting the find for an archaeologist to investigate. » If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are potentially uncovered during construction, all work in the immediate area affecting the find must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) and/or the McGregor Museum, Kimberly, so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts would then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
			» A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers /foremen and/or the EO should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. » All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency. » The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (*e.g.* museum or university collection). » All potential palaeontological specialist work would have to conform to international best practice for palaeontological fieldwork and the study (*e.g.* data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies recently developed by SAHRA (2013).
	Indirect impacts:	NA	» NA

Activity	Impact summary	Significance (with mitigation)	Proposed mitigation
	N/A		
	Cumulative impacts: The number of renewable facilities proposed in the area can potentially increase the risk of impact on archaeological sites (if any), but in general it will be negligible.	Low	» None required as all proposed projects would have accounted for the potential impacts on heritage.

1.3 Operational Phase

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the Operational Phase of the proposed expanded Komsberg MTS and associated infrastructure are provided in the tables which follow.

1.3.1. Preferred Layout Alternative 1 (Preferred) - Komsberg MTS

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Ecological impacts		
Maintenance and operation of the Komsberg MTS	***Direct impacts:*** » Potential influx of alien invader species. » Potential disturbance of the drainage line	Low	» Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose should be permitted. » Disturbed areas should be rehabilitated and re-vegetated as soon as practically possible (given the findings of the Ecologist, vegetation species within the assessed area are known to re-establish effectively if disturbed – re-vegetation might therefore effectively occur naturally). » During the operational phase, monitor culverts to see if erosion arise and if any erosion control is necessary.
	Indirect impacts: » Potential disruption of ecosystem function & processes	Low	
	Cumulative impacts: » Potential impacts such as soil erosion and habitat loss may exacerbate the infestation of alien species.	Low	

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
			» Any stormwater within the substation site must be handled in a suitable manner, i.e. trap sediments, and reduce flow velocities.
	Visual impacts		
Maintenance and operation of the Komsberg MTS and associated infrastructure.	***Direct impacts:*** » Visual impact of the expansion of the Komsberg MTS and associated infrastructure on the visual quality of the landscape and sense of place of the region.	Low	» Maintain the general appearance of the Komsberg MTS as a whole.
	Indirect impacts: » None	N/A	» N/A
	Cumulative impacts: » The expanded substation would add slightly to the existing visual impact associated with the existing power lines and planned/ proposed renewable energy facilities in the area.	Low	» Maintain the general appearance of the substation and the associated infrastructure as a whole.
	Avifauna impacts		
Operation and maintenance of Komsberg MTS and associated infrastructure.	***Direct impacts:*** » Potential electrocutions on substation infrastructure.	Low	» Bird perch deterrents and physical exclusion barriers, frames and covers may reduce incidence of birds perching and nesting on infrastructure. » Insulating, covering or isolating hardware (e.g. >180 cm between phase conductors or phase conductors and grounded infrastructure) may reduce electrocutions and outages. » Electrocutions to be monitored and recorded, and reported to the Endangered Wildlife

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
			Trust's (EWT's) Wildlife and Energy Programme (WEP) to determine if further mitigation action is required. » Potential Faulting (caused by nesting and perching of birds on structures in the substation) may require detailed, site specific mitigation dependent on the precise design and equipment in the new substation. Upon completion of construction, or during planning, an avifaunal specialist is to be contacted to determine if mitigation is required and if so, what mitigation measures are to be implemented. » No nests may be removed, without first consulting the EWT's WEP.
	Indirect impacts: » Decrease in avifauna species in the study area due to electrocution, and habitat disturbance	Low	» As above
	Cumulative impacts: » There is existing infrastructure including overhead power lines, access roads etc. in the vicinity of the proposed site and further development will add slightly to the possibility of electrocutions and collisions.	Low	» N/A
<u>Social impacts</u>			
Social Impacts	***Direct*** » Increase skills » Increased fire risk	Low	» Social enhancement measures to be implemented.

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
			» The health and safety plan to be implemented for the expansion of the Komsberg MTS.
	Indirect impacts		N/A
	Cumulative Impacts		N/A

1.3.2. Layout Alternative 2 - Komsberg MTS

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Ecological impacts		
Maintenance and operation of the Komsberg MTS	***Direct impacts:*** » Potential influx of alien invader species. » Potential disturbance of the drainage line	Low	» Regular monitoring for alien plants at the site should occur and could be conducted simultaneously with erosion monitoring. » When alien plants are detected, these should be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur. » Clearing methods should themselves aim to keep disturbance to a minimum. » No planting or importing any alien species to the site for landscaping, rehabilitation or any other purpose should be permitted. » Disturbed areas should be rehabilitated and re-vegetated as soon as practically possible (given the findings of the Ecologist, vegetation species within the assessed area are known to re-establish effectively if disturbed – re-vegetation might therefore effectively occur naturally).
	Indirect impacts: » Potential disruption of ecosystem function & processes	Low	
	Cumulative impacts: » Potential impacts such as soil erosion and habitat loss may exacerbate the infestation of alien species.	Low	

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
			» During the operational phase, monitor culverts to see if erosion arise and if any erosion control is necessary. » Any stormwater within the substation site must be handled in a suitable manner, i.e. trap sediments, and reduce flow velocities.
Visual impacts			
Maintenance and operation of the Komsberg MTS and associated infrastructure.	***Direct impacts:*** » Visual impact of the expansion of the Komsberg MTS and associated infrastructure on the visual quality of the landscape and sense of place of the region.	Low	» Maintain the general appearance of the Komsberg MTS as a whole.
	Indirect impacts: » None	N/A	» N/A
	Cumulative impacts: » The expanded substation would add slightly to the existing visual impact associated with the existing power lines and planned/ proposed renewable energy facilities in the area.	Low	» Maintain the general appearance of the substation and the associated infrastructure as a whole.
Avifauna impacts			
Operation and maintenance of Komsberg MTS and associated infrastructure.	***Direct impacts:*** » Potential electrocutions on substation infrastructure.	Low	» Bird perch deterrents and physical exclusion barriers, frames and covers may reduce incidence of birds perching and nesting on infrastructure. » Insulating, covering or isolating hardware (e.g. >180 cm between phase conductors or phase conductors and grounded

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
			infrastructure) may reduce electrocutions and outages. » Electrocutions to be monitored and recorded, and reported to the Endangered Wildlife Trust's (EWT's) Wildlife and Energy Programme (WEP) to determine if further mitigation action is required. » Potential Faulting (caused by nesting and perching of birds on structures in the substation) may require detailed, site specific mitigation dependent on the precise design and equipment in the new substation. Upon completion of construction, or during planning, an avifaunal specialist is to be contacted to determine if mitigation is required and if so, what mitigation measures are to be implemented. » No nests may be removed, without first consulting the EWT's WEP.
	Indirect impacts: » Decrease in avifauna species in the study area due to electrocution, and habitat disturbance	Low	» As above
	Cumulative impacts: » There is existing infrastructure including overhead power lines, access roads etc. in the vicinity of the proposed site and further development will add slightly to the possibility of electrocutions and collisions.	Low	» N/A

Activity	Impact Summary	Significance (with mitigation)	Proposed Mitigation
	Social impacts		
Social Impacts	***Direct*** » Increase skills » Increased fire risk	Low	» Social enhancement measures to be implemented. » The health and safety plan to be implemented for the expansion of the Komsberg MTS.
	Indirect impacts		N/A
	Cumulative Impacts		N/A

1.4 Decommissioning Phase

Impacts associated with the decommissioning of the proposed infrastructure will be similar to those described and assessed for the construction phase. Assessment of the impacts is therefore not repeated in this report. It must however be noted that the Komsberg MTS and associated infrastructure is expected to have a lifespan of more than 25 years (with maintenance) and the infrastructure would only be decommissioned once it has reached the end of its economic life or is no longer required. During decommissioning the relevant legislation at the time would need to be complied with.

1.5 The No-Go Option

This is the option of not expanding of the Komsberg MTS and associated infrastructure. This option will result in limited or no impacts occurring on the environment. However, this option will result in the situation where the authorised/preferred bidder renewable energy projects in the area are not able to connect to the national electricity grid or in a situation where they may be required to construct long overhead power lines and additional substation infrastructure. This could potentially result in significant environmental impacts. This would result in negative impacts at a local, regional and national scale from a socio-economic and economic perspective and is not considered desirable. The negative impacts of the no go alternative are considered to outweigh the low significance of impacts of this proposed development. The no go option is therefore not preferred.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.982 must be included as **Appendix F**.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

This section provides a summary of the environmental assessment and conclusions drawn for the proposed Expansion of the Komsberg MTS and associated infrastructure which will accommodate the connection of the renewable energy projects proposed and authorised in the area. This section draws on the information gathered as part of the Basic Assessment process and the knowledge gained by the environmental consultants during the course of the process and presents an informed opinion of the environmental impacts associated with the proposed project. The following conclusions can be drawn from the Environmental Assessment Practitioner's (EAP's) findings and the specialist studies undertaken within this Basic Assessment. Impacts are expected to be similar for both layout alternatives considered.

Ecology: The extent of the development footprint area is very limited and furthermore restricted to an area already transformed by the existing Komsberg MTS infrastructure. It was found that the majority of the site can be regarded as Low Sensitivity with the exception of the rocky patch which is regarded as Medium Sensitive. Given the limited footprint of the development and the characteristics of the receiving environment, impacts resulting from construction phase as well as operational phase can be regarded as **Low Significance** with the most significant impacts being vegetation removal and the temporary disturbance of the drainage line during the upgrading/widening of the access road. The proposed upgrading/widening of the access road might result in a positive impact to the drainage line considering that the placement of a culvert will improve flow which is currently impeded. From an ecological perspective, both Layout Alternatives (1 and 2) are considered acceptable.

Avifauna: The habitat in the project site is not particularly unique and given the relatively small extent of the site, only a small area of habitat will be lost. The identified flora species that might be affected have also been found to be capable of colonizing previously disturbed areas at an effective rate. Although there are numerous bird species susceptible to electrocutions that may potentially be present on the project site, effective mitigation measures exist to mitigate this impact to a **Low Significance**. From an Avifaunal perspective, both Layout Alternatives (1 and 2) are considered acceptable.

Heritage: The overall area is considered as having a **Low Archaeological Significance**, and therefore, the development may proceed as planned. As no archaeological heritage remains were observed within both the layout alternatives (Alternative 1 and Alternative 2) nor within the vicinity of the widening of the access road during the survey there is no preferential alternative site. The developer may continue development on the Preferred Site Layout (Alternative 1) or Alternative Layout 2.

Palaeontology: The proposed expansion of the Komsberg MTS is unlikely to entail significant impacts on local fossil heritage resources. Due to the general scarcity of fossil remains as well as the extensive superficial sediment cover observed within the study area, the overall impact significance of the construction phase of the proposed expanded MTS and associated access road widening/ upgrading is considered to have **Low Significance**. The operational and decommissioning phases of the MTS are very unlikely to involve further adverse impacts on local palaeontological heritage. From a Palaeontological perspective, both Layout Alternatives (1 and 2) are considered acceptable.

Social Impact: Social impacts are expected during all phases of the development and are expected to be both positive and negative. Impacts are expected to be of **Low Significance** for the various issues identified. Impacts, which are already low, can be minimised or enhanced through the implementation of the recommended management measures. From a social perspective, both Layout Alternatives (1 and 2) are considered acceptable.

Visual Impacts: The proposed expansion of the Komsberg MTS and associated infrastructure as assessed in this Basic Assessment Report is not likely to contribute significantly to the visual impacts associated with existing Komsberg MTS and associated infrastructure. Therefore the potential visual impacts associated with the proposed Komsberg MTS and associated infrastructure are expected to have a **Low Significance** and should not alter/influence the outcome of the project decision-making. From a visual perspective, both Layout Alternatives (1 and 2) are considered acceptable.

Cumulative Impacts: Cumulative impacts from both layout alternative 1 and 2 would result from impacts arising from the expansion of the Komsberg MTS and associated infrastructure, the construction of multiple renewable energy facilities and power lines being constructed in the area. As this infrastructure is generally located within the existing Komsberg MTS boundary, the contribution of this infrastructure to the cumulative impacts in the area is considered to be of **Low Significance**.

Overall conclusion

From the EAP's findings and specialist studies undertaken, the preferred options for the proposed expansion of the Komsberg MTS (i.e. Alternative layout 1) and associated infrastructure are considered to be acceptable from an environmental perspective. The proposed expansion of the Komsberg MTS and associated infrastructure location is also considered technically and financially feasible based on detailed design and discussions with Eskom (the proponent).

Based on the findings of the studies undertaken, in terms of environmental constraints and opportunities identified through the Environmental Basic Assessment process, no environmental fatal flaws were identified to be associated with the construction of the proposed MTS expansion and associated infrastructure. Impacts are expected to be of **Low Significance** after the implementation of appropriate mitigation and it is recommended that the proposed development can therefore be implemented. With reference to the information available at this planning approval stage in the project cycle, the confidence in the environmental assessment undertaken is regarded as acceptable.

No-go alternative (compulsory)

The 'Do nothing' alternative is the option of not expanding the Komsberg MTS and associated infrastructure. This option will result in limited or no impacts occurring on the environment. However, this will potentially result in proposed and approved renewable energy facilities in the area not being able connect to the national electricity grid or in a situation where they will be required to construct long overhead power lines and additional substations that could potentially result is significantly higher environmental impacts. This would result in negative impacts at a local, regional and national scale from a socio-economic and economic perspective and is not considered desirable. The negative impacts of the no go alternative are considered to outweigh the low impacts of this proposed development. **The 'Do nothing' alternative is, therefore, not a preferred alternative.**

SECTION E: RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES**

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

The expansion of the Komsberg MTS and associated infrastructure should be implemented according to the conclusions of this report and the specifications of the EMPr to adequately mitigate and manage potential impacts associated with construction and operation activities, all of which are considered to be of **low significance**. Alternative layout 1 is nominated as the preferred alternative for implementation, but given the findings of this Basic Assessment process, both layout alternatives are considered acceptable.

The construction and operation activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation (once issued) and all other relevant environmental legislation. Relevant conditions to be adhered to include:

Construction Phase:

» All relevant practical and reasonable mitigation measures detailed within this report and within the EMPr must be implemented.
» The implementation of the EMPr for all life cycle phases of the proposed project is considered key in achieving the appropriate environmental management standards as detailed in this report.
» An independent Environmental Control Officer (ECO) should be appointed to monitor compliance with the specifications of the EMPr for the duration of the construction period.
» A pre-construction survey for the species protected under provincial legislation should be undertaken in the final approved footprint of the proposed development to determine which of these species and how many would be affected by the development.
» Protected plant species in the vicinity should be avoided as far as practically possible.

- A permit from the relevant department (NC DENC) should be obtained prior to the commencement of any activities relating to the disturbance, destruction or removal and transplanting of the affected protected plant species.

» All declared alien plants must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). The implementation of a monitoring programme in this regard is recommended.
» Surface water runoff should be managed by using a storm water management plan. During construction, erosion should be monitored while areas of vegetation are cleared.
» Care must be taken with the topsoil during and after construction on the site. If required, measures to reduce erosion to be employed, such as keeping the soil covered by straw, mulch, erosion control mats, etc., until a healthy plant cover is again established.
» Erosion control measures must be utilised during construction, operations, decommissioning and rehabilitation of the expanded MTS and access road.
» Contractors must be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find potential sites.
» The proponent should obtain all necessary permits prior to the commencement of construction.

Operation Phase:
The mitigation and management measures previously listed in this Basic Assessment Report should be implemented in order to minimise potential environmental impacts. The following mitigation measures should also be implemented:

» On-going monitoring of the Komsberg MTS site must be undertaken to detect and restrict the spread of alien plant species.
» Maintain roads to forego erosion and to suppress dust.
» Monitor rehabilitated areas, and implement remedial action as and when required.
» Restrict maintenance activities to the substation.

Is an EMPr attached?	**YES**

The EMPr must be attached as **Appendix G.**

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as **Appendix H.**

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in **Appendix I.**

Any other information relevant to this application and not previously included must be attached in **Appendix J.**

KAREN JODAS

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDICES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest and the EAP's Affirmation

Appendix J: Additional Information