

# WAG 'N BIETJIE 400KV MTS PROJECT

Construction of the Wag 'n Bietjie Main Transmission Substation (MTS) and a 132kv Powerline between the Wag 'n Bietjie MTS and the Vetlaagte MTS : Situated on a Portion of the Remaining Extent of Wag en Bittje No 5; the Remaining Extent of Wag 'n Bietjie Annex C No 137; and the Remaining Extent of Vetlaagte No 4  
De Aar, Northern Cape

## EXECUTIVE SUMMARY

### INTRODUCTION AND PURPOSE OF THE PROJECT

MTS Wag n Bietjie (Pty) Ltd ("the Applicant") has appointed Landscape Dynamics Environmental Consultants to apply for Environmental Authorisation for this Wag 'n Bietjie 400kV MTS Project with the Department of Forestry, Fisheries & Environment (DFFE), which is the Competent Authority for this project (refer to paragraph 1.1.2 below for more detail regarding the Competent Authority).

The existing Eskom Hydra MTS does not have enough capacity to fulfil the requirement of connecting all the electricity generated by numerous existing, planned and approved renewable energy developments to the national grid. The electrical infrastructure associated with the Wag 'n Bietjie 400kV MTS Project will connect the electricity generated from a number of renewable energy projects within the macro area to the Eskom national grid.

The Renewable Independent Power Producer Programme (REIPPP) was developed in support of the Department of Energy's Integrated Resource Plan (IRP) to take nationally appropriate carbon dioxide mitigation action to reduce emissions. The Wag 'n Bietjie MTS Project will form an integral part in some of the solar facilities in the De Aar macro area that will be bid in the next REIPPP round. The proposed MTS will also support and connect to the SEF's that received Environmental Authorisation and Preferred Bidder status. Bidding will not be possible without an authorised solution to feed the electricity into the national grid.

The following is confirmed and motivated in the Basic Assessment Report (BAR):

- It is the intention of the applicant to submit this proposed Wag 'n Bietjie 400kV MTS Project in future REIPPPP rounds and /or in similar procurement programmes related to the IRP.
- The DFFE is the competent authority for this application.
- Activity 9 of Listing Notice 2 is triggered, however, the project site falls within a Strategic Transmission Corridor (STC) which implies that a Basic Assessment process has to be undertaken and the shortened timeframe for approval or refusal of the Final BAR is 57 days (instead of 107 days).
- As per the DFFE's requirement in terms of Electrical Grid Infrastructure (EGI) within a STC, a pre-negotiated MTS Site and associated powerline routes must form part of the application. Proof of pre-negotiation of the MTS site, LILO 132kV Powerline Routes and Road Upgrade is provided in the BAR.

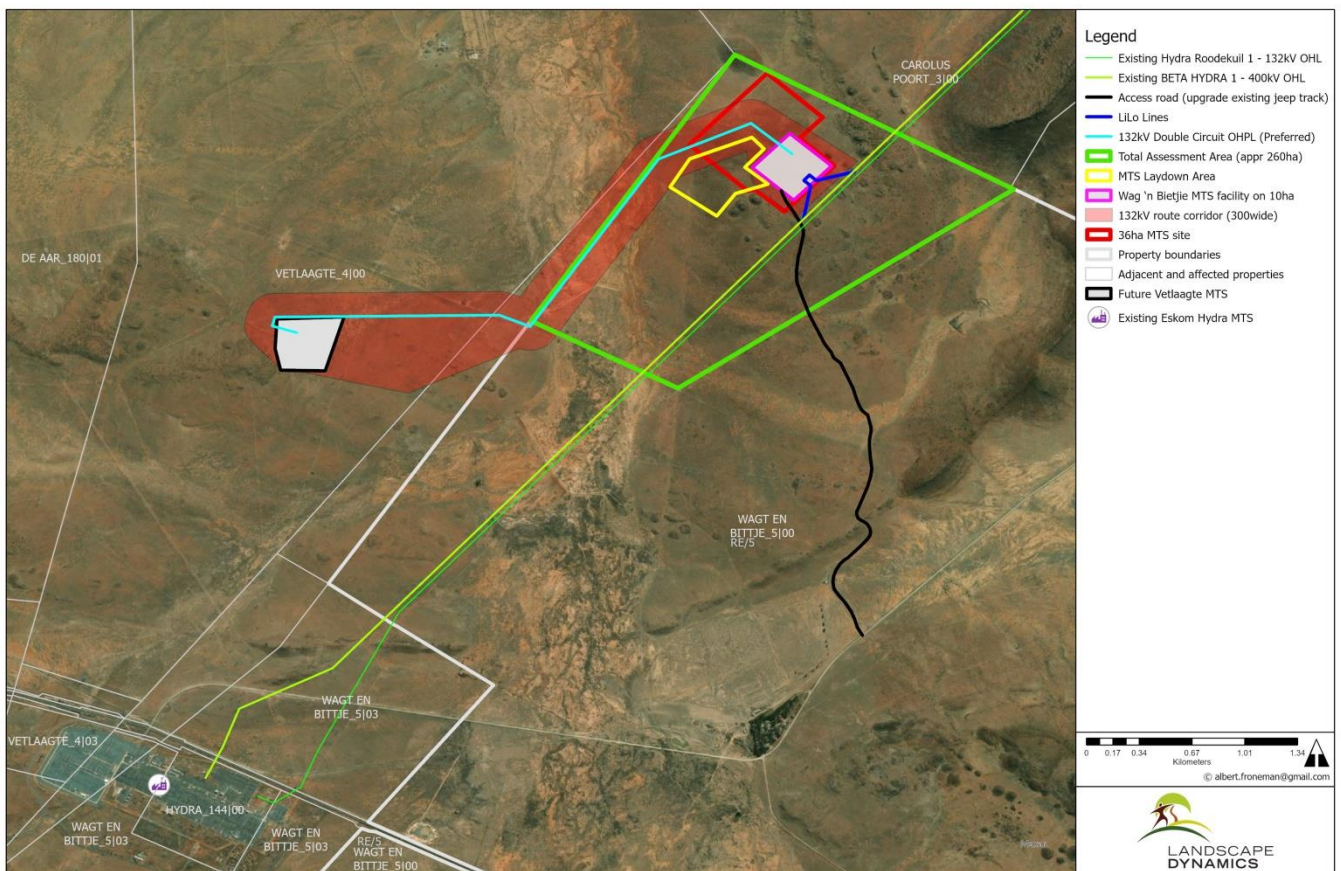
## LOCALITY

The project area is situated between 9km and 11km south-east of the town of De Aar in the Northern Cape Province.

The following farms are directly affected by the proposed project:-

- The Remaining Extent of the Farm Wagt en Bittje No 5
- Portion 1 of the Farm Vetlaagte No 4
- The Remaining Extent of the Farm Vetlaagte No 4

SITE LAYOUT MAP - Wag 'n Bietjie MTS Project  
(on the Remaining Extent of the Farm Wagt en Bittje No 5, De Aar, Northern Cape Province)



## PROJECT COMPONENTS

Infrastructure	Specifications
Development footprint (permanent infrastructure)	<ul style="list-style-type: none"> <li>A 36-hectare site is required by Eskom to be authorised to allow for future expansion of the MTS. The Wag 'n Bietjie MTS facility will initially have a construction footprint of 10ha within this 36ha area.</li> </ul>
Main Transmission Substation (MTS)	<ul style="list-style-type: none"> <li>Capacity : 400kV</li> <li>Height of structures: <ul style="list-style-type: none"> <li>Stringer strain beam: Up to 20m</li> <li>Tubular busbar: Up to 13m</li> </ul> </li> <li>Associated Infrastructure: <ul style="list-style-type: none"> <li>Lighting</li> <li>Fencing</li> <li>Buildings required for control, storage, operations and maintenance</li> </ul> </li> </ul>
Loop-In Loop-Out (LiLo)	<ul style="list-style-type: none"> <li>The connection of the Wag 'n Bietjie 400kV MTS to the national grid will be via new loop-in loop-out 400kV power lines of approximately 600m total length that will connect into the existing 400kV Beta-Hydra 1 power line.</li> </ul>
132kV MTS Connection Powerline(s)	<ul style="list-style-type: none"> <li>There exist different possible connection scenarios for Wag 'n Bietjie MTS to meet the connection requirements of renewable energy projects within the vicinity of De Aar to the national grid.</li> <li>The connection scenarios are reliant on aspects such as grid capacity, Eskom requirements and the specific requirements of renewable energy projects connecting to the national grid via the MTS.</li> <li>To cater for the possible connection scenarios the Applicant requires authorisation for the following connection infrastructure: <ul style="list-style-type: none"> <li>Up to a maximum of five adjacent 132kV overhead powerlines within the assessed corridor</li> <li>Approximately 3,8km</li> <li>Authorisation of a 300m wide corridor as assessed</li> </ul> </li> </ul>
Potential upgrades required at the Vetlaagte MTS	<ul style="list-style-type: none"> <li>400kV and 132kV yard extensions</li> <li>new 500MVA 400/132kV transformer</li> <li>400kV busbar extensions</li> <li>132kV busbar extensionnew 132kV feeder bay (maximum of five)</li> </ul>
Access and internal roads	<ul style="list-style-type: none"> <li>The access road to the Wag 'n Bietjie MTS is an existing gravel road which will be upgraded to a maximum width of 8 meters. The total length of this road is approximately 3km.</li> <li>Internal access roads within the MTS site of less than 8m wide will be constructed</li> <li>An access route of approximately 6m wide will be constructed inside the 400kV LiLo line servitude. This road will be used for construction and later maintenance purposes.</li> <li>An approximately 6m wide access road will be constructed along the line route for construction and maintenance purposes – this road will be inside the powerline servitude</li> </ul>
Laydown area	<ul style="list-style-type: none"> <li>A temporary construction site area of approximately 14ha directly adjacent to the MTS will be required.</li> <li>All temporary infrastructure will be rehabilitated following the completion of the construction phase, where it is not required for the operation phase.</li> </ul>

Storage of diesel	<p>Diesel storage of less than 80m<sup>3</sup> for the MTS for the following purposes:-</p> <ul style="list-style-type: none"> <li>○ During construction, diesel is required for construction vehicles as well as generators for the construction camp and commissioning whilst waiting for the Eskom grid connection works to be completed</li> <li>○ During operations, diesel is required for Operations &amp; Maintenance vehicles at the PV plants but also required for backup diesel generators at the substations. The Generators supply auxiliary power to the substation's protection and communications systems, should there be outages on the grid. This is an Eskom requirement together with a battery room at the substations to act as UPS for these critical systems.</li> </ul>
Temporary Services	During the construction phase, temporary sanitation facilities will be provided (i.e. chemical toilets) and these toilets will be regularly serviced by a licensed company.

## LEGAL REQUIREMENT

### ***National Environmental Management Act (Act 107 of 1998)***

This application is done in terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations of December 2014, as amended in April 2017 (Government Notice Nr 326). Environmental Authorisation is requested for the following listed activities:

Listing Notice 1		
12	<p>The development of—</p> <ul style="list-style-type: none"> <li>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</li> <li>(ii) <u>infrastructure or structures with a physical footprint of 100 square metres or more;</u></li> </ul> <p><u>where such development occurs—</u></p> <ul style="list-style-type: none"> <li>(a) <u>within a watercourse;</u></li> <li>(b) in front of a development setback; or</li> <li>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</li> </ul> <p>excluding—</p> <ul style="list-style-type: none"> <li>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</li> <li>(bb) where such development activities are related to the development of a port or</li> </ul>	<p>The 132kV powerline will cross the delineated watercourse for a length of 1,2km (1 200m) and will involve the construction of a service/ maintenance road within the servitude with a width not exceeding 8m. The total area affected will ultimately involve 9 600m<sup>2</sup>.</p> <p>The existing access gravel road will cross the delineated watercourse for a length of 0,2km. The road will be upgraded and widened to a maximum of 12 m wide. The area that will thus be affected resulting from the access road upgrade will ultimately involve 2 400m<sup>2</sup>.</p>

	<p>harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area;</p> <p>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</p> <p>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared</p>	
Nr 19	<p>The infilling or depositing of any material of more than 10m<sup>3</sup> into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;- but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>(e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	<p>More than 10m<sup>3</sup> will be deposited / removed from a watercourse resulting from construction of the main access road and the service/maintenance road within the 132kV powerline servitude. The exact volumes will be determined during the design phase of the project.</p>
24	<p>The development of a road—</p> <p>(i) for which an environmental authorisation was obtained for the</p>	<p>An approximately 8m wide access road will be constructed along the line route for construction and maintenance</p>

	<p>route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or</p> <p>(ii) <u>with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</u></p> <p>but excluding a road—</p> <p>a) which is identified and included in activity 27 in Listing Notice 2 of 2014;</p> <p>b) where the entire road falls within an urban area; or</p> <p>c) which is 1 kilometre or shorter.</p>	<p>purposes – this road will be inside the powerline servitude for the entire length of the line which is approximately 3,8km.</p> <p>The existing access gravel road will cross the delineated watercourse for a length of 0,2km. The road will be upgraded and widened to a maximum of 12m wide. The length of this road is approximately 3km.</p>
27	<p>The clearance of an area of 1 hectares of more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for</p> <p>(i) The undertaking of a linear activity</p> <p>(ii) Maintenance purposes undertaken in accordance with a maintenance management plan</p>	<p>The MTS will be constructed in an area of approximately 10 hectares; thus indigenous vegetation of 1 hectare or more will be removed.</p>
28	<p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</p> <p>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</p> <p>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</p> <p>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	<p>The MTS be constructed in an area of approximately 10 hectare and will be constructed on land recently and currently used for agricultural purposes – mostly for grazing.</p>
48	<p><u>The expansion of</u></p> <p>(i) <u>infrastructure or structures where the physical footprint is expanded by 100 square metres or more;</u> or</p> <p>(ii) dams or weirs, where the dam or weir,</p>	<p>Infrastructure (existing gravel access road) of more than 100m<sup>2</sup> will be upgraded within a watercourse, The existing access gravel road will cross the delineated watercourse for a length</p>

	<p>including infrastructure and water surface area, is expanded by 100m<sup>2</sup> or more;</p> <p><u>where such expansion occurs—</u></p> <ul style="list-style-type: none"> <li>a) <u>within a watercourse;</u></li> <li>b) in front of a development setback; or</li> <li>c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</li> </ul> <p>excluding—</p> <ul style="list-style-type: none"> <li>(aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</li> <li>(bb) where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</li> <li>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</li> <li>(dd) where such expansion occurs within an urban area; or</li> <li>(ee) where such expansion occurs within existing roads, road reserves or railway line reserves.</li> </ul>	<p>of 0,2km. The road will be upgraded and widened to a maximum of 12m wide. The total area ultimately affected will involve 9 600m<sup>2</sup>.</p>
56	<p><u>The widening of a road by more than 6 metres</u>, or the lengthening of a road by more than 1 kilometre—</p> <ul style="list-style-type: none"> <li>(i) where the existing reserve is wider than 13,5 meters; or</li> <li>(ii) where no reserve exists, where the existing road is wider than 8 metres;</li> </ul> <p>excluding where widening or lengthening occur inside urban areas.</p>	<p>The existing access gravel road will be upgraded and widened to a maximum of 12m wide. Current road width differs between approximately 6 and 8 meters. The length of this road is approximately 3km.</p>

### Listing Notice 2

*Even though Listing Notice 2 calls for a full Scoping and EIA to be undertaken, the project site falls within a Strategic Transmission Corridor which implies that a Basic Assessment process has to be undertaken regardless if Listing Notice 2 is being triggered or not.*

9	<p>The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —</p> <ol style="list-style-type: none"> <li>a) temporarily required to allow for maintenance of existing infrastructure;</li> <li>b) 2 kilometres or shorter in length;</li> <li>c) within an existing transmission line servitude; and</li> <li>d) will be removed within 18 months of the commencement of development.</li> </ol>	<ul style="list-style-type: none"> <li>• A 400kV substation will be constructed outside an urban area.</li> <li>• The LiLo powerlines will also have a capacity of 400kV.</li> </ul>
15	<p>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for</p> <ol style="list-style-type: none"> <li>(i) the undertaking of a linear activity; or</li> <li>(ii) maintenance purposes undertaken in accordance with a maintenance management plan</li> </ol>	<ul style="list-style-type: none"> <li>• The substation will be constructed in an area of approximately 10 hectares, but authorisation is required for 36 hectares to adhere to Eskom requirement.</li> <li>• Indigenous vegetation of more than 20 hectares may thus be removed over time.</li> </ul>

The Basic Assessment process followed is summarised as follows:



### Screening

- Purpose: Demarcating obvious no-go areas in order to inform the development proposal
- Key specialists (avifauna, aquatic, fauna & flora, heritage & agriculture)
- Site visit
- Compiled Initial Sensitivity Maps and Screening Reports

### Background Information Document & Public Participation

- Purpose: obtaining public and government input /concerns/objections at start of project
- Compiled Background Information Document
- Distributed for a 30-day commenting period to all on IAP Register

### Public Participation

- Purpose: public participation in line with NEMA Regulations and obtaining public input/objections/concerns
- Onsite notifications
- Newspaper advertisements

### Specialist Studies

- Desktop assessments
- Site investigations
- Impact Assessment Reports / Statement Letters

### Draft Basic Assessment Report and Public Participation

- Purpose: project detail, alternative assessment, responses to public input, impact assessment
- Compiled Draft Basic Assessment Report
- Distributed for a 30-day commenting period

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### Final Basic Assessment Report

- Purpose: Respond to public comment on the dBAR, incorporate comment into development proposal, finalise development proposal and layout
- fBAR may be distributed for a 30-day commenting period if substantial changes to the dBAR were made

### Submission of Final Basic Assessment Report to DFFE

- Purpose: DFFE review for refusal / granting of Environmental Authorisation

### Informing IAPs of the Environmental Authorisation

- Informing IAPs of the EA and their right to appeal
- 20-day appeal period

### ***The National Water Act (Act No 36 of 1998)***

The aquatic environment was investigated by the relevant specialist and it was concluded that disturbance will take place within the relevant delineated watercourses and Section 21(c) and/or 21(i) of the NWA will thus be triggered. It is therefore a requirement to apply for Water Use Authorisation (WUA) for this project to the Department of Water & Sanitation who is the administering body. The aquatic specialist for the project confirmed that General Authorisation (GA) will be applicable. The applicant is in the process of applying for the GA. This GA is only required for the 132kV powerline and the upgrade of the existing access road where it crosses the delineated watercourse with buffer zones.

### ***The National Heritage Resources Act (Act 25 of 1999)***

The proposed project falls within the scope of Section 38 of the National Heritage Resources Act and the applicable activities include the following:

- any development or other activity which will change the character of a site exceeding 5 000m<sup>2</sup> in extent
- linear developments of 300m or longer.

The SA Heritage Resources Agency is the commenting authority in this regard and their comment will be included and addressed in the Final BAR.

## **ALTERNATIVES**

Two MTS site alternatives with their associated powerline route corridors were assessed and are described in this Draft BAR. Sufficient motivation is given as to why the Preferred Site Alternative was put forward for negotiations with the landowner and is recommended for approval. The pre-negotiation agreements will be submitted with the Final BAR. **As per the DFFE requirement, further discussion regarding alternatives is however not required and impact will not be assessed further in the Final BAR.**

The following aspects regarding the alternatives considered are applicable to this project:

- *Location*
  - The preferred location of the MTS has been identified by the applicant as the most viable in terms of future planning in the macro area. The location of the Wag 'n Bietjie MTS is strategically placed relatively close to the Vetlaagte MTS but will connect via the proposed 400kV LiLo powerlines to the 400kV Beta-Hydra 1 powerline to feed into the existing Eskom Hydra MTS. The proposed Vetlaagte MTS will connect to the 400kV Perseus-Hydra power line, thereby connecting the Vetlaagte MTS to the existing Eskom Hydra MTS. The Wag 'n Bietjie MTS will enable the evacuation of the generated electricity from various solar and wind farms and will feed this electricity into the national Eskom grid. Note that this project includes LILO lines that will connect the MTS directly to the 400kV Beta-Hydra 1 Powerline that feeds electricity into the Eskom Hydra MTS.

- The Wag 'n Bietjie MTS infrastructure therefore serves as a grid connection solution for renewable energy facilities which are intended to be bid (or have been bid) in current or future rounds of the REIPPP. The REIPPP forms part of the programmes assisting the IRP in reaching its goals. The DFFE is the competent authority for this application.

The location of the preferred 132kV powerline between the Wag 'n Bietjie MTS and the Vetlaagte MTS is the shortest route between the two facilities and runs as far as possible along the Wag 'n Bittje farm boundary. The crossing of the delineated water feature plus buffer zone (the wider floodplain area of a Brak River tributary), is not possible to avoid; therefore water use authorisation is required for the purpose of the 132kV powerline and the upgrade of the existing access road. These crossings have been confirmed acceptable with the implementation of appropriate mitigation measures from the aquatic specialist point of view.

- *Extent of the MTS site to be approved*

Even though a site of 10ha in extent was initially proposed for the MTS project area; Eskom confirmed their requirement for a larger area of 36ha to allow sufficient area for future expansion. The relevant specialists had been approached to consider the enlarged area which was already assessed as part of the study area of 275ha during the initial specialist investigations. No objections and/or concerns were raised for this enlarged area to be approved.

- *Design, technology and operational aspects*

The design, technology and operational aspects of substations and power lines are guided strictly by Eskom standards, stipulations and requirements and it is not within the ambit of the Applicant to change Eskom standards.

The Applicant is satisfied that the pre-negotiated MTS site and route meet the technical requirements for this project.

- *Environmental Considerations*

Support for MTS Site Alternative 1 was given by all the specialists (fauna & flora; aquatic; bird, agricultural and heritage specialists) on condition that proposed mitigation measures are implemented.

- *Landowner Consent*

The preferred MTS site alternative and proposed powerline routes were presented in the pre-negotiation agreement with the relevant landowners attached to the Basic Assessment Report in Appendix F(3)

- *Conclusion re alternative assessment*

There is no justification and/or restrictions from both a technical and environmental point of view to change the position of the MTS and associated powerline routes.

## THE DFFE SCREENING TOOL

Based on the DFFE Screening Tool Report, the site verification, specialist input and direct relevant experience from the EAPs, it was concluded that the following specialist studies were required for the project:-

- Terrestrial (Fauna & Flora) Impact Assessment
- Freshwater Impact Assessment
- Bird Impact Assessment
- Heritage & Archaeological Impact Assessment
- Palaeontological Assessment
- An Agricultural Impact Statement

Engineering input required was an Engineering Hydrological Assessment and Stormwater Management Plan.

All recommendations in terms of mitigation and planning form part of the EMPr.

## ENVIRONMENTAL SPECIALISTS ASSESSMENTS & ENGINEERING REPORT

All the specialist studies summarised below concluded that the expected negative impacts associated with the project can be mitigated to acceptable levels.

### ***Terrestrial Ecological Specialist Assessment (Fauna & Flora)***

- Neither of the two regional vegetation types that occur on site and in surrounding areas are listed or of conservation concern.
- The entire site is within an Ecological Support Area (ESA), but this extends across vast distances in all areas close to De Aar. There are therefore no options outside of this ESA for the project.
- The protected tree *Boscia albitrunca* occurs regularly in specific parts of the site, namely within the low hills and rocky outcrops. This is within the assessment area, but not within the proposed MTS project footprint area. Therefore the proposed infrastructure does not affect any individuals of this species.
- No plant species of concern were found on site. One rare plant species *Tridentea virescens* could potentially occur in the general area but was not seen. It occurs across a very wide geographical area and loss of a small area of habitat will not affect the species.
- One Near Threatened reptile, the *Psammobates tentorius* (tent tortoise), was seen nearby but not within the project area. The animal is mobile and could occur anywhere in this general area, or further away. This species is threatened by general habitat loss and/or degradation across its entire range, which includes the entire arid parts of South Africa,

extending into Namibia. Loss of a small area of habitat for the proposed projects will not adversely affect the species.

- Impacts of the proposed project components are relatively insignificant in comparison to the approved solar PV projects in neighbouring areas.
- Considering that the access road is existing and will only be upgraded, the proposed access road is also considered to be acceptable from an ecological (Terrestrial Biodiversity and Terrestrial Plants) perspective and can be approved following the implementation of relevant mitigation measures described in the specialist report

### ***Aquatic Specialist Impact Assessment***

The aquatic features within the study area comprise ephemeral unnamed tributaries of the Brak River. The Brak River is a seasonal tributary within the Lower Orange River System. The river flows approximately 5km to the north of the study area with a larger tributary crossing the eastern extent of the farm, flowing in a northerly direction to join the Brak River. Associated with these larger watercourses are wide floodplains and some depression wetlands. Roads and a few dams have been constructed within the wide floodplains. Erosion control measures have been constructed along the roads due to the high erosion potential in the floodplain. Smaller watercourses and drainage features drain into the larger river corridors.

A risk assessment as per requirement of the Department of Water & Sanitation has been undertaken to inform the water use authorisation process. Considering the scope of works proposed and the fact that there will be minimal works undertaken within the delineated aquatic features within the site, the risk of altering the ecological status of the adjacent aquatic features is considered to be low. It is thus recommended that the proposed activities fall within the ambit of General Authorisations for Section 21(c) and (i) water use activities.

### ***Avifauna Specialist Impact Assessment***

The area of habitat destruction associated with the footprint of the substation and the grid connection corridor are relatively small in extent compared to the proportion of untransformed habitat available in the area, and do not represent a fatal flaw that would prevent the proposed development from proceeding. A number of Red Data species and species vulnerable to collisions with power lines exist in the area broader area of the proposed power line corridor and the impact of collisions to birds has a low significance even with the implementation of mitigation measures. Many existing power lines traverse the area; therefore most of the potential impacts already exist in and around the project site. The proposed grid connection corridor is therefore unlikely to significantly contribute to the negative impacts that already exist in the area and unlikely to have a significant negative impact on species of conservation concern or the functioning and goals of the IBA.

While a number of Red Data species, and species vulnerable to habitat destruction and displacement exist in the area of the proposed development, the relatively small size of the development footprint makes it highly unlikely that the proposed development will have a significant negative impact on the avifauna in the area following the implementation of mitigation measures.

Overall, the impacts of the substation, powerline routes and the access road upgrade are unlikely to generate significant negative impacts on avifauna, therefore from an avifaunal perspective the proposed project can be authorised if the recommendations and mitigation measures are implemented accordingly.

### ***Heritage Impact Assessment (Includes Archaeology and Palaeontology)***

#### Archaeology

The overall archaeological sensitivity of the development area with regard to the preservation of Early, Middle and Later Stone Age archaeology as well as Khoe and San heritage, early colonial settlement is regarded as very high sensitivity. Despite this, the field assessment conducted for this project has demonstrated that the specific area proposed for development has low sensitivity for impacts to significant archaeological heritage.

Two archaeological sites of significance were identified in the field assessment. In order to ensure that the sites are not negatively impacted by the proposed development, it is recommended that a no-go development buffer of 30m is implemented around Site 004 (Still bay point, blades, hornfels, burnt bone, on top of dolerite outcrop with good views) and a no-go development buffer of 100m is implemented around Site 014 (Middle Stone Age (MSA) & Later Stone Age (LSA) with mainly LSA hornfels flakes and pottery).

These sites and their respective buffers should be indicated on site development maps during the construction phase of the project. Furthermore, during the operational phase of the projects, relevant staff of the facility should be made aware of these sites and proper training provided regarding appropriate behaviour at archaeological sites.

#### Palaeontology

Based on experience, other reports and the lack of any significant previously recorded fossils from the area, it is unlikely that any fossils would be preserved in the Tierberg Formation or Adelaide Subgroup. Nonetheless, a Fossil Chance Find Protocol should be added to the EMP. If fossils are found by the environmental officer, or other responsible person once excavations for foundations, infrastructure and amenities have commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample

### ***Agricultural Compliance Statement***

The conclusion of this assessment is that the proposed development will not have an unacceptable negative impact on the agricultural production capability of the site. This is substantiated by the following:

- Overhead transmission lines have no agricultural impact because all agricultural activities that are viable in this environment, can continue completely unhindered underneath transmission lines.
- The direct, permanent, physical footprint of the development that has any potential to interfere with agriculture, is entirely insignificant within this agricultural environment.
- The affected land has very limited agricultural potential.

The proposed upgrade of the existing access road will also have insignificant impact and will not change the original agricultural assessment in any way. No changes or additions to the mitigation measures for agricultural impacts that were recommended in the original assessment are required.

### ***Hydrological Assessment and Outline of the Stormwater Management Plan***

The purpose of the report provided was not to be a design report, but rather to provide guidance to ensure compliance by the eventual design, implementation and operational teams.

Prior to the detailed design stage and implementation, a physical high resolution topographical survey needs to be conducted. Based on this the development site drainage needs to be designed on this elevation basis, with the full consideration of the final infrastructure layout on site. The final infrastructural layout and drainage design mutually impact on each other and will therefore be an iterative process.

## **PUBLIC PARTICIPATION**

The public participation process followed was approved by the DFFE on 13 December 2021 and the following actions were taken to date:

Initial advertising took place combined for the Wag 'n Bietjie MTS project and the four adjacent Vetlaagte Projects:

- ❖ Three laminated A2 onsite notifications had been placed on site on 19 October 2021 along public accessible roads & entrances to the two relevant properties.
- ❖ A newspaper advertisement was placed in Die Echo/Midland Nuus on 28 January 2022
- ❖ A comprehensive list of Interested & Affected Parties has been compiled and is being updated throughout the EIA process.
- ❖ A Background Information Document (BID) was prepared on 11 January 2022 (via email and/or registered post where e-mail addresses were not available) to everyone on the IAP list.

The Draft BAR (this document) has now been distributed for public review and input. Comment/objections received will be carefully assessed and addressed. The responses thereto will be included in the Final BAR. It is however not expected that objections will be received due to the numerous solar farm and associated infrastructure projects in the macro area.

## **IMPACT ASSESSMENT**

The main potential negative impacts associated with the project are the following:

## ***Expected Negative Impacts***

### *Planning and Design Phase*

- Permanent loss of agricultural land
- Risk of failure of structures
- Risk of erosion
- Impact on terrestrial and aquatic habitat
- Impact on avifauna

### *Construction Phase*

- Impact on natural habitat
- Impact on avifauna
- Impact on aquatic environment
- Impact on heritage resources
- Impact on palaeontological resources
- Risk of groundwater pollution
- Risk of erosion
- Impact of an uncontrolled labour force
- Noise and dust (air quality)

### *Post- Construction / Operational Phase*

- Continuous impact on natural habitat
- Impact on avifauna
- Impact on aquatic environment
- Risk of erosion
- Continuous risk of groundwater pollution

It was concluded that, after the application of proposed mitigation measures, all negative impacts can be mitigated to acceptable levels.



### ***Expected positive impacts***

- The need for this project relates directly to the need for new renewable energy projects in South Africa. This project will assist directly with reducing current generation capacity constraints in the country. The proposed electrical infrastructure associated with the Wag 'n Bietjie Project (400kV MTS and associated power lines) outside the town of De Aar in the Northern Cape, will connect the electricity generated from a number of authorised solar PV farms as well as other renewable energy projects within the macro area, to the Eskom national grid.
- The existing Eskom Hydra MTS does not have enough capacity to fulfil the requirement of connecting all the electricity generated by numerous existing, planned and approved renewable energy developments to the national grid. Without the proposed electrical infrastructure it will not be possible for new renewable projects to connect to the national grid in the De Aar area.
- All the advantages of additional, clean, renewable electrical supply to the national Eskom grid will be realised. An opportunity to reduce South Africa's very high carbon emissions will be utilised.
- Employment and business opportunities with the opportunity for skills development and on-site training will be created through the establishment of the Wag 'n Bietjie MTS and associated powerlines mostly during the construction phase.

## **ENVIRONMENTAL IMPACT STATEMENT**

The following is concluded:-

- The proposed Wag 'n Bietjie MTS Project is planned in a legal, pro-active and structured manner taking all development components, potential and restrictions into account.
- All relevant legal requirement in terms of the Environmental Impact Assessment Regulations published in 2014, as amended were complied with. This Basic Assessment Report includes all relevant proceedings, findings and recommendations which resulted from this study.
- The specialist input obtained is comprehensive and effective in providing an assessment of the status quo of the study area, identifying potentially sensitive areas and issues of concern as well as identifying impact that require re-consideration of alternatives.
- Significant and reasonable actions were taken to identify and notify all Interested & Affected Parties that include government departments, relevant authorities, general stakeholders and potentially affected landowners of the project. No objections had been received regarding this project.
- The infrastructure and preferred alternative as motivated and recommended for authorisation in this document will, after the application of mitigation measures, have a minimal and acceptable impact on the environment. This will be accomplished through the implementation of the mitigation measures specified in the Environmental Management Programme (EMPr) that is included as Appendix E of the Basic Assessment Report.

- The EAPs are confident that the infrastructure and route corridors presented are acceptable and viable. The assessment of additional alternative sites and/or routes is not justified.
- There is no reason from a technical, environmental and social perspective why the pre-negotiated Wag 'n Bietjie MTS Project could not be authorised.

## RECOMMENDATIONS

It is recommended that Environmental Authorisation be granted to MTS Wag n Bietjie (Pty) Ltd for the Wag 'n Bietjie 400kV MTS Project which includes the construction of the Wag 'n Bietjie MTS, 400kV Loop-in Loop-Out (LiLo) lines and an approximately 3,8km 132kv powerline between the Wag 'n Bietjie MTS and the Vetlaagte MTS with ancillary facilities that includes the upgrade of an existing gravel road.

It is recommended that the following be included in the Environmental Authorisation:

- The Wag 'n Bietjie MTS will affect 10ha; however, it is requested that a total area of 36ha required by Eskom for future expansion be authorised.
- A 132kV power line route corridor of 300m wide was assessed and it is requested that the *corridor* be approved as part of the environmental authorisation and not the servitude only. This will allow for reasonable adjustments within the corridor during the final design phase of this project without having to go through another environmental authorisation process. Only the required 31m wide servitude will be registered within the route corridor, not the entire corridor.
- The Environmental Management Programme must be approved and the implementation thereof should be a condition of authorisation. It is however recommended that the following plans be compiled and included as part of the EMPr before construction commences. Approval of these plans by the DFFE at this time is NOT required:
  - Geotechnical Assessment
  - Detailed Storm Water Management Plan
  - Alien Invasive Management Plan
  - Habitat Restoration Plan
- The Environmental Authorisation must be valid for a period of 10 years during which construction must commence.

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