APPENDIX G

ALTERNATIVE ASSESSMENT REPORT FOR THE RECTIFICATION OF THE UNLAWFUL CONSTRUCTION AND OPERATION OF THE 4.5KM 50kV POWERLINE BETWEEN ESKOM HELIOS MAIN TRANSMISSION SUBSTATION AND TRANSNET HELIOS TRACTION FEEDER SUBSTATION WITHIN THE JURISDICTION OF HANTAM LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE

DATE: FEBRUARY 2022

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DOC CONTROL		
Alternative Assessment Report	07 February 2022	Draft

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DOCUMENT CONTROL

Project title:

Draft Section 24 G Alternative Assessment Report for the rectification of the unlawful construction and operation of the 4.5km 50kv Bypass Powerline between Eskom Helios Main Transmission Substation and Transnet Helios traction Feeder Substation within the jurisdiction of Hantam Local Municipality in the Northern Cape Province.

QUALITY CONTROL:

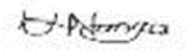
Report:	Compiled By:	Peer-Reviewed and Authorised By:
Draft Scoping Report	Hulisani Nunga  _____	Rejoice Aphane  _____ Munyadziwa Rikhotso  _____

TABLE OF CONTENTS

1. DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ACTIVITY, SITE AND LOCATION WITHIN THE SITE

The identification of alternatives is an important component of the EIA process. The identified alternatives were assessed in terms of environmental acceptability, technical as well as economic feasibility during the S24G application process, wherein the preferred alternatives are highlighted and presented to the Authorities.

1.1. DETAILS OF ALTERNATIVES CONSIDERED

This section describes the alternatives considered, which include the site, technical, and no-go alternatives which are discussed hereunder:

1.1.1. SITE ALTERNATIVES

A 200m corridor was studied during the Basic Assessment application process in 2014 for the proposed 15km 50kV powerline to ensure construction on the best and least sensitive site within the corridor. The Department of Forestry, Fisheries and the Environment (DFFE) approved site Alternative 1 (See figure 1) and construction commenced in August 2020. However, Transnet and the landowner could not reach an agreement to construct a portion of the powerline between the Helios MTS and towers HEL/8TRA22 on the authorised site. As a result Transnet constructed and commissioned a bypass powerline (See Figure 2) in the existing servitude, and as such there is no site alternative for the bypass powerline.

Table 1: Coordinates of the Bypass Powerline

Coordinates Points	Coordinates of the bypass deviation powerline	
	Latitude	Longitude
Start point	30° 29' 49.02"S	19° 33' 39.79"E
Middle point	30° 28' 54.45"S	19° 33' 35.46"E
End point	30° 27' 37.79"S	19° 34' 39.09"E

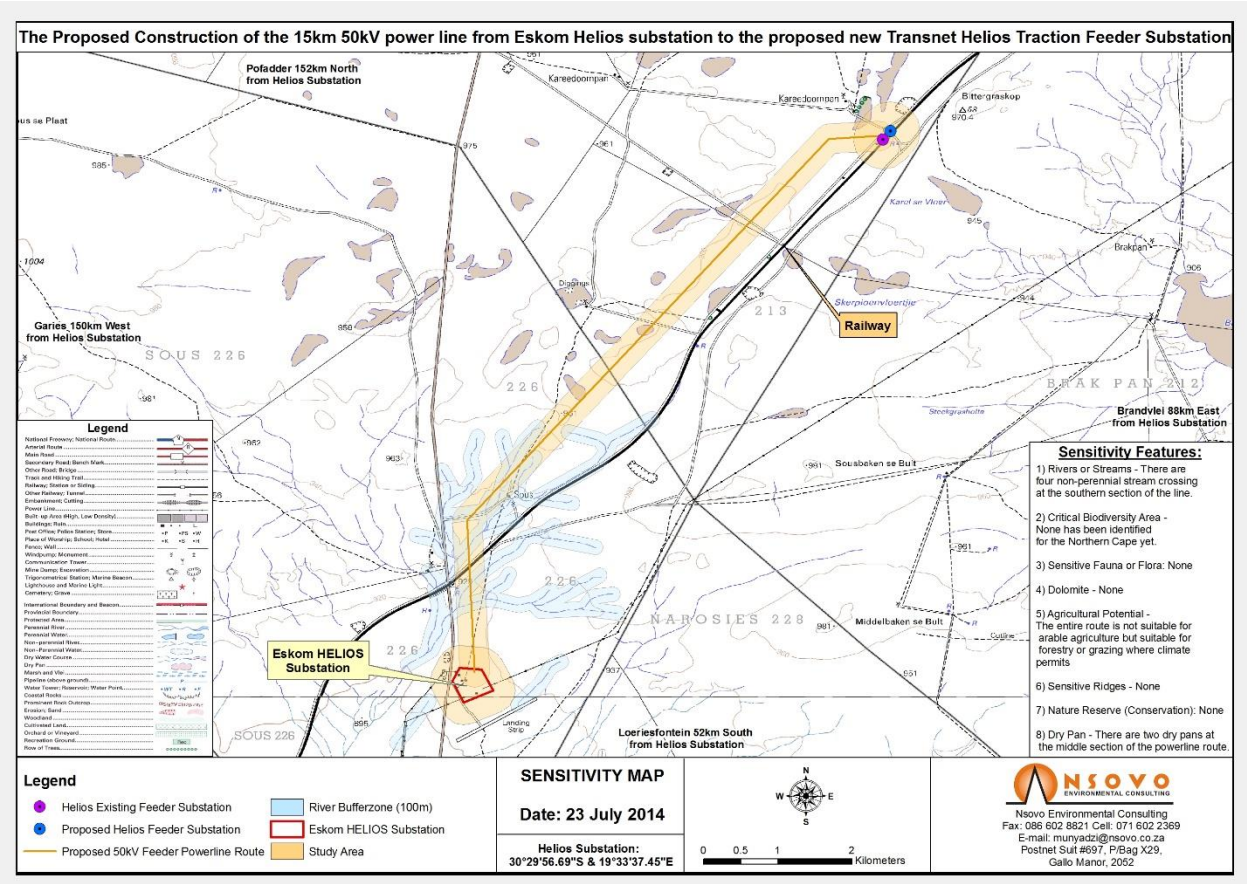


Figure 1 Map indicating Site Alternative 1 approved by the DFFE in 2015

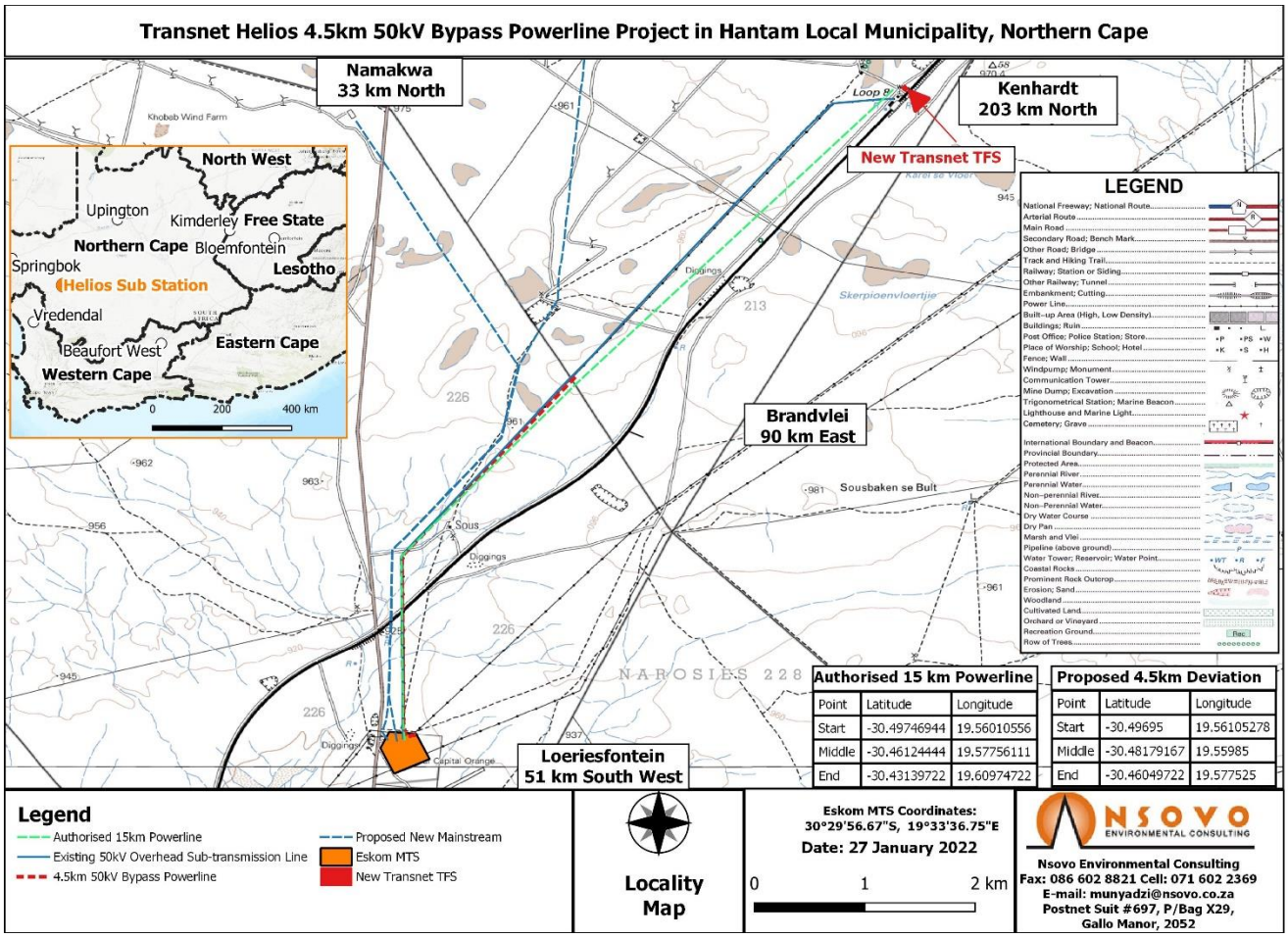


Figure 2: Map showing the 4.5km 50kV Bypass Powerline

1.1.2. TECHNICAL AND STRUCTURAL ALTERNATIVES

Alternative 1 (Preferred alternative)

The Bypass powerline was constructed using concrete masts similar to the masts being used by Transnet along the OREX rail line. Further, the bypass was constructed using the material approved in the 2015 EA. Bird friendly structures were installed on new lines. SF6 gas insulated circuit breakers were used instead of oil insulated circuit breakers.

Alternative 2:

Use SF6 gas insulated auxiliary, voltage and current transformers. However, this is not preferred due to excessive costs and practical constraints.

1.1.3. NO-GO ALTERNATIVE

In accordance with GN R.982, consideration must be given to the option not to act. This option is usually considered when the proposed project is envisaged to have significant negative environmental impacts that mitigation measures cannot ameliorate the identified impacts effectively. The no-go alternative would be the option of decommissioning the bypass powerline. Further, this also means that the 9E Electrical Locomotives and Diesel Locomotives will continue to operate making room for overloading and interruption of power supply which will affect the surrounding communities and industries. Should the no-go alternative be adopted, the expansion of Transnet operations which form part of the country's economy would not be undertaken as it will result in the overloading and interruption of electricity supply. In addition, this will have the potential of inhibiting Transnet Freight Rail's growth.

The no-go alternative was assessed not to be an option given the economic and social benefits of the proposed project which far outweigh other identified impacts. If the no-go alternative is considered none of the identified impacts will be realised.