

BACKGROUND INFORMATION DOCUMENT

BASIC ASSESSMENT PROCESSES FOR THE PROPOSED CONSTRUCTION OF ELECTRICAL GRID INFRASTRUCTURE TO SUPPORT THREE AUTHORISED WIND ENERGY FACILITIES, AND A SUBSTANTIVE AMENDMENT APPLICATION PROCESS FOR A REVISION OF TURBINE AND HUB SPECIFICATIONS OF THE THREE AUTHORISED WIND ENERGY FACILITIES NEAR SUTHERLAND, NORTHERN AND WESTERN CAPE PROVINCES



DECEMBER 2016

CSIR

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1. BACKGROUND AND INTRODUCTION TO THE PROPOSED PROJECTS

South Africa Mainstream Renewable Power Developments (PTY) Ltd (hereinafter referred to as Mainstream) appointed an Environmental Assessment Practitioner (EAP) in 2010 to undertake an Environmental Impact Assessment (EIA) for the proposed construction and operation of the Sutherland Renewable Energy Facility (REF), consisting of a Solar Energy Facility and a Wind Energy Facility (WEF), with a collective generation capacity (i.e. for wind and solar) of 747 MW to 1137 MW. The EIA was undertaken in terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the NEMA EIA Regulations promulgated on 21 April 2006, in Government Notice (GN) R385, R386, and R387. Mainstream accordingly received Environmental Authorisation (EA) on 22 February 2012 (DEA Reference Number: 12/12/20/1782), from the National Department of Environmental Affairs (DEA) to construct and operate the proposed Sutherland REF. Following this, a non-substantive amendment process (to amend certain project details, the details of the Applicant, and to extend the validity period of the EA) was undertaken and an amended EA, dated 6 October 2015 (DEA Reference Number: 12/12/20/1782/AM1), was issued to Mainstream.

The original and amended EA authorised Mainstream to develop a 747 MW to 1137 MW REF, with 325 turbines on site. Based on the generation capacity of the wind turbines, this provision allocated roughly 650 MW to the WEF component of the REF. Mainstream wishes to potentially bid these projects in a tender round of the Department of Energy's (DOE) Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). However, the maximum generation capacity that can currently be bid for a WEF is 140 MW. Therefore, in February 2016, Mainstream appointed the Council of Scientific and Industrial Research (CSIR) to submit applications to the National DEA for two further substantive amendments of the original EA (dated 22 February 2012) and the amended EA (dated 6 October 2015). The first amendment (i.e. Amendment 1) was undertaken to split the existing EA into three separate projects so that each WEF has a generation capacity of 140 MW. The three split WEFs are referred to as the Sutherland WEF; Sutherland 2 WEF; and Rietrug WEF. The CSIR accordingly submitted the Application for Amendment (i.e. Amendment 1) to the National DEA on 20 April 2016.

Three separate Amendment Reports (for each WEF) were produced and released for a 30-day review period extending from 30 May 2016 to 01 July 2016. The reports were then finalised (with the inclusion of comments received during the comment period), and submitted to the National DEA in July 2016 for consideration and decision-making in terms of Regulation 33 of the 2014 NEMA EIA Regulations. On 10 November 2016, the National DEA accordingly granted separate EAs for the Sutherland, Sutherland 2, and Rietrug WEFs (DEA Reference Numbers: 12/12/20/1782/1; 12/12/20/1782/2; and 12/12/20/1782/3). These EAs replace the original EA (dated 22 February 2012) and the amended EA (dated 6 October 2015).

The second amendment (i.e. **Amendment 2**) is to apply to change the turbine and hub specifications of the split WEFs. In line with the above, the CSIR is now in a position to submit the second substantive Amendment Applications to the National DEA (in accordance with Regulation 31 (Part 2) of the 2014 NEMA EIA Regulations) in order to amend the three separate EAs (dated 10 November 2016) in terms of turbine and hub specifications.

The proposed Rietrug and Sutherland 2 WEFs are located in the Northern Cape, approximately 23 km south of Sutherland and 50 km north of Laingsburg, under the jurisdiction of the Namakwa District Municipality and the Karoo Hoogland Local Municipality. The proposed Sutherland WEF is also predominantly located in the Northern Cape, within the aforementioned district and local municipalities; however a small portion of the WEF falls within the Western Cape, under the jurisdiction of the Central Karoo District Municipality and the Laingsburg Local Municipality.

In addition to this, Mainstream is also proposing to construct electrical infrastructure (i.e. three substations, laydown areas, Operational and Maintenance (O&M) Buildings, three 132 kV distribution lines, including service roads and the connection to a third party substation) in order to support the three separately authorised WEFs. In terms of the NEMA and the 2014 NEMA EIA Regulations, the three proposed Electrical Grid Infrastructure projects require a **Basic Assessment (BA)** Process.

As noted above, the CSIR has been appointed to undertake the three requisite substantive EA Amendment Application and BA Processes, which will be referred to as:

Substantive EA Amendment Processes:	BA Processes: Proposed Electrical Grid Infrastructure
<ul style="list-style-type: none"> ▪ Sutherland WEF – Amendment 2 ▪ Sutherland 2 WEF – Amendment 2 ▪ Rietrug WEF – Amendment 2 	<ul style="list-style-type: none"> ▪ Sutherland WEF – Electrical Grid Infrastructure ▪ Sutherland 2 WEF – Electrical Grid Infrastructure ▪ Rietrug WEF – Electrical Grid Infrastructure

Since the three BA projects and the three substantive Amendment Application projects are located within the same geographical area, an integrated Public Participation Process (PPP) will be undertaken for the proposed projects. However, separate Applications for EA will be lodged with the National DEA for each BA project and separate Applications for EA Amendment will be lodged for each WEF Amendment 2 project. As such, separate reports (i.e. BA and Amendment Reports) will be compiled for each project.

2. AIM OF THIS DOCUMENT

The aim of this Background Information Document (BID) is to provide Stakeholders, Organs of State and I&APs with:

- Background information on the proposed projects;
- A description of the combined BA Application Process, Substantive EA Amendment Process, and PPP that will be undertaken for the projects; and
- Details on how Stakeholders, Organs of State and I&APs can become involved in the proposed projects.

As a registered I&AP, there will be opportunities for involvement in the BA and Substantive Amendment Processes by registering interest in the projects, receiving information, raising issues of concern and commenting on draft reports. The input received from I&APs together with the information and assessment provided by the EAP and relevant specialists, will assist the Competent Authority, the National DEA, with their decision making process in terms of whether to grant or refuse EA for the proposed projects.

3. NEED AND JUSTIFICATION FOR THE PROPOSED PROJECTS

As noted above, the proposed development of the electrical grid infrastructure is envisaged to support the Sutherland, Sutherland 2 and Rietrug WEFs. Therefore, the proposed electrical grid infrastructure projects will ensure that the proposed WEFs are equipped with the fundamental infrastructure required to enable the WEFs to supply and transmit electricity to the National Grid. In addition, the proposed substantive amendments to the turbine and hub specifications will ensure that the WEFs are more feasible, efficient and suitable for submission in the next bidding round of the REIPPPP. In South Africa, national government has encouraged the utilisation of renewable energy through national policy and strategic planning, as the country is facing serious electricity shortages as well as water scarcity. The objective is to

expand electricity generation capacity in South Africa and promote the practice of sustainable development. The proposed projects therefore aim to contribute to the above strategic imperative (by enabling the realisation of electricity generation via wind resources).

4. WHAT DO THE PROPOSED PROJECTS ENTAIL?

The respective farm portions affected by the proposed BA and Substantive EA Amendments projects and the relative location of the proposed projects are shown in the locality map (Figure 1) included with this BID. The proposed projects will be situated on land that is owned by third parties and as such, consent will be obtained from the respective landowners. It is anticipated that the properties on which the proposed projects will be constructed will be leased from the landowners. The BA Electrical Grid Infrastructure and the Substantive EA Amendment projects occur within the Northern and Western Cape.

4.1. ELECTRICAL GRID INFRASTRUCTURE BA PROCESSES

Each WEF will consist of the components already authorised within the EAs (dated 10 November 2016), which include wind turbine generators, internal and external electrical connections, internal roads, upgrading of access roads and additional infrastructure. The supporting electrical infrastructure for each WEF will consist of an on-site substation, laydown area, O&M Building, a 132 kV distribution line, a service road, and the connection to a third party substation.

Two alternatives of the third party substations (and the associated distribution line routing thereto) will be considered as part of the BA Processes. It is important to note that both alternatives of the proposed third party substations have been assessed as part of the separate Moyeng Energy (PTY) Ltd Suurplaat WEF EIA, which received EA on 5 April 2011 (DEA Reference Number: 12/12/20/1583) and therefore will not be considered as part of these BA Processes. Construction of the proposed third party substations (which are planned to be used for the proposed BA Projects) has not commenced yet. The proposed third party substations will be constructed by a separate developer and it is expected that it will have multiple users and it will service many projects. It is understood that an application for EA Amendment is currently underway to split the approved Moyeng Energy (PTY) Ltd Suurplaat WEF EIA project into four separate EAs (DEA Reference Number: 12/12/20/1583/AM3).

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Alternative 1 of the grid connection is the proposed 132 kV Suurplaat on-site substation (which will be referred to as the proposed collector hub for the BA Projects), which is located on the Farm Hartebeeste Fontein in the Northern Cape, whilst Alternative 2 is the proposed 400 kV Eskom Main Transmission Substation (which is also known as the Eskom Nuwerust Substation), which is located on Farm Hamelkraal in the Western Cape.

The distribution line for each WEF will be routed from each on-site substation (i.e. Sutherland, Sutherland 2 and Rietrug) to either the proposed 132 kV Suurplaat on-site substation (i.e. proposed collector hub) on the Farm Hartebeeste Fontein (Alternative 1) or to the proposed Eskom Nuwerust Substation (Alternative 2). As shown in

Figure 1, the routing of the distribution lines for Alternative 1 and Alternative 2 are the same up until a point on the Farm Hartebeeste Fontein, where it splits in a southerly direction towards the proposed collector hub for Alternative 1; and in a separate easterly direction towards the proposed Eskom Nuwerust Substation for Alternative 2. A 1000 m wide corridor has been included in Figure 1 to indicate the area within which each distribution line will be constructed.

A summary of the approximate details of the proposed Electrical Grid Infrastructure for each of the WEFs is provided in Table 1 below.

Table 1: Estimated WEF Electrical Grid Infrastructure Specifications

	Alternative 1: Connection to the proposed collector hub (i.e. the proposed 132 kV Suurplaat On-site Substation assessed as part of the Moyeng Energy Suurplaat WEF EIA (DEA Reference Number: 12/12/20/1583)) and located on Farm Hartebeeste Fontein in the Northern Cape	Alternative 2: Connection to the proposed Eskom Nuwerust Substation (assessed as part of the Moyeng Energy Suurplaat WEF EIA (DEA Reference Number: 12/12/20/1583)) and located on Farm Hamelkraal in the Western Cape
Sutherland WEF Electrical Grid Infrastructure		
Length of Distribution Line	14 km	37 km
Service Road	Width: 4 m to 6 m Length: 14 km	Width: 4 m to 6 m Length: 37 km
Development Envelope Area (i.e. <u>area to be assessed</u>) for the On-site Substation, Laydown Area and O&M Building	500 m x 500 m (25 ha)	500 m x 500 m (25 ha)
Sutherland 2 WEF Electrical Grid Infrastructure		
Length of Distribution Line	40 km	64 km
Service Road	Width: 4 m to 6 m Length: 40 km	Width: 4 m to 6 m Length: 64 km
Development Envelope Area (i.e. <u>area to be assessed</u>) for the On-site Substation, Laydown Area and O&M Building	500 m x 500 m (25 ha)	500 m x 500 m (25 ha)
Rietrug WEF Electrical Grid Infrastructure		
Length of Distribution Line	16 km	39 km
Service Road	Width: 4 m to 6 m Length: 16 km	Width: 4 m to 6 m Length: 39 km
Development Envelope Area (i.e. <u>area to be assessed</u>) for the On-site Substation, Laydown Area and O&M Building	500 m x 500 m (25 ha)	500 m x 500 m (25 ha)

As noted in Table 1 above, each Electrical Grid Infrastructure BA Project will include an assessment of the necessary infrastructure to ensure that any WEF will be able to connect to the grid. This will ensure that, if for any reason, one of the Electrical Grid Infrastructure projects do not receive EA or preferred bidder status, the other WEFs will still be allowed to efficiently connect to the National Grid.

Furthermore, as noted in Table 1 above, a large development envelope area has been provided and will be assessed for the on-site substations in order to determine the most suitable location for each on-site substation, laydown area, O&M Building, in terms of environmental and topographical sensitivities. However, the actual on-site substation, laydown area, O&M Building and the infrastructure required to connect to the collector hub or the Eskom Nuwerust Substation for each Electrical Grid Infrastructure BA Project, will cover a significantly smaller area. It is important to note that all non-linear components of the projects (i.e. the on-site substations, O&M Buildings and laydown areas) will cover an area less than 20 ha.

4.2. SUBSTANTIVE AMENDMENT PROCESSES

The EAs for the three WEFs, approved as part of Amendment 1 (for splitting the projects) as described above, approve the following:

- Sutherland WEF: Maximum of 56 wind turbines, with a height up to 120 m and a rotor diameter up to 120 m;
- Sutherland 2 WEF: Maximum of 47 wind turbines, with a height up to 120 m and a rotor diameter up to 120 m; and
- Rietrug WEF: Maximum of 56 wind turbines, with a height up to 120 m and a rotor diameter up to 120 m.

Therefore, the total number of turbines has decreased from 325 (as originally approved in the original EA (dated 22 February 2012)) to 159 (as part of the amended EAs (dated 10 November 2016)).

The **Substantive Amendment 2** will include an application to increase the hub height and rotor diameter from the authorised 120 m to 150 m.

5. ENVIRONMENTAL AUTHORISATION REQUIREMENTS

In terms of the NEMA and the 2014 NEMA EIA Regulations, the proposed Electrical Grid Infrastructure BA Projects trigger the need for a BA Process as they

include, amongst others, the following listed activities in terms of Listing Notices 1 (GN R983) and 3 (GN R985), which require approval from the National DEA prior to commissioning:

- GN R983 Listing Notice 1: Activity 9; Activity 11 (i); Activity 12 (x), (xii); Activity 19 (i); Activity 27; and Activity 28 (ii); and
- GN R985 Listing Notice 3: Activity 4 [(a), (ii) and (ee) and ((f), (i) and (aa))]; Activity 12 [(a) and (ii) and ((d) and (ii))]; and Activity 14 [(x), (xii), [(a), (ii) and (ff)] and [(f), (i) and (ff)]].

Note from the CSIR: A precautionary approach has been adopted by the CSIR when identifying listed activities, in that if there is any doubt at this stage of the project planning whether or not an activity is included in the project design, then the activity is listed. This list may be refined during the course of the BA Processes, and listed triggers may be removed or added as applicable.

As noted above, the Substantive Amendment Projects will be undertaken in accordance with Regulations 31 to 33 (Chapter 5, Part 2) of the 2014 NEMA EIA Regulations.

6. BA AND SUBSTANTIVE EA AMENDMENT PROCESSES AND PPP

The main objectives of the BA Processes are to:

- Undertake specialist investigations to address the issues of concern that have been raised and identified during the Project Initiation Phase, and to investigate and assess potential impacts;
- Identify and motivate a preferred site, activity and technology alternative;
- Determine the policy and legislative context of the proposed project;
- Describe the need and desirability of the proposed project;
- Identify, determine and assess the significance of the predicted impacts;
- Recommend management actions to enhance positive benefits or avoid/minimise potential negative impacts (based on specialist input); and
- Identify residual risks that need to be managed and monitored.

Table 2 indicates the specialist studies that have been identified, at this stage, to form part of the BA and Amendment Projects.

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Table 2: Specialist Studies to be undertaken as part of the BA and Amendment Processes

Specialist Study	Specialist Study for the BA Projects	Specialist Study for the Substantive Amendment Projects
Terrestrial Ecology Assessment	✓	✓- Professional Opinion Letter
Aquatic Ecology Assessment (including Wetlands and Freshwater Systems)	✓	✓- Professional Opinion Letter
Visual Impact Assessment	✓	✓- Specialist Study
Heritage Impact Assessment (Archaeology, Palaeontology and Cultural Landscape)	✓	✓- Professional Opinion Letter
Avifauna Impact Assessment	✓	✓- Specialist Study
Bat Impact Assessment	✓	✓- Specialist Study
Noise Impact Assessment	✓	✓- Specialist Study

The main steps in BA and Amendment Processes are discussed below and shown in Figure 2. As also shown, proactive engagement with stakeholders forms a key component of the entire BA and Amendment Processes. As noted above, an integrated PPP will be undertaken for the BA and Amendment Processes.

Step 1: Notify Authorities and I&APs of the BA and Amendment Processes (30 days) – Current Stage

The initial step entails providing notification to Authorities and potential I&APs of the proposed projects and the commencement of the BA and Amendment Processes. An initial database of potential I&APs and Authorities will be compiled. Authorities and potential I&APs will be provided with a BID (i.e. this document), including a Comment and Registration Form and written notification (i.e. Letter 1). Advertisements will also be placed in three local newspapers (i.e. The Cape Times, Die Noordwester, and Die Burger) during this phase. Site notices will also be placed at strategic locations in the vicinity of the proposed project area. The Project Initiation documents will be placed on the project website (<https://www.csir.co.za/environmental-impact-assessment>).

I&APs will be provided with a 30-day review period within which to raise any issues or concerns for inclusion in the BA and Amendment Reports. During this review period, I&APs are required to register their interest on the project database in order to be included from the outset of the BA and Amendment Processes.

Step 2: Preparation of Applications for EA, Applications for EA Amendment, Commissioning of Specialist Studies, and Preparation of BA and Amendment Reports

Separate Applications for EA for each Electrical Grid Infrastructure BA project will be prepared (i.e. a total of three applications will be prepared). Separate Applications for Amendment of the EA will be compiled for each WEF (i.e. a total of three applications will be prepared). The specialist studies (as listed in Table 2) will be commissioned and completed during this phase.

The BA Reports will be compiled in line with Appendix 1 of the 2014 NEMA EIA Regulations, and the Amendment Reports will be compiled in line with Regulations 31 and 32 of the 2014 NEMA EIA Regulations. The Environmental Management Programmes (EMPRs) will be compiled in line with Appendix 4 of the 2014 NEMA EIA Regulations for both the BA and Amendment Processes.

All issues and concerns raised by the Authorities and I&APs during the review of the BID will be recorded and compiled into an Issues and Responses Trail for inclusion in the BA and Amendment Reports.

Step 3: Submission of Applications for EA Amendment

The three separate Applications for EA Amendment will be submitted to the National DEA for consideration (in accordance with Regulation 31 of the 2014 NEMA EIA Regulations).

Step 4: Submission of Applications for EA for the BA Projects and Authority and I&AP Review of the BA and Amendment Reports (30 days)

The three separate Applications for EA for the Electrical Grid Infrastructure BA projects will be submitted to the National DEA for processing together with the BA and Amendment Reports.

The BA and Amendment Reports will be released to the public, registered I&APs and Authorities (including the National DEA) for a 30-day review period. All Authorities and registered I&APs on the project database will be notified in writing (via Letter 2) of the opportunity to review the BA and Amendment Reports. A Comment and Registration Form will also be sent with the written notification to all registered stakeholders. Copies of the BA and Amendment Reports will be placed on the project website (<https://www.csir.co.za/environmental-impact-assessment>), and at the Sutherland and Laingsburg Public Libraries and Karoo Hoogland and Laingsburg Local Municipality. Advertisements will also be placed in three local newspapers (i.e. The Cape Times, Die Noordwester, and Die Burger) during this phase.

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Step 5: Submission of the finalised BA and Amendment Reports to the National DEA for Decision-Making

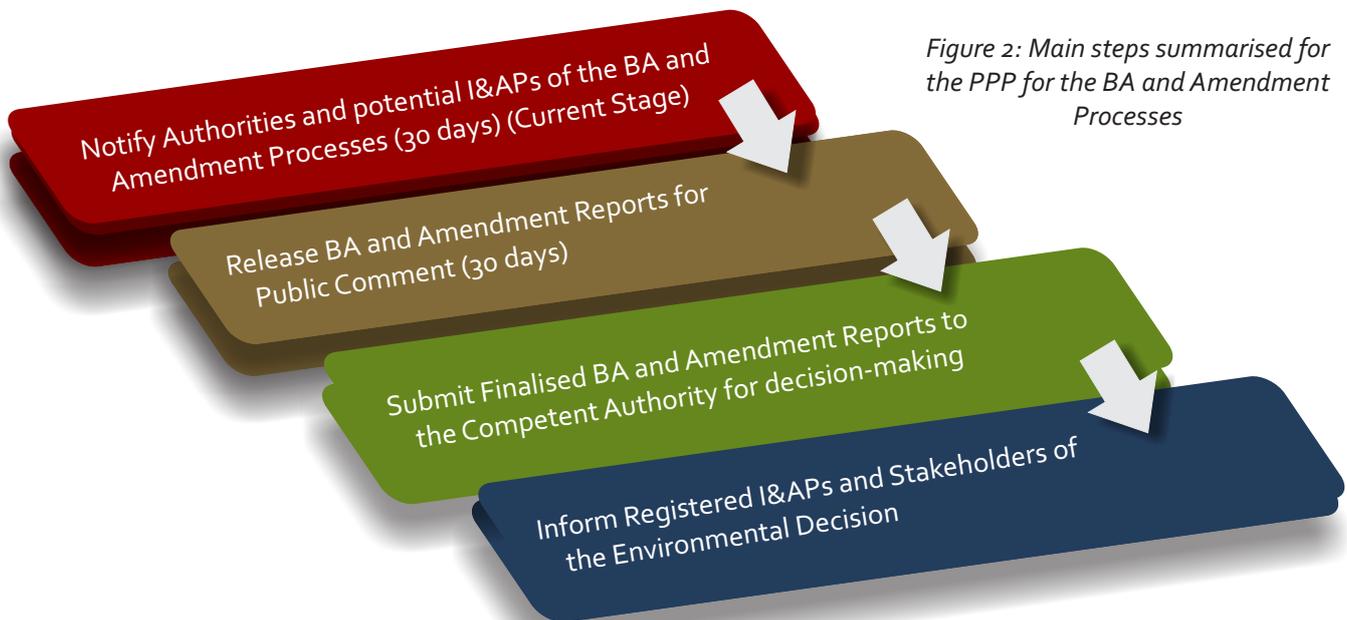
The comments received from I&APs during the 30-day review of the BA and Amendment Reports will be recorded into a comprehensive Issues and Responses Trail, and will be included in the reports before submission to the National DEA. The Comments and Responses Trail will indicate the nature of the comment, when and who raised the comment, as well as indicate how the comment received has been considered in the BA and Amendment Reports, in the project design or the EMPr. The BA and Amendment Reports will thereafter be finalised and submitted to the National DEA for decision making (in terms of Regulations 20 (1) and 33 (1)

respectively).

The National DEA will have 10 days (from receipt of the BA and Amendment Reports) to acknowledge the reports and will thereafter have 107 days to grant or refuse EA.

Step 6: Notification of Environmental Decision and Appeal Period

All registered stakeholders on the project database will be notified in writing of the environmental decision for the proposed projects, and will be informed of the opportunity to appeal.



GET INVOLVED

1. Respond to our invitation for your involvement advertised in local newspapers (Die Burger, Cape Times and Noordwester).
2. Email, fax or mail the attached Comment and Registration Form to the Public Participation Facilitator, Shawn Johnston, Sustainable Futures ZA, P.O. Box 749, Rondebosch, 7701; Fax: 086 510 2537; E-mail: swjohnston@mweb.co.za.
3. Visit the project website at <https://www.csir.co.za/environmental-impact-assessment> to download relevant project information.
4. Review the various reports within the stipulated comment periods provided.
5. Attend any focus group meetings, which may be held during the review periods.

To register as an I&AP, please complete the Comment and Registration Form included with this BID and kindly return to:

Sustainable FuturesZA
P.O. Box 749, Rondebosch, 7701
Fax: 086 510 2537
E-mail: swjohnston@mweb.co.za
Tel: 083 325 9965

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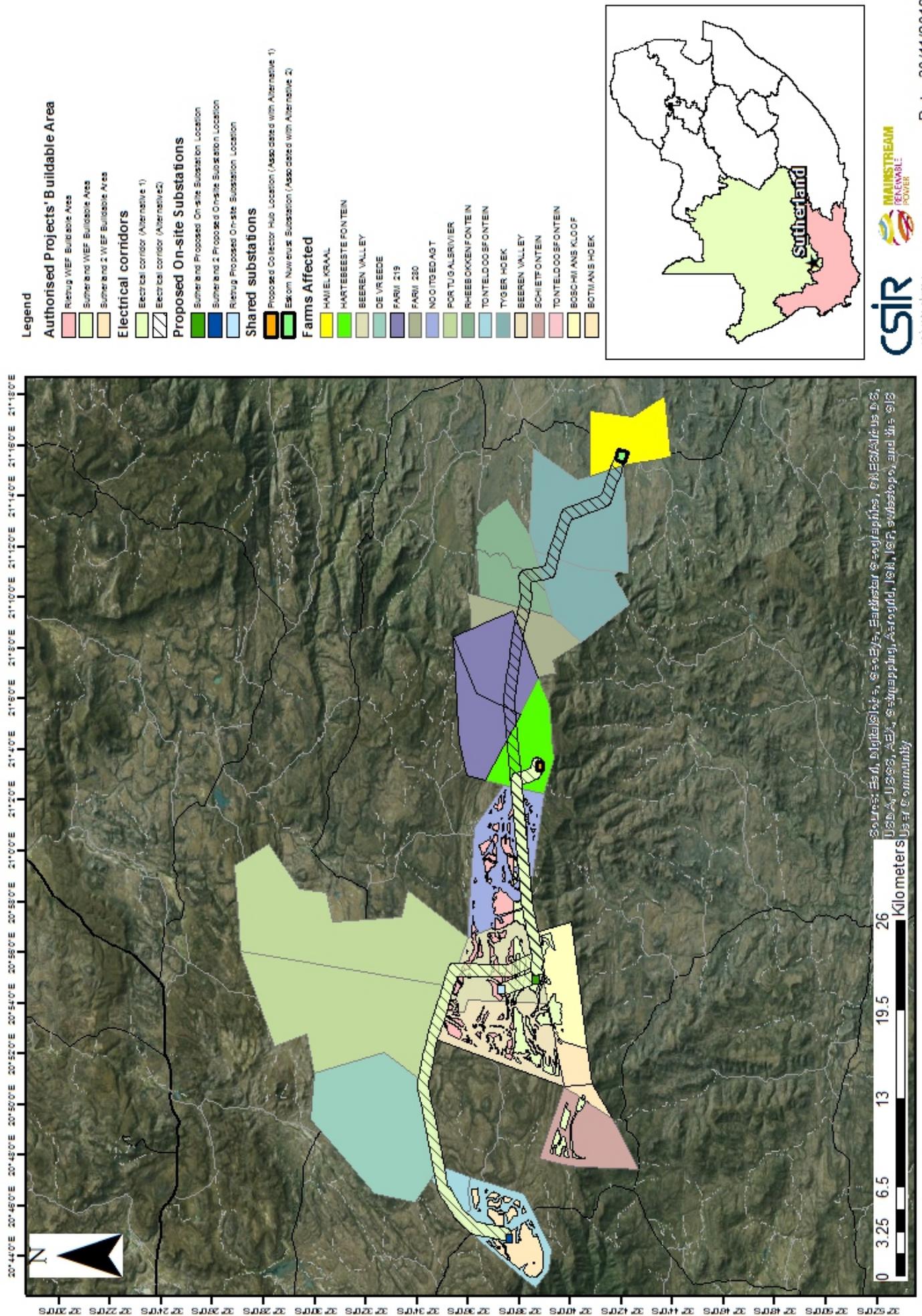


Figure 1: Locality Map of the Proposed BA and Amendment Processes