

## **BACKGROUND INFORMATION DOCUMENT**

FOR THE PROPOSED ADDITION OF THE SYNCHRONOUS CONDENSERS TO THE EXISTING GAMMA SUBSTATION AND ITS ASSOCIATED INFRASTRUCTURES WITHIN JURISDICTION OF THE UBUNTU LOCAL MUNICIPALITY, UNDER THE PIXLEY KA SEME DISTRICT MUNICIPALITY, IN THE NORTHERN CAPE PROVINCE.

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## Abbreviations and Acronyms

|                  |                                                       |
|------------------|-------------------------------------------------------|
| <b>BID</b>       | Background Information Document                       |
| <b>DFFE</b>      | Department of Forestry, Fisheries and the Environment |
| <b>EA</b>        | Environmental Authorisation                           |
| <b>EIA</b>       | Environmental Impact Assessment                       |
| <b>EIR</b>       | Environmental Impact Report                           |
| <b>EMPr</b>      | Environmental Management Programme report             |
| <b>I &amp;AP</b> | Interested and Affected Parties                       |
| <b>NEMA</b>      | National Environmental Management Act                 |
| <b>NTCSA</b>     | National Transmission Company South Africa            |
| <b>PPP</b>       | Public Participation Process                          |
| <b>SynCons</b>   | Synchronous Condensers                                |

## **1. INTRODUCTION**

Quality Environmental and Business Management Solution CC (QEMS) was appointed by the National Transmission Company South Africa (NTCSA) to prepare and apply for the amendment of the current Environmental Authorisation. This amendment application is undertaken in accordance with the provisions of Chapter 5, Part 2 (Regulations 31–32) of the Environmental Impact Assessment Regulations, 2014, promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998). The amendment pertains to the proposed installation of synchronous condensers and the development of associated infrastructure to integrate the synchronous condensers at Gamma Substation.

Eskom SOC Ltd, South Africa's state-owned power company, has historically relied on large coal-fired power stations and a few hydro plants for electricity generation. The national grid, primarily consisting of 400 kV and 765 kV overhead lines, transmits power across the country. To enhance grid reliability amid growing renewable energy adoption, the National Transmission Company South Africa SOC Ltd (NTCSA), a subsidiary of Eskom, plans to implement Synchronous Condensers at seven host main transmission substations (MTSs). The host substations are in the Eastern (two) and Northern Cape (five), where there is an immediate need to improve grid stability.

Synchronous condensers (SynCons) are large spinning machines that act like stabilizing anchors to the grid. SynCons are a proven technology that is commonly used to provide inertia, damping, voltage support and stronger grid conditions. This in turn enables the reliable operation of renewable energy inverters.

Gamma Substation is one of the seven MTSs and its siting on the main transmission corridor from North to South is shown by studies that this intervention at the substation would support the national grid stability.

## **2. PURPOSE OF THE BACKGROUND INFORMATION DOCUMENT (BID)**

The purpose of this document is to provide the public with project information and brief any potential Interested and Affected Parties (I&APs) about the Environmental Impact Assessment (EIA) process to be conducted for the project. The BID indicates how you can become actively involved in the EIA process through the Public Participation Process (PPP) and raise issues that may concern and / or interest you. You can achieve this by:

- Reviewing the BID, and;
- Registering as an I&AP by completing the attached Comments and Registration Form

It is important that you:

- Please also state why you should be considered as interested / affected by the project
- Give comments, raise issues / concerns about the project through this process.

You can do this by:

- Registering and completing a response form.
- Writing a letter.
- Calling or emailing, QEMs if you wish to register.

Our contact details are to be found at the end of this document.

## **3. DESCRIPTION OF PROPOSED AMENDMENTS**

The current Environmental Authorisation (EA) for the Gamma Substation was originally approved on 9 November 2007 (Ref. No.: 12/12/20/873). The EA was subsequently amended in 2023 (Ref. No.: 12/12/20/873/AM3) to accommodate the construction of the 400/132 kV yard and associated powerline infrastructure. This amendment included update to the substation layout and associated powerline turn-in infrastructure to facilitate the integration of renewable energy into Gamma substation. The 400/132 kV yard development footprint was assessed as part of the powerline and grid connection infrastructure associated with the following authorized projects:

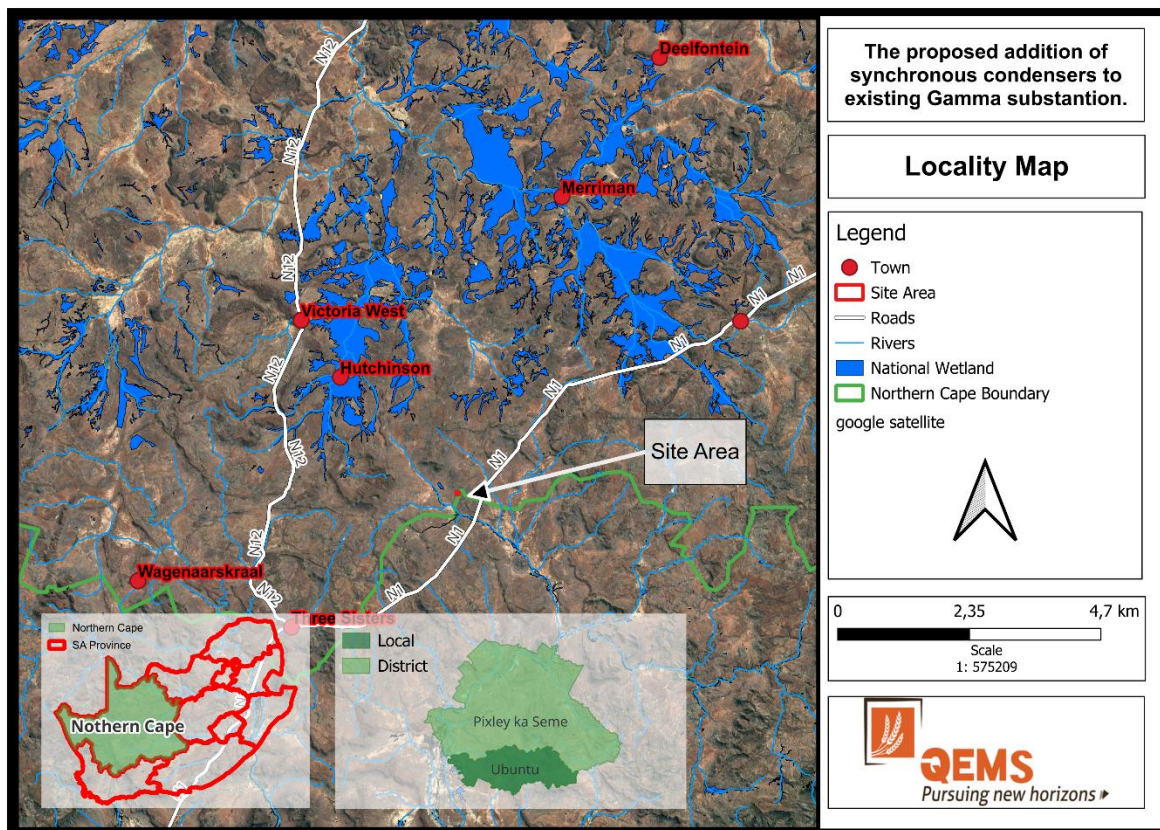
- Umsinde Emoyeni Wind Energy Facility (DFFE Ref. No.: 14/12/16/3/3/2/686)
- Khangela Emoyeni Wind Energy Facility (DFFE Ref. No.: 14/12/16/3/3/2/687)
- Ishwati Emoyeni Wind Energy Facility (DFFE Ref. No.: 12/12/20/2351)

To enhance grid reliability in response to the increasing integration of renewable energy within the Eastern, Northern and Western Cape, NTSCA now proposes the addition of three Synchronous Condensers and their associated infrastructure at the Gamma Substation. These components were not included in the activities authorized under the original EA dated 9 November 2007, nor in the subsequent amendment(s).

Accordingly, NTSCA seeks to amend the existing Environmental Authorisation to include the proposed Synchronous Condensers. The proposed change constitutes a Part 2 Amendment in terms of the Environmental Impact Assessment Regulations 2014, as it involves the expansion of previously authorized infrastructure and the inclusion of activities not covered under the Gamma substation's existing authorisation.

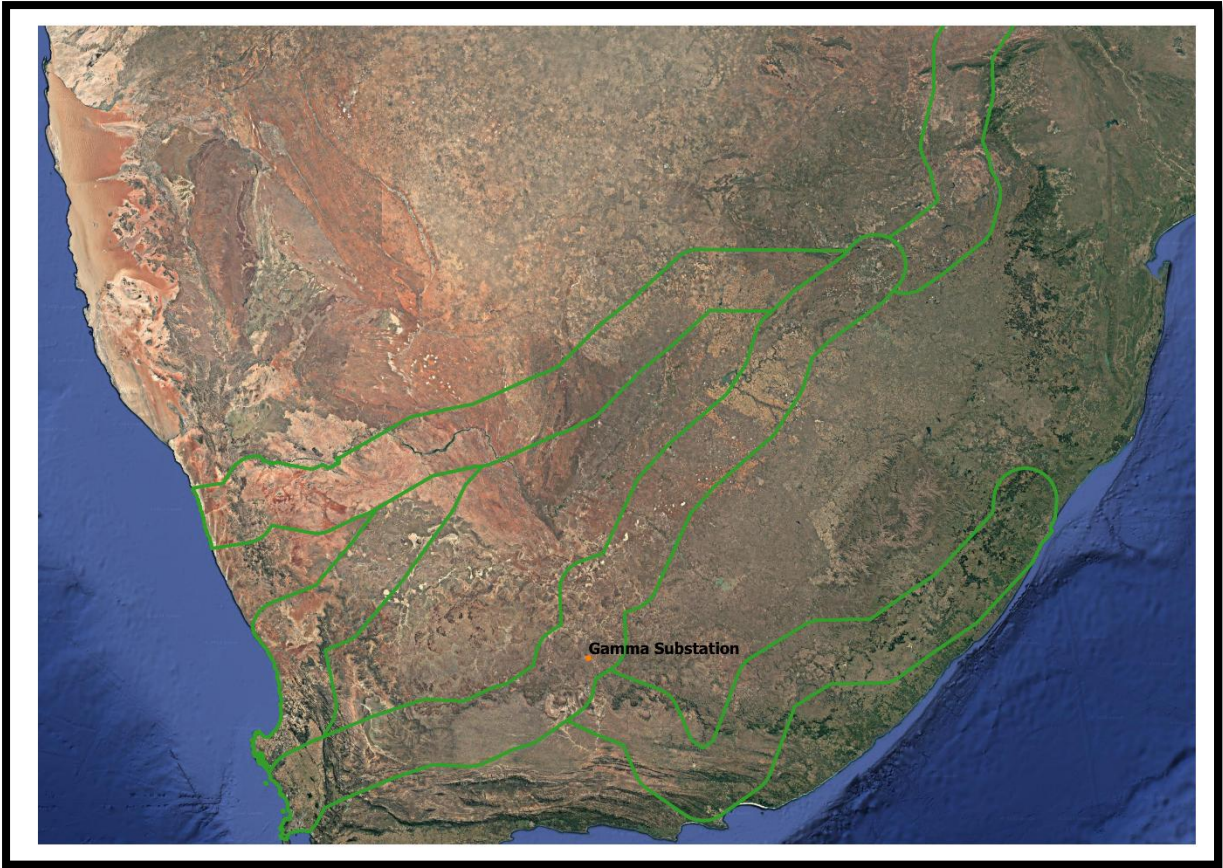
#### **4. PROJECT LOCATION**

Gamma Substation is located on the border of the Northern Cape and Western Cape near the town of Victoria West. The land portions that it is located on Portion 1 of the farm Uit Vlucht Fontein No. 265 and remainder of farm Schiekuil No. 3. The proposed development area for the Synchronous Condensers and associated infrastructure is located within the Northern Cape Province, on Portion 1 of the Farm Uit Vlucht Fontein No. 265. The proposed development falls within the Strategic Transmission Corridor (Figure2). The approximately central coordinates are 31°40'54.71"S; 23°24'30.88"E.



**Figure 1:** Locality Map of the development





**Figure 2:** Strategic Transmission Corridor Map

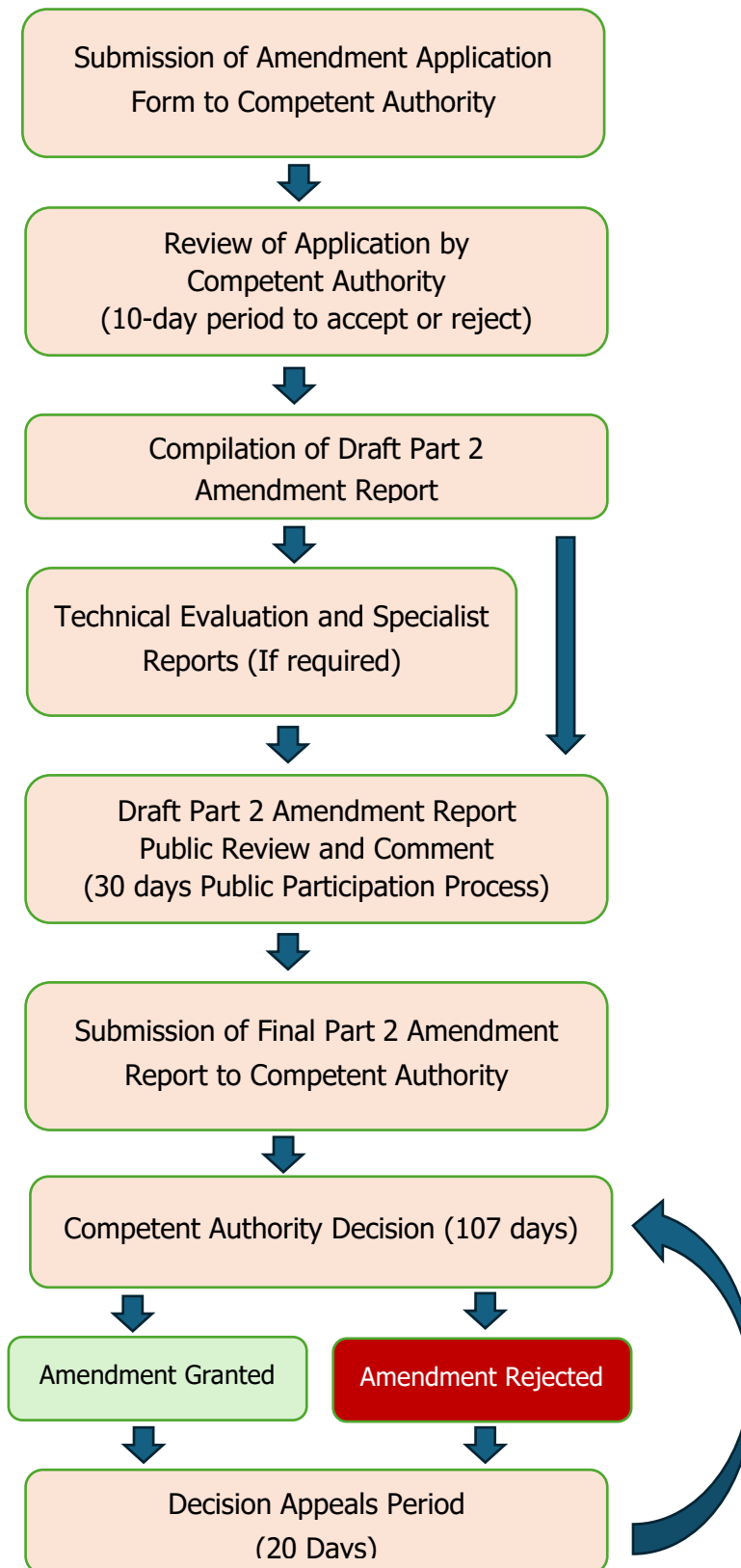
## **5. LEGISLATIVE REQUIREMENTS**

### **5.1 NEMA**

The proposed amendment will be applied for as per the EIA Regulations 2014 (As amended) as promulgated under the National Environmental Management Act (NEMA, Act No. 107 of 1998, as amended). Section 31 and 32 of these regulations outline a Part 2 Amendment (amendments where a change in scope occurs) and require the new scope of the development to be assessed from an environmental perspective. As such, the proposed changes to the approved development require an application for an amendment to the existing EA, prior to commencement of construction and operation. The process of the Part 2 Amendment is outlined the figure below.



## PART 2 AMENDMENT PROCESS



**Figure 3:**Part 2 Amendment Process

Section 32 (1) of the 2014 EIA Regulations (as amended) requires that a report reflecting the details of the amendment is submitted to the competent authority within 90 days of acknowledgement of the application form, which includes the following:

- (i) An assessment of all impacts related to the proposed change;
- (ii) Advantages and disadvantages associated with the proposed change; and
- (iii) Measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and
- (iv) Any changes to the Environmental Management Programme (EMPr).

In compliance with the requirements of a Part 2 Amendment in terms of Section 32(1) of the Environmental Impact Assessment Regulations, 2014 (as amended), the potential impacts associated with the proposed addition of the Synchronous Condensers and their associated infrastructure will be identified and assessed as part of this amendment process (see Figure 2). Where necessary, specialist studies will be undertaken, and the findings will be incorporated into the relevant assessment reports.

The competent authority for this application is the Department of Forestry, Fisheries and the Environment (DFFE), which issued the original Environmental Authorisation (EA) for the construction of the Gamma Substation and its amendment(s).

## **5.2 NWA**

The developer intends to drill a borehole; a formal water use license application (WULA) will be lodged to the Department of Water and Sanitation in terms of Section 21 of the National Water Act (Act No 36 of 1998). The WULA Procedure is regulated under the 'Procedural Requirements for Water Use License Applications and Appeals (GNR 267, 24 March 2017) published in terms of the NWA.

## **6. POTENTIAL IMPACTS**

The proposed development activities could have several environmental impacts, which would need to be managed. Based on the knowledge of the Interested and/or Affected Parties (I&APs) concerning the area it will be crucial in identifying additional consequences that may be considered. The following are some of these anticipated impacts:

- Loss of biodiversity – Clearing of vegetation for the proposed addition of synchronous condenser and its associated infrastructures.
- Increased influx of job seekers in the proposed area.

- Soil erosion – lack of storm water management system and removal of vegetation which exposes bare soil.
- Soil Pollution: Potential contamination of soil may occur due to accidental oil or fuel spills from construction vehicles, as well as leaks of lubricants or cooling fluids during the operation of the Synchronous Condensers.
- Surface water pollution – lack of proper storm water management infrastructure, slope management, lack of oil spills management system, lack of flood management strategy
- Increased ambient noise level – construction machinery and equipment, labourer(s) on site and dust emissions during construction phase.
- Heat Discharge- Releases approximately 1.5% of rated power as heat to the atmosphere during operation.
- Electromagnetic Fields (EMF): Operation produces low-level EMFs.
- Noise: operation of SynCons is in building, noise damped.
- Localized EMF Increase: Slight increases in localized EMF levels may occur due to the addition of new equipment, though levels are expected to remain within regulatory limits.

## **7. SPECIALIST STUDIES**

The findings of the specialist studies undertaken for the original Environmental Authorisation (EA), together with any new specialist assessments conducted as part of this process, will be incorporated into the Part 2 Amendment Report. The following specialist assessments will be undertaken for the project:

- Terrestrial Biodiversity Impact Assessment.
- Aquatic And Wetland Compliance Statement report
- Archaeological and Cultural Heritage Impact Assessment

## **8. PUBLIC PARTICIPATION PROCESS (PPP)**

The public participation process (PPP) is a key requirement of the EIA process. For this application it needs to satisfy the requirements of the National Environmental Management Act Regulations (Regulation 40-44). The PPP identifies potential I&APs on the project and provides an opportunity for the expression of public views on the environmental and social impacts of the application. All public views on impacts will be documented, addressed and responded to in the public participation process and incorporated into the final Part 2 Amendment Report for consideration by the DFFE.

Potential interested and affected parties will be given an opportunity to comment on or raise issues relevant to specific project matters. Specifically, Regulation 40(3) of the EIA Regulations, 2014, as amended, states that potential Interested and Affected Parties (I&As), including the Competent Authority, may be provided with an opportunity to comment on reports and plans contemplated in Regulation 40 (1) of the EIA Regulations, 2014, as amended, prior to the submission of an application but must be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. The public participation process will take place from 08 July 2026 to 06 August 2026. This process will include the placement of site notices and the publication of advertisements in a local newspaper.

## **9. INVITATION TO REGISTER AS AN I&AP**

You are invited to register as an Interested and Affected Party (I&AP).

For 30 days, 08 July 2026 to 06 August 2026, the BID is presently available for review and for submission of comments regarding the proposed project. I&APs are requested to please provide comments together with their name, contact details and an indication of any direct business, financial, personal or other interest which they have in the application to the contact person provided within the review period.

The preferred method of communication is either by telephone or email correspondence, which will also allow tracking of submissions.

## **10 WAY FORWARD**

In terms of sections 39 to 44 of Regulation 326 of NEMA, a Draft Part 2 Amendment Report will be given along with this BID for I&APs to review and register as I&APs by completing the attached Comments & Registration Form below. They can also contact QEMS by emailing the details given in the attachment below. Lastly, I&APs can send comments and raise issues/concerns about the project.



**PART 2 AMENDMENT FOR THE PROPOSED ADDITION OF THREE SYNCHRONOUS CONDENSERS TO THE EXISTING GAMMA SUBSTATION AND ITS ASSOCIATED INFRASTRUCTURES WITHIN JURISDICTION OF THE UBUNTU LOCAL MUNICIPALITY, UNDER THE PIXLEY KA SEME DISTRICT MUNICIPALITY, IN THE NORTHERN CAPE PROVINCE.**

**QEMS MANAGEMENT AND BUSINESS SOLUTIONS CC**

7 Munnik Avenue, Sterpark,  
Polokwane, 0700  
Limpopo, South Africa  
Tel:

**REGISTRATION AND COMMENTS SHEET**

|                                           |  |                             |  |
|-------------------------------------------|--|-----------------------------|--|
| <b>TITLE</b><br>(Prof/Mr./Mrs.)           |  | <b>FIRST</b><br><b>NAME</b> |  |
| <b>SURNAME</b>                            |  |                             |  |
| <b>CAPACITY (e.g. Director/Secretary)</b> |  |                             |  |
| <b>ORGANISATION</b>                       |  |                             |  |
| <b>POSTAL ADDRESS</b>                     |  | <b>POSTAL CODE</b>          |  |
| <b>TEL NO:</b>                            |  | <b>CELL NO:</b>             |  |



|                 |             |              |
|-----------------|-------------|--------------|
| <b>Address:</b> |             |              |
| <b>Tel:</b>     | <b>Fax:</b> | <b>Cell:</b> |
| <b>Email:</b>   |             |              |