Nov 2023

Environmental and Social Impact Assessment for the Proposed 400 kV Transmission Line from Auas to Kokerboom Substation

STAKEHOLDER ENGAGEMENT PLAN

December 2023

ENVIRO DYNAMICS
Environmental Management Consultants

NamPower
Powering the Nation and beyond

PROJECT NAME	Proposed 400kV Transmission line from Auas to Kokerboom Substations ESIA and ESMP
REPORT	Stakeholder Engagement Plan and Report
STAGE OF REPORT	Final
CLIENT	NamPower Attention: Martin van der Merwe
LEAD CONSULTANT	Enviro Dynamics Enquiries: Stephanie van Zyl Tel: 264 81 1287002 E-Mail: stephanie@envirod.com
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CONTRIBUTORS TO THE REPORT	Author: Stephanie van Zyl Reviewed: Norman van Zyl

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1 INTRODUCTION

NamPower intends constructing a 400kV power line from the Auas Substation near Dordabis to the Kokerboom Substation near Keetmanshoop, Namibia. The line will assist in securing the supply of electricity to Namibia in future and open up opportunities for selling power to the Southern African Power Pool.

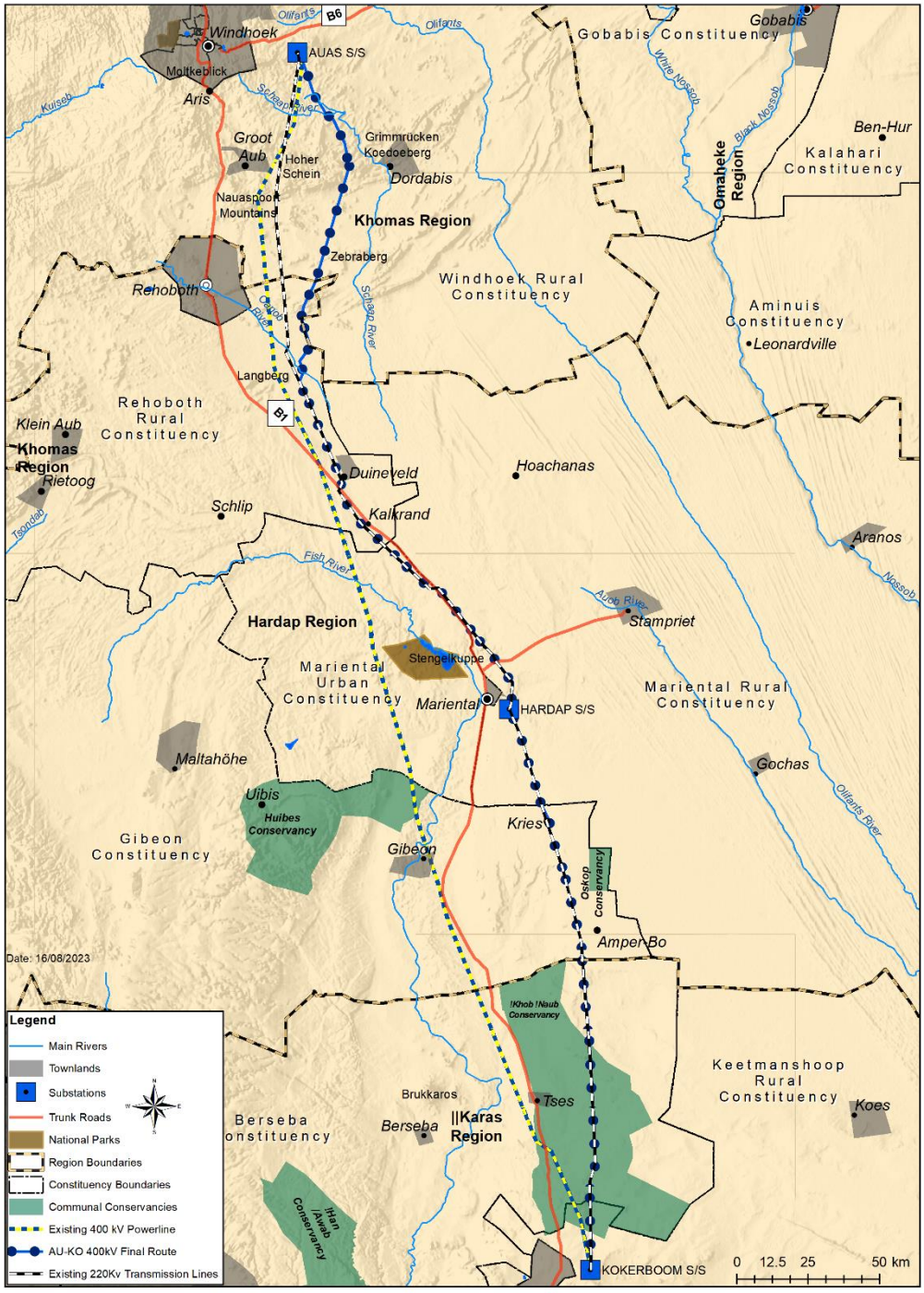


Figure 1: Locality of the proposed Auas-Kokerboom 400kV Transmission line

An initial Environmental Impact Assessment was conducted for the project to satisfy the requirements of the Environmental Management Act (2007) and its Regulations (2012), i.e. before involvement of the World Bank. An Environmental Clearance Certificate was received for the project in January 2021 in terms of the mentioned Namibian legislation. The updated ESIA for the project was prepared in 2023, and is currently under review by the World Bank to be finalized by project appraisal in January 2024.

NamPower is currently seeking funding from the World Bank for the construction of the transmission line along with a number of associated works, which will include the following:

- The new Auas-Kokerboom 400kV Transmission Line, with associated infrastructure at both substations such as switchgear and reactors
- A Battery Energy Storage System (BESS) to be installed at Lithops Substation, that will enable NamPower to store energy generated by, amongst other, renewable sources such as solar or wind energy to allow utilisation of such energy when these resources are not available, such as after sunset. See **Appendix D** with further project details on the BESS.

The World Bank requires of its Borrowers to fulfils the requirements of its Environmental and Social Framework (ESF). The Framework sets out the environmental and social safeguards to be implemented during all phases of a project life-cycle.

Enviro Dynamics has been appointed to update the Environmental Impact Assessment process (2020) to fulfil the above requirements of the World Bank.

Stakeholder Engagement has been carried out for the Environmental Impact Assessment conducted to Namibian and World Bank standards. This document sets out the work to conducted for the ESIA, according to the Stakeholder Engagement Plan also presented here, as a final round of consultation following the initial consultation, to fulfil the requirements of the ESF, as set out in Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure.

2 THE PROJECT SCOPE

2.1 PROJECT DESCRIPTION – 400KV TRANSMISSION LINE

2.1.1 Transmission line route

The general direction of the 500km route is from Auas substation near Dordabis to Kokerboom substation near Keetmanshoop. The overall aim is to keep the route short over this distance, yet avoid major topographical limitations. Furthermore, the aim is to place the route alongside existing infrastructure to avoid the breaking up

of productive land, habitat and limit visual intrusion, as well as any physical resettlement of people and land acquisition. Historic work on the route finalisation has focussed on these aims and to accommodate stakeholder concerns where possible.

2.1.2 **Structural and physical requirements of the line**

The entire length of the proposed transmission line is estimated to be approximately 500 km.

There will be no land acquisition conducted, and all of the impacts on land are limited to servitude. The servitude will be 80 m wide for the entire line an estimated 12 m width will be cleared of vegetation and obstacles to create a service road, to provide access (during construction and maintenance) to the line throughout its lifespan of 30 years. Owing to its footprint, the area about the centre of each V-structure to be cleared of vegetation will cover an area of approximately 70 m X 50 m.

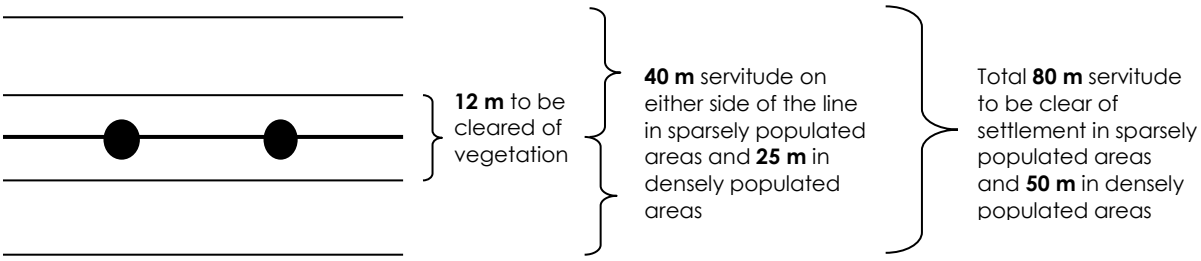


Figure 2: Servitude details for the proposed transmission line

Since the line will run parallel to an existing power line to the south, the servitude width there including the existing line will be 110m in total, consisting of a minimum distance of 45m between the two lines, and a 40m servitude outside the centre line of the 400kV line, and 25m outside the centre line of the existing 220kV line.

For safety and technical reasons, no permanent structures other than the towers are allowed within the servitude. Grazing and cultivation of fields with associated farming activities may be accommodated within this area as there is still plenty of land surrounding the actual footprint, except for the 12 m strip, which is needed during construction. No serious impact on livelihoods or economic displacement is expected as a result of works (with the exception of low to minimal impacts associated with processing servitudes).

2.1.3 **Regeneration stations**

There are no new substations required for this proposed power line, although changes will be made to the existing Auas and Kokerboom stubstations to accommodate it.

Four new Fibre Regeneration stations will need to be constructed. These stations are normally contained within the footprint of one of the towers, and are fully fenced off with a gate. Therefore, no land acquisition, servitude, or any other ESS5 impacts are anticipated.

2.1.4 **Project Cost and Timeline**

Cost estimates are approximately N$ 2.2 million per km for the V-tower system. The total cost is therefore expected to be at least N$ 990 million.

The construction period will be approximately 36 months or two to four years, depending on the construction programme favoured.

2.1.5 **CONSTRUCTION MATERIALS AND PROCESS**

The project will require the following approximate volumes of materials per km of transmission line:

- Approximately 12 m^3 water from boreholes for concrete.
- Approximately 50 m^3 sand and stone for concrete, sourced locally.
- Approximately 12 tons galvanised steel, sourced internationally.
- Conductor, Optical fibre, Insulators and associated hardware will be sourced internationally.

The project will be sourced from two base camps as well as satellite camps for every 40 km of line. The construction process will use three separate teams that will be responsible for:

- Clearing the line, digging and casting of foundations;
- Constructing towers (specially trained team); and
- Stringing and clamping the cabling (specially trained team).

2.1.6 **Employment Creation**

About 100 people will be employed during construction of a section of line, of which approximately 10 people will be of management and supervisory capacity. The remainder will be artisan and skilled labour, with a smaller component of unskilled labour.

The maintenance of the new transmission line is likely to be done by existing NamPower staff, therefore, no employment creation is expected during operation. If an agreement can be reached between NamPower and the local authorities, the maintenance of the cleared portion of the servitude could serve as an employment opportunity in the future when works are completed.

2.2 BATTERY ENERGY STORAGE SYSTEM (BESS)

A Battery Energy Storage System (BESS) is comprised of three major components: the battery which is the energy container; the power conversion system/inverter, which interfaces the DC battery system to the AC power system; and the power plant controller which governs, monitors, and executes the intended functions of the energy storage application.

The NamPower grid shows strong feasibility during normal operation. The final decision to install the BESS at Lithops substation is taken in terms of arbitrage. This is a suitable location for the BESS installation:

- This location is close to high-loading mine area and the BESS could reduce the inrush current when the heavy machinery is connected.
- Power fluctuations from upcoming PV projects can be compensated directly at the source.
- BESS will allow PV penetration to be increased beyond the current committed expansion plans in the region. The demand here for captive PV power plants is especially interesting due to the large industrial loads.

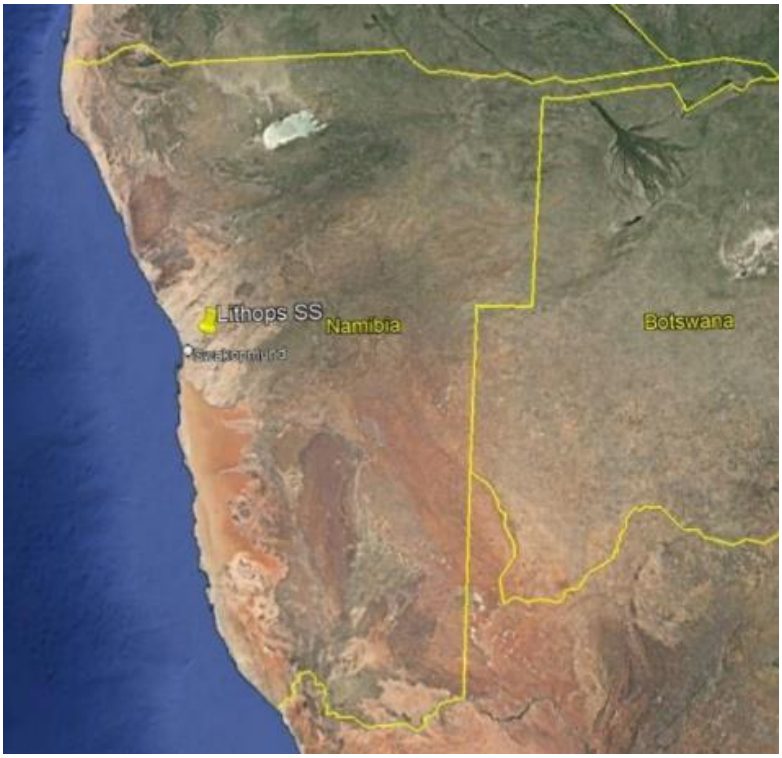


Figure 3: Lithops Substation Location: proposed site for BESS

3 PREVIOUS STAKEHOLDER ENGAGEMENT ACTIVITIES:400kV TRANSMISSION LINE

3.1 WORK DONE PRIOR TO 2023 ESIA UPDATE

3.1.1 Scoping study

During the Scoping study of the EIA process, a thorough stakeholder engagement exercise was undertaken during May and June 2016. Although this was prior to anticipation of World Bank financing, the demographical landscape of stakeholder has not been changed since then.

At the time of the initial round of consultation, the Consultant used all relevant means to ensure engagement, access to the information and a reasonable chance to comment.

Public meetings were held at the following places:

- Keetmanshoop Show Hall, Keetmanhoop
- Tses Community Hall, Tses
- Gibeon Community Hall, Gibeon
- Mariental Hotel, Mariental
- Kalkrand Community Hall, Kalkrand
- Hermann van Wyk Memorial Hall, Rehoboth
- Dordabis Farmer's Association Hall, Dordabis and
- NamPower Convention Centre, Windhoek.

Forty six (46) Interested and affected parties commented at this time, indicating that engagement was effective and bring benefits to communities. Comment received during the Scoping phase fell into the following categories:

- Confirmation of the need for the proposed project due to the unreliable electricity supply in the area and the need to strengthen the counties' overall transmission line network, and the encouragement of NamPower to construct the proposed project
- Support for the proposed EMP for the construction and operational phases in order to mitigate potential detrimental impacts
- Concerns over the impacts on avifauna, change of sense of place, long-term disruption to livelihoods and life (including homesteads and farm infrastructure) as well as short-term disruption to farm management.

Suggestions were made to realign the powerline away from established infrastructure to minimise/ avoid impacts to livelihoods. Notably, these suggestions are incorporated in the latest route proposed to the World Bank, and will avoid significant land impacts and require only servitude.

- Various specialist studies were undertaken to address the concerns as presented during this engagement process.

3.1.2 Engagement during Environmental Impact Report 2019-2021

During the submission of the 2019-2021 Environmental Impact Reports, stakeholder engagement was again undertaken, since a number of years had lapsed since the scoping study was commissioned.

The Draft Assessment Report was circulated for review to the stakeholders, notably the effected farm owners on 11 November 2019. After this process it became apparent that some farm owners still objected to the position of the line on their farms. Follow up engagements therefore took place with these specific farm owners. All concerns were addressed by adjusting the route to avoid some of the sensitivities pointed out by the farm owners. In one instance, this was not possible due to cost implications, new impacts to other farm owners when moving the line, and the need to keep the line parallel to the existing one to avoid bird collisions.

The details of this process are available in the presentation (Appendix A), and the focus areas consulted is shown in **Figure 4.**

4 2023 STAKEHOLDER ENGAGEMENT PLAN

A thorough identification of stakeholder groups was done during the 2016, then again in 2019-2021, Scoping Process. This was renewed again in 2023 in the context of the World Bank involvement and its ESS10 requirements.

The aim of the current process is to focus on the affected authorities, directly affected parties (i.e. farms which are affected by the transmission line), as well as applicable NGOs, notably those concerned with biodiversity and birds, as well as representatives of Indigenous Peoples/vulnerable and disadvantaged groups.

4.1 AUTHORITIES

The proposed transmission line traverses three (3) regions (namely Khomas, Hardap and //Karas Regions). **Table 1** below shows the Constituencies within each region that are affected.

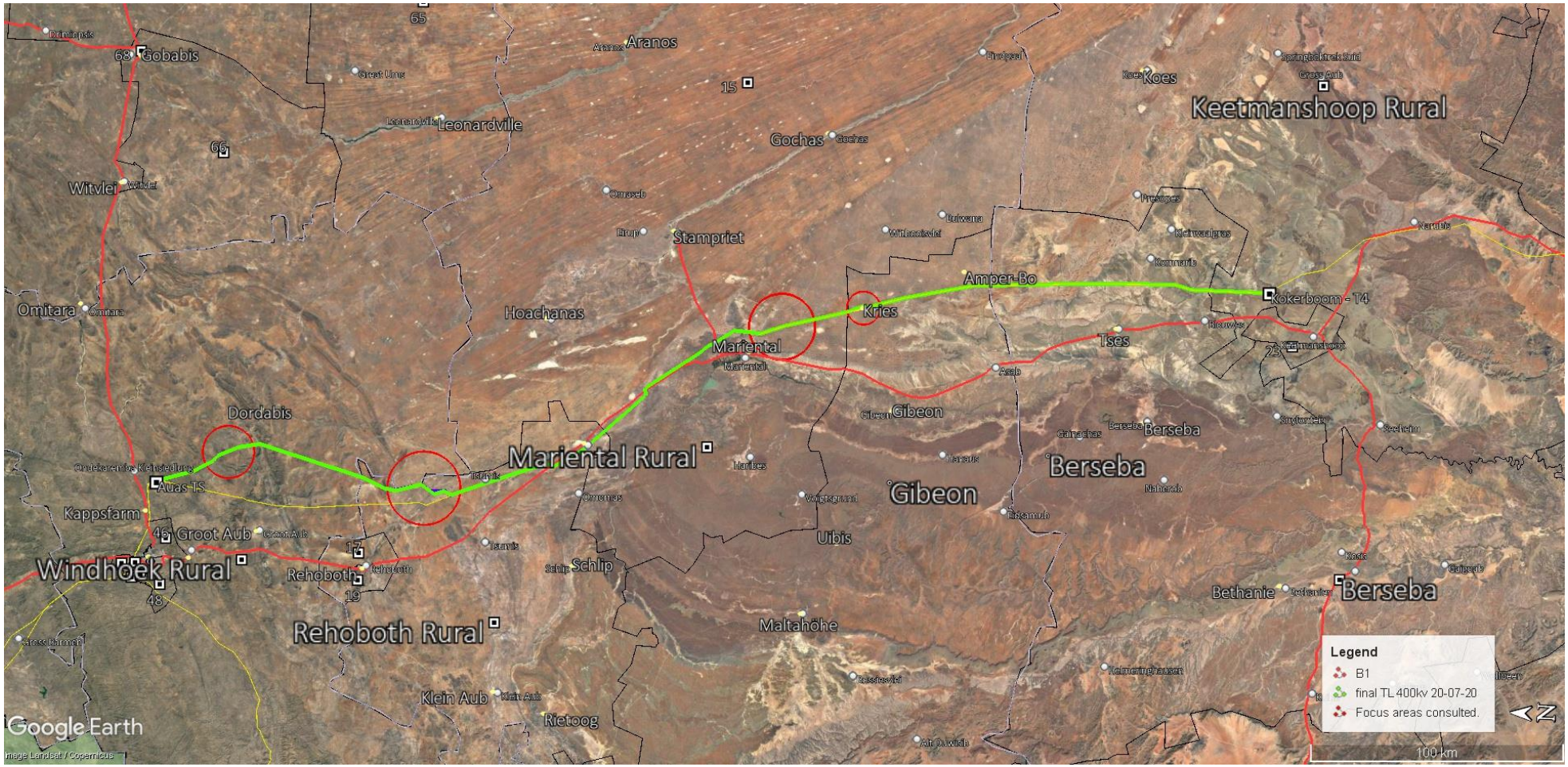


Figure 4: Proposed Transmission Line Route showing affected Constituencies, Villages and Towns passed, and focus areas consulted.

4.2 PROJECT AFFECTED PARTIES

4.2.1 Land owners and occupants – 400kV line

The proposed transmission line traverses 88 farms[1], the distribution and ownership status[2] of these farms is presented in **Table 1**, which also illustrates the freehold and communal areas in the three project-affected regions.

Table 1: Distribution and tenure status of affected farms.

Region	Constituency	Total Farms	Private		State-Owned	Unknown
			Individuals	Companies		
Khomas	Windhoek Rural	28	22	6	-	-
Hardap	Mariental Rural	19	10	5	3	1
	Mariental Urban	1	1	-	-	-
	Rehoboth Rural	18	13	2	3	-
	Gibeon	10	-	-	10	-
//Karas	Berseba	6	-	1	5	-
	Keetmanshoop Rural	7	2	-	5	-
TOTAL		**89**	**50**	**14**	**24**	**1**

Source: Surveyor General, May 2016 and personal interviews, October 2016, cited in Desai, 2016.

The farms located in Windhoek Rural are 100% privately owned by individuals or companies. In Mariental Rural, Mariental Urban and Rehoboth Constituencies, ~82% of the farms are privately owned and 16% are state-owned.

The Rehoboth 'Baster Gebiet' is largely located in Rehoboth Constituency and crosses the boundary into the southern parts of Windhoek Rural Constituency.

[1] This information was collected from the Deeds Office. The accuracy of the information is variable. (Desai, 2016)

[2] The tenureship status is as captured at the Deeds Office in 2009. More detailed work was done in 2020 to verify the ownership of these farms and the upated information was used during engagement at that time. Ownership had changed in some cases, but not ownership status.

'Baster Gebiet' refers to land located in the vicinity of Rehoboth, Duineveld and Kalkrand towns. The Rehoboth Basters, amongst other 'Baster' groups, migrated north of the Orange River, as they were not permitted to own land in the Cape. They searched for new homes and secure pastures. With Namibian independence, their communal 'Gebiet' ceased to exist; the land was divided up into privately owned freehold farms (registered to individual Basters);[3]. These farms are often divided between family members following the death of the registered owners; this occurs informally and is not reflected at the Deeds Office. As such, in practice, these farms may be smaller than those recorded at the Deeds Office.

South of Kries, almost 100% of the farms are state-owned in Gibeon and Berseba constituencies. Five of the 7 affected farms in Keetmanshoop Rural (71%) are state-owned and the remaining 2 are private. In Gibeon and Berseba, some of the state-owned land is leased on a contract basis as 'resettlement farms'; however, the majority of state land is communal and under the jurisdiction of the Traditional Authorities. The Ministry of Land Reform has over-arching responsibility for all state-owned land.

Straddling the boundary of the Hardap and //Karas regions is the communal land (this includes the 'pre-independence private farms); see **Table 1**. The proposed transmission line will run through this area, ending approximately 23km north-east of Keetmanshoop. The communal area is referred to as Namaland and is occupied and used by the Nama people. Kries, Gibeon, Amper-Bo, and Tses are some of the established settlements that accommodate many of the Nama households, education and healthcare facilities. There are structures (including kraals, water points, small houses) scattered throughout the communal area, however these are sparsely distributed.

All these villages and structures are avoided by the power line with the route planning work done to date.

4.2.2 Other interested parties

As mentioned, NGO's and individuals specifically concerned with birds, biodiversity and vegetation were including in the Stakeholder Engagement Plan and targeted. These include the National Botanical Society, University of Cape Town research Unit,Namibia Nature Foundation, Namibia Environment and Wildlife Society, BirdlifeSouth Africaand Namibia Chamber of the Environment. These specific NGO's were targeted, since they were previously actively involved, either through some of the specialist work, in an advisory capacity or as known to have an interest in the

[3] Rehoboth, Namibia – Past & Present, 2012.

project, particularly as far as the matter of avifauna collisions is concerned. The NGOs will be periodically consulted with throughout project implementation.

4.2.3 **Vulnerable groups**

Generally, vulnerable groups[4] are present in the study area. These groups were all identified as part of the original stakeholder engagement exercise, as described above. Because of distinct languages, rural nature, or relative illiteracy, such groups are sometimes excluded from various engagements, and therefore, the project preparation specifically focused on ensuring that such groups are well informed of project decision making and are aware of the proposed project activities. Thus, all directly affected owners and occupants as well as their leaders were identified. The communal land is mostly where vulnerable groups reside. None of their assets or livelihoods are affected by the project. Grazing of livestock is still possible under the power lines. However, during the current engagement process, care was taken to involve the leadership of these groups, to ensure their concerns could be heard, if any.

The vulnerable groups in the area also include women, and those without jobs. The English language may also be a barrier, therefore the stakeholder engagement process used necessary translation and applicable language where necessary. Another barrier was access to written documentation for the communities. Therefore physical meetings were be held where needed.

The Nama people

[4] World Bank Definition of vulnerable groups as described in ESS7 "8 . In this ESS, the term "Indigenous Peoples/SubSaharan African Historically Underserved Traditional Local Communities" (or as they may be referred to in the national context using an alternative terminology) is used in a generic sense to refer exclusively to a distinct social and cultural group possessing the following characteristics in varying degrees: (a) Self-identification as members of a distinct indigenous social and cultural group and recognition of this identity by others; and (b) Collective attachment6 to geographically distinct habitats, ancestral territories, or areas of seasonal use or occupation, as well as to the natural resources in these areas; and (c) Customary cultural, economic, social, or political institutions that are distinct or separate from those of the mainstream society or culture; and (d) A distinct language or dialect, often different from the official language or languages of the country or region in which they reside . 9 . This ESS also applies to communities or groups of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities who, during the lifetime of members of the community or group, have lost collective attachment to distinct habitats or ancestral territories in the project area, because of forced severance, conflict, government resettlement programs, dispossession of their land, natural disasters, or incorporation of such territories into an urban area .7 This ESS also applies 5 The scope and scale of consultation, as well as subsequent project planning and documentation processes, will be proportionate to the scope and scale of potential project risks and impacts as they may affect Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities . See paragraph 11 . 6 "Collective attachment" means that for generations there has been a physical presence in and economic ties to land and territories traditionally owned, or customarily used or occupied, by the group concerned, including areas that hold special significance for it, such as sacred sites . 7 Care must be taken in application of this ESS in urban areas . Generally, it does not apply to individuals or small groups migrating to urban areas in search of economic opportunity . It may apply, however, where Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities have established distinct communities in or near urban areas but still possess the characteristics stated in paragraph 8 . to forest dwellers, hunter-gatherers, pastoralists or other nomadic groups, subject to satisfaction of the criteria in paragraph 8"

The Nama group, residing in the lower two thirds of the transmission corridor, is considered to be a specific Indigenous Group, recognised as such in Namibia. The Nama people reside mostly in villages and towns along the route. The people are livestock farmers, but do increasingly work in towns and villages in the area. The !Khoi !Naub Conservancy **(Figure 1),** is a protected area occupied by Nama people. The area contains limited wildlife, for which hunting permits are issued annually by the Ministry of Environment, Forestry and Tourism and has zones allocated according to the management plan of the conservancy.

Representatives of the Nama people, as well as of the conservancy, were targeted as important stakeholders, and have attended consultations.

The Kriess Village, occupied by Nama people was also targeted during this engagement, since it is a settlement adjacent to the proposed route, but not directly impacted by its footprint.

4.2.4 **Stakeholders of BESS**

The BESS team identified the following specific stakeholders on the BESS at the Lithops substation:

- NamPower
- Ministry of Mines and Energy (MME) as competent authority
- Ministry of Environment, Forestry and Tourism, (MET) as regulator
- Ministry of Agriculture, Water and Land Reform (MAWF), Ministry of Works and Transport (MWT),Ministry of Labour and Social Welfare (MLRS), Ministry of Health and Social Services (MHSS), Ministry of Industrialization, Trade and SME Development as other involved ministries, or ministries to keep informed.
- National Heritage Council (NHC)
- Erongo Regional Council with jurisdiction in the region
- City of Arandis and Swakopmund as off-takers
- Adjacent Landowners, which Sahara Mine Dimension Stone, Khan Mine, Stone Africa Dimension Stone, Savanah Marble, Rössing Mine.

4.3 SUMMARY OF STAKEHOLDER NEEDS

Stakeholder group	Key characteristics	Language needs	Preferred notification means (e-mail, phone, radio, letter)	Specific needs
Regional and national stakeholders	Time constraints Fluent in English Literate	English	E-mail	Provide ample time for comment

Stakeholder group	Key characteristics	Language needs	Preferred notification means (e-mail, phone, radio, letter)	Specific needs
	Distanced from the project			
Community leaders	Rural nature, sometimes inability to read, comprehend invitations, project details	English, Afrikaans	Mobile phone no access to e-mails. Councillor may share information	Meetings advance notice. Explain in simple terms
Land owners	Rural – commercial and communal Time constraints Distance from meetings Rural ability to understand The commercial farm owners mostly have access to e-mail, and are literate in English. This includes the BESS adjacent landowners.	English, Afrikaans	E-mail for commercial owners, BESS. rural – notified through leadership and e-mail where applicable, watssapp	Advance notice Focal meetings where there are objections

4.4 STAKEHOLDER ENGAGEMENT METHODS

All stakeholders were notified of the updated ESIA process through e-mail. All the commercial farm owners and BESS stakeholders have access via e-mail, as well as WhatsApp as this has proven to be the most optimal method to reach staekholders. Specific stakeholders such as councillors and other leaders were directly contacted and requested to arrange the meetings for the communal area specifically Kriess where it was felt that this community was perhaps excluded from Consultation before during 2016 scoping. During this round of consultations, the consultant aimed to engage the leadership of communal areas.

All engagements were recorded and the issues and responses identified.

The ESIA and ESMP Reports will be circulated for comment to these stakeholders again before project's appraisal in January 2024.

5 2023 STAKEHOLDER ENAGEMENT REPORT

From experience it was found that the farm owners from Windhoek to Mariental have e-mail access and that, through past interactions, all their concerns were addressed and the line moved to suit their needs.

For this reason, one meeting was held at Gibeon to target the leadership of the Kriess community, the general Gibeon Constituency, and leadership of the !Khob !Naub Conservancy.

Another meeting was held in Windhoek for any commercial farm owners who still needed an opportunity to comment.

The minutes of these meetings are attached as **Appendix A.**

A Background Information Document **(Appendix B)** was circulated to all on the stakeholder database in order to solicit comments, either telephonic, or by way of a focal meeting. A Background Information Document **(Appendix D)** was also sent to the stakeholders of the BESS project, soliciting their concerns.

There were technical questions asked at the meeting and some needed confirmation on, for instance, how far the power line would be from their residences. After an explanation on the distance of servitude and necessary processes, there was clarity and no further comments were received. At Gibeon there was a request to employ the local people as unemployment was reported as being very high, which is indicative of broader economic situation in the country. It was explained candidly and to manage expectations of stakeholders that the project is not a significant employment creator at this point.

The Avifauna specialist who was involved in conducting the original Avifauna Impact Assessment, requested an edit within the main ESIA, to reflect the fact that the staggering of the pylons is important for mitigation purposes.

To date no comments have been received on the BESS component of the proposed project.

The e-mail communication, for both the 400kV transmission line project and the BESS is presented in **Appendix C.**

6 STAKEHOLDER ENGAGEMENT PLAN DURING CONSTRUCTION AND OPERATION

The following schedule and roadmap is proposed for engagement during construction and shall be included in the ESMP.

Project stage	Topic of consultation	Method used	Timetable Location and dates	Target stakeholders	Responsibilities
Pre-construction	Recruitment	Meeting	At Regional council Prior to construction	Community leaders And Councilors meeting	Contractor

Project stage	Topic of consultation	Method used	Timetable Location and dates	Target stakeholders	Responsibilities
Pre-construction	Construction activities and what to expect Health and safety Grievance	E-mail NamPower website	Electronic prior to construction, with updates every three months or as may be appropriate	Community leaders Landowners	Community Liaison Officer (CLO) Engineer
As needed	Grievance redress	Individual, meeting,	Needs based	Leader and affected individual	Community Liaison Officer (CLO) Engineer
Monthly	Progress report Environmental and Social performance	Meeting	As determined by the community leaders where construction is in progress	Leaders Stakeholder list	Community Liaison Officer (CLO) Engineer

7 GRIEVANCE REDRESS MECHANISM

By adopting this SEP, NamPower is committed to fostering a constructive project work environment in which the views and rights of both NamPower and its internal and external stakeholders are respected. Feedback received from stakeholders will contribute to the development and status of the stakeholder engagement matrix. The project has therefore, instituted this grievance procedure aimed at:

- Providing all stakeholders (internal and external) with the opportunity to raise any individual or group grievances; and
- Ensuring a consistent and fair approach in addressing any stakeholder dissatisfaction/grievance that has been raised within the project

Principles:

- The project is committed to the fair treatment of all its stakeholders who lodge a grievance and stakeholders are therefore encouraged to raise grievance without prejudice to the contracts/interest/roles, provided that the grievance is not false or of a malicious nature.
- Any stakeholder has the right to submit all its grievances to the Project Manager for a solution.
- Provided that the grievance issue is within the Project Manager's control, the Project Manager shall attempt expedite the resolution of the matter diligently.
- Recourse to the mechanism will not prevent access to judicial or administrative remedies.
- Complainants may request anonymity and confidentiality, and procedures should respect such requests, in line with Namibia's laws as well as WB's ESF.

The Project Grievance mechanism is attached as Appendix E. Its implementation is required according to the ESMP of both the 400kV transmission line and the BESS.

There are various avenues that will be employed in the stakeholder engagement process throughout project cycle by NamPower going forward:

a. Community Forums: To facilitate effective consultation with the communities during implementation of the project, establishes community forums through local community established leadership to disseminate project information to community members.

b) Local Government: engaging local government representatives as a channel to disseminate information on the project.

c) Information Boards: Notice boards are effective mechanisms to inform the communities and wider audiences about the project. These can be installed on specific areas of impact (communities).

d) Media: Newspapers commonly read in the project area will be used notify the general public.

e) Using Whatsapp, Phone, Email to keep regular contact with key stakeholders, as well as receive necessary feedback form them.

8 STAKEHOLDER ENGAGEMENT DURING OPERATION AND MAINTENANCE

The following is applicable to both the BESS and 400kV transmission line projects.

8.1 REPORTING

The MEFT requires bi-annual reporting and as part of this reporting, the environmental and social performance is due. The reporting should include grievances redressed for the period as well as accidents and incidents in the community and how they were resolved. It is recommended that all those on the stakeholder list also receive access to this report via the internet and the local leadership as appropriate. This requirement will be included in the ESMP.

8.2 FUTURE PROJECT MAINTENANCE WORKS AND EXTENSIONS

Any new construction schedules and significant maintenance works should be communicated to the applicable community/stakeholders as described above, and they should be included as stakeholders to the project.

Access to farms and the conservancy should be communicated beforehand to the land owner and occupants, in line with Namibia's laws, as well as principles of the WB's ESS10.

APPENDIX A MINUTES

AUAS-KOKERBOOM 400kV TRANSMISSION LINE

Community Consultation Meeting
5 Jully 2023

Meeting date:	5 July 2023
Venue:	Gibeon Constituency Office
Conveners:	Norman van Zyl, Enviro Dynamics
	Martin Van Der Merwe, NamPower
Attendants:	Appendix A, including representatives from the Conservancy, Kriess village, Gibeon Constituency, Including Nama leaders.
Presentation:	Appendix B

1 INTRODUCTION AND PURPOSE

Mr. Norman van Zyl introduced the conveners and the purpose of the meeting, namely to bring progress with the project, get final input and explain the way forward. The meeting was conducted in Afrikaans as per the overwhelming wish of the participants. For further information refer to Appendix B. Detailed information on each project components were delivered to the participants to make them fully aware of the activities.

2 THE PROJECT

Mr van Zyl further used the presentation (Appendix B), to explain the history of the EIA and its findings as well as the proposed project route with its details. He emphasised the objective of NamPower to fund the project through World Bank. The Auas-Kokerboom 400kV transmission line, a Battery Energy Storage System (BESS) and further technical studies for NamPower will be funded by World Bank. He also emphasized that should participants have any suggestions at any point during actual consultations, and any point thereafter, they should feel free to reach out to him as well as NamPower to express any wishes or concerns that they may have.

3 QUESTIONS AND COMMENTS

Mr Van Zyl explained the limitations under the route, namely that no structures could be erected, but that grazing could continue there once the construction phase was

completed. During construction phase, grazing can continue elsewhere as there is adequate land beyond the footprint of the project activities along the route. He enquired from the audience whether there would be any impacts on the livelihoods of the people. Participating did not express any particular concerns on livelihoods, or land impacts, or construction. Overall, they welcome the longer term benefits that the project will bring to the region and communities. The following are some of the key responses, questions and comments were received from the audience:

(Note: English responses, below Afrikaans language responses)

Comments/questions	**Response**
Van Kries af is daar plase naby die 220kV lyn. Sal die nuwe hulle nie affekteer nie? Around Kries there are farms near the 220kV line. Wil they be affected by the new line?	Nee. Dit is bevestig dat hulle aan die ander kant van die lyn lê. No. It is confirmed that they lie on the other side of the old line.
Wat van die vee poste? Wat about stock posts?	Dit het geen effek op vee poste se gebruik nie. Beeste kan nie in die nuwe toring ontwerp vassit nie. It will have no effect on the use of stock posts. The new tower design will also not allow cattle to get stuck.
Sal die ou 220kV lyn tot niet gemaak word? Will the 220kV line be shut down?	Nee. No.
Sal nuwe plase van die 400kV lyn krag kan kry? Will new farmhouses be connected to the 400kV line?	Nee, die nuwe 400kV lyn is te groot. Dit is te duur om plaaslike huise to koppel. No, the new 400kV power line is too big. It would be too expensive to connect farmhouses.
Sal Kries gekeer word van onder die lyn uitbrei? Will Kries be kept from expanding underneath the power line?	Niks permanent moet onder die lyn gebou word nie. Yes, nothing permanent should be built underneath the power line.

Comments/questions	Response
Sal die nuwe 400kV lyn die krag pryse verlaag? Will the new 400kV line lower power costs?	Die krag lyn sal nie noodwendig die prys verlaag nie, maar dit sal krag voorsiening stabiliseer en nuwe bronne akkomodeer. The new power line will not have a direct impact on prices, but will stabilise power provision and will accommodate new sources.
Sal die plaaslike mense konstruksie werk kry? Will the locals get construction work?	Die ooreenkoms met die kontrakteur sal voorsiening maak vir die gebruik van plaaslike werkers waar moontlik. The agreement with the contractor will make provision for the use of local workers where possible, although employment opportunities are limited.

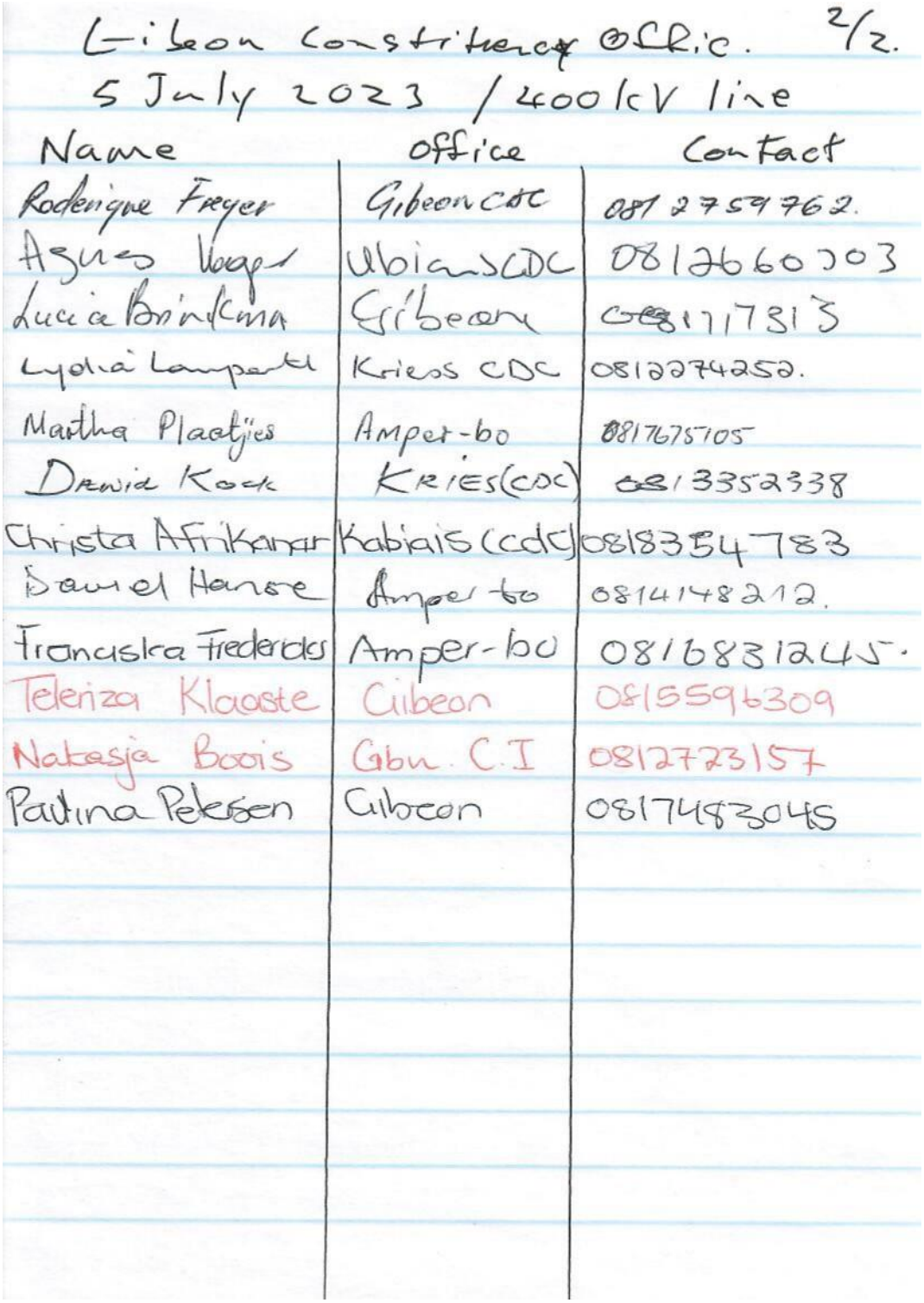
APPENDIX A: ATTENDANCE LIST

1/2

Gibeon Constituency Office

5 July 2023 / 400kV line meeting.

Name	Office	Contact
I.F.A. BERENA	BONDELSWARTS	0812886157
Josephine SKEYER	Bondelswarts	0814422437
RUDY BASSON	KRIESS. SET. Off	0812336911
Silia Bloodstaan	EDUCATION	0813091490
STANLEY KATZAU	GIBEON CLINIC	0816490166
GERSON //HOXOBEB	//Guguru-Ames Sout Put	0812426519
Juleata J. Kisting	S/C	0816210408
CHRIS Kisting.	MAWLR	0813352261
Moritz Apollus	RosenHof	0813196027
Ludwig WINDSTAAN	Sout Blok-Area	0814411597
Bonifatuis Witbooi	BONDELSWARTS	081 7118234
Amon D. Stewe	Gibeon	0813289256
JEREMIAS SWARTBOOI	HEMAT	0817584 130
ANNA Elifas	Farm Falkenhorst	0814028686.
JOHANNES J. EISER	FALKENHORST	0813684961
Timo Isaacks	GRUNDORING.	0812617479
Dennis Demmindu	Gibeon	0813890821
IDA KARICUS	Gibeon	0812606904
Willem Hanse	Gibeon	0812027380



Gibeon Constituency Offic. 2/2.
5 July 2023 / 400kV line

Name	office	Contact
Roderique Freyer	Gibeon CDC	081 2759762.
Agnes Voogt	Ubians CDC	0812660303
Lucia Brinkman	Gibeon	0811717813
Lydia Lamperth	Kries CDC	0812274252.
Martha Plaatjies	Amper-bo	0817675105
Dawid Kock	Kries(CDC)	0813352338
Christa Afrikaner	Kabias (CDC)	0818354783
Samuel Hanse	Amper bo	0814148212.
Francska Frederiks	Amper-bo	0816831245.
Teleriza Klaaste	Gibeon	0815596309
Natasja Boois	Gbn. C.I	0812723157
Paulina Pekesen	Gibeon	0817483045

APPENDIX B: PRESENTATION

Agenda

- Introduction of the project.
- Purpose of the engagement.
- History and findings of the EIA
- Description of the project
- Your comments

Introduction

- Norman van Zyl / Martin van der Merwe.
- 400kV transmission line:
  - approximately parallel to existing 200kV transmission line
  - from the Kokerboom substation, near Keetmanshoop,
  - to the Auas Substation, near Dordabis.
- Original EIA - 2016, Update – 2021.
- Now require an update for Word Bank funding.

Purpose of the engagement

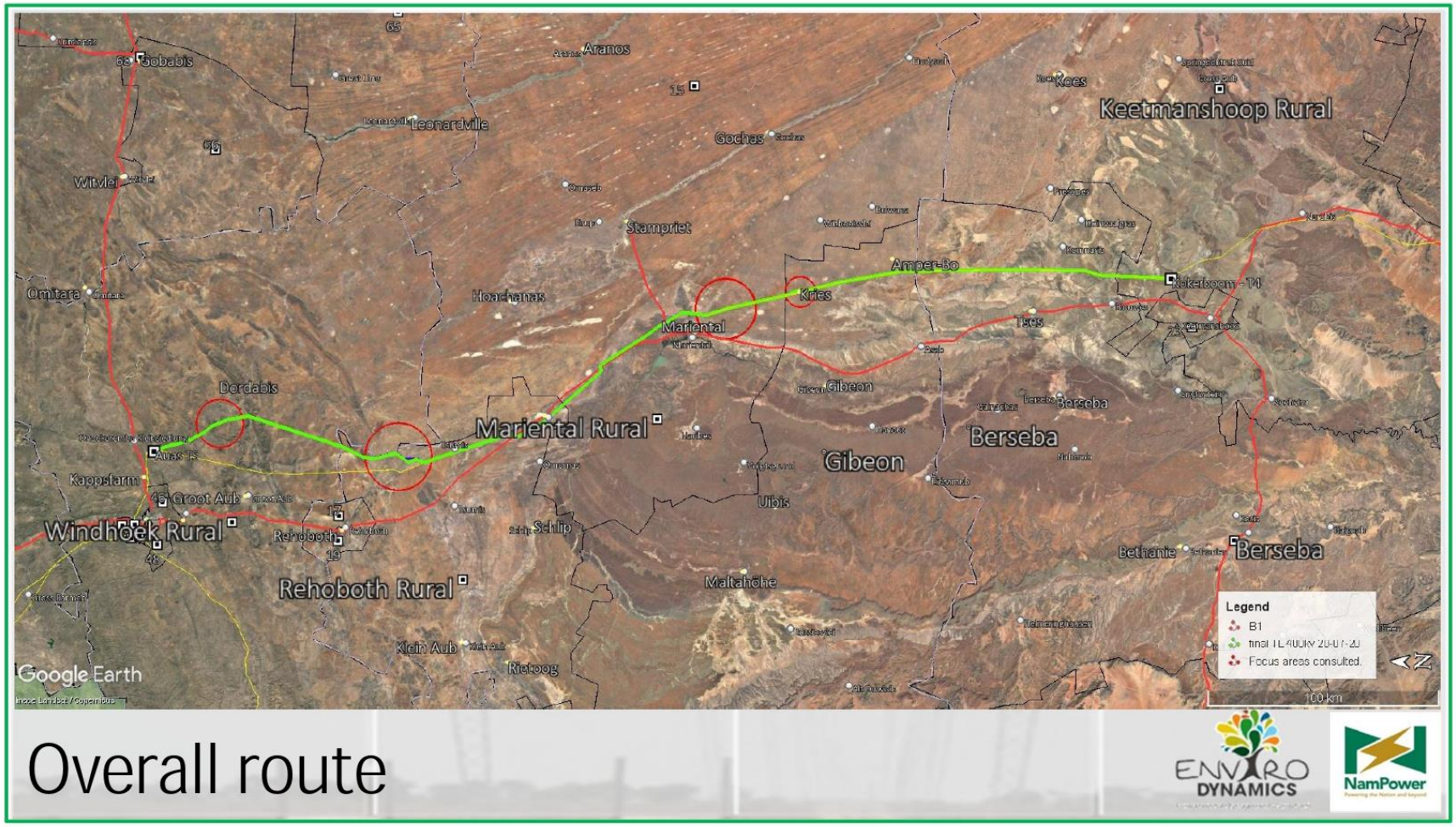
- World Bank funding for:
  - The new Auas-Kokerboom 400kV Transmission Line with substation infrastructure.
  - Battery Energy Storage System (BESS) at Auas Substation for renewable sources energy.
  - Other energy focussed studies in support of NamPower.
- World Bank require Environmental and Social Framework.
  - Stakeholder re-engagement to fulfil requirement.
  - Kries community.

EIA history and findings

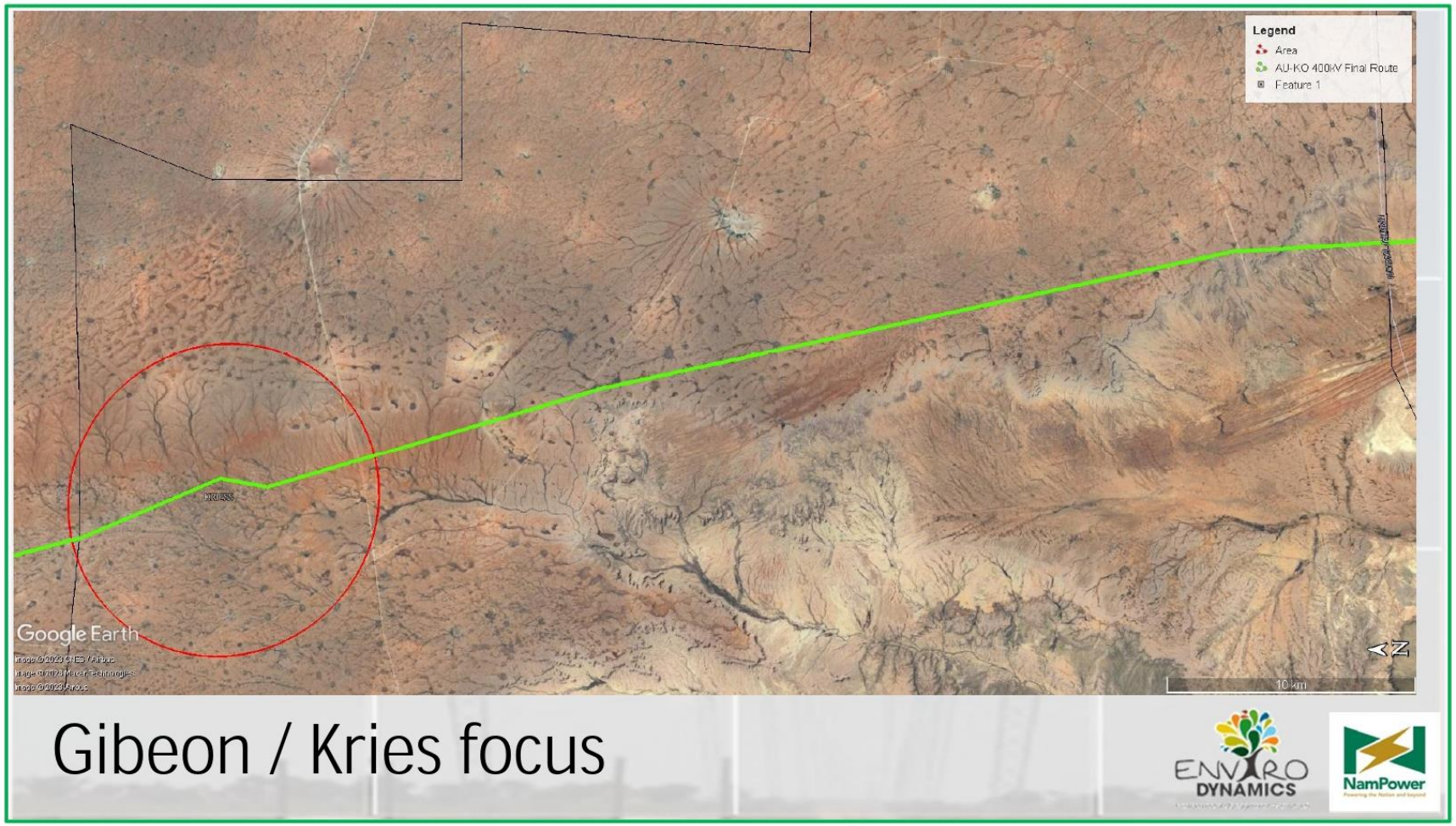
- Engaged all stakeholders in 2016 as well as 2020.
  - Included two route alternative considerations.
  - Extensive specialist input ito birds, vegetation, land use.
  - Led to various final route adjustments.
  - Finalised and received GRN clearance in 2021.
- Key findings:
  - Risk to vegetation limited to protected trees.
  - Risk to birds complex. Will require further monitoring.
  - Risk to land use - route adjustments minimized.

Project description – 400kV Transmission Line

- 400kV transmission line:
  - approximately parallel to existing 200kV transmission line
  - from the Kokerboom substation, near Keetmanshoop,
  - to the Auas Substation, near Dordabis.
- Let's look at some maps and details.



Overall route


Legend
Area
AU-KO 400kV Final Route
Feature 1
Google Earth
10 km
N
Gibeon / Kries focus
ENVIRO DYNAMICS
NamPower


Legend
AU-KO 400kV Final Route
existing line
Google Earth
400 m
N
Kries focus
ENVIRO DYNAMICS
NamPower


Legend
Area
AU-KO 400kV Final Route
Feature 1
Google Earth
20 km
N
Berseba and Keetmans
ENVIRO DYNAMICS
NamPower

Your input

- Update of existing engagements.
- Focus on communal area, - Kries community.
- Confirmation of consultation.

Way forward

- Questions and comments may be sent to:
  - Send your inputs to the e-mail address provided below;
  - Attend one of the pre-arranged meetings communicated;
  - Contact us directly

- Contact details:

Stephanie van Zyl
E-mail: stephanie@envirod.com
Tel: +264 833305891

AUAS-KOKERBOOM 400kV TRANSMISSION LINE

Public Consultation Meeting
12 July 2023

Meeting date: 12 July 2023

Venue: NamPower Convention Centre

Conveners: Norman van Zyl, Enviro Dynamics
Martin van der Merwe, NamPower

Attendants: Appendix A

Presentation: Appendix B

1 INTRODUCTION AND PURPOSE

Mr. Norman van Zyl introduced the conveners and the purpose of the meeting. The meeting was conducted in English and Afrikaans. For further information please refer to Appendix B.

2 THE PROJECT

Mr van Zyl used the presentation (Appendix B), to explain the history of the EIA and its findings as well as the proposed project route with its details. He emphasised the objective of NamPower to fund the project through the World Bank. The Auas-Kokerboom 400kV transmission line, a Battery Energy Storage System (BESS) at the Auas substation and further technical studies for NamPower will be funded by the World Bank.

3 QUESTIONS AND COMMENTS

Mr Van Zyl explained the limitations under the route, namely that no structures could be erected, but that grazing could continue there once the construction phase was completed. During construction phase, grazing can continue elsewhere as there is adequate land beyond the footprint of the project activities along the route. He enquired from the audience whether there would be any impacts on the livelihoods of the people. Participating did not express any particular concerns on livelihoods, or land impacts, or construction. Overall, they welcome the longer term benefits that the project will bring to the region and communities. The following are some of the key responses, questions and comments were received from the audience:

Comments/questions	Response
Is the line route final? Can there be adjustments to the new 400kV line?	NamPower explained the long history of considering the final route of the 400kV line, including various iterations with the stakeholders in order to accommodate their needs.
What is the distance between the 220kV and 400kV line at Kries?	The 220kV line runs close to the western edge of the Kries village which leaves no space for the 400kV line. Therefore, the 400kV line will deviate to the east of the village with at least a 250m buffer from the village.
Sal die ou 200kV lyn af gesit word? Will the 200kV line be shut down?	 No.
What is in that space between the 220kV and 400kV line?	The Kries village.
Will it go over my house on Atsigas farm?	No, it will be 500m away at the closest point.
Is there no way to miss the mountain at Atsigas farm?	There is a technically viable path through the mountain range. Going around would mean we have to go through more farms.
Will it influence my radio, television and phones.	No, it gives of less electromagnetic interference at the 500m distance than the background normal electromagnetic interference.
Can I use the vehicle track that is created when the power line is built?	Yes. Both NamPower and the farm owner must have access through the gates on the line and the track.
You should use the locals for work. There is a lot of unemployment among them.	Noted
Will you remove Camelthorns from my farm (Atsigas)?	There will be an 80x80m area cleared for construction of towers every 500m. There will also be a jeep track cleared between each

Comments/questions	Response
	tower. This means the removal of any camelthorn trees will be avoided as far as possible. Gates on the farm will receive a dual lock to prevent NamPowers maintenance team and farmers from getting locked out.

APPENDIX A ATTENDANCE LIST

Attendance List – Public Meeting Meeting
Proposed new NamPower Auas - Kokerboom 400 kV Transmission Line
World Bank Update

Date: 12 July 2023 @ 10hoo **Venue: NamPower Convention Centre**

NAME	ORGANISATION	POSITION	TELEPHONE	E-MAIL	SIGNATURE
Norman van Zyl	Enviro Dynamics	EAP	081273985	norman@enviro.com.na	
Simon van Zyl	11	N/A	11	11	SvZ
Roger Getze	Petroussia No3 No 422	Owner	0811223932	roger.getze@gmail.com	
Harry Eiman	Atsigas N. Welteviede757	Owner	0812708649	eimancar@gmail.com	
Caroline Eiman	Atsigas N Welteviede757	Spouse & Owner	0812554818	eimancar@gmail.com	
Geo-Chris Rittmann	NamPower	Transmission	061 205 2721	Geo_Chris.Rittmann@nampower.com.na	
Calvin Sisamy	NamPower	Transmission	0811244457	Calvin.Sisamy@nampower.com.na	
Smut Matergn	Nampower	Transmissi	0814077820	Smut.matergn@nampower.com.na	

APPENDIX B: BACKGROUND INFORMATION DOCUMENT 400KV TRANSMISSION LINE

July
2023

Environmental Impact Assessment for the Proposed Auas-Kokerboom 400 kV Transmission Line

Background Information Document

1 INTRODUCTION

NamPower intends constructing a 400kV transmission line approximately parallel to the existing 200kV transmission line from the Kokerboom substation, near Keetmanshoop, to the Auas Substation, near Dordabis. The new transmission line is of national importance, to assist in securing the supply of electricity to Namibia and open up opportunities for selling power to the Southern African Power Pool.

An Environmental Impact Assessment was completed for the project by Lithon Project Consultants in 2020. Part of this process involved stakeholder engagement in 2016, as well as in 2020. An Environmental Clearance Certificate was obtained from the Ministry of Environment, Forestry and Tourism in 2021, to construct the power line.

NamPower is currently applying to the World Bank for funding of the project, which will entail the following:

- The new Auas-Kokerboom 400kV Transmission Line, with associated infrastructure at both substations such as switchgear and reactors

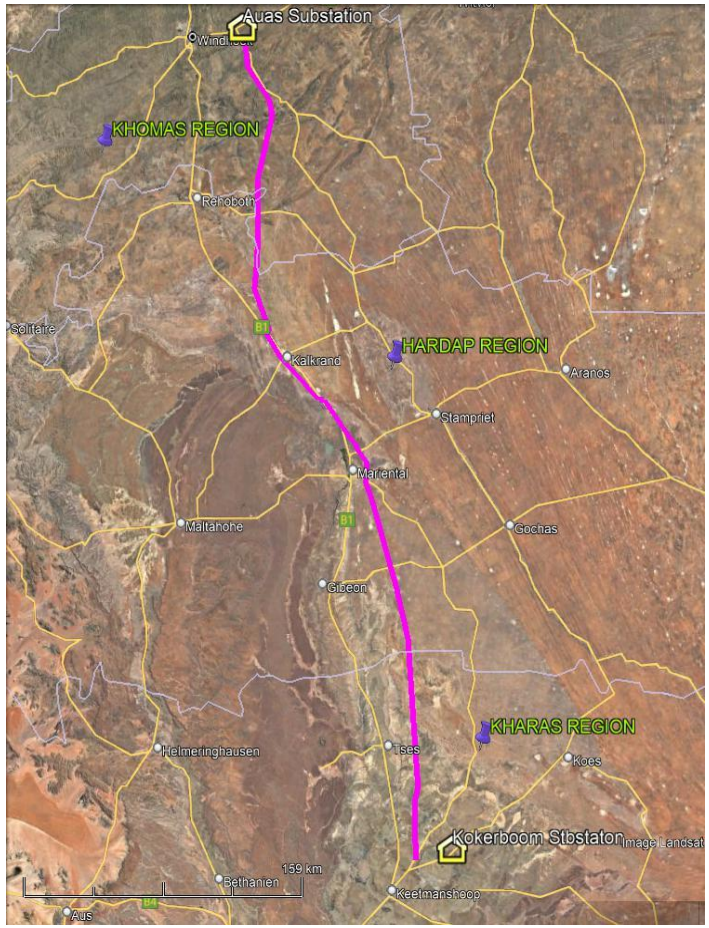


Figure 5: Locality of the proposed 400kV power line from Kokerboom substation near Keetmanshoop, to Auas substation, near Dordabis, Namibia.

- A Battery Energy Storage System (BESS) to be installed at Lithops Substation, that will enable NamPower to store energy generated by, amongst other, renewable sources such as solar or wind energy to allow utilisation of such energy when these resources are not available, such as after sunset.

Part of the funding requirements of the Bank is commitment to its Environmental and Social Framework (ESF), (https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf). Enviro Dynamics has been appointed to ensure the project meets these requirements. As part of this process, we are involving all stakeholders in order to get updated information about project progress and to be afforded a final opportunity for questions and comments, before project implementation commences.

2 WORK DONE TO DATE

The 2016 – 2020 Environmental Impact Assessment, with accompanying consultation with affected parties, focussed on avoiding ecological and social impacts as far as practically possible. Two main route alternatives were considered and the current alternative is preferred financially, technically and ecologically. During 2020 NamPower continued to consult with farm owners and bird specialists, adapting the route as feasible, to avoid settlements, lodges, farmsteads, views, and important habitats. The current route has therefore undergone rigorous consideration. An excerpt from the findings of the 2020 Environmental Impact Report is provided below in Appendix A and the full documents are available on request.

3 PURPOSE OF THIS CONSULTATION

Your inputs are welcomed for the following purposes, keeping in mind national interests and the broader context of the route:

- Final inputs to the route
- Issues to be addressed during construction (e.g. nuisances on farms caused by construction teams)
- Methods for effective stakeholder communication to and feedback from the project team during construction (effective grievance redress mechanisms).

4 STAKEHOLDER ENGAGEMENT OPPORTUNITIES

Questions and comments may be sent in one of the following ways:

- Send your written inputs to the e-mail address provided below;
- Attend meetings communicated; or
- Contact us for a focal meeting

Contact details:

Stephanie van Zyl

E-mail: Stephanie@envirod.com

Tel: 0811287002

APPENDIX A: EXERPT MAIN FINDINGS FROM 2020 EIADOCUMENT (Enviro Dynamics, 2020).

FINDINGS

The most significant biophysical and socio-economic impacts related to the proposed construction and operation of a new transmission line from the Kokerboom substation to Auas substation can be summarised as follows:

- **Impact on vegetation:** Because of the linear nature of the project, the impact on vegetation is expected to be without any red flags. The loss of protected tree species, specifically Camel Thorn is a concern. This impact rates medium and can be reduced to achieve a low significance with proper vegetation management.
- **Erosion and flooding risk:** If the 1:100 flood line is avoided along the route, then potential erosion and flood risk can be largely avoided. The remaining impacts can be mitigated by introducing erosion protection along the bases of the pylons and along the tracks.
- **Impact on birds:** The project area supports a relatively high diversity of species with bird and red data species, including vultures, eagles, and bustards that are particularly vulnerable to power line collisions. The main impact pertaining to birds is related to potential collisions once the line is operational. The bird assessment initially recommended that the western route be followed to avoid sensitive bird areas and to stagger the line with the existing 400kV route as mitigation. This option is problematic for NamPower, however, since the new 400kV line would have to cross the existing 220kV line, causing high risks in terms of potential power outages. A review has been done on this recommendation (Ecoserve, 2020), indicating that the differences in impact between the two routes are only marginally different. Therefore, it is proposed that the eastern route be followed (route currently proposed). The avifauna specialist accepts this route, on condition that it be used for monitoring purposes and that the line be marked. Mitigation measures have been included in the Environmental Management Plan to address bird-powerline interactions. The significance of this impact is high if no mitigation is implemented and can be reduced to a moderate significance with mitigation. Ongoing monitoring is crucial for keeping a watch on the mortalities in the project area as well as on the effectiveness of the mitigation to be implemented.
- **Social impacts:** The most significant impacts include disruption to farm management and changed sense of place. For some farmers the key impact will be during construction when the team interferes with and could potentially introduce nuisances on their farms such as noise, dust, security risk, poaching, etc. to their land. This impact will continue during operation when maintenance is carried out on the line. Some owners are concerned who already have a number of lines crossing their land. For some who place a high value on view sheds, their sense of place will change. Interaction with

the farm owners has been ongoing throughout the project, including a new set of focal meetings after this report was initially circulated in November 2019. Several adjustments were made to the route to accommodate the concerns of farm owners and to avoid sensitive receptors such as tourism establishments, and homesteads. The resulting route finally presented is acceptable to all farm owners consulted, except one instance where the environmental and technical costs of moving the line would be greater than the original proposal. The social impacts are generally of low to medium significance for the entire route, given a well-planned management strategy is implemented during construction.

- **Impact on archaeology:** Three sensitive sites have been discovered along the route, including one burial cairn, a grave and a graveyard. These are not directly on the route, but may be implicated during construction and operational activities in the area, particularly vehicles driving on the access track. The sites should either be marked and protected, or if this is not possible, removed completely before construction commences. The impact on these sites is rated high and the careful consideration of how to protect them is crucial.

RECOMMENDATIONS

In light of what can be concluded regarding the potential impacts associated with the proposed transmission line, NamPower will be able to reduce the significance of most of these to acceptable levels if they implement the mitigation measures outlined in both the Construction and Operational EMP. It is therefore important the EMP is audited to ensure compliance and that monitoring takes place as outlined therein otherwise the impacts identified will remain unacceptable. Emphasis is placed on the monitoring of avifauna mortalities and the effectiveness of bird markers along the route, as well as on the control of operations during construction and operation to avoid undue nuisances and losses to farm owners.

APPENDIX C: E-MAIL COMMUNICATION

400Kv TRANSMISSION LINE

PROPOSED AUAS-KOKERBOOM 400Kv TRANSMISSION LINE INFORMATION AND INVITATION

Reply | Reply All | Forward

stephanie@enviro.com
To 'norman@enviro.com'
Cc 'Van Der Merwe, Martin'
Wed 05/07/2023 7:37 pm

Bcc 'gastell@iway.na'; 'ute@go-nam.com'; 'amowes@unam.na'; 'feroplumbing@gmail.com'; 'drickerts@unam.na'; 'ingemarCH@postfin.com.na'; 'ute@go-nam.com'; 'jamytraut@gmail.com'; 'rottchernm@gmail.com'; 'ncelento@novelmo.com.na'; 'eimancar@gmail.com'; 'gellap-ost@mawf.gov.na'; 'llotter02@icloud.com'; 'calexander@unam.na'; **+38 others**

You forwarded this message on 07/07/2023 3:05 pm.

AU-KO 400kV Final Route received 27 June 2023.kmz
9 KB

Auas-Kokerboom 400kV Background Information Document 5 July 2023.pdf
194 KB

Dear Stakeholder,

Consultants of NamPower have previously communicated to you, as a land owner or representative, about this above project. The route was subsequently adjusted to accommodate land owners' concerns as far as possible, and your comments were taken into account in the documentation.

We are reaching out to you once again with the final route for your information and inputs, should you have any.
Attached please find further information, as well as the final route in KMZ format, which you may study in Google Earth.

Kindly respond with any further questions or concerns, and/or attend the following meeting:
Date: Wednesday, 12 July, 2023, 10h00
Venue: NamPower Convention Centre

Best regards,

Stephanie van Zyl
Environmental Assessment Practitioner
P O Box 4039, Windhoek, Namibia
8 Demonte St, Auasblick, Windhoek, Namibia
Tel +264833305891 Cell +264(81)1287002

RE: PROPOSED AUAS-KOKERBOOM 400Kv TRANSMISSION LINE INFORMATION AND INVITATION

Reply | Reply All | Forward

stephanie@enviro.com
To 'Rob Simmons'; 'norman@enviro.com'
Cc 'john.pallett@saiea.com'; 'chrisbrown.namibia@gmail.com'; 'Van Der Merwe, Martin'; 'ecoserve@iway.na'
Mon 10/07/2023 11:28 am

APPENDIX H1 AVIFAUNAL ASSESSMENT AMENDMENT.pdf
751 KB

Dear Rob,

Thank you very much for your inputs. We agree that staggering is very important, and we assume that staggering is a given. I will amend the statement to reflect this.

Your conditions, namely that the 400kV pylon height resembles that of the 220kV pylons as far as possible, has been presented and will be again, with all the other monitoring and marking requirements.

Martin, please confirm whether this is still feasible, as per Rob's previous assessment, which still stands.

Best regards,

Stephanie van Zyl
Environmental Assessment Practitioner
P O Box 4039, Windhoek, Namibia
8 Demonte St, Auasblick, Windhoek, Namibia
Tel +264833305891 Cell +264(81)1287002

BESS PROJECT AT LITHOPS

FW: LITHOPS BESS PROJECT BACKGROUND DOCUMENT

Reply | Reply All | Forward

Pandeni, Connie <Connie.Pandeni@nampower.com.na>
To
Cc Mingeli, Ben; Iilende, Elifas; Bailey, Fred; Christina.Mansfeld@fma.fichtner.de
Tue 07/11/2023 4:30 pm

NamPower_Background Information Document for BESS at Lithops Substation_07Nov23_v1.0(Clean).pdf
636 KB

As part of NamPower's short-to-medium term strategy to fulfil its future energy demand, NamPower is exploring the feasibility of the integration of Battery Energy Storage Systems (BESS) Project into the transmission network with an estimated capacity of 45 MW / 90 MWh and market standard lithium-ion technology at the NamPower Lithops Substation outside Swakopmund.

NamPower have appointed Fichtner GmbH to conduct the Environmental and Social Assessments (ESIA) for the Project and produce a Scoping Report as well as an Environmental and Social Management Plan (ESMP), as per the World Bank Environmental and Social Framework (ESF) and the respective Environmental and Social Standards (ESS) and Namibia's Environmental Management Act No. 7 of 2007 and its Regulations.

As a possible Affected and/or Interested and Affected Stakeholder, we would like to share the Lithops BESS' Background Information Document (BID) for your inputs and comments.

Please channel all inputs and or comments to: Christina.Mansfeld@fma.fichtner.de and/or Connie.Pandeni@nampower.com.na

Kind regards

Connie Pandeni
Senior stakeholder Liaison | Generation Capital Projects Section

Tel: +264 61 205 2974
Email: connie.pandeni@nampower.com.na
Web: www.nampower.com.na

PO Box 2864, Windhoek, Namibia,
NamPower Centre, 15 Luther Street

NamPower
Powering the Nation and beyond

Background Information Document (BID)

NAMPOWER Battery Energy Storage Systems (BESS)

1. Aim of this Document

This BID aims to provide stakeholders / Interested and/or Affected Parties (IAP) with the following information:

- Brief description of the proposed project.
- Motivation for/or desirability for the proposed project.
- The potential key issues as identified during the initial assessment phase, both positive and negative which may arise as a result of the proposed project.

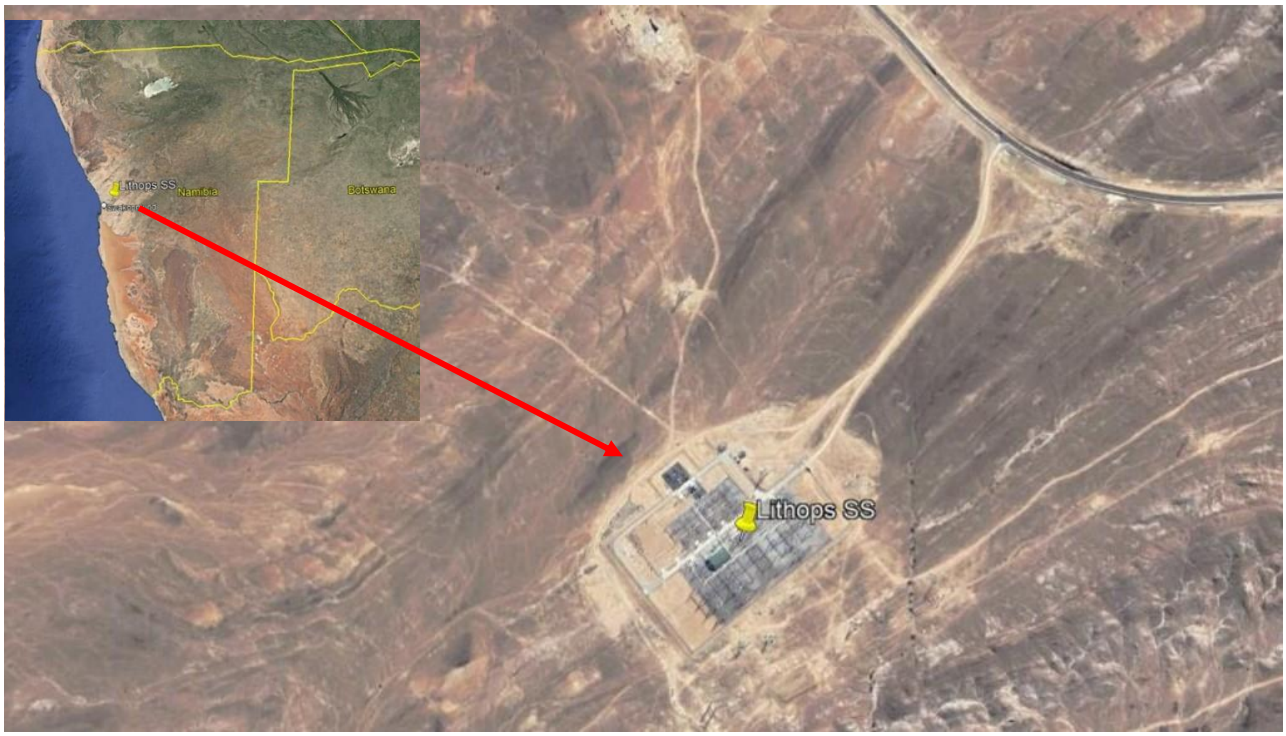


Figure 1: Lithops Substation Location

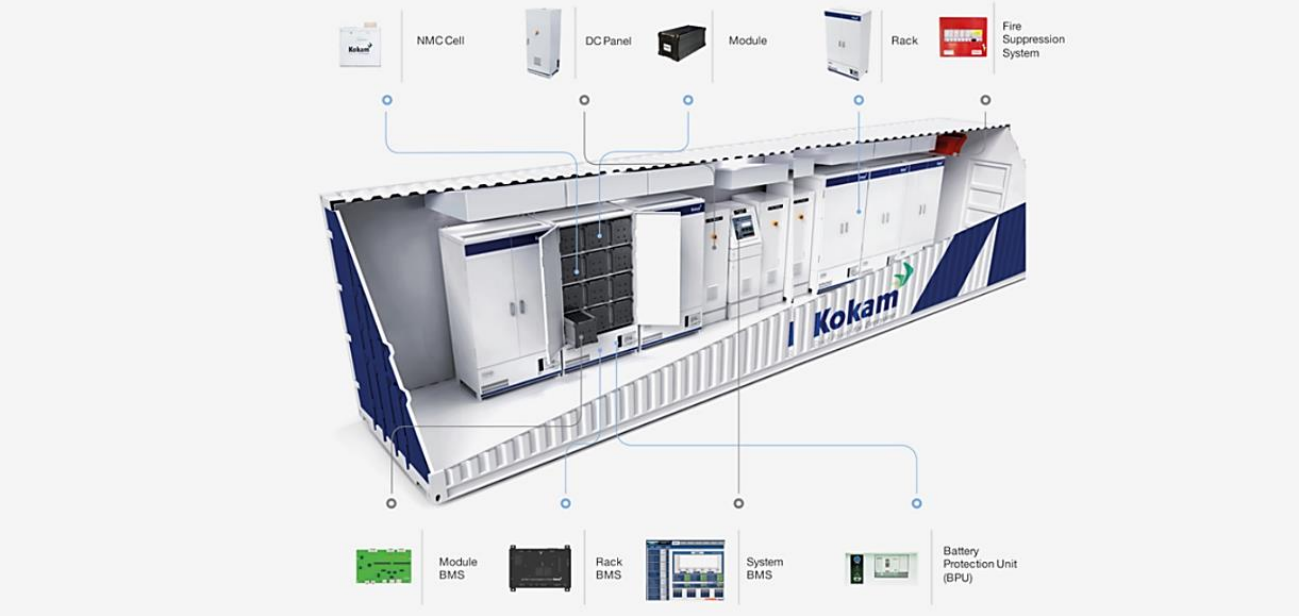


Figure 2: Typical containerized BESS

Figure 3: Typical containerized BESS facility (source: smart-energy.com)

2. Introduction

As part of NamPower's short-to-medium term strategy to fulfil its future energy demand, NamPower is exploring the feasibility of the integration of Battery Energy Storage Systems (BESS) Project into the transmission network with an estimated capacity of 45 MW / 90 MWh and market standard lithium-ion technology.

Fichtner has been appointed by NamPower to conduct the Environmental and Social Assessments (ESIA) for the Project and produce a scoping Report as well as Environmental and Social Management Plan (ESMP), as per the World Bank Environmental and Social Framework (ESF) and the respective Environmental and Social Standards (ESS) and Namibia's Environmental Management Act No. 7 of 2007 and its Regulations.

3. Project Description and Motivation

The Government of Namibia is committed to environmental protection and socioeconomic and sustainable development, as expressed, and articulated in the Environmental Management Act No. 7 of 2007, whose objective is to prevent and mitigate the significant effects of activities on the environment.

The following two phases are being conducted as part of the project:

a) Phase I: consisted of a detailed technical feasibility study to determine the required BESS application for integration into the grid, its operating concept, sizing, technology, location, and time of implementation to suit the Namibian energy market. This included a draft Scoping Report and overview (Table of Content) of an Environmental and Social Management Plan (ESMP), a preliminary carbon credit and avoided emissions calculation, and a high-level financial feasibility assessment.

b) Phase II: consists of the design basis report, the detailed financial feasibility study and economic modelling of the BESS project. This will serve as the basis for project appraisal by NamPower, as well as for NamPower's discussions with the regulator (Electricity Control Board) on a suitable tariff regime to cover the long-term cost of the BESS project. This phase also includes the detailed project risk assessment report, detailed carbon credit and avoided emissions calculation, as well as the Scoping Report including an Environmental and Social Management Plan (ESMP) for submission to the Ministry of Environment, Forestry and Tourism (MEFT).

A Battery Energy Storage System (BESS) is comprised of three major components: the battery which is the energy container; the power conversion system/inverter, which interfaces the DC battery system to the AC power system; and the power plant controller which governs, monitors, and executes the intended functions of the energy storage application.

Since the BESS needs to be operated economically within the current power system, BESS must be designed to meet all economic, legal, and safety-related requirements that best suits its intended use case.

BESS can be placed either in a building or module-wise within containers. In this present project, a container concept is planned. Several battery modules will be installed in one container with their respective cooling system, and battery management systems. It is estimated that a total area of approximately 2 hectares will be utilized at an existing substation of NamPower.

Project specifics

The NamPower grid shows strong feasibility during normal operation. The final decision to install the BESS at Lithops substation is taken in terms of arbitrage. This is a suitable location for the BESS installation:

- This location is close to high-loading mine area and the BESS could reduce the inrush current when the heavy machinery is connected.

- Power fluctuations from upcoming PV projects can be compensated directly at the source.

- BESS will allow PV penetration to be increased beyond the current committed expansion plans in the region. The demand here for captive PV power plants is especially interesting due to the large industrial loads.

4. The Affected Environment

The Lithops Substation falls within the Dorob National Park. The Lithops substation already belongs to NamPower, and no additional land would be required for the BESS. The BESS would be located at the Lithops SS with no additional access roads required for construction or operation and no other additional infrastructure needed either.

The Dorob National Park was proclaimed in 2010 and covers the central Namib desert. This area also contains a few surprises. Extensive lichen fields are found north of Wlotzkasbaken and Cape Cross, while the Messum Crater in the north contains San rock paintings and archaeological sites from Damara nomads. Site visit and desktop review will be done to ensure that the site surrounding Lithops does not contain any Rock art, lichens, or plants such as the welwitschia as part of ensuring the immediate environment remain unaffected.

5. Potential Impacts Identified

The following potential impacts may result from the proposed project.

Table 1: Impacts Identified

Impact	Description

Hazardous Substances	Hazardous substances in the form of chemicals (e.g. sulfuric acid) are an integral part of the workings of batteries. Furthermore, the battery includes the use of heavy metals (lead).
Noise	The BESS will emit acoustic noise to their vicinity when in operation from power transformers and cooling compressors and fans.
Disposal of Waste	Hazardous landfill sites are generally the main route for disposal of a hazardous substance. However, other mechanisms are available. These mechanisms include incineration and disposal of the hazardous waste to land (not in a government owned landfill site).

6. Possible Mitigation Measures

The following mitigation measures are envisaged to remediate the potential impacts associated with the proposed project.

Table 2: Mitigation Measures

Impact	Proposed Mitigations
Hazardous Substances	BESS should have secondary containment systems that prevent environmental release following spill or damage. Some lithium-ion batteries under development use an aqueous electrolyte which significantly reduces the hazards associated with organics and acids. Lithium-ion batteries require battery management systems to monitor and protect cells from overcharging or damaging conditions. Large BESS systems should be designed with appropriate fire detection and suppression systems.
Noise	Component selection: Special low-noise cooling compressors, fans and transformers Barriers Provision of ear protection equipment.
Disposal of Waste	Owners should consider provisions for disposal at end of life to ensure proper disposal. There are currently a limited number of facilities that recycle lithium-ion batteries. The owner may request the supplier to provide a warranty for certain parts or whole modules. Some programs provide for disposal and decommissioning of battery systems at end of life. The project should have a set aside for decommissioning and disposal, e.g. in form of a reserve account.

	Decommissioning and Disposal costs at end of life should be considered and factored into any facility financial model. Disposal costs tend to increase with system size. Because lithium battery systems currently have negative scrap value, it is important that the decommissioning plan is sufficiently well financed to cover the full costs of decommissioning and removal from site.

7. How to register comments

To register any comments as a stakeholder/ Interested and/or Affected Parties (IAP) for the proposed project, please submit **in writing** your complete contact details; your interest in the proposed project (direct business, financial, personal, etc.) as well as your comments and/or concerns to Fichtner as listed below:

Fichtner: Christina Mansfeld	NamPower: Connie Pandeni
E-Mail Address: Christina.Mansfeld@fma.fichtner.de	E-Mail Address: Connie.Pandeni@nampower.com.na
Postal Address: Fichtner GmbH & Co. KG Sarweystraße 3 70191 Stuttgart Germany	Postal Address: NamPower Center 15 Luther Street P O Box 2864, Windhoek
Telephone Nr.: +27 (72) 4490353	Telephone Nr.: 061 205 2974

Figure 4: Indicative location of BESS at Lithops substation

APPENDIX E: PROJECT GRIEVANCE MECHANISM

PROJECT STAKEHOLDER GRIEVANCE MECHANISM

400 kV Auas - Kokerboom Transmission Line

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Introduction and Background

NamPower undertakes to foster a constructive working environment for projects and commits to ensuring that the views and rights of both NamPower and its internal and external project stakeholders are collectively respected. The Grievance Resolution Procedures have therefore been instituted to:

afford all project stakeholders the opportunity to unmaliciously lodge individual or group grievances with the Project Director/Manager in writing (email or letter); without prejudice to contracts/interests/roles, and

ensure a fair, consistent, and diligent stakeholder grievances resolution system.

However in instances of fraud or any impropriety conduct by a NamPower staff member relating to project(s), please be advised that NamPower has a confidential fraud hotline toll free number: 0800 66 999 or E-mail address: nampower@tip-offs.com or Website address: www.tip-offs.com.

Grievances Resolution Procedures

Aggrieved project stakeholders may submit written grievances to the Project Director/Manager by email or letter for registration, evaluation, investigation, and resolution. The project team will adopt procedures as illustrated in

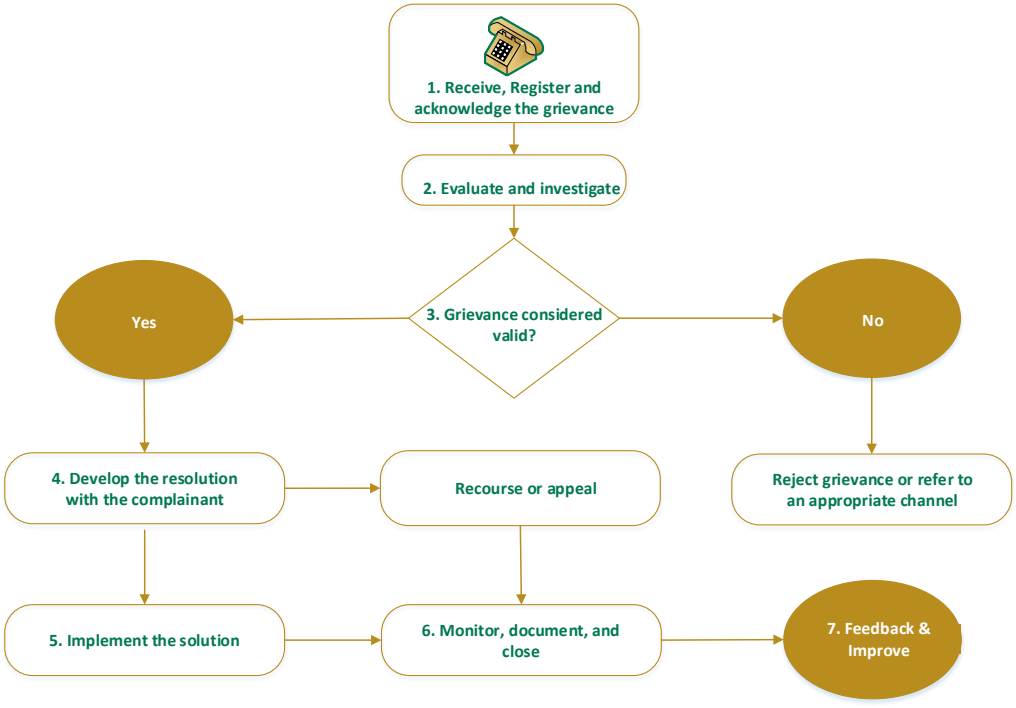

Figure 1: Stakeholder Grievance Resolution Procedure Flowchart

to amicably resolve logged grievances.

Grievance Form

Please submit your grievance to the project team by completing the Grievance Form.

GRIEVANCE FORM

(Please forward your completed form to the Project Manager)

- **Case No.:** _____
- **First Name and Surname:** _____

☐ I request that my personal / company details not be disclosed.

☐ I consent that my personal / company details may be disclosed.

- **Contact details:**

(*Please indicate the preferred method of communication: by post, email, or phone*)

☐ By Post (*Please enter the correspondence address*):

_____

_____

☐ By phone: _____

☐ By E-mail: _____

- **Grievance Description:**

(Please indicate the subject of the grievance; date of occurrence, location relating to the grievance, persons involved in the grievance and effects of the ensuing situation)

Subject: _____

_____

Date: _____

Location: _____

Persons involved: _____

_____

_____

Effects of the ensuing situation:

_____

_____

Date of incident / occurrence of the subject of the grievance /emergence of the case:

☐ One-time incident/grievance (Date): _____

☐ Happened often (*Indicate how many times)*: _____

☐ Ongoing (*A currently existing problem*).

Recommendations (Please propose measures that would provide solutions to the problem):

_____

_____

Signature: _____ **Date:** _____

Please forward this form to (Name & Surname): _____

Postal Address: _____

Email: _____ **Phone Number:** _____

Corporate Communication and Marketing
+ 264 (61) 205 4111 register@nampower.com.na

Mr. Martin van der Merwe **(Project Manager)**
Senior Engineer: Transmission Capital Projects
Tel: +264 61 205 2724
Fred.Bailey@nampower.com.na

NamPower Centre, 15 Luther Street,
PO Box 2864, Windhoek, Namibia,