SITE SENSITIVITY VERIFICATION REPORT: THE PROPOSED DEVELOPMENT OF NDAU SOLAR ENERGY FACILITY 2 & ASSOCIATED INFRASTRUCTURE, LOCATED WITHIN THE POLOKWANE LOCAL MUNICIPALITY AND CAPRICORN DISTRICT MUNICIPALITY IN THE LIMPOPO PROVINCE

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REVISION HISTORY AND APPROVAL

DATE	REV.	AUTHOR	REVIEWER	APPROVER
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ACRONYMS

BESS	Battery Energy Storage System
BGL	Below Ground Level
CBA	Critical Biodiversity Area
CDM	Capricorn District Municipality
CMA	Catchment Management Agency
DFFE	Department of Forestry, Fisheries, and Environment
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EC	Electrical Conductivity
EGI	Electricity Grid Infrastructure
EIR	Environmental Impact Report
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Area
I&AP	Interested and Affected Parties
IBA	Important Bird Area
LCC	Land Capability Class
LCP	Limpopo Conservation Plan
ℓ/s	litres/ second
LSU	Large Stock Unit
mS/m	millisiemens per meter
NPAES	National Protected Area Expansion Strategy
PAR	Protected Areas Register
PDA	Primary Drainage Area
PLM	Polokwane Local Municipality
PV	Photovoltaic
QDA	Quaternary Drainage Area
QDGC	Quarter Degree Grid Cell
QDS	Quarter Degree Square
RDL	Red Data List
REDZ	Renewable Energy Development Zone
RFI	Radio Frequency Interference
S&EIR	Scoping and Environmental Impact Reporting
SACAA	South African Civil Aviation Authority
SAHRIS	South African Heritage Resources Information System
SANDF	South African National Defence Force
SARAO	South African Radio Astronomy Observatory
SCC	Species of Conservation Concern
SG	Surveyor General
SKA	Square Kilometre Array
SSVR	Site Sensitivity Verification Report
SWSA	Strategic Water Source Area
WAP	Working-Age Population
WMA	Water Management Area

1. INTRODUCTION

Praxos was appointed as an independent Environmental Assessment Practitioner (*EAP*) by ABO Wind on behalf of ABO Ndau Solar Energy Facility 2 (Pty) Ltd to undertake the application process for Environmental Authorisation (*EA*), subject to a Scoping and Environmental Impact Reporting (*S&EIR*) process, for the Proposed Development of the Ndau Solar Photo Voltaic (*PV*) Facility 2. The Proposed Development will be located within the Polokwane Local Municipality (*PLM*) and Capricorn District Municipality (*CDM*), of Limpopo Province, South Africa. (hereafter referred to as the *Proposed Development*).

Using the national web-based screening tool, a Screening Tool Report was generated as part of the EA application process. According to the Screening Tool Report, the following specialist assessments were identified and recommended to be undertaken as part of the environmental process:

1. Geotechnical Assessment.
2. Geohydrological Impact Assessment.
3. Radio Frequency Interference (*RFI*) Assessment.
4. Socio-Economic Impact Assessment.
5. Civil Aviation Assessment

Furthermore, the following environmental sensitivities were identified in the Screening Tool Report:

Table 1: Summary of Environmental Sensitivities

Theme	Very High	High	Medium	Low
Agriculture			X	
Animal Species			X	
Aquatic	X			
Archaeological and Cultural Heritage				X
Avian	X			
Civil Aviation			X	
Defence				X
Landscape (Solar)	X			
Palaeontology			X	
Plant Species			X	
Radio Frequency Interference (*RFI*)			X	
Terrestrial Biodiversity	X			

The DFFE Screening Tool also identified the following Specialist Studies to be undertaken as part of the S&EIR process:

1. Agricultural Impact Assessment
2. Animal Species Assessment
3. Aquatic Biodiversity Impact Assessment
4. Archaeological and Cultural Heritage Impact Assessment
5. Civil Aviation Assessment

6. Defence Assessment
7. Geotechnical Assessment
8. Landscape/ Visual Impact Assessment
9. Palaeontology Impact Assessment
10. Plant Species Assessment
11. RFI Assessment
12. Socio-Economic Assessment
13. Terrestrial Biodiversity Impact Assessment

In accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of National Environmental Management Act (No. 107 of 1998), this Site Sensitivity Verification Report (*SSVR*) has been compiled to address the findings of the Screening Tool Report and the rationale behind the identified specialist studies.

This report focuses on the themes for Civil Aviation, Defence, and RFI since SSV reports for the various other themes have already been undertaken by qualified Specialists. It should be noted that Geotechnical, Geohydrological, and Socio-Economic Impacts do not have specific themes within the Department of Forestry, Fisheries and Environment's (*DFFE*) Screening Tool. As such, desktop assessments were undertaken by qualified Specialists for the Geohydrological conditions and the Socio-Economic environment. In terms of the Geotechnical component, detailed Specialist investigations will be undertaken during the EIR phase however, the baseline environment has been described in **Section** Error! Reference source not found. of this report.

Detailed assessments will be undertaken during the EIR phase which must comply with Appendix 6 of the Environmental Impact Assessment (*EIA*) Regulations, 2014 (as amended), unless a specific theme protocol has been prescribed. The rationale for undertaking Specialist Studies is detailed in **Chapter** Error! Reference source not found..

Please refer to **Table 2** below for a list of Specialist SSV reports/ desktop investigations already undertaken and its location within the Scoping Report (*SR*).

Table 2: Specialist SSV Reports

Specialist SSV Reports	DFFE Screening Sensitivity	Site Sensitivity Verification	Specialist Study (Yes/No)
Agricultural Potential	Medium	Medium	**Yes**, refer to **Appendix F1** of the SR
Animal Species Assessment (part of Terrestrial Biodiversity)	Medium	Medium	**Yes**, refer to **Appendix F9** of the SR
Aquatic Biodiversity	Very High	Low	**Yes**, refer to **Appendix F2** of the SR
Avifauna	Very High	Medium	**Yes**, refer to **Appendix F3** of the SR
Archaeological and Cultural Heritage	Low	Medium	**Yes**, refer to **Appendix F4** of the SR

Specialist SSV Reports	DFFE Screening Sensitivity	Site Sensitivity Verification	Specialist Study (Yes/No)
Landscape and Visual	Very High	High to Low	**Yes**, refer to **Appendix F6** of the SR
Palaeontology Assessment	Medium	Low	**Yes**, refer to **Appendix F7** of the SR
Plant Species Assessment (part of Terrestrial Biodiversity)	Medium	Medium	**Yes**, refer to **Appendix F9** of the SR
Terrestrial Biodiversity	Very High	Medium	**Yes**, refer to **Appendix F9** of the SR

2. PROJECT DESCRIPTION

ABO Ndau Solar Energy Facility 2 (Pty) Ltd proposes the development of Ndau 2, a PV solar energy generation facility, of up to 80 MWac in capacity, and associated infrastructure located on Portion 5 (Portion of Portion 2) of the Farm Rotterdam No. 12 and Remaining Extent of Portion 2 of the Farm Rotterdam No. 12, 27 km south-west of Polokwane within the Limpopo Province.

The Project Area falls within the jurisdiction of the PLM, within the Capricorn District. The Proposed Development is located within the International Strategic Transmission Corridor, as stipulated in Government Notice No. 113 of Government Gazette No. 41445 published on 16 February 2018. The Proposed Development is not located within a Renewable Energy Development Zone (*REDZ*) and is not classified as Electricity Grid Infrastructure (*EGI*).

A development area has been identified for the Proposed Development. Within this identified development area, a development footprint has been defined in a manner which has considered the environmental sensitivities present on the affected property and which intentionally remains beyond highly sensitive areas. The affected property has been considered in this S&EIR process (which includes the independent Specialists' assessments undertaken) and assessed in terms of its suitability from an environmental and social perspective.

The Proposed Development is located outside of an urban area with a current zoning that is agricultural in nature. It is envisaged that a change in zoning will be required from agricultural to special use.

The proposed facility would comprise the following:

- Solar Field/Solar Arrays (Note that the foundations, mounting structures and module types will be confirmed during detail design, however, would remain within the proposed development footprint and be up to approximately 3.5metres (*m*) in height; i.e., new infrastructure to be erected);
- Internal access roads (noting that existing farm roads will be used as far as possible, and that the maximum road width will be up to approximately 10m);
- A main access and secondary access road (noting that existing farm roads will be used as far as possible, and the road width will be up to approximately 10m);

- Internal electrical reticulation (i.e., low- and medium voltage lines) to be placed underground where feasible;
- An on-site substation hub and associated infrastructure/buildings (including, but not limited to, operation & maintenance buildings, admin buildings, substation, transformation infrastructure, collector infrastructure, step-up infrastructure, battery energy storage system etc.) contained within up to approximately a 3 hectares (*ha*) footprint;
- Perimeter fencing.

A temporary laydown area would be established during the construction period but will be within the development footprint i.e., within the fenced area allocated for development. The laydown area would move as required while construction is underway.

The proposed facility would be accessed from the east via an existing unnamed road. A new road to serve as a second access to the facility is also proposed. This road would extend approximately 2 Kilometres (*km*) southwards to an existing unnamed farm road. The detailed design of the proposed accesses and road upgrade requirements would be as per the recommendations of the Transport Impact Assessment which is being undertaken as part of the environmental impact assessment process.

Alternatives:

The proposed development as described above has been assessed with the following alternatives:

- Layout: Two alternative positions for the on-site substation hub and adjoining auxiliary buildings are under consideration.
- Technology: With regard to the proposed Battery Energy Storage System (*BESS*), the technology thereof is dynamic and so the specific type/technology to be developed would be selected based on market demands and technology availability at the time of construction. Therefore, both Lithium-ion and redox-flow are being assessed as technology alternatives, with Lithium-ion being the current preferred technology. It is envisaged that the Lithium-Ion BESS will arrive to site pre-assembled.

3. PROJECT LOCATION AND SITE DESCRIPTION

The Proposed Development is located on Portion 5 (Portion of Portion 2) of the Farm Rotterdam No. 12 and Remaining Extent of Portion 2 of the Farm Rotterdam No. 12 and is known as Ndau 2 site (Project Area). The Project Area is located adjacent to the N1 road and measures approximately 126 ha in extent. Refer to the locality map in **Figure 1** below.

The Project Area is located within the International Strategic Transmission Corridor near the city of Polokwane, Limpopo Province. The nearest residential areas are the suburb of Mayapje in the North, the suburb of Ga-Sebati in the East, the village of Mogoto in the South and Tshamahansi (a large, populated semi-urban rural township) in the West.

The immediate surroundings of the Project Area are sparsely populated and largely undeveloped, vacant land. The Percy Fyfe Nature Reserve is approximately 150 m West of the Project Area, whereas there are a few agricultural farms, a bush lodge and a local restaurant East of the Project Area. The current Project Area and adjacent properties are zoned as "Agricultural".

Project Area occurs in Ward 1 of the Polokwane Local Municipality. The property is currently part of a single title made out to Marco Property Investment CC, with Title Deed number: T59902/2010PTA. Refer to **Table 3** for the property description and Surveyor General (*SG*) Codes for the Project Area.

The properties applicable to the proposed access roads are also indicated in the table.

Table 3: SG Code and Property Description

Property Description	SG Code	Extent (Ha)
Portion 5 (Portion of Portion 2) of the Farm Rotterdam No. 12	**T0KS00000000001200005**	**428.266**
Remaining Extent of Portion 2 of the Farm Rotterdam No. 12	**T0KS00000000001200002**	**392.741**
Remaining Extent of Farm Rietvley No. 13 (access road only)	T0KS00000000001300000	289.51
	Total	**1 110.517**

Refer to **Table 4** below for the GPS co-ordinates for the corner points of the Project Area boundary.

Table 4: GPS Co-ordinates for the Corner Points

Corner Points	Latitude	Longitude
Point 1	24° 1'5.32"S	29°13'2.15"E
Point 2	24° 1'22.59"S	29°13'25.40"E
Point 3	24° 1'37.98"S	29°13'7.20"E
Point 4	24° 1'48.33"S	29°12'42.68"E
Point 5	24° 1'36.63"S	29°12'37.07"E
Point 6	24° 1'17.92"S	29°12'36.58"E

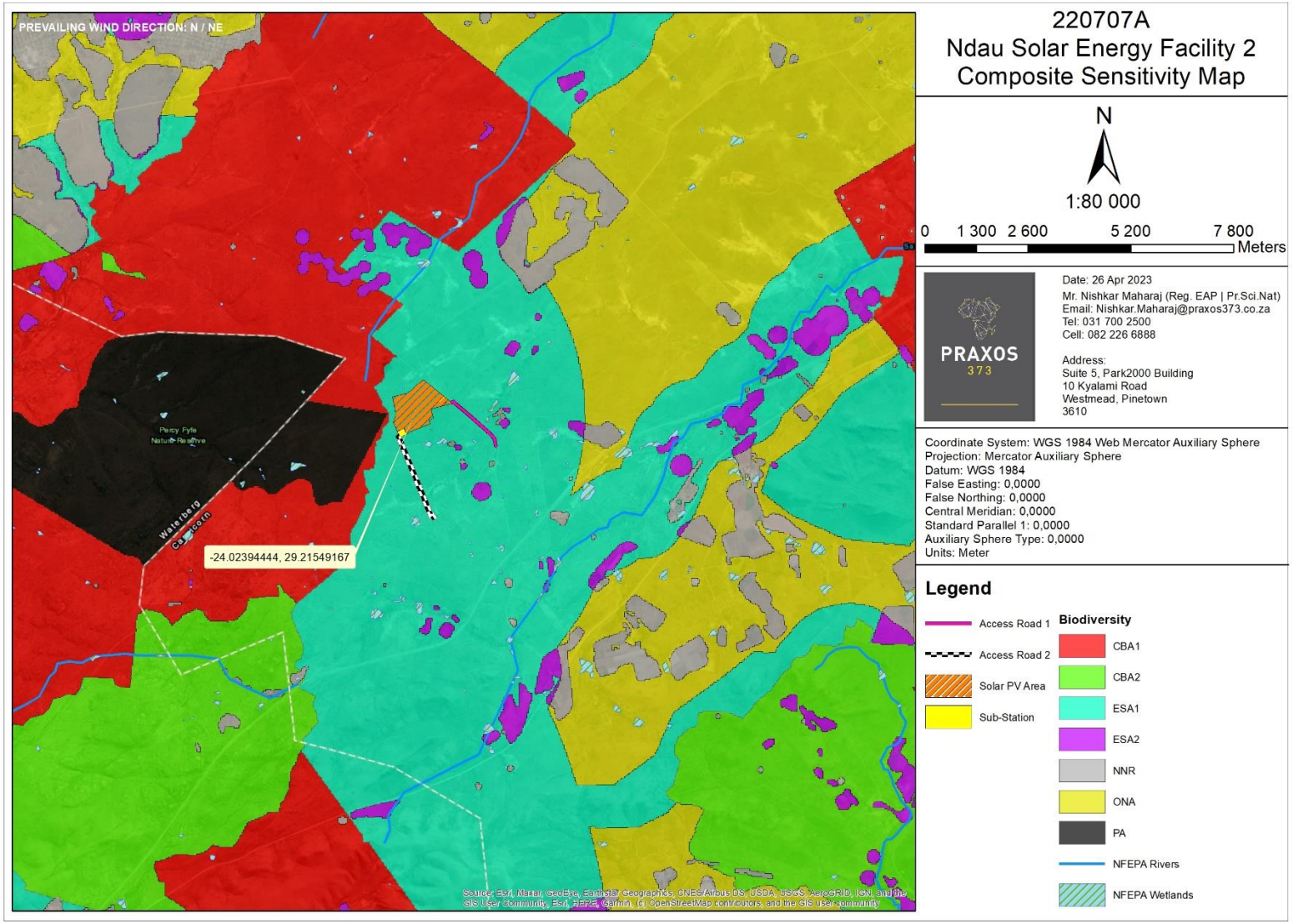

Figure 1: Locality Map (Praxos, 2023)

4. DESKTOP ASSESSMENT

At a desktop level, the Proposed Development was characterised as follows:

4.1 GEOTECHNICAL ASSESSMENT

a) Topography and Drainage

The Polokwane Municipal area is situated on the 'Pietersburg Plateau' which is bordered in the south by the Strydpoort Mountains, in the west and north by the Waterberg Mountains and in the east by the Great Escarpment. The topography the Project Area is gently undulating with a range in altitude from around 1397 m to 1516 m above mean sea level. It comprises low hills with eroded valleys that form the upper reaches of the Leeuspruit River, a tributary of the Sand River.

In terms of drainage, South Africa is geographically divided up into a number of naturally occurring Primary Drainage Areas *(PDAs)* and Quaternary Drainage Areas *(QDAs)*. Areas are classified into Water Management Areas *(WMAs)* and Catchment Management Agencies *(CMAs)*. The Project Area is within PDA 'A' and QDAs A61F & A71A. The majority of the Project Area falls within A71A, with a small portion located in A61F on the western side of the Project Area. This section drains towards the west, whereas the area in A71A drains towards the east/ northeast. The Project Area is also located within the Limpopo WMA (1) and CMA (1)[Error! Bookmark not defined.]. Error! Reference source not found. below reflects the drainage areas in relation to the Project Area.

b) Geology

The surface geology in the immediate vicinity of the Project Area is mainly composed of meta-arenaceous rocks such as quartzite, gneiss, migmatite, and granulite, as well as meta-argillaceous rocks like slate, phyllite, meta-pelite, schist, serpentine, amphibolite, and hornfels. However, as one moves away from the Project Area, intrusive rocks with varying levels of acidity including granitoids can be found. Error! Reference source not found. below shows the local surface geology within and surrounding the Project Area[1].

A Geotechnical Impact Assessment will be undertaken as part of the Environmental Impact Reporting (*EIR*) phase.

4.2 GEOHYDROLOGY

The Project Area lies in a Strategic Water Source Area (SWSA) for groundwater, specifically the Upper Sand (Polokwane) Aquifer System which covers an area of approximately 96.5 km2 in the upper Sand River Catchment. The Hydrogeologist conducted a desktop investigation utilising various sources and in accordance with the South African National Standards (SANS) 10299:2003 guideline.

The Project Area is underlain by an intergranular and fractured aquifer system with an approximate yield of 5 litres/ second (ℓ/*s*). This indicates that the aquifer is highly productive even though the region is characterised as semi-arid. Towards the south and west of the Project Area, the aquifers can

[1] Luhlaza Advisory and Consulting, Geohydrological Desktop Investigation, 2022

also be described as intergranular and fractured with borehole yields ranging from 0.5 to 2 ℓ/s and 0.1 to 0.5 ℓ/s respectively. As such, these aquifers are classified as moderately productive and poorly productive systems. In terms of Electrical Conductivity *(EC)*, values range from 70 to 300 millisiemens per meter *(mS/m)* with some areas showing EC values between 0 and 70 mS/m which is indicative of a mixture of moderate to good groundwater quality. The depth to groundwater within the Project Area and surrounds ranges from 10 m to 17 m and 17 m to 25 m below ground level *(bgl)* respectively. The region's groundwater recharge is between 14 and 28 mm/year, suggesting that groundwater resources have a regional recharge rather than local one[1].

The Project Area is located at the local surface water drainage divide of the two quaternary catchments i.e., A71A and A61F. If the local groundwater level follows the local topographical gradient, the Specialist notes that the Project Area is positioned on the groundwater divide. This suggests that any pollution that occurs within the Project Area will pollute downstream water resources, both surface and groundwater[1].

A desktop hydro census was also conducted at a 2 km and 5 km radius of the Project Area. The information indicated that there are a number of boreholes within and in the vicinity of the Project Area however detailed information such as groundwater level, use, type and pumping rates were unavailable[1].

The Specialist noted that the Project Area is classified as having a low to moderate sensitivity based on the hydrological aquifer type and drainage patterns. A more detailed assessment of geohydrological conditions including a field hydro census will be undertaken during the EIR phase. Please refer to Error! Reference source not found. above for a Hydrogeological Map.

4.3 Socio-Economic

A Socio-Economic Impact Assessment was undertaken during May 2023. The report relied on both primary and secondary sources of data as part of its assessment.

Primary sources of data included a site visit undertaken on **02 May 2023** to get an understanding of the locational factors of the proposed development; however, none of the local residents were consulted.

Secondary data was sourced from the following databases and documents:

- Previously completed studies.
- Stats SA Census 2011
- StatsSA Labour Force Survey
- Quantec Research database
- Industrial Policy Action Plan (IPAP2), 2018/19-2020/21
- National Environmental Management Act (No. 107 of 1998) (NEMA)
- National Development Plan (NDP) 2011–2030
- New Growth Path Framework (NGPF) 2010
- Provincial:

  - Limpopo Strategic Plan 2020-2025
  - Limpopo Development Plan 2015-2019
- Local:
  - Capricorn District Municipality Integrated Development Plan (2022/2027)
  - Polokwane Local Municipality Integrated Development Plan (2021/2026)
  - Polokwane 2030 Development Plan
- Other national, provincial, and local government strategic documents and policies

The proposed site is located within the vicinity of a few scattered residential areas, which are expected to be affected by the development of the solar PV facility. Additionally, there are several businesses established in close proximity to the area, including Ysterberg Lodge, Caltex Fuel Station, Geyser Traction Substation, and various privately owned farms. **Table 5** provides a detailed description of the land uses in the vicinity of the proposed site.

Table 5: Land Use in Surrounding area

Direction	Distance	Land Use
North	0.0km	Vacant Land
	3.26km	Cultivated Land
North-east	0.0km	Vacant Land
	2.23km	Private Property (Small farm)
	3km	Private Property (Residential)
East	0.0 km	Vacant Land
	1.25km	Private Property (Residential)
	7km	Baxters Barn Function Venue
	8km	Dinoko Lodge
South-East	0.0km	Vacant Land
	1.81km	Private Property (Small farm)
	1.81km	Ysterberg Lodge
South	3.56	Caltex Fuel Station
South-west	0.0km	Vacant Land
	464m	Private Property (Residential)
	0.0km	Vacant Land
West	8.6km	Bandito Ranch Kudu Camp
North-west	0.0km	Vacant Land
	1km	Percy Fyfe Nature Reserve
	0.0km	Vacant Land

a) Study area's composition and locational factors

The proposed project site is in the Polokwane LM, a Category B municipality in the Limpopo Province. It is one of four LMs together with Blouberg LM, Molemole LM and Lepelle-Nkumpi LM that forms part of the Capricorn DM.

The combination of Polokwane's status as the provincial capital, its diverse economy, and its strategic location makes it a crucial center for commerce, services, and governance. Makgwareng, as the other

formal town in the municipality, also contributes to the overall socio-economic development of the region, albeit on a smaller scale.

b) Sense of Place, History, and Cultural Aspects

Polokwane was founded in 1886 by Voortrekkers, a group of Dutch settlers who were fleeing British rule in South Africa. The city was originally named Pietersburg, after Petrus Joubert, a Boer general who fought in the Boer War. In 2002, the city was renamed Polokwane, which means "Place of Safety" in Northern Sotho. Polokwane is a major commercial and industrial centre. The city is home to several factories, including those that produce food, beverages, and clothing. Polokwane is also a major transportation hub, with several roads and railways connecting it to other parts of South Africa. Polokwane is a popular tourist destination.

The city is home to several historical and cultural attractions, including the Polokwane Game Reserve, the Polokwane Museum, and the Peter Mokaba Stadium. Polokwane is also a good base for exploring the surrounding countryside, which is home to several national parks and game reserves. Polokwane is a city with a rich and diverse cultural heritage. The city is home to a number of different ethnic groups, each with its own unique culture and traditions. Polokwane is also home to a number of different festivals throughout the year. These festivals celebrate the city's rich cultural heritage and offer visitors a chance to experience the different cultures that make up the city.

Some of the most popular cultural attractions in Polokwane include:

- Polokwane Art Museum: This museum houses a collection of over 800 artworks by artists from Limpopo Province.
- Polokwane Museum: This museum tells the story of the history of Polokwane and the Limpopo Province.
- Mapungubwe World Heritage Site: This site is home to the ruins of an ancient African kingdom.
- Bakone Malapa Open Air Museum: This museum is a reconstruction of a traditional Sotho village.
- Thathe Vondo Cultural Village: This village is home to the Venda people.

Closer to the proposed develop, there two main tourist destinations in the surrounding area are Percy Fyfe Nature Reserve and H.L Crause Private Nature service. There is also a hotel close to the area which is the Protea by Marriott Hotel.

It is important to evaluate the tourist attractions within proximity to the proposed Ndau Solar Energy Facility 2 to ensure that no notable tourist attractions or wildlife will be impacted by the proposed development. The operations of the proposed facility are not expected to have a significant impact on these establishments, it is important to consider the potential negative impacts that may arise during the construction phase. Careful planning and mitigation measures will be necessary to minimize any adverse effects and ensure the preservation of the surrounding protected areas and the uninterrupted experience for visitors to these tourist accommodations and protected areas.

c) Demographics, Health, and Crime Profiles

In Polokwane LM, males make up a greater proportion (54%) of the population in the LM than females. As of 2021, the population of Polokwane LM was estimated to be around 644 489 people, residing in

181 098 households. This population represents approximately 49% of the total population of Capricorn District Municipality and about 11% of the entire population of Limpopo province. The average household size in Polokwane LM is approximately 3.8 people per household. While this figure is slightly higher than the district average of 3.7, it is slightly lower than the provincial average of 3.9.

Crime is an important indicator of a community's socioeconomic status. Serious crimes comprise of contact crimes, sexual offences, robberies with aggravating circumstances, crimes involving property, and crimes discovered as a result of police action. The highest crime rate was recorded in 2020. This increase in crime can be attributed to various factors, including the impact of the COVID-19 pandemic and the subsequent lockdown regulations implemented in 2020.

The stringent lockdown measures resulted in job losses and economic hardships for many individuals, which may have contributed to a sense of desperation and an increase in criminal activities as people sought ways to improve their circumstances. However, as the global pandemic restrictions began to ease in 2021, the crime rates showed a decline, potentially indicating the restoration of employment opportunities and improved socio-economic conditions.

Notably, 2022 witnessed the lowest crime rate among the observed years, suggesting positive developments in the economy of Polokwane LM and progress towards sustainable development. This decline in crime rates reflects the potential positive impact of ongoing efforts in enhancing economic opportunities, social welfare, and overall well-being within the municipality.

The introduction of a new development project could potentially contribute to an increase in crime rates in an area. This is because the construction and operation of the new development project often attract a transient population, which can introduce new dynamics and challenges related to crime.

d) Income and Education Levels

According to the 2011 Census data, a significant portion of Polokwane LM's population falls within the category of low to middle income household. The majority of households (19.7%) fall within the income range of R38 201 to R76 400, which translates to approximately R3 183 to R6 367 per month. On the other hand, about 7% of the LM's total households earn above R307 601 annually or approximately R25 633 per month. The prevalence of low to middle income households in the LM suggests that many residents face economic challenges and may experience limited financial resources.

Low average income levels are often related to the difficulty of getting access to adequate education. Education includes various levels, each of which reflects a broad segment of the education "ladder," i.e., the development from elementary learning to more difficult learning experiences. Polokwane LM can be considered a low to middle income area as the highest percentage (19.7%) of individuals earn R19,601 - R38,200. Low average income levels are often related to the difficulty of getting access to adequate education. Education includes various levels, each of which reflects a broad segment of the education "ladder," i.e., the development from elementary learning to more difficult learning experiences.

According to the available data, it is observed that a significant portion of Polokwane LM's adult population has limited formal education. Approximately only 7% of the total adult population has not received any form of formal education, while roughly 18.0% have completed at least matriculation (secondary education). In contrast, less than 10% of the adult population in Polokwane LM's holds higher education degrees, including bachelor's degrees, honours degrees, master's degrees, and doctorate degrees.

The educational landscape in Polokwane LM plays a significant role in shaping the labour market dynamics. The low levels of education among residents tend to be associated with a predominance of low-skilled labour. This correlation between educational attainment and skill level suggests that the general population faces challenges in accessing higher-paying job opportunities.

Furthermore, the observed low educational levels in Polokwane LM can be linked to the higher proportion of residents belonging to lower-income brackets. The limited educational opportunities and qualifications contribute to the prevalence of lower-income households within the municipality. This connection between educational attainment and income further underscores the socioeconomic challenges faced by the general population.

e) Labour Force and Employment Structure

In 2021, the employed population in Polokwane LM constituted approximately 73% of the total employed population in the municipality. The working-age population (*WAP*) accounted for 73% of Polokwane LM's total population, which corresponds to around 464,022 individuals.

Some 164,921 individuals amongst the economically active population are employed, representing approximately 68% of the total economically active individuals. On the other hand, the total number of unemployed individuals amounts to 79,114, constituting around 32% of the economically active population.

Regarding the formal employment sector, skilled workers make up approximately 33%, while semi-skilled workers account for 43%, and low-skilled workers represent 24% of the total formally employed individuals.

f) Access to Basic Services

Figure 2 provides valuable insights into the access to basic services in Polokwane LM. It reveals that 24% of households within the municipality have piped water within their yards, while approximately 42% have piped water inside their dwellings. For about 24% of households, access to water is facilitated through a community stand, while the remaining households rely on alternative sources such as water tankers, boreholes, rainwater tanks, rivers/streams, and water vendors.

In terms of energy access, an impressive 96% of households in Polokwane LM have access to electricity provided by Eskom. However, a small portion, approximately 4%, still rely on candles for energy, while 4.1% use paraffin, and a minority of households use other sources such as gas. Regarding sanitation, only roughly 45.8% of LMs' households have access to flushing toilets with sewage systems, while the

0.2% have no access to any toilet system. About 41.5% of the LMs' households have their refuse removed by the community's waste on a weekly basis.

The above subsection suggests that besides the provision of electricity, the LM is likely to be underdeveloped and that the standards of living are fairly low. The proposed Ndau facility is unlikely to improve the LMs' access to basic services, however, it may indirectly impact the standards of living of the local community.

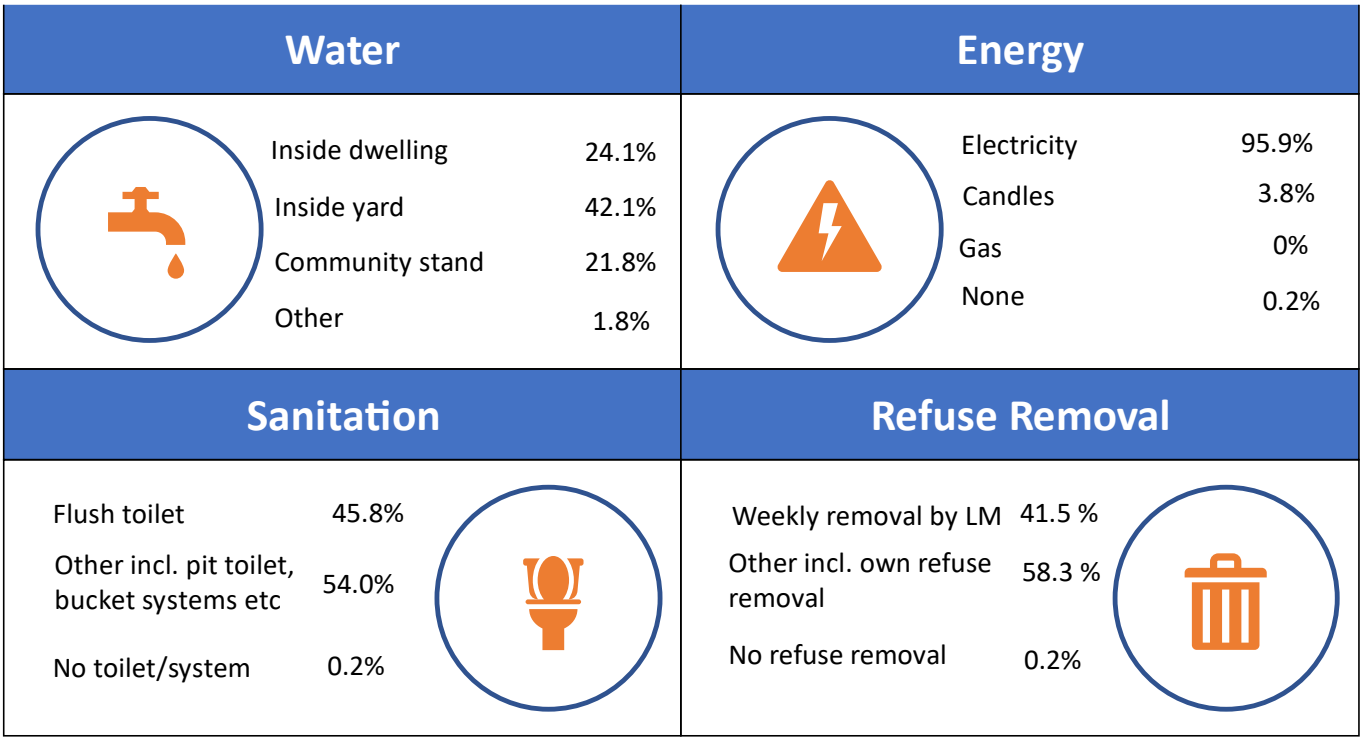

Figure 2: Access to Basic Services (Source: Quantec, 2022)

A full Socio-economic Impact Assessment will be undertaken during the EIR phase.

5. SITE ASSESSMENT

The EAP (Mr. Richard Myburgh) undertook a site visit of the Proposed Development on 02 May 2023. Photographs were captured around the borders and interior of the Proposed Development as illustrated below:

Figure 1: Ndau 2 SEF East Corner (Proposed Substation Location) – North View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 2: Ndau 2 SEF East Corner (Proposed Substation Location) – North East View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 3: Ndau 2 SEF East Corner (Proposed Substation Location) – East View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 4: Ndau 2 SEF East Corner (Proposed Substation Location) – South East View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 5: Ndau 2 SEF East Corner (Proposed Substation Location) – South View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 6: Ndau 2 SEF East Corner (Proposed Substation Location) – South West View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 7: Ndau 2 SEF East Corner (Proposed Substation Location) – West View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 8: Ndau 2 SEF East Corner (Proposed Substation Location) – North West View (GPS 24°1'19.74"S 29°13'21.29"E)

Figure 9: Ndau 2 SEF Southern Side – North View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 10: Ndau 2 SEF Southern Side – North East View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 11: Ndau 2 SEF Southern Side – East View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 12: Ndau 2 SEF Southern Side – South East View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 13: Ndau 2 SEF Southern Side – South View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 14: Ndau 2 SEF Southern Side – South West View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 15: Ndau 2 SEF Southern Side – West View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 16: Ndau 2 SEF Southern Side – North West View (GPS 24° 1'35.12"S 29°13'5.48"E)

Figure 17: Ndau 2 SEF North Corner – North-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 18: Ndau 2 SEF North Corner – North East-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 19: Ndau 2 SEF North Corner – East-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 20: Ndau 2 SEF North Corner – South East-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 21: Ndau 2 SEF North Corner – South-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 22: Ndau 2 SEF North Corner – South West-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 23: Ndau 2 SEF North Corner – West-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 24: Ndau 2 SEF North Corner – North West-View (GPS 24° 1'10.59"S 29°12'55.31"E)

Figure 25: Ndau 2 SEF West Side – North View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 26: Ndau 2 SEF West Side – North East View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 27: Ndau 2 SEF West Side – East View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 28: Ndau 2 SEF West Side – South East View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 29: Ndau 2 SEF West Side – South View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 30: Ndau 2 SEF West Side – South West View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 31: Ndau 2 SEF West Side – West View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 32: Ndau 2 SEF West Side – North West View (GPS 24° 1'26.63"S 29°12'41.03"E)

Figure 33: Ndau 2 SEF South West Corner (Alternative Substation Location) – North View (GPS 24° 1'47.36"S 29°12'42.98"E)

Figure 34: Ndau 2 SEF South West Corner (Alternative Substation Location) – North East View (GPS 24° 1'47.36"S 29°12'42.98"E)

Figure 35: Ndau 2 SEF South West Corner (Alternative Substation Location) – East View (GPS 24° 1'47.36"S 29°12'42.98"E)

Figure 36: Ndau 2 SEF South West Corner (Alternative Substation Location) – South East View (GPS 24° 1'47.36"S 29°12'42.98"E)

Figure 37: Ndau 2 SEF South West Corner (Alternative Substation Location) – South View (GPS 24° 1'47.36"S 29°12'42.98"E)

Figure 38: Ndau 2 SEF South West Corner (Alternative Substation Location) – South West View (GPS 24° 1'47.36"S 29°12'42.98"E)

Figure 39: Ndau 2 SEF South West Corner (Alternative Substation Location) – West View (GPS 24° 1'47.36"S 29°12'42.98"E)

Figure 40: Ndau 2 SEF South West Corner (Alternative Substation Location) – North West View (GPS 24° 1'47.36"S 29°12'42.98"E)

The EAP confirmed that the entire extent of the Proposed Development will be confined to the identified study area, and that no obvious fatal flaws were identified.

6. RATIONALE FOR SPECIALIST STUDIES AND FINDINGS

The national web-based screening tool identified the following specialist studies for inclusion in the S&EIA report:

6.1 GEOTECHNICAL ASSESSMENT

A Geotechnical Assessment will be undertaken as part of the EIR phase.

6.2 GEOHYDROLOGICAL ASSESSMENT

A Geohydrological Impact Assessment will be undertaken as part of the EIR phase.

6.3 SOCIO-ECONOMIC

A Socio-Economic Impact Assessment will be undertaken as part of the EIR phase.

6.4 DEFENCE AND CIVIL AVIATION

No defence sites or civil aviation domes were recorded within or in close proximity to the Proposed Development bases on the EAP's site visit and desktop screening. It is the EAP's opinion that this project will not have any significant impact on the civil aviation or national defence infrastructure. In terms of the DFFE Screening Tool, the Civil Aviation and Defence theme for the Proposed Development was a medium and low sensitivity, respectively. However, from the SSV undertaken, it is the EAP's opinion that the Proposed Development will have a low sensitivity rating for both themes. Thus no impact assessment will need to be undertaken.

However, the South African National Defence Force (*SANDF*) has been included as a stakeholder on the Interested and Affected Party (*I&AP*) database and will be afforded the opportunity to provide comments during public participation conducted as part of the S&EIR process

6.5 RADIO FREQUENCY INTERFERENCE ASSESSMENT

An RFI Assessment will not be undertaken during the EIR phase. SARAO have already assessed the site and confirmed that the project represents a low risk of interference to the nearest SKA radio telescope with a compliance surplus of 405.08 dBm/Hz. As such, SARAO do not have any objection to the proposed development.

Based on the above communication, it is the EAP's opinion that this project will not have any significant impact on the SKA radio telescope infrastructure and the medium sensitivity rating assigned

by the DFFE screening tool for the RFI theme is disputed. Thus no impact assessment will need to be undertaken.

SARAO has also been included as a stakeholder on the I&AP database and will be afforded the opportunity to provide comments during public participation conducted as part of the S&EIR process.

7. CONCLUSIONS AND RECOMMENDATIONS

Praxos was appointed as an independent EAP by ABO Wind on behalf of ABO Ndau Solar Energy Facility 2 (Pty) Ltd to undertake the EA application process, subject to a S&EIR process, for the Proposed Development.

A Screening Tool Report was generated for the Proposed Development. According to the Screening Tool Report, various specialist studies were identified and recommended to be undertaken as part of the environmental process.

The results of the Screening Tool Report and Site Sensitivity Verification undertaken by the EAP are summarised in **Table 6** below.

Table 6: Summary of Desktop vs Site Verification Sensitivities

Theme	Desktop Sensitivity	Site Sensitivity Verification	Specialist Study (Yes/No)
Civil Aviation Theme	Medium	Low	No
Defence Theme	Low	Low	No
RFI Theme	Medium	Low	Confirmation from SARAO

It should be noted that Geotechnical, Geohydrological, and Socio-Economic Impacts do not have specific themes within the DFFE Screening Tool. However, these have been assessed and each will have full impact assessments undertaken during the EIR phase.

In addition to the above, and based on their own site verifications completed by specialists, specialist assessments for Agriculture, Aquatic, Avifauna, Archaeological and Cultural Heritage, Ecological, Landscape and Visual will also be undertaken during the EIR phase.