APPENDIX F – IMPACT ASSESSMENT

PROJECT IMPACT ASSESSMENT, SIGNIFICANCE AND MITIGATION MEASURES SUMMARY

The following impact rating approach used by EnviroAfrica CC is a basic exponential rating system to assess actual and potential negative and positive environmental impacts.

Environmental activities or aspects are identified, based on:

- the phases of the project,
- the nature (or description) of the actual and potential impacts of the activities.

For every project activity or aspect, various environmental impacts are listed. Every negative impact is allocated a -value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Consequence (Receiving Environment)
- Magnitude (Intensity/severity)

Every positive impact is allocated a +value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Magnitude (Intensity/severity)

Once a value is allocated for each of the criterion, the scores are averaged to determine the final impact rating see Table 1 below.

EnviroAfrica then further assesses environmental significance, based on the nature of the impact, as per the score and colour key which forms part of Table 1 below. This results in impacts having either a low (indicated in green), medium (indicated in yellow) or high (indicated in orange and red) negative significance, and a low (light blue), medium (blue) or a high (dark blue) positive significance

Note: i. As a baseline, impact rating values/scores are allocated taking the **worst-case** scenario into account i.e. with no mitigation. The baseline rating is compared with those after mitigation has been taken into account i.e. the post-mitigation rating. Post mitigation rating is used for the actual impact assessment.

APPENDIX N – IMPACT ASSESSMENT

SIGNIFICANCE CRITIERIA	Very High	High	Medium	Low	Negligible (very low)
Value	**16**	**8**	**4**	**2**	**1**
Probability (likelihood) **(P)**		Definite. Impact will definitely occur (impact will occur regardless of any prevention measures)	Highly probable. Very likely for impact to occur.	Probable. Impact may likely occur.	Improbable. Low likelihood/unlikely for impact to occur.
Extent (E)	Impact potentially reaches beyond national boundaries	Impact has definite provincial/potential national consequences	Impact confined to regional area/ town	Impact confined to local region and impact on neighbouring properties	Impact confined to project property / site
Duration (D)		Permanent The impact is expected to have a permanent impact, with very little to no rehabilitation possible	Long-Term The impact is expected to last for a long time after construction with rehabilitation expected to be 15-50 years. Impact is reversible but only with long-term mitigation	Medium-term The impact is expected to last for some time after construction with rehabilitation expected to be 2 - 15 years. Impact is reversible but only with on-going mitigation	Short-term / temporary The impact is expected to be temporary or last for a relatively short time with rehabilitation expected to be <2years. The impact is reversible through natural process and/or some mitigation.
Magnitude (Intensity/ Severity) **(M)**	It is expected that the activity will have a very severe to permanent impact on the surrounding environment. Functioning irreversibly impaired. Rehabilitation often impossible or unfeasible	It is expected that the activity will have a severe impact on the surrounding environment. Functioning may be severely impaired and may be temporarily cease. Rehabilitation will be needed to restore system integrity	It is expected that the activity will have an impact on the surrounding environment, but it will maintain its function, even if moderately modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the activity will have a perceptible impact on the surrounding environment, but it will maintain its function, even if slightly modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the impact will have little or no effect on the integrity of the surrounding environment
Receiving environment (Consequence): **(RE)**	Very sensitive, pristine area – protected site or species permanently or seasonally present	Unused area containing only indigenous fauna / flora species	Unused area containing indigenous and alien fauna / flora species	Semi-disturbed area already rehabilitated / recovered from prior impact, or with moderate alien vegetation	Disturbed area/ transformed/ heavy alien vegetation

APPENDIX N – IMPACT ASSESSMENT

ENVIRONMENTAL RATING SIGNIFICANCE KEY:

Negative Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Very Significant	Very High	-11 to -16
Significant	High	-7 to <-11
Increasing Significance	Medium	≥-5 to <-7
	Medium Low	-4 to ≤-5
Insignificant	Low	-3 to <-4
	Very Low	-1 to <-2

Positive Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Significant	High	10 to 16
Increasing Significance	Medium	4 to <10
Insignificant	Low	1 to <4

Table 1. Environmental Significance Rating Methodology (rating criteria and significance key)

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
CONSTRUCTION PHASE					
1	Biodiversity	**Special habitats**: Potential impact on special habitats (e.g. true quartz or "heuweltjies")	**Very Low (Negative)**	Ensure that the watercourse is protected and could maintain its function as a migration corridor.	**Very Low (Negative)**
2		**Landuse and cover:** Potential impact on socio-economic activities.	**Very Low (Negative)**	The impact is expected to have a positive impact on job creation.	**Very Low (Negative)**
3		**Vegetation status**: Loss of vulnerable or endangered vegetation and associated habitat.	**Very Low (Negative)**	The impact on loss of vegetation is expected to be negligible.	**Very Low (Negative)**
4		**Conservation priority:** Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	**Medium (Negative)**	Ensure that the watercourse is protected and that the impact on Vachellia erioloba trees larger than 6m are protected.	**Medium Low (Negative)**
5		**Connectivity:** Potential loss of ecological migration corridors.	**Medium Low (Negative)**	Ensure that the watercourse is protected and could maintain its function as a migration corridor.	**Low (Negative)**
6		**Protected and Endangered plant species**: Potential impact on threatened or protected plant species.	**Medium Low (Negative)**	Ensure that all mature Vachellia erioloba trees, larger than 6m are protected.	**Very Low (Negative)**
7		**Fauna and Avi-fauna:** Potential impact on mammals, reptiles, amphibians and birds	**Low (Negative)**	Ensure that all mature Vachellia erioloba trees, larger than 6m are protected	**Very Low (Negative)**

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
8		**Cumulative** impact associated with proposed activity.	**Medium (Negative)**	Ensure that the watercourse is protected and that the impact on Vachellia erioloba trees larger than 6m are protected.	**Medium Low (Negative)**
9	Freshwater	Drainage lines	**Medium (Negative)**	Prevent loose soil and sediments from moving down the drainage line along with stormwater.	**Low (Negative)**
10	Heritage	Palaeontological heritage	**Medium (Negative)**	If fossil remains are discovered during any phase of construction, either on the surface or below, the ECO in charge of these developments must be alerted immediately. These discoveries should be protected (if possible, in situ), and the ECO must report to SAHRA so that appropriate mitigation can be carried out by a professional palaeontologist.	**Low (Negative)**
11	Archaeological	No impacts expected	No further mitigation is recommended concerning these resources.		
12	Palaeontology	No impacts expected	No further mitigation is recommended concerning these resources.		
13	Agriculture	No impacts expected	No further mitigation is recommended concerning these resources.		
14	Socio-Economic	Economically, environmental, socially, physically, culturally	**Medium (Negative)**	Engage with local businesses, especially existing farm stalls and guest houses, to assess impact and explore collaborative opportunities for stimulating the local economy. Adhere to general Environmental Management Programme (EMPr) guidelines to mitigate noise and visual impacts in mixed residential areas. No direct action required for Eskom overhead lines, but maintain situational awareness for potential local grid instability. Develop marketing strategies to promote the unique selling point of the EV charging station, considering its potential to boost local economy and tourism. Implement skills development programs targeting the local community to prepare them for job opportunities in construction and maintenance. Engage with local agricultural stakeholders to minimize disruption and explore opportunities for collaboration.	**Medium (Negative)**

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
				Utilize existing internal farm gravel roads to minimize land use change. Develop a comprehensive traffic management plan to manage increased traffic during construction and operational phases. Confirm with SANRAL that no future railway development plans are anticipated that may create potential conflicts. Engage with local communities to identify and protect cultural and heritage sites	
15	Visual	Altered Landscape and Sense of Place Visibility of the facility Water Resources Vegetation Existing Infrastructure Dust Visual Exposure Cultural and Living Landscape Tourism and Scenic Features	**Medium (Negative)**	Implement natural vegetative buffers or earth berms around the facility to minimize its visual impact, especially near water features and residential areas. Use non-reflective, earth-toned materials for all built structures to blend them into the natural landscape and reduce glare. Post-construction, undertake a re-vegetation program using indigenous plant species to restore any disrupted areas and enhance the site's Visual Absorption Capacity (VAC). Implement dust control measures and restrict construction activities to daylight hours to minimize visual and atmospheric impacts. Develop and implement a traffic management plan to control construction-related traffic, minimizing visual and safety impacts on the N14 highway and other local roads. Conduct a comprehensive Heritage Impact Assessment (HIA) that specifically includes the graves identified on the neighboring farm to evaluate their cultural significance and potential visual impact. Based on the findings, implement protective measures that may include demarcation, buffering zones, or even relocation, if feasible and culturally appropriate. This will ensure that the development is sensitive to the newly identified cultural elements and maintains the integrity of the broader cultural and living landscape. Install educational signage that explains the environmental benefits of the solar PV and EV charging facility, turning a potential visual intrusion into an educational opportunity if feasible.	**Medium Low (Negative)**

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
				Design the layout of solar panels to follow the natural contours of the land, reducing the visual impact and need for extensive land grading.	
OPERATIONAL PHASE					
16	Freshwater	Drainage lines	**Medium (Negative)**	Prevent litter and rubbish entering the drainage lines.	**Low (Negative)**