

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
PLANNING & DESIGN PHASE										
<i>It is important to note that specialist planning and design phase impacts were not expected since the developer designed the layout presented in the EIR based on sensitivity data and constraints provided by the various specialists. The planning and design impacts were therefore mitigated at Planning Phase.</i>										
AGRICULTURAL IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
AQUATIC IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
AVIFAUNAL IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
HERITAGE IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
PALAENTOLOGICAL IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
RIVERINE RABBIT IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
SOCIO-ECONOMIC IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
CONSTRUCTION PHASE										
AGRICULTURAL IMPACT ASSESSMENT										
OCCUPATION OF LAND	<p>Agricultural land directly occupied by the development infrastructure will become restricted for agricultural use, with consequent potential loss of agricultural productivity for the duration of the project lifetime. The small and widely distributed nature of the agricultural footprint of the OHL means that only an insignificant proportion of the available agricultural land is impacted in this way.</p> <p>The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of future agricultural production potential.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure (including the OHLs) are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.</i></p>	DIRECT	STUDY AREA	MEDIUM TERM	POSSIBLE	DEFINITE	LOW -	<p>✦ <i>The amount of agricultural land loss caused by the project is well within the allowable development limits prescribed by the agricultural protocol to ensure appropriate conservation of agricultural production land. The footprint of the development is approximately eight times smaller than what the development limits allow.</i></p>	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	MEDIUM TERM	POSSIBLE	DEFINITE	LOW -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	
SOIL EROSION AND DEGRADATION	<p>Erosion can occur as a result of the alteration of the land surface run-off characteristics, predominantly through the establishment of hard surface areas including roads. Soil erosion is completely preventable. The storm water management that will be an inherent part of the road engineering on site and standard, best practice erosion control measures recommended and included in the EMP, are likely</p>	DIRECT	STUDY AREA	SHORT TERM	PROBABLE	MODERATE	LOW -	<p><i>The risk of a loss of agricultural potential by soil degradation can effectively be mitigated for renewable energy developments.</i></p> <p><i>Mitigation measures to prevent soil degradation are all inherent in the project design and / or are standard, best-practice for construction sites.</i></p>	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	MODERATE	LOW -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	

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	<p>to be effective in preventing soil erosion. Loss of topsoil can result from poor topsoil management during construction related excavations.</p> <p>The risk for each individual development is low and the cumulative risk is also low as it can be effectively mitigated for renewable energy developments.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure (including OHLs) are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.</i></p>							<p>A system of storm water management, which will prevent erosion, will be an inherent part of the road engineering on site. Any occurrences of erosion must be attended to immediately and the integrity of the erosion control system at that point must be amended to prevent further erosion from occurring there.</p> <p>Any excavations done during the construction phase, in areas that will be re-vegetated at the end of the construction phase, must separate the upper 30 cm of topsoil from the rest of the excavation spoils and store it in a separate stockpile. When the excavation is back-filled, the topsoil must be back-filled last, so that it is at the surface. Topsoil should only be stripped in areas that are excavated. Across the majority of the site, including construction lay down areas, it will be much more effective for rehabilitation, to retain the topsoil in place. If levelling requires significant cutting, topsoil should be temporarily stockpiled and then re-spread after cutting, so that there is a covering of topsoil over the entire surface.</p>		

AQUATIC IMPACT ASSESSMENT

CONSTRUCTION PHASE – IMPACT ASSESSMENT OF SITE PREPARATION ACTIVITIES PRIOR TO THE CONSTRUCTION OF THE POWERLINE: Vehicular movement (transportation of construction materials)	Transportation of construction materials can result in disturbances to soil, and increased risk of sedimentation/erosion; Soil contamination and potential oil and hydrocarbon spills originating from construction vehicles; and Soil compaction leading to increased runoff and erosion within the vicinity of the freshwater feature(s).	DIRECT	LOCALISED	SHORT TERM	PROBABLE	MODERATE SEVERE	MODERATE -	It is strongly recommended that the proposed powerline support structures be located outside of the freshwater features and at least 32 m (as far as possible/feasible) from the delineated edge of a freshwater feature – this in itself is considered a mitigation measure, which entails no direct negative impacts from occurring to the freshwater features. Should the following mitigation measures (pertaining to the construction of the proposed powerline) be applied, a Low risk significance can be expected;	REVERSIBLE	LOW -
	Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.	CUMULATIVE	LOCALISED	SHORT TERM	PROBABLE	MODERATE SEVERE	MODERATE -		REVERSIBLE	LOW -
	No-go alternative would result in no impact related to disturbance of aquatic habitats as no known construction activities are present on site.	NO-GO	NO IMPACT							NO IMPACT
CONSTRUCTION PHASE – IMPACT ASSESSMENT OF SITE PREPARATION ACTIVITIES PRIOR TO THE CONSTRUCTION OF THE POWERLINE: Construction of camp/contractor laydown and storage area	Exposure of soil, leading to increased runoff, and erosion, and thus increased sedimentation of the receiving freshwater features; Increased sedimentation of the freshwater feature(s), leading to smothering of vegetation associated with freshwater features; Dust pollution during construction which may impact on water quality; and Proliferation of alien and/or invasive vegetation as a result of disturbances.	DIRECT	LOCALISED	SHORT TERM	PROBABLE	MODERATELY SEVERE	MODERATE	It is imperative that all construction works (with specific mention of potential upgrading of any road crossings) be undertaken during the driest period of the year when the flow is very low in the freshwater features;	REVERSIBLE	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	PROBABLE	MODERATE SEVERE	MODERATE -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT							NO IMPACT
								Due to the accessibility of the sites, no unnecessary crossing of the freshwater features may be permitted and it is strongly recommended that the		

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	<p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of aquatic habitats as no known construction activities are present on site.</i></p>										
<p>CONSTRUCTION PHASE – IMPACT ASSESSMENT OF SITE PREPARATION ACTIVITIES PRIOR TO THE CONSTRUCTION OF THE POWERLINE: Removal of vegetation and associated disturbances to soil</p>	<p>Earthworks could be potential sources of sediment, which may be transported as runoff into the downstream freshwater ecosystems; Disturbances of soil leading to potential impacts to the freshwater feature(s) and increased sediment runoff from the construction site to the freshwater feature(s), in turn leading to altered freshwater habitat; Altered runoff patterns, leading to increased erosion and sedimentation of the receiving freshwater features down gradient of the development; Dust pollution during construction which may impact on water quality (if surface water is present).</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of aquatic habitats as no known earthworks activities are present on site.</i></p>	DIRECT	LOCALISED	SHORT TERM	PROBABLE	SEVERE	HIGH -	<p><i>calculated the delineated freshwater features be considered a no-go area. This will limit edge effects, erosion and sedimentation of the freshwater features during the construction phase;</i></p> <ul style="list-style-type: none"> ✦ <i>The reaches of the freshwater features where no activities are planned (i.e., where no supportstructures or spanning of the powerline over the freshwater features is planned) must be considered no-go areas;</i> ✦ <i>Contractor laydown areas, vehicle re-fuelling areas and material storage facilities to remain outside of the freshwater features and their associated 32 m NEMA Zone of Regulation (ZoR);</i> ✦ <i>Clearing of powerline servitudes of vegetation. Technically, only a very limited width strip of woody vegetation above a minimum clearance height needs to be cleared, all lower woody vegetation and other herbaceous vegetation must remain and not be cleared. Clearing of the entire width of the servitude through freshwater features must not occur. Keep woody vegetation below the minimum clearance height, and no indiscriminate removal of vegetation within the servitude must occur. This is considered feasible for the freshwater features identified to be associated with the proposed powerline as they are mostly characterised by low growingshrub and graminoid vegetation species;</i> ✦ <i>Removed vegetation outside the delineated freshwater features must be stockpiled outside of the delineated boundary of a freshwater feature. The footprint areas and height of these stockpiles must be kept to a minimum; and</i> ✦ <i>The removed (indigenous) vegetation must be reinstated after the construction phase. However, alien/invasive</i> 	<i>REVERSIBLE</i>	LOW -	
		CUMULATIVE	LOCALISED	SHORT TERM	PROBABLE	SEVERE	MODERATE -		<i>REVERSIBLE</i>	LOW -	
		NO-GO	NO IMPACT							NO IMPACT	

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								vegetation species present and removed must not be reinstated but must be disposed of at a registered garden refuse site and may not be burned or mulched on site.		
INSTALLATION OF THE SUPPORT STRUCTURES (FURTHER THAN 32 M BUT WITHIN 100 M OF THE DELINEATED FRESHWATER FEATURES) AND SPANNING OF THE PROPOSED POWERLINE: Excavation of foundation pits for the support structures leading to stockpiling of soil	Earthworks could be potential sources of sediment, which may be transported as runoff into the downstream freshwater areas; Disturbances of soil leading to potential impacts to freshwater vegetation, increased alien vegetation proliferation in the footprint areas, and in turn to altered freshwater habitat; Altered runoff patterns, leading to increased erosion and sedimentation of the receiving freshwater features down gradient of the development; Dust pollution during construction which may impact on water quality (if surface water is present). <i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact related to disturbance of aquatic habitats as no known earthworks activities are present on site.</i>	DIRECT	STUDY AREA	SHORT TERM	PROBABLE	MODERATELY SEVERE	MODERATE -	Stringing of the line (i.e., pulling the cables into place) needs to be done manually across the lower foothill tributary and must not entail the movement of machinery across the feature, unless as part of an approved existing access track / road across the feature; ✦ The construction footprint and period must be kept as small and as short as possible, respectively; and construction activities within the delineated freshwater features must be avoided; ✦ Only a 5 m zone of disturbance / construction right of way must be permitted to be disturbed. This 5 m construction right of way will limit construction vehicles/personnel to disturb the surrounding area to freshwater features, should the support structures be located in close proximity to a freshwater feature; ✦ Protect exposed stockpiles (if necessary) from wind and limit the time in which the stockpiled soil is exposed, by covering with a suitable geotextile such as hessian sheeting; ✦ Excavation of foundation pits for the support structures may result in loose sediments within the landscape, specifically if works are undertaken during a period of rainfall (if applicable); ✦ During excavation activities, soil must be stockpiled upgradient of the excavated area. Mixture of the lower and upper layers of the excavated soil must be kept to a minimum. This soil must be used to backfill the pits (support structures), immediately after installation of the support structures and/or other infrastructure; ✦ Material used as bedding material (at the bottom of the excavated foundation pit) must be stockpiled outside of the 32m NEMA ZoR and as close as possible to the support structures footprint area. Once the pit has been excavated, the bedding material must directly be placed within the foundation pit, rather than stockpiling it alongside the foundation pit;	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	MODERATELY SEVERE	MODERATE -		REVERSIBLE	LOW -
		NO-GO								
INSTALLATION OF THE SUPPORT STRUCTURES (FURTHER THAN 32 M BUT WITHIN 100 M OF THE DELINEATED FRESHWATER FEATURES) AND SPANNING OF THE PROPOSED POWERLINE: Potential movement of construction equipment and personnel within the freshwater features	Potential contamination of surface water (if present). Earthworks could be potential sources of sediment, which may be transported as runoff into the downstream freshwater areas; Disturbances of soil leading to potential impacts to freshwater vegetation, increased alien vegetation proliferation in the footprint areas, and in turn to altered freshwater habitat; Altered runoff patterns, leading to increased erosion and sedimentation of the receiving freshwater features down gradient of the development; Dust pollution during construction which may impact on water quality (if surface water is present). <i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact related to disturbance of aquatic habitats as no known earthworks activities are present on site.</i>	DIRECT	REGIONAL	SHORT TERM	PROBABLE	MODERATELY SEVERE	MODERATE -	REVERSIBLE	LOW -	
		CUMULATIVE	REGIONAL	SHORT TERM	PROBABLE	MODERATELY SEVERE	MODERATE -	REVERSIBLE	LOW -	
		NO-GO								
INSTALLATION OF	Potential contamination of surface water (if present).	DIRECT	REGIONAL	SHORT	PROBABLE	MODERATELY	HIGH -		REVERSIBLE	LOW -

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<p>THE SUPPORT STRUCTURES (FURTHER THAN 32 M BUT WITHIN 100 M OF THE DELINEATED FRESHWATER FEATURES) AND SPANNING OF THE PROPOSED POWERLINE: Mixing and casting of concrete for foundations</p>	<p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p>	CUMULATIVE	REGIONAL	TERM SHORT TERM	PROBABLE	SEVERE MODERATE	MODERATE -	<ul style="list-style-type: none"> ✦ <i>The bedding layer (such as clean gravel) must be spread evenly and compacted uniformly to the required density using a hand tamper (one man operator) in order to minimise the use of large machinery within the freshwater feature or within close proximity to a freshwater feature;</i> ✦ <i>When the powerline is strung between the support structures, no vehicles may indiscriminately drive through the freshwater features, use must be made of the existing access roads.</i> 	REVERSIBLE	LOW -
	<p><i>No-go alternative would result in no impact related to disturbance of aquatic habitats as no known earthworks activities are present on site.</i></p>							<p>Control measures for concrete mixing on site:</p> <ul style="list-style-type: none"> ✦ <i>No mixed concrete may be deposited outside of the designated construction footprint;</i> ✦ <i>As far as possible, concrete mixing must be restricted to the batching plant. Additionally, batter</i> ✦ <i>/ dagga board mixing trays and impermeable sumps must be provided, onto which any mixed concrete can be deposited while it awaits placing; and</i> ✦ <i>Concrete spilled outside of the demarcated area must be promptly removed and taken to a suitably licensed waste disposal site.</i> <p>With regards to backfilling of the concrete encasing:</p> <ul style="list-style-type: none"> ✦ <i>Soil removed for excavating the foundation pit must be used as backfill material;</i> ✦ <i>All excavated pits must be compacted to natural soil compaction levels to prevent the formation of preferential surface flow paths and subsequent erosion. Conversely, areas compacted as a result of construction activities must be loosened to natural soil compaction levels;</i> ✦ <i>Any remaining soil following the completion of backfilling of the pits are to be spread out thinly surrounding the installed support structures (outside of the delineated freshwater features) to aid in the natural reclamation process; and</i> ✦ <i>The construction footprint must be limited to the foundation pit area associated with the support structures and recommended 5 m construction buffer (to allow for the stockpiling and movement of personnel). The area must be rehabilitated after the completion of the construction phase, including revegetation thereof with indigenous vegetation. In addition, alien</i> 		

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								vegetation eradication of the footprint area must be undertaken where applicable. Hydroseeding of disturbed areas is recommended.		
ACCESS ROUTE "JEEP-TRACK": SOIL COMPACTION FOR THE ACCESS ROUTE AND ASSOCIATED DISTURBANCES OF SOIL WITHIN THE VICINITY OF THE FRESHWATER FEATURES	Soil compaction for the access route; Disturbances of soil resulting in altered runoff patterns within the vicinity of the freshwater features; and Altered runoff patterns, leading to increased erosion and sedimentation of freshwater habitat. <i>Cumulative impact, on a localised scale, would be moderate should the Taabos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact related to disturbance of aquatic habitats as no known earthworks activities are present on site.</i>	DIRECT	STUDY AREA	SHORT TERM	PROBABLE	MODERATELY SEVERE	MODERATE -	<ul style="list-style-type: none"> All footprint areas must remain as small as possible and vegetation clearing to be limited to what is absolutely essential; No vegetation clearing must take place in the freshwater features; and No formal paving must be used for the access route. In situ compaction of soil for the "jeep-track" as proposed is preferred. 	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	MODERATELY SEVERE	MODERATE -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT							NO IMPACT
CUMULATIVE IMPACT	Direct and indirect impacts identified within the assessed freshwater features can predominantly be attributed to informal road crossings leading to limited alien and invasive species establishment. Considering that the proposed powerline support structures and substation will be located outside the assessed freshwater features (thus avoiding direct negative impacts), increased vehicular movement and infrastructure in the surrounding landscape may result in indirect edge effects. Such edge effects may have cumulative impacts to the freshwater features, with specific mention of alien and invasive species establishment and increased sediment loads.	DIRECT						<ul style="list-style-type: none"> With management and mitigation measures implemented during the construction phase and monitoring of support structures and substation for any erosion during the operational phase, the direct and indirect negative impacts can be reduced, thus cumulative impact on the larger catchment can, therefore, be considered low/limited. 		
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	SLIGHT	LOW -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT							NO IMPACT
AVIFAUNAL IMPACT ASSESSMENT										
DISPLACEMENT THROUGH DISTURBANCE	Disturbance can negatively affect all avifauna on an individual or population level by increasing stress, decreasing food and habitat availability, causing displacement into potentially less suitable neighbouring environments, and ultimately potentially decreasing reproductive success (Frid & Drill 2002, Percival 2005, Birdlife SA 2017, Bennun et al. 2021). This is particularly true for resident breeding species, some of which are shy, secretive and not habituated to human activities. For this project, disturbance is of particular concern due to the confirmed occurrence of the SCC Ludwig's Bustard, Verreaux's Eagle, Blue Crane, Karoo Korhaan, Lanner Falcon and Secretarybird, which are all locally breeding residents. The impact of disturbance on avifauna is negative and would affect the PAOI for the duration of all phases. Some disturbance is definite to occur, but the impact will cease with the completion of the phases and is reversible. Avifauna could continue to be present on site but in a modified manner, if for example breeding SCC are affected.	DIRECT	STUDY AREA	SHORT TERM	DEFINITE	SLIGHT	LOW -	<ul style="list-style-type: none"> Disturbance can be managed and mitigated at the design stage by avoiding important nesting, roosting and foraging areas of sensitive species during site selection and layout design. In order to ensure no SCCs are breeding within the proposed disturbance footprint prior to the commencement of construction or decommissioning activities, a walkthrough of the site must be conducted, as close as possible prior to the commencement of activities. The impact management actions and outcomes as per Table 11 must be included in the EMP for the proposed development. 	ACHIEVABLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	DEFINITE	SLIGHT	LOW -		ACHIEVABLE	LOW -
		NO-GO	NO IMPACT							NO IMPACT

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	<p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of avifaunal habitats.</i></p>									
<p>DISPLACEMENT THROUGH HABITAT LOSS</p>	<p>Any transformation of vegetation leads to habitat loss for avian species utilising that vegetation, causing displacement into areas which are potentially less suitable or already occupied by competing individuals or species (Frid & Dill 2002, Percival 2005, Dwyer et al. 2018). The clearing of vegetation will be required for the servitude road and pylon foundations and associated infrastructure. Pylons also represent potential new nesting, roosting and perching habitat for a variety of species, which would be lost with decommissioning. For some of these, in particular Martial Eagle and Verreaux's Eagle this will however be a higher risk environment than their natural substrate, due to the associated risk of collisions and electrocutions.</p> <p>The impact of habitat loss on avifauna is negative and would affect the site directly and surrounding areas indirectly through displacement. Therefore, the spatial extent of the impact is rated as the study area. Habitat loss is definite to occur and may impact SCC. Reversibility is considered to be possible with rehabilitation to some degree for the construction phase. The impact will persist for the lifetime of the facility and is therefore rated as long-term. The habitat is of Least Concern, with much equivalent habitat remaining in surrounding areas, but the resource will be partly lost. The severity of habitat loss for SCC is potentially severe if habitat loss occurs within breeding areas.</p> <p>During the lifetime of the facility some avian species may use the OHPL and infrastructure as a perching, roosting or nesting locality. Decommissioning therefore potentially results in habitat loss for these individuals, and can affect breeding success. The affected species are likely to be SCC.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of avifaunal habitats.</i></p>	<p>DIRECT</p>	<p>STUDY AREA</p>	<p>LONG-TERM</p>	<p>DEFINITE</p>	<p>MODERATELY SEVERE</p>	<p>MODERATE -</p>	<p>✦ <i>With implementation of an alignment that avoids all SCC breeding sites, and an avifaunal pre-construction walkthrough the severity and likelihood can be reduced. The total development footprint would be relatively small.</i></p> <p>✦ <i>Mitigation of habitat loss from construction of the development is only marginally possible by retaining as much of the indigenous vegetation as possible, and minimising the footprint of all associated infrastructure, including buildings, electrical infrastructure and the width and length of roads.</i></p> <p>✦ <i>Pylons should be made unattractive for nesting birds by installing anti-perch and anti-nesting devices. Before decommissioning an avifaunal walkthrough must identify any active nesting and breeding sites of SCC, that could have established throughout the lifetime of the development, which must be protected until the breeding has concluded.</i></p> <p>✦ <i>The impact management actions and outcomes as per Table 11 must be included in the EMP for the proposed development.</i></p>	<p>ACHIEVABLE</p>	<p>LOW -</p>
		<p>CUMULATIVE</p>	<p>STUDY AREA</p>	<p>LONG-TERM</p>	<p>DEFINITE</p>	<p>MODERATELY SEVERE</p>	<p>MODERATE -</p>		<p>ACHIEVABLE</p>	<p>LOW -</p>
		<p>NO-GO</p>	<p>NO IMPACT</p>				<p>NO IMPACT</p>		<p>NO IMPACT</p>	<p>NO IMPACT</p>

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HERITAGE IMPACT ASSESSMENT											
LOSS OF HERITAGE RESOURCES: STONE AGE OCCURANCES	<p>Construction activities pose the greatest threat to tangible heritage resources within the cultural landscape and it is often during this Phase that heritage sites are lost. Previously undetected cultural (archaeological) layers are usually superficial, subsoil layers and that makes them easily vulnerable to destruction and the likelihood for encountering additional cultural heritage sites as the land clearing process commences, or during construction of infrastructure should be considered.</p> <p><i>Cummulative impact: The low frequency of significant archaeological resources documented in the project area and in its immediate surroundings implies low-severity short and long-term impacts on the heritage landscape</i></p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to destruction of archaeological resources.</i></p>	DIRECT	STUDY AREA	SHORT TERM	MAY OCCUR	SLIGHT	LOW -	<p>Stone Age remains occur abundantly in the project landscape where locally available raw material for the manufacture of stone tools is available in the geological setting. Most of the artefacts are probably Middle Stone Age (MSA) lithics such as blades, scrapers, chunks and cores produced on quartzite. Single possible Later Stone Age (LSA) microlithic tools were noted. Stone artefact scatters are usually located in areas with fluvial gravels along drainage lines, pans and within decomposing calcretes, rocky outcrops or ridges. Despite the high number of observations of artefacts and high densities in places, these resources are common and representative of similar scatters across widespread areas of the Karoo. The widespread but ephemeral scatters are often of low heritage value due to temporally mixed contexts and the frequent absence of faunal, organic and other cultural remains which is scattered over thousands of square kilometres of the Karoo. The Stone Age localities are not conservation-worthy and even though the resources may be destroyed during construction, the impact is inconsequential.</p> <p>Information on the layout of civil services such as access roads were made available to specialists at an advanced stage of this assessment and not all of these proposed access road alignments could be included in site investigations. It is recommended that a suitably qualified archaeologist be appointed during the Construction Phase to monitor vegetation clearing and excavation activities for the possible occurrence of archaeological material remains and features in these areas.</p> <p>Considering the localised nature of heritage remains, the general monitoring of the development progress by an ECO or by the heritage specialist is recommended for all stages of the project. Should any subsurface palaeontological, archaeological or historical material, or burials be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately.</p> <p><i>Cummulative impact:</i></p> <p><i>The significance of the landscape in terms of its heritage is bound not to change during the course</i></p>	<i>REVERSIBLE, EASILY ACHIEVABLE</i>	LOW -	
		CUMULATIVE	STUDY AREA	SHORT AND LONG TERM	MAY OCCUR	SLIGHT	LOW -		<i>REVERSIBLE</i>	LOW – AND LOW (+)	
		NO-GO							NO IMPACT		
		CUMULATIVE	STUDY AREA	SHORT AND LONG TERM	MAY OCCUR	SLIGHT	LOW -		<i>REVERSIBLE</i>	LOW – AND LOW (+)	
		NO-GO							NO IMPACT		

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY/MITIGATION	SIGNIFICANCE POST-MITIGATION
								of construction, operation and decommissioning of the project. It should be noted that archaeological knowledge and the initiation of research projects into significant archaeological sites often result from Heritage Impact Assessments conducted for developments. Provided that significant archaeological sites are conserved and that appropriate heritage mitigation and management procedures are followed, the cumulative impact of development can be positive.		
PALAEONTOLOGICAL IMPACT ASSESSMENT										
LOSS OF PALAEONTOLOGICAL HERITAGE RESOURCES	Disturbance, damage, destruction or sealing-in of legally protected, scientifically valuable fossil remains preserved at or beneath the ground surface within the development footprint, especially during ground clearance or bedrock excavations during the Construction Phase. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard. No-go alternative would result in no impact related to loss of palaeontological resources.</i>	DIRECT	LOCALISED	LONG TERM	POSSIBILITY	MODERATE TO SEVERE	LOW -	Impact severity can be effectively (albeit only partially) mitigated through: <ul style="list-style-type: none"> Pre-construction walk-down of authorized project footprint by specialist palaeontologist in the Pre-Construction Phase Ongoing monitoring for fossil remains of all substantial bedrock excavations and surface clearance activities by ECO during Construction Phase, with safeguarding and reporting of new palaeontological finds (notably fossil vertebrate bones & teeth) to SAHRA for possible specialist mitigation (See appended Chance Fossil Finds Protocol). Low Negative impact may also be partially offset by professional recording and collection of new fossil finds, which may be a compensatory positive outcome. <ul style="list-style-type: none"> Cumulative impacts: Anticipated cumulative impacts on local palaeontological heritage fall within acceptable limits based largely on the paucity of significant fossil sites recorded hitherto within the combined cluster project area and assumes that the proposed Pre-Construction and Construction Phase mitigation measures recommended for all these projects are implemented in full. 	IRREVERSIBLE	LOW -
		CUMULATIVE	LOCALISED	LONG TERM	POSSIBILITY	MODERATE TO SEVERE	LOW -		IRREVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT
RIVERINE RABBIT IMPACT ASSESSMENT										
LOSS OF HABITAT	The construction of roads, turbine hard-stands, roads and laydown areas will result in the destruction of vegetation and top-soil within areas of potential Riverine Rabbit habitat. No turbines should be constructed in riparian zones demarcated as High sensitivity, or their associated buffers. Furthermore, the developer should strive to reduce the amount of roads intersecting these riparian zones. If these measures are correctly implemented the total extent of habitat loss is likely to be low, and the resulting impact on the species from habitat	DIRECT	STUDY AREA	SHORT TERM	PROBABLE	SEVERE	HIGH -	<ul style="list-style-type: none"> Turbines and pylons should be located outside of the buffers around riverine habitat An ECO must be employed to demarcate areas for use during construction, and to ensure that the construction activities remain within the designated area and that no unauthorised activities occur outside of the construction footprint Avoid road development traversing riparian 	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	SEVERE	HIGH -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
	<p>loss would also be low.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on the local Riverine Rabbit population.</i></p>							areas, where possible		
DISTURBANCE THROUGH CONSTRUCTION NOISE	<p>The construction of roads, turbine hard-stands, roads and laydown areas will result in elevated levels of both noise and activity, which may displace potential Riverine Rabbits out of the Aol. Mitigation should include minimizing noise and educating workers. If done, the potential displacement of the species from home range is likely to be very low. As there are limited areas of potentially suitable Riverine Rabbit on the site, this would be a largely minimalised, thus requiring minimal mitigation.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on the local Riverine Rabbit population.</i></p>	DIRECT	STUDY AREA	SHORT TERM	PROBABLE	SLIGHT	LOW -	<ul style="list-style-type: none"> ✦ An ECO must be employed to demarcate areas for use during construction, and to ensure that the construction activities remain within the designated area and that no unauthorised activities occur outside of the construction footprint ✦ Traffic and loud machinery should be prohibited during the early hours of the morning (04:00 – 09:00) and early evening (18:00 – 22:00) ✦ Any trenches built must have slopes that allow any dispersing rabbits that fall in to escape and must be backfilled. 	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	SLIGHT	LOW -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT
MORTALITY FROM ROADKILL OR BUSHMEAT HUNTING	<p>Roadkill is a significant source of mortality for Riverine Rabbits across their range. The probability of vehicle-related mortality in and around the Aol will increase with the added traffic, particularly during the construction phase. This would potentially occur within the site as well as on the nearby larger public roads (such as the R381). During operation, however, this potential impact would be significantly reduced. As Riverine Rabbit activity is ‘crepuscular’ (i.e., highest between dusk and dawn), traffic during these periods should be curtailed. In addition, speed limits (<40km) in all areas of potential conflict (i.e. High sensitivity) should be implemented to reduce collision risk. Finally, a limitation of roads within the drainage habitat within the Aol should be considered.</p> <p>Bushmeat hunting and active interference with Riverine Rabbits by construction employees may also result in reduced Riverine Rabbit occurrence within the Aol. All employees should be educated thoroughly on the potential impact of hunting in the Aol, and encouraged to report any sightings of the species during construction to their line managers.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines</i></p>	DIRECT	STUDY AREA	SHORT TERM	POSSIBLE	SEVERE	MODERATE -	<ul style="list-style-type: none"> ✦ Prohibit all employees from hunting ✦ Prohibit open fires ✦ Prohibit any domestic carnivores (e.g. dogs) from entering the site with employees ✦ An ECO must be employed to demarcate areas for use during construction, and to ensure that the construction activities remain within the designated area and that no unauthorised activities occur outside of the construction footprint ✦ Avoid road development traversing riparian areas, where possible ✦ Speed restrictions for all project vehicles (40km/h is recommended) should be in place to reduce road kills of rabbits killed on the project roads. Traffic should be reduced during the early hours of the morning (04:00 – 09:00) and early evening (18:00 – 22:00) ✦ Any contractor employed for development work must ensure that no rabbit or hare species are disturbed, trapped, hunted or killed by them and their team during the 	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	POSSIBLE	SEVERE	MODERATE -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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	<p>overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</p> <p><i>No-go alternative would result in no impact on the local Riverine Rabbit population.</i></p>							<p>construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance</p>		
SOCIO-ECONOMIC IMPACT ASSESSMENT										
TEMPORARY EMPLOYMENT	<p>During the construction phase, there will be temporary employment associated with the project. It has been established that approximately 50 employment opportunities will become available over the 8-month construction period. Of these about 55% will be allocated to unskilled, 30% to semi-skilled and 15% to skilled workers. Semi- and lower skilled workers are usually required to perform electrical and civil duties (site clearing, excavation and casting of concrete foundations, stormwater reticulation, trenching, access roads, cable installations, structural steelwork, buildings, fencing, etc.); whereas higher skilled professionals entail Project Managers, Engineers, Environmental Control Officers and so forth. In addition to direct employment, the construction phase will have a positive spin-off effect on the economy (local, regional and national) through procurement of goods and services, with indirect and induced employment creation as result.</p> <p><i>Cumulative impact, on a localised scale, would be HIGH should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>	DIRECT	LOCAL	SHORT TERM	DEFINITE	MODERATELY BENEFICIAL	SOME BENEFITS	<p>✦ <i>Maximise local employment and local content (the Project's direct sending area) through the Preferential Procurement Plan and Contractor Services Management Plan (CSMP) for all contractors that are used.</i></p> <p>✦ <i>Involve the Ubuntu LM and PKSDM from the early processes (from financial close already if possible). Determine their existing processes with regards to a labour desk and streamline employment processes between the various stakeholders.</i></p> <p>✦ <i>Appoint a Community Employer Relations Officer / CLO. Communicate with communities through this one channel to ensure transparency, limit unrealistic expectations and to avoid conflict.</i></p>	<i>DIFFICULT</i>	SOME BENEFITS
		CUMULATIVE	NATIONAL	SHORT TERM	DEFINITE	MODERATELY BENEFICIAL	HIGH +		<i>DIFFICULT</i>	HIGH +
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT
INDUCED LOCAL ECONOMIC IMPACTS	<p>Expenditure during construction and the increase in household earnings due to temporary employment result in various induced economic impacts and spin-offs for the local and regional economies, such as:</p> <p>Business opportunities for the service and manufacturing industries (locally and nationally), e.g. transport, Personal Protective Equipment, maintenance work, general consumables, civil works;</p> <p>✦ <i>Wages that are spent locally and a general improvement of income levels with higher spending benefits and spin-offs for local businesses, retail, sales, leisure and hospitality, real estate, etc.;</i></p> <p>✦ <i>Local accommodation facilities that house the workers sourced from outside the direct Project sending area and spin-offs for the tourism industry.</i></p> <p>Since at least 20% of the South African workforce has to be</p>	DIRECT	NATIONAL	SHORT TERM	DEFINITE	SLIGHTLY BENEFICIAL	LOW +	<p>✦ <i>Maximise the Project's local content as far as possible.</i></p>	<i>VERY DIFFICULT</i>	LOW +
		CUMULATIVE	NATIONAL	SHORT TERM	DEFINITE	SLIGHTLY BENEFICIAL	LOW +		<i>VERY DIFFICULT</i>	LOW +
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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	<p>residents from local communities a large portion of these induced impacts will manifest locally. Definite positive impacts of 'low significance' will manifest.</p> <p>Wallet loose b</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>										
TRAINING / SKILLS DEVELOPMENT	<p>An important outcome of training and skills development is that it increases the employability of a region's workforce, resulting in enhanced economic opportunities and thus addressing poverty alleviation over the medium to long term. During the construction phase the following training initiatives would usually take place:</p> <ul style="list-style-type: none"> On-site training so that workers can safely perform their duties; and Training by contractors to maintain their own BBEEE level, such as health and safety legislation training, first aid, fire-fighting, construction skills, basic electrical training, quality management, legal compliance or business skills. <p>Consultation with the affected local and district municipalities however identified a great need for training and capacity building as most of the workers and SMME's on their databases are poorly educated with limited skills. These constraints result in gaps between the Developers' requirements and the local communities' / SMME's abilities to provide the required services. It would thus be to the advantage of the Project if on-the-job training is implemented, especially for unskilled workers.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>	DIRECT	REGIONAL	SHORT TERM	DEFINITE	SLIGHTLY BENEFICIAL	LOW +	<ul style="list-style-type: none"> Where feasible, the Developer should: Make the skill requirements clear to the municipalities in advance and do a skills analysis of the available labour force. Implement a SMME skills development programme and do certification (training on how to tender, understanding contracts, basic business skills, etc.) at least 4 months prior inviting SMMEs to tender and involve the relevant LED Units in the programmes. Do a Value-chain analysis of services required (directly and indirectly related to construction) and communicate this to local and district municipalities in advance so that they are prepared and equipped to take part in the tender process. Require larger contractors to work with small SMMEs to train and transfer skills and include this in their respective CSMP's. Implement on-the-job training for unskilled workers. Capacitate the local government structures by involving them as early as possible in the Project; remain transparent throughout the processes. Negotiate a MoU with the municipalities so that each role-player is clearly aware of its roles, responsibilities and timelines in the Project processes. Establish an EMC or similar Forum for the duration of construction to aid communication and transparency. Members of the EMC / Forum to meet on a quarterly basis to discuss issues that may arise during the course of the construction period (if feasible). 	ACHIEVABLE	MODERATE +	
		CUMULATIVE	REGIONAL	SHORT TERM	DEFINITE	SLIGHTLY BENEFICIAL	MODERATE +		MODERATE +	ACHIEVABLE	MODERATE +
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT	NO IMPACT
EMPLOYMENT EQUITY	<p>Statistics obtained from the IP4 overview (DMRE, December 2021) indicate that during the construction phases, Black</p>	DIRECT	REGIONAL	SHORT TERM	DEFINITE	MODERATELY SEVERE	LOW +	<ul style="list-style-type: none"> Obtain inputs from the local and district municipalities on the contents of the 	ACHIEVABLE	MODERATE +	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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	<p>facilities, littering and refuse) and so forth.</p> <p>In terms of security, landowners and community members could easily consider this construction project as the catalyst should local crime levels and stock theft increase and affect their quality of life. Landowners in and around the study area describe their environment as extremely safe and peaceful with minimal / low levels of crime.</p> <p>Impacts that relate to an influx of construction workers would increase if contractors and sub-contractors refrain from using the labour desk and prefer to bring in their own workforce. The Developer’s commitment to maximize local labour, design the recruitment process in conjunction with the municipalities and implement relevant security measures for the duration of construction is thus essential.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters’ Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>							<p><i>the workforce that focuses on sexual health, unwanted pregnancies and related social issues.</i></p> <ul style="list-style-type: none"> ✦ <i>Security, safety and environmental health:</i> ✦ <i>24-hour security, demarcate and fence the construction site (if possible), material stores to be secured, access control and no trespassing of workers outside designated construction areas.</i> ✦ <i>Join the local community policing forum or similar initiative for the duration of construction.</i> ✦ <i>Keep the local SAPS, other emergency services, Ward Councillors, landowners and other relevant stakeholders informed about the construction progress and time-lines.</i> ✦ <i>Develop a Fire / Emergency Management Plan in conjunction with affected and neighbouring landowners.</i> ✦ <i>Dispose of the various types of waste generated in the appropriate manner at licensed waste landfill sites at regular intervals. Comply with the waste management plan compiled for the construction phase.</i> ✦ <i>Display “danger” warning signs and “no public access” signs at all potential accesses, paths and along the periphery of the construction areas in English and the local languages.</i> ✦ <i>If water for construction is obtained from a natural water resource, comply with the Water Use Licence conditions for the duration of the construction period.</i> ✦ <i>Ensure implementation of the provisions of the Occupational Health and Safety Act No. 85 of 1993 and adhere to the Emergency and Safety plan procedures for the duration of the construction phase.</i> ✦ <i>Awareness / community engagement:</i> ✦ <i>Keep open communication channels with the landowners and address any potential issues as a matter of priority.</i> ✦ <i>Make contact details of the main contractor and procedures to lodge complaints available to landowners and the local communities through the Ward Councillors and EMC / Forum.</i> ✦ <i>Make a complaints register / log book available at the entrance to the construction site and act immediately should issues arise.</i> 		

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY/MITIGATION	SIGNIFICANCE POST-MITIGATION	
								<ul style="list-style-type: none"> Consult with surrounding landowners whose livestock, private residences and other infrastructure could be affected by dust, noise and other impacts that result from traffic movement and general construction activities. Where required, draw up a land use management plan with individual landowners to protect livestock and farmland, which addresses restricted access areas, procedures when farm gates are opened and closed and so forth. Rehabilitate the veld to its original state post construction. 			
INTRUSION IMPACTS	<p>Intrusion impacts could indirectly impact agricultural land uses, thereby having a negative effect on incomes of landowners, such as:</p> <ul style="list-style-type: none"> Negligent construction workers that do not close / lock farm gates resulting in animals that go missing and/or mix with animals in different breeding groups / cycles, potentially introducing diseases into herds; Livestock that is killed on access roads if drivers do not adhere to speed limits and traffic rules; Dust that impact the quality of wool and/or dust that settle on grazing land and have an impact on livestock carrying capacity; Possible noise impacts; and Construction activities that hamper the farmers' access to their own farms. <p>The increase in traffic could result in the degradation of road surfaces and speeding / negligent drivers could cause accidents and fatalities, subsequently placing pressure on local emergency, disaster management and health care services (fire, ambulance, police services, etc.). Abnormal vehicles that transport large project infrastructure could also necessitate intermittent road closures.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>	DIRECT	STUDY AREA	SHORT TERM	DEFINITE	MODERATELY SEVERE	MODERATE -	<ul style="list-style-type: none"> Comply with the EMP requirements to address any potential noise and dust impacts. Proper planning, management and rehabilitation of all construction sites to forego the visual impacts of the construction activities, as proposed in the VIA (Nuleaf Planning & Environmental, October 2022). Implement all mitigation measures as proposed Discuss construction timelines with landowners so that grazing of livestock can take place away from construction areas. Collaborate with the necessary road management agencies when road closures are required and advertise alternative routes in advance. Impose penalties for reckless drivers as a way to enforce compliance to traffic rules. 	<i>DIFFICULT</i>	MODERATE -	
		CUMULATIVE	STUDY AREA	SHORT TERM	DEFINITE	MODERATELY SEVERE	MODERATE -		MODERATE -	<i>DIFFICULT</i>	MODERATE -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT	
HEALTH AND SAFETY RISKS FOR WORKERS	<p>Health and safety risks for workers and the broader community are possible to manifest. Community health and safety risks are associated with the inflow of workers. The Occupational Health and Safety Act (Act No. 85 of 1993) makes provision for the health and safety of workers at construction sites. These</p>	DIRECT	LOCALISED	SHORT TERM	MAY OCCUR	SEVERE	MODERATE -	<ul style="list-style-type: none"> Ensure implementation of the provisions of the Occupational Health and Safety Act (Act No. 85 of 1993) and adhere to the Emergency and Safety plan procedures for the duration of the construction phase. Promote good conduct of employees through 	<i>ACHIEVABLE</i>	LOW -	
		CUMULATIVE	LOCALISED	SHORT TERM	MAY OCCUR	SEVERE	MODERATE -		<i>ACHIEVABLE</i>	MODERATE -	
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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	<p>risks are broadly associated with:</p> <ul style="list-style-type: none"> Construction related accidents due to structural safety of Project infrastructure, possibly resulting in fatalities; Dust generation and air pollution resulting in respiratory diseases; High ambient noise levels caused by machinery and construction equipment, resulting in loss of hearing or other similar health issues; Dehydration, sunburn and related issues for workers due to unsafe and insufficient drinking water and high temperatures during summer months; and An increase in HIV/AIDS and other STDs due to prostitution activities and temporary sexual relationships with local women and unwanted pregnancies that place further pressure on Basic Health Care Services. <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>							<p>awareness campaigns. It is also recommended that the Developer embarks on a Social Awareness Campaign for the workforce that focuses on sexual health, unwanted pregnancies and related social issues.</p> <ul style="list-style-type: none"> Contractors to provide a housing plan that makes provision for workers that do not live nearby to return to their families at regular intervals or over weekends. Provide safe and clean drinking water and instil regular water breaks to keep workers hydrated. Provide sufficient ablution facilities (chemical/portable toilets, etc.) at strategic locations that are cleaned regularly. Keep the local police, emergency and ambulance services informed of construction times and progress. 		

TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT

POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS VEGETATION	Permanent or temporary loss of indigenous vegetation cover because of site clearing. Site clearing before construction will result in the blanket clearing of vegetation within the affected footprint. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on vegetation.</i>	DIRECT	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -	<ul style="list-style-type: none"> Blanket clearing of vegetation must be limited to the site. No clearing outside of required footprint required for construction to take place. Topsoil must be striped and stockpiled separately during site preparation and replaced on completion where revegetation will take place. Any site camps and laydown areas requiring clearing must be located within already disturbed areas as far as possible, or away from watercourses, alluvial areas and other sensitive features (rocky outcrops). 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -		DIFFICULT	LOW -
		NO-GO	NO IMPACT						NO IMPACT	
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS FLORA SPECIES	Loss of flora species of special concern during pre-construction site clearing activities. Several special of concern are known from surrounding areas, which could be destroyed during site preparation. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on floral species.</i>	DIRECT	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -	<ul style="list-style-type: none"> A flora search and rescue is recommended before commencement. Respective permits to be obtained beforehand. 	REVERSIBLE	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	
POTENTIAL TERRESTRIAL	Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species and removal of exotic and	DIRECT	LOCALISED	SHORT TERM	DEFINITE	SLIGHT	LOW -	<ul style="list-style-type: none"> Alien trees and weeds must be removed from the site as per CARA/ NEMBA requirements. 	REVERSIBLE	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	DEFINITE	SLIGHT	LOW -		REVERSIBLE	LOW -

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
BIODIVERSITY IMPACTS ALIEN INVASIVE SPECIES	alien invasive species during construction. Post construction disturbed areas having no vegetation cover are often susceptible to invasion by weedy and alien species, which can not only become invasive but also prevent natural flora from becoming established. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on alien invasive species.</i>	NO-GO	NO IMPACT					<ul style="list-style-type: none"> A suitable weed and alien invasive plant management plan to be implemented in construction and operation phases. After clearing and construction is completed, an appropriate cover crop may be required, should natural re-establishment of grasses not take place in a timely manner, such as along road verges. This will also minimise dust. 	NO IMPACT	
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS EROSION	Susceptibility of some areas to erosion because of construction related disturbances. Removal of vegetation cover and soil disturbance may result in some areas being susceptible to soil erosion after completion of the activity. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on erosion.</i>	DIRECT CUMULATIVE NO-GO	LOCALISED LOCALISED	SHORT TERM SHORT TERM	POSSIBLE POSSIBLE	SLIGHT SLIGHT	LOW - LOW -	<ul style="list-style-type: none"> Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted once construction is completed. Topsoil must be stripped and stockpiled separately and replaced on completion. If natural vegetation re-establishment does not occur, a suitable grass must be applied. 	REVERSIBLE REVERSIBLE	LOW - LOW -
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS ECOLOGICAL PROCESSES	Disturbances to ecological processes: Activity may result in disturbances to ecological processes such as fragmentation (road, etc). <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on ecological processes.</i>	DIRECT CUMULATIVE NO-GO	LOCALISED LOCALISED	PERMANENT PERMANENT	DEFINITE DEFINITE	SLIGHT SLIGHT	LOW - LOW -	<ul style="list-style-type: none"> Blanket clearing of vegetation must be limited to the development footprint, and the area to be cleared must be demarcated before any clearing commences. 	DIFFICULT DIFFICULT	LOW - LOW -
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS AQUATIC AND RIPARIAN PROCESSES	Aquatic and Riparian processes: Diversion and increased velocity of surface water flows – Changes to the hydrological regime and increased potential for erosion. Impact of changes to water quality. Loss of riparian vegetation / aquatic habitat. Loss of species of special concern. <i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on aquatic and</i>	DIRECT CUMULATIVE NO-GO	LOCALISED LOCALISED	PERMANENT PERMANENT	DEFINITE DEFINITE	MODERATE MODERATE	MODERATE - MODERATE -	<ul style="list-style-type: none"> Suitable structures to be constructed at watercourse crossings that do not alter flows. Stormwater discharge into watercourses to be protected against erosion. 	REVERSIBLE REVERSIBLE	LOW - LOW -

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	<i>riparian processes.</i>									
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS FAUNAL HABITAT	Loss of Faunal Habitat: Activity may result in the loss of habitat for faunal species, which could result in disturbance and displacement of faunal species. <i>Cumulative impact, on a localised scale, would be XX should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on XX.</i>	DIRECT	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -	<ul style="list-style-type: none"> ⚡ Blanket clearing of vegetation must be limited to the construction footprint required. ⚡ Rocky outcrop areas and Riverine Rabbit Habitat to be avoided as far as possible. ⚡ It is important that clearing activities are kept to the minimum and take place in a phased manner, where applicable. This allows any smaller animal species to move into safe areas and prevents wind and water erosion of the cleared areas. 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -		DIFFICULT	LOW -
		NO-GO	NO IMPACT							NO IMPACT
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS FAUNAL PROCESSES	Impacts to faunal processes because of the activity such as erection of barriers to movement. <i>Cumulative impact, on a localised scale, would be XX should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on XX.</i>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	LOW -	<ul style="list-style-type: none"> ⚡ The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the local impact associated with the footprint would be of low significance if mitigation measures are adhered to. ⚡ Small mammals within the habitat on and around the affected area are generally mobile and likely to be transient to the area. They will most likely vacate the area once construction commences. As with all construction sites there is a latent risk that there will be some accidental mortalities. Specific measures are made to reduce this risk. The risk of species of special concern is low, and it is unlikely that there will be any impact to populations of such species because of the activity. ⚡ Reptiles such as lizards are less mobile compared to mammals, and some mortalities could arise. It is recommended that a faunal search and rescue be conducted before construction commences, although experience has shown that there could still be some mortalities as these species are mobile and may thus move onto site once construction is underway. A reptile handler should be on call for such circumstances. ⚡ Should any amphibian migrations occur between wetland areas during construction, appropriate measures (including temporarily suspending works in the affected area) should be implemented. 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	LOW -		DIFFICULT	LOW -
		NO-GO	NO IMPACT							NO IMPACT
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS FAUNAL SPECIES	Loss of faunal SSC due to construction activities: Activities associated with bush clearing, killing of perceived dangerous fauna, may lead to increased mortalities among faunal species. <i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note</i>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> ⚡ A pre-commencement faunal search and rescue is recommended. ⚡ Respective permits to be obtained beforehand. ⚡ No animals are to be harmed or killed during the course of operations. ⚡ Workers are NOT allowed to snare any faunal 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		DIFFICULT	LOW -
		NO-GO	NO IMPACT							NO IMPACT

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	<p><i>that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on faunal species.</i></p>							species.		
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: HABITAT LOSS, DEGRADATION AND FRAGMENTATION	<p>The development may fragment an already highly fragmented landscape which may create barriers to gene flow where subpopulations are disconnected and isolated. Roads and fences can affect the quality and quantity of available habitat, most notably through fragmentation, creating barriers to animal movement. Erosion from construction may degrade the habitat and direct loss of habitat will occur due to necessity of access roads.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on habitat loss, degradation and fragmentation with regards to faunal species.</i></p>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> ✦ Minimising the project footprint by utilising existing roads and disturbed areas as much as technically possible. ✦ Locate developments away from identified sensitive habitats, this includes no go zones and buffer zones for turbine pads, electrical substations and housing facilities as well as construction laydown areas. ✦ Implementing adequate dust control and erosion control. ✦ Careful planning of road layout to minimise the length of roads traversing through riverine habitats and rocky ridges that have been identified as Very high or high sensitivity which may create barriers and fragment habitats. ✦ Establish wildlife passes, where artificial barriers are found; this particularly refers to physical barriers such as roads and fences. ✦ Develop and implement a site-specific spill management plan. 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		DIFFICULT	LOW -
		NO-GO	NO IMPACT						NO IMPACT	
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: MORTALITY FROM ROAD COLLISION	<p>There is an increased collision risk from increased traffic levels at the site and in the general area. This impact is likely to be of highest concern during construction but is also expected during the operational phase. Roads and roadsides may attract SCC such as Riverine Rabbits and Karoo Dwarf Tortoises due to verge edge enhancement of vegetation and roads may be used to facilitate movement, thus further increasing collision risks. Access roads that traverse riverine habitats require careful planning and monitoring to reduce risk of rabbit mortality.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on faunal species in relation to road collision mortality.</i></p>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> ✦ Careful planning of roads to minimise the length that traverses through riverine and rocky habitats that have been identified as Very high or high sensitivity. ✦ Use existing roads as much as possible. ✦ Roadkill monitoring program on both internal and external public roads targeting sensitive habitats and wildlife corridors. Roadkill Monitoring programs must be initiated at pre-construction phase and continued during construction and post-construction as well as conducted over different seasons. ✦ Pre-construction road planning to identify target sites for wildlife crossing structures which should be considered during the EIA process and with pre-construction roadkill monitoring findings. Wildlife crossing structures must be made in consultation with road planner, construction manager and wildlife biologist. This is generally more cost effective than retro fixing existing roads. ✦ Assess efficiency of roadkill mitigation approaches via a post-implementation roadkill monitoring program. ✦ Implementation of speed limits on both internal access WEF roads (40km/h) as well as 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		DIFFICULT	LOW -
		NO-GO	NO IMPACT						NO IMPACT	

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								external public roads (60km/h). <ul style="list-style-type: none"> ✦ Reduced speed limits of 30km/h where roads (both internal and external) cross High and Very high sensitivity areas identified; including riverine habitat, koppies and ecotones which may harbour sensitive species and generally have higher species diversity and abundance ✦ Wildlife warning signage and speed reduction measures where roads cross High and Very high sensitivity areas. ✦ Education and awareness campaigns on SCC and their habitat must form part of staff induction procedures to help increase awareness, respect and responsibility towards the environment for all staff and contractors. ✦ Inductions on safe wildlife passing and driving to reduce possible injury and roadkill alongside roads. ✦ There is higher risk of collision when animals are more active which is typically from late afternoon to early morning. During these times a low speed limit (30km/h) needs to be implemented. Night-time driving should be avoided as much as possible but if necessary, speed needs to be reduced significantly to avoid collisions. Lagomorph species (hares and rabbits) often freeze in headlights and require headlights to be momentarily turned off to allow the animal to move off the road. ✦ Reduced speeds also need to be implemented during reduced visibility such as misty conditions that have been observed on the site. ✦ Induction must include reporting of any vehicle/wildlife collision or found roadkill to the appointed Roadkill monitoring personnel. ✦ Search and rescue of slow-moving species, specifically Karoo Dwarf Tortoises, during the construction phase. IUCN guidelines for translocation of sensitive species should be consulted. Tortoises will need to be carefully relocated and provided shelter and water-rich food as well as monitoring of threatened species to ensure of their survival. Should a subpopulation be found further consultations with a herpetologist will be required for appropriated mitigation. 		
POTENTIAL RISKS TO FAUNA SPECIES OF	The cumulative impact is of concern, given the fact that the renewable-energy industry is rapidly expanding in South	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	✦ <i>It is important to evaluate the consequences of each development before the next is begun.</i>	<i>DIFFICULT</i>	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		<i>DIFFICULT</i>	LOW -

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CONSERVATION CONCERN: CUMULATIVE IMPACT	<p>Africa. The local fauna is already impacted and threatened by past and current land use and the combination of these existing anthropogenic impacts with planned developments may impact the local fauna with unexpectedly large effects. Cumulative effects can also result where the construction phase occurs at several locations simultaneously or if a new project begins construction immediately following the completion of another. Cumulative effects can cause a small localized effect (which may have a limited effect on its own) to have a significant impact on population level as there may be thresholds where the cumulative effects increase disproportionately.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact from a cumulative faunal species of conservation concern loss perspective.</i></p>	NO-GO	NO IMPACT					<ul style="list-style-type: none"> ✦ Use a precautionary approach and aim to minimise negative effects even when the effects are not fully known. ✦ Ensure the construction phase is done in as short a period as possible and avoid breeding season, typically in the spring after good rains. ✦ Construction needs to be done during daytime, avoiding noise and disturbance when faunal communities are most likely active, particularly where the construction is in proximity to their habitat. Sensitive habitats near construction will need to be clearly marked. ✦ Relating construction phase of the development with neighbouring developments and farming activity to ensure construction does not begin immediately after the completion of another or simultaneously. ✦ The developer instigates a proactive mitigation measure by initiating a multi-stakeholder dialogue at a workshop to clarify these concerns and how they might be taken forward and co-funded. The aim of this mitigation is to reduce current impacts that threaten the survival of SCC populations. We recommend a biodiversity wildlife corridor approach whereby protecting sensitive habitats is made a priority. This may include species refuge areas where no form of indiscriminate wildlife killing/snaring is allowed, no or highly reduced livestock grazing, and no pest control including locust spraying is carried out. ✦ Poaching and the use of hunting dogs at site is prohibited. 	NO IMPACT	
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: CASCADING IMPACT ACROSS TROPHIC LEVELS	<p>The effect of the wind farm on one species may have indirect cascading effects (knock on effect) on other species within the same community due to ecological relations to one another. This means that an effect on one species may in turn affect many others within the same ecosystem. Cascading effects may be complex and unpredictable as it may be the result of different types of interactions including competition, predation, parasitism, or symbiosis.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> ✦ Initiate a general Fauna Biodiversity Monitoring program ✦ A Fauna Biodiversity program must be initiated pre-construction to have baseline population status and monitoring must be ongoing post-construction to identify any changes in occupancy in certain species' population which may in turn indirectly impact other fauna populations. ✦ We recommend the use of multiple monitoring methods including and not limited to; camera trapping in diverse habitats, targeted camera trapping for SCC; small mammal monitoring with the use of Sherman traps; the use of Conservation Scent Detection 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		DIFFICULT	LOW -
		NO-GO	NO IMPACT				NO IMPACT		NO IMPACT	

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	<i>No-go alternative would result in no cascading impact across the trophic levels due to the proposed OHL.</i>							Dog teams to assist in detecting SCC.		
OPERATIONAL PHASE										
AGRICULTURAL IMPACT ASSESSMENT										
OCCUPATION OF LAND	<p>Agricultural land directly occupied by the OHL infrastructure will become restricted for agricultural use, with consequent potential loss of agricultural productivity for the duration of the project lifetime. The small and widely distributed nature of the agricultural footprint of the facility means that only an insignificant proportion of the available agricultural land is impacted in this way. Furthermore, all agricultural activities can continue completely unhindered underneath the power line. This is because its direct, permanent, physical footprint that has any potential to interfere with agriculture (pylon bases and servitude track, where it is needed), is insignificantly small.</p> <p>The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of future agricultural production potential.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure (including the OHLs) are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.</i></p>	DIRECT	STUDY AREA	MEDIUM TERM	POSSIBLE	DEFINITE	LOW -	<p>The land is of limited land capability and is not suitable for crop production, the amount of agricultural land loss is well within the allowable development limits prescribed by the agricultural protocol, and that the proposed development offers some positive impact on agriculture by way of improved financial security for farming operations and improved security against stock theft and crime, as well as wider, societal benefits. Furthermore, all agricultural activities that are viable in this environment, can continue completely unhindered underneath the power line and there will therefore be no loss of agricultural production potential underneath it.</p>	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	MEDIUM TERM	POSSIBLE	DEFINITE	LOW -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	
SOIL EROSION AND DEGRADATION	<p>Erosion can occur as a result of the alteration of the land surface run-off characteristics, predominantly through the establishment of hard surface areas including roads. Soil erosion is completely preventable. The storm water management that will be an inherent part of the road engineering on site and standard, best practice erosion control measures recommended and included in the EMP, are likely to be effective in preventing soil erosion. Loss of topsoil can result from poor topsoil management during construction related excavations.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the OHL construction timelines overlap. However, it is important to note that the OHL infrastructure (including the OHLs) are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.</i></p>	DIRECT	STUDY AREA	SHORT TERM	PROBABLE	MODERATE	LOW -	<p>Mitigation measures to prevent soil degradation are all inherent in the project design and / or are standard, best-practice for construction sites.</p> <ul style="list-style-type: none"> ✦ A system of storm water management, which will prevent erosion, will be an inherent part of the road engineering on site. Any occurrences of erosion must be attended to immediately and the integrity of the erosion control system at that point must be amended to prevent further erosion from occurring there. ✦ Any excavations done during the construction phase, in areas that will be re-vegetated at the end of the construction phase, must separate the upper 30 cm of topsoil from the rest of the excavation spoils and store it in a separate stockpile. When the excavation is back-filled, the topsoil must be back-filled last, so that it is at the surface. Topsoil should only be stripped in areas that are excavated. 	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	MODERATE	LOW -		REVERSIBLE	LOW -
		NO-GO	<p>The no-go alternative considers impacts that will occur to the agricultural environment in the absence of the proposed development. The one identified potential impact is that due to irregular rainfall, which is likely to be exacerbated by climate change, agriculture in the area will come under increased pressure in terms of economic viability. In addition, the no-go option would prevent the proposed development from contributing to the environmental, social and economic benefits associated with the development of renewable energy in South Africa.</p>						NO IMPACT	
INCREASED FINANCIAL	Reliable and predictable income will be generated by the	DIRECT	STUDY AREA	SHORT TERM	PROBABLE	MODERATE	LOW +	ACHIEVABLE	LOW +	

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SECURITY FOR FARMING OPERATIONS	farming enterprises through the lease of the land to the energy facility. This is likely to increase their cash flow and financial security and could improve farming operations and productivity through increased investment into farming. <i>Cumulative impact, on a localised scale, would be LOW should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.</i>	CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	MODERATE	LOW +	Across the majority of the site, including construction lay down areas, it will be much more effective for rehabilitation, to retain the topsoil in place. If levelling requires significant cutting, topsoil should be temporarily stockpiled and then re-spread after cutting, so that there is a covering of topsoil over the entire surface.	ACHIEVABLE	LOW +
		NO-GO	NO IMPACT						NO IMPACT	
IMPROVED SECURITY AGAINST STOCK THEFT AND OTHER CRIME	Improved security against stock theft and other crime due to the presence of security infrastructure and security personnel at the energy facility. <i>Cumulative impact, on a localised scale, would be LOW should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.</i>	DIRECT	STUDY AREA	SHORT TERM	POSSIBLE	SLIGHT	LOW +	ACHIEVABLE	LOW +	
		CUMULATIVE	STUDY AREA	SHORT TERM	POSSIBLE	SLIGHT	LOW +	ACHIEVABLE	LOW +	
		NO-GO	NO IMPACT					NO IMPACT		
AQUATIC IMPACT ASSESSMENT										
CUMULATIVE IMPACT	Direct and indirect impacts identified within the assessed freshwater features can predominantly be attributed to informal road crossings leading to limited alien and invasive species establishment. Considering that the proposed powerline support structures and substation will be located outside the assessed freshwater features (thus avoiding direct negative impacts), increased vehicular movement and infrastructure in the surrounding landscape may result in indirect edge effects. Such edge effects may have cumulative impacts to the freshwater features, with specific mention of alien and invasive species establishment and increased sediment loads.	DIRECT						⚠ With management and mitigation measures implemented during the construction phase and monitoring of support structures and substation for any erosion during the operational phase, the direct and indirect negative impacts can be reduced, thus cumulative impact on the larger catchment can, therefore, be considered low/limited. ⚠ CUMULATIVE	STUDY AREA	SHORT TERM
		CUMULATIVE	STUDY AREA	SHORT TERM	PROBABLE	MODERATE	LOW -		NO IMPACT	
OPERATION AND MAINTENANCE OF THE POWERLINE ENTAILING POTENTIAL INDISCRIMINATE MOVEMENT OF MAINTENANCE VEHICLES WITHIN CLOSE PROXIMITY TO THE	Potential indiscriminate movement of maintenance vehicles within close proximity of the freshwater features. Disturbance to soil and ongoing erosion as a result of periodic maintenance activities; <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier OHL timelines overlap, which is likely. However, it is important to note that the OHL infrastructure are proposed by the same developer and the</i>	DIRECT	LOCALISED	LONG TERM	PROBABLE	MODERATELY SEVERE	MODERATE -	⚠ Clearing of powerline servitudes of vegetation. All lower woody vegetation and other herbaceous vegetation must remain and not be cleared. Clearing of the entire width of the servitude through freshwater features must not occur even during maintenance activities. Keep woody vegetation below the minimum clearance height, and no indiscriminate removal of	REVERSIBLE	LOW -
		CUMULATIVE	LOCALISED	LONG TERM	PROBABLE	MODERATELY SEVERE	MODERATE -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT						NO IMPACT	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
FRESHWATER FEATURES	<i>EMPrs will be prepared to the same standard. No-go alternative would result in no impact related to erosion of aquatic habitats.</i>							vegetation within the servitude must occur. This is considered feasible for the freshwater features identified to be associated with the proposed powerline as they are mostly characterised by low growing shrub and graminoid vegetation species;		
OPERATION AND MAINTENANCE OF THE POWERLINE ENTAILING POTENTIAL INDISCRIMINATE MOVEMENT OF MAINTENANCE VEHICLES WITHIN CLOSE PROXIMITY TO THE FRESHWATER FEATURES	Increased risk of sedimentation and/or hydrocarbons entering the freshwater features via stormwater runoff from the access roads. Altered water quality (if surface water is present) as a result of increased availability of pollutants. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier OHL timelines overlap, which is likely. However, it is important to note that the OHL infrastructure are proposed by the same developer and the EMPrs will be prepared to the same standard. No-go alternative would result in no impact related to erosion of aquatic habitats.</i>	DIRECT	REGIONAL	LONG TERM	PROBABLE	SEVERE	HIGH -	<ul style="list-style-type: none"> ✦ Maintenance vehicles must make use of dedicated access roads and no indiscriminate movement in the freshwater features may be permitted; ✦ During periodic maintenance activities of the powerline, monitoring for erosion must be undertaken; ✦ Should erosion be noted at the base of the support structures, the area must be rehabilitated by infilling the erosion gully and revegetation thereof with suitable indigenous vegetation; ✦ Monitoring for the establishment of alien and invasive vegetation species must be undertaken, specifically where the support structures are within close proximity (within 32 m) to the <i>freshwater feature and for access roads through or along the freshwater features. Should alien and invasive plant species be identified, they must be removed and disposed of as and the area must be revegetated with suitable indigenous vegetation.</i> 	<i>REVERSIBLE</i>	LOW -
		CUMULATIVE	REGIONAL	LONG TERM	PROBABLE	SEVERE	HIGH -		<i>REVERSIBLE</i>	LOW -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT

AVIFAUNAL IMPACT ASSESSMENT

MORTALITY FROM COLLISIONS WITH POWERLINES	Collisions with powerlines is a well-known and increasing threat for many bird species worldwide (Bernardino et al. 2018, Jenkins et al. 2010, Loss et al. 2014). In South Africa, a number of endemic and threatened species are known to be significantly affected by collisions (Taylor et al. 2015, Shaw et al. 2021), including SCC's that have a high probability of occurrence or are known to occur in the PAOI such as Ludwig's Bustard, Blue Crane, Karoo Korhaan, Verreaux's Eagle, Martial Eagle, and Secretarybird. Ludwig's Bustard is particularly prone to collisions and made up 69% of carcasses found under powerlines in a two year study in the Karoo (Shaw 2013). Karoo	DIRECT	REGIONAL	LONG-TERM	PROBABLE	SEVERE	HIGH -	The most widely recommended mitigation measure (Jenkins et al. 2010), apart from burying the powerline, or not building it, is to route the line away from sensitive areas such as water bodies, valley heads, ridge tops, and to (a) keep the line as short as possible, (b) keep the line as low as possible, (c) make the cabling as thick as possible, (d) avoid vertically separated arrays of lines as much as possible, (e) run lines with a similar height and structure in close proximity in a common servitude and (f) keep lines with very	<i>ACHIEVABLE</i>	MODERATE -
		CUMULATIVE	REGIONAL	LONG-TERM	PROBABLE	SEVERE	HIGH -		<i>ACHIEVABLE</i>	MODERATE -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
	<p>Korhaan is also affected, but does not collide as frequently as Ludwig’s Bustard, possibly due to their sedentary nature making them familiar with their area and their smaller size increasing their manoeuvrability (Shaw 2013). For raptors, collisions appear to be a less frequent source of mortality compared to electrocutions (Loss et al. 2014, Slater et al. 2020). This is likely due to a combination of their good eyesight, high aspect-ratio wings, and often high flight altitude while engaged in thermal soaring (Bevanger 1998, Martin & Shaw 2010, Janss 2000, Slater et al. 2020). However, power line collisions increase when lines intersect with home ranges or if lines span regularly used flight paths between nesting and foraging grounds (Rollan et al. 2010, APLIC 2012, Slater et al. 2020). For some raptor species collisions with powerlines are a major conservation concern, such as the Bonelli’s Eagle in Spain (Rollan et al. 2010).</p> <p>The impact of collisions can result in injury or mortality which may, in the worst-case scenario affect a sensitive SCC on a regional population level. The extend was therefore rated regional, long-term, with low reversibility and potentially severe consequence. The impact is considered likely to occur. Therefore, the significance</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters’ Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of avifaunal habitats.</i></p>							<p>different heights and configurations well apart. However, in South Africa, only mitigations that are in line with Eskom’s requirements and Technical Standards are in fact implementable in practice. In order to mitigate collisions with powerlines, line markers such as bird flappers and static bird flight diverters are being widely used with some success and have been shown to alter flight behaviour (Bernardino et al. 2018, Pavón-Jordan et al. 2020). One recent study in South Africa (Shaw et al. 2021) demonstrated a 51% reduction in mortality for all large birds, while reducing collision rates effectively for some species (92% for Blue Crane) and having no effect on others (Ludwig’s Bustard).</p> <p>Any proposed powerlines associated with the development should therefore be minimised as much as possible in length and avoid areas identified as of high sensitivity where possible, and avoid all identified no go areas (such as SCC nest buffers). All lines and pylons must be of a bird friendly design, with anti-perching structures installed, and fit with line markers installed along the entire length, in line with current Eskom Technical Standards. A steel monopole pylon structure is preferred over a lattice tower which offers more perching and nesting opportunities, and should be selected wherever technically possible.</p> <p>The impact management actions and outcomes as per Table 11 must be included in the EMPr for the proposed development.</p>	NO IMPACT	
<p>MORTALITY FROM ELECTROCUTIONS ON ELECTRICAL INFRASTRUCTURE</p>	<p>Normally, energised components on overhead powerlines are not insulated but are elevated to place them safely out of people’s reach, which elevates energised wires into places that are also attractive perches for birds (Dwyer et al. 2017). Large birds can be electrocuted or incur electric shock injuries when simultaneously contacting two uninsulated energised components of differing electric potential (phase-to-phase electrocution), or when contacting an uninsulated energised component and a path to ground (phase-to-ground-electrocution) (Guil et al. 2015, Dwyer 2006, APLIC 2006, Lehman et al. 2007, Dwyer et al. 2017, Mojica et al. 2018, Slater et al. 2020). Because electrocutions result from birds bridging air-gaps, larger birds with larger wingspans, such as Martial Eagle, are disproportionately affected (Slater et al. 2020). For the proposed project electrocutions could also occur at the switching station infrastructure.</p> <p>Electrocution results in injury or mortality which may, in the worst case scenario affect a sensitive SCC on a regional</p>	<p>DIRECT</p> <p>CUMULATIVE</p> <p>NO-GO</p>	<p>REGIONAL</p> <p>REGIONAL</p>	<p>LONG-TERM</p> <p>LONG-TERM</p>	<p>MAY OCCUR</p> <p>MAY OCCUR</p> <p align="center">NO IMPACT</p>	<p>DEFINITE</p> <p>DEFINITE</p>	<p>HIGH -</p> <p>HIGH -</p>	<p>✦ <i>Bird electrocutions can easily be prevented with bird-friendly pole design i.e. creating separation between conductors of differing electric potential, by placing insulation over conductors, or by redirecting birds to perch or nest away from conductors (APLIC 2006, Dwyer et al. 2017).</i></p> <p>✦ <i>The impact management actions and outcomes as per Table 11 must be included in the EMPr for the proposed development.</i></p>	<p>EASILY ACHIEVABLE</p> <p>EASILY ACHIEVABLE</p> <p align="center">NO IMPACT</p>	<p>LOW -</p> <p>LOW -</p>

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY/ MITIGATION	SIGNIFICANCE POST-MITIGATION
	<p>population level. The extend was therefore rated regional, long-term, with low reversibility and potentially severe. The probability of occurrence is rated as definite without mitigation.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of avifaunal habitats.</i></p>									
CUMULATIVE IMPACTS	<p>Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.</p> <p>Cumulative impacts assessed include the combination of all the impacts discussed above for this project, which may be higher than the sum of impacts, as well as the associated three Soutrivier WEF and Solar PV Facilities and associated OHPLs, and all known past, present and proposed projects in an area of 30 km surrounding the proposed development. In addition to the Soutrivier projects two WEFs are proposed within this radius: the Taaibos North WEF and associated OHPL, and the Taaibos South WEF and associated OHPL. All of these facilities are to ultimately connect to the Gamma MTS. All of these projects have the same shared OHPL from the Soutrivier South collector substation, which lowers the cumulative impact.</p> <p>The impacts of the cumulative projects will be negative by making a larger area of avifaunal karoo scrub habitat unavailable and of higher risk for SCC flying between Victoria West and Loxton.</p> <p>There is also a potential for an increased barrier effect being created by the combination of these projects, which would be a negative, regional, long-term impact. As these projects are not located on any major flyways, making the probability of this occurring unlikely.</p> <p>The contribution of the Soutrivier South OHPL to the cumulative impact in a 30 km radius is considered to be low,</p>	<p>DIRECT</p> <p>CUMULATIVE</p> <p>NO-GO</p>	<p>REGIONAL</p> <p>REGIONAL</p>	<p>LONG-TERM</p> <p>LONG-TERM</p>	<p>SEVERE</p> <p>SEVERE</p> <p>NO IMPACT</p>	<p>DEFINITE</p> <p>DEFINITE</p>	<p>HIGH -</p> <p>HIGH -</p>	<p>⚡ <i>The only real mitigation possible in order to minimise cumulative impacts, beyond minimising impacts for each project separately during the EIA process, is for the Competent Authority to ensure only projects are authorised that are practically mitigatable to an acceptable level, and that do not lead to unacceptable negative impacts, including cumulative impacts, and to ensure the correct implementation of authorised Environmental Management Programmes through compliance audits and enforcement.</i></p> <p>⚡ <i>The impact management actions and outcomes as per Table 11 must be included in the EMP for the proposed development.</i></p>	<p>DIFFICULT</p> <p>DIFFICULT</p> <p>NO IMPACT</p>	<p>MODERATE -</p> <p>MODERATE -</p>

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
	<p>i.e. the cumulative impact significance rating will remain unchanged regardless of the Soutrivier South OHPL being constructed or not.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to disturbance of avifaunal habitats.</i></p>									

HERITAGE IMPACT ASSESSMENT

LOSS OF HERITAGE RESOURCES: STONE AGE OCCURANCES	<p>impact on previously undetected archaeological sites, human burials and the cultural landscape might occur as a result of operational activities (site access, movement, maintenance, trespassing, natural elements, hazards etc).</p> <p><i>Cummulative impact:</i> <i>The low frequency of significant archaeological resources documented in the project area and in its immediate surroundings implies low-severity short and long-term impacts on the heritage landscape</i></p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact related to destruction of archaeological resources.</i></p>	DIRECT	STUDY AREA	SHORT TERM	MAY OCCUR	SLIGHT	LOW -	<p>It is understood that no new areas will be disturbed and/or impacted during the operations phase of the project and the risk and severity of heritage impacts should decrease once the projects activate.</p> <p>Furthermore, the majority of sites of archaeological and heritage significance would have been recorded and/or assessed in preceding phases.</p> <p><i>Cumulative impact:</i></p> <ul style="list-style-type: none"> ✦ <i>The significance of the landscape in terms of its heritage is bound not to change during the course of construction, operation and decommissioning of the project.</i> ✦ <i>It should be noted that archaeological knowledge and the initiation of research projects into significant archaeological sites often result from Heritage Impact Assessments conducted for developments. Provided that significant archaeological sites are conserved and that appropriate heritage mitigation and management procedures are followed, the cumulative impact of development can be positive.</i> 	EASILY REVERSIBLE	LOW -	
		CUMULATIVE	STUDY AREA	SHORT AND LONG TERM	MAY OCCUR	SLIGHT	LOW -		REVERSIBLE	LOW - AND LOW (+)	
		NO-GO							NO IMPACT		
		CUMULATIVE	STUDY AREA	SHORT AND LONG TERM	MAY OCCUR	SLIGHT	LOW -		REVERSIBLE	LOW - AND LOW (+)	
		NO-GO							NO IMPACT		

PALAENTOLOGICAL IMPACT ASSESSMENT

None identified by specialist

RIVERINE RABBIT IMPACT ASSESSMENT

DEGRADATION OF HABITAT BY EROSION	<p>The construction of roads, turbine hard-stands, roads and laydown areas etc. will result in the destruction of currently intact vegetation, which may lead indirectly to soils being exposed and facilitating erosion. Erosion leads to river degradation through increased runoff and siltation processes. If erosion control is implemented, the resulting impact from erosion and would also be low.</p>	DIRECT AND INDIRECT	STUDY AREA	MEDIUM TERM	POSSIBLE	SEVERE	MODERATE -	<p>✦ <i>Implement a Site Erosion Management and Control Plan to prevent erosion from high-lying areas impacting downstream ecosystems</i></p>	REVERSIBLE	LOW -
		CUMULATIVE	STUDY AREA	MEDIUM TERM	POSSIBLE	SEVERE	MODERATE -		REVERSIBLE	LOW -
		NO-GO							NO IMPACT	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
	<p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters operational timelines overlap, which is likely. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on the local Riverine Rabbit population.</i></p>									
SOCIO-ECONOMIC IMPACT ASSESSMENT										
NEW EMPLOYMENT AND ECONOMIC IMPACTS	<p>Direct and indirect employment opportunities will manifest during the operational lifespan of the Project and result in an increase in household earnings and improved livelihoods for the affected households through salaries and wages.</p> <p>In additional to employment, economic impacts will manifest for the local and national economies through the manufacturing and services industries. Furthermore, agricultural land will be rezoned for renewable energy purposes, thereby increasing farm values and resulting in higher payable taxes for the local municipality. Induced economic impacts will realise locally and regionally through employment and procurement and as a result more benefits for retail sales, leisure and hospitality, real estate, etc. will occur as more money circulates in the local economy.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly</i></p>	DIRECT	REGIONAL	LONG TERM	DEFINITE	MODERATELY BENEFICIAL	MODERATE +	<ul style="list-style-type: none"> Maximise local employment and procurement (from the local and district municipalities) wherever possible. Coordinate the effort to obtain temporary employment, service providers, SMME's etc. required for maintenance work, with the municipal LED Units. 	<i>DIFFICULT</i>	MODERATE +
		CUMULATIVE	REGIONAL	LONG TERM	DEFINITE	MODERATELY BENEFICIAL	MODERATE +		<i>DIFFICULT</i>	MODERATE +
		NO-GO	NO IMPACT							NO IMPACT
SOCIO-ECONOMIC CONTRIBUTION / COMMUNITY DEVELOPMENT	<p>A needs assessment will be done with the affected parties (municipalities, beneficiary communities, etc.) to identify suitable projects for SED and ED, which is usually aligned with IDP and LED priorities. Once the identified beneficiaries have been evaluated according to stringent evaluation criteria a contract is entered with them for the specified duration of the projects. Monitoring is done to ensure that the projects deliver as per their proposals.</p> <p>The IPP is required to report quarterly to the DMRE's Independent Power Producer Office (IPPO), which allows the IPPO to monitor use of SED and ED funds as committed by the Project (approximately 2.1% of revenue), as well as monitor the impact such contributions have on the communities through funding of existing projects and enterprises. Consultation with municipal stakeholders for this Project and for previous RE projects in other provinces identified the need</p>	DIRECT	REGIONAL	LONG TERM	DEFINITE	SLIGHTLY BENEFICIAL	LOW +	<ul style="list-style-type: none"> Involve the local and district municipalities' LED Units in all processes when SED and ED projects and suitable candidates for projects and/or training programmes are identified. Make gender and Youth issues a specific outcome of the needs analysis to ensure that these groups are targeted. In conjunction with other IPP's in the region or in the RE corridor / RE Zone set up and establish a Forum (or similar structure) to coordinate community development initiatives. Meet on a quarterly basis to provide feedback and ensure transparency. Ensure further transparency and effective information sharing through industry associated websites, emailed newsletters, municipal noticeboards, information events 	<i>ACHIEVABLE</i>	MODERATE +
		CUMULATIVE	REGIONAL	LONG TERM	DEFINITE	SLIGHTLY BENEFICIAL	LOW +		<i>ACHIEVABLE</i>	MODERATE +
		NO-GO	NO IMPACT							NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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	<p>for:</p> <p>More transparency during the annual monitoring processes so that it is clear for municipalities whether the budget allocated towards SED and ED has been used adequately;</p> <ul style="list-style-type: none"> A greater commitment to link with the LED initiatives already identified in the IDP; Coordination between SED and ED initiatives of the various RE projects in the region through a central Forum or similar structure so that initiatives are not duplicated. This will also enable the implementation of larger projects that will have a greater impact for the region. <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>							<p>and meetings and existing community channels used by the various wards.</p> <ul style="list-style-type: none"> Become involved in local initiatives that address existing backlogs, such as the establishment and training of an Emergency Unit / Response Team for fire prevention and emergencies (e.g. with volunteers such as farmers), hospital support (e.g. equipment, training of staff where there are staff shortages, etc.) and so forth to ensure that real community based needs are met. Link with existing NGO's and pre-established projects but make it a requirement (and set targets) for the establishment of new community-driven development processes and for NGO's to assist in skills transfer to these new groups and processes. 				
TRAINING / SKILLS DEVELOPMENT / CAPACITY BUILDING	<p>Training and skills development initiatives during operations are likely to occur in the following ways:</p> <p>Formal and on-the-job training for permanent and temporary employees to allow them to perform their tasks safely and adequately;</p> <ul style="list-style-type: none"> Training / education programmes through ED contributions; Offering of bursaries and internships; Skills development and capacity building of municipal Officials during the negotiation processes and stakeholder relations. The implementation and operation of RE projects require local government involvement to assist with managing stakeholder and community relations. This poses various challenges, as there might be shortfalls in terms of capacity and management experience within the municipalities. Emphasis is therefore again placed on the involvement of local government throughout operations to enable the Officials to gain experience and develop skills that will be to the advantage of the Project as well as for the municipalities over the long-term. <p><i>Cumulative impact, on a localised scale, would be LOW should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>	DIRECT	REGIONAL	LONG TERM	MAY OCCUR	SLIGHTLY BENEFICIAL	LOW +	<ul style="list-style-type: none"> Identify existing NGO's to assist in training and skills transfer to communities and Officials. Link with existing training workshops and programmes for SMME development that are done by municipal LED Units. In collaboration with other IPPs operational in the region, establish a SMME "Village" and training centre to coordinate training efforts of SMMEs and individuals. Link with bigger institutions such as Universities and Further Education and Training (FET) institutes to increase the impact of training and skills development in the region. 	<i>ACHIEVABLE</i>	MODERATE +		
		CUMULATIVE	REGIONAL	LONG TERM	MAY OCCUR	SLIGHTLY BENEFICIAL	LOW +		<i>ACHIEVABLE</i>	MODERATE +		
		NO-GO	NO IMPACT						NO IMPACT		NO IMPACT	
		CUMULATIVE	STUDY AREA	LONG TERM	MAY OCCUR	SLIGHT	LOW -		<i>VERY DIFFICULT</i>	LOW -		
		NO-GO	NO IMPACT						NO IMPACT		NO IMPACT	
IMPACTS ON SENSE OF	The Project is located in an area with low crime levels and has	DIRECT	STUDY AREA	LONG TERM	PROBABLE	MODERATE	MODERATE -	<ul style="list-style-type: none"> Implement an effective Land Use 	<i>VERY DIFFICULT</i>	MODERATE -		

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
PLACE	<p>an overall feeling of solitude and stillness. The social impact associated with the long-term impact on the sense of place for this OHL project would thus relate to a potential change in the landscape character, intrusion impacts and any changes to the safety and social surroundings of community members.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>					SEVERE		<p>Management programme in collaboration with the landowners.</p> <ul style="list-style-type: none"> Implement all mitigation and management measures as proposed Rehabilitate the veld to its original state post the operational phase. 		
		CUMULATIVE	STUDY AREA	LONG TERM	PROBABLE	MODERATE SEVERE	MODERATE -		VERY DIFFICULT	MODERATE -
		NO-GO	NO IMPACT							
CONTRIBUTION TO NATIONAL POWER SUPPLY	<p>The proposed Soutrivier South WEF will generate electricity and enhance the reliability and stability of supply that would contribute to economic development in the country as a whole.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would not impact the SEIA ratings significantly.</i></p>	DIRECT	NATIONAL	LONG TERM	DEFINITE	SLIGHTLY BENEFICIAL	MODERATE +	<ul style="list-style-type: none"> None suggested. 	VERY DIFFICULT	MODERATE +
		CUMULATIVE	NATIONAL	LONG TERM	DEFINITE	SLIGHTLY BENEFICIAL	MODERATE +		VERY DIFFICULT	MODERATE +
		NO-GO	NO IMPACT							
TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT										
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS VEGETATION	<p>Permanent or temporary loss of indigenous vegetation cover because of site clearing. Site clearing before construction will result in the blanket clearing of vegetation within the affected footprint.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on vegetation.</i></p>	DIRECT	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -	<ul style="list-style-type: none"> Blanket clearing of vegetation must be limited to the site. No clearing outside of required footprint required for construction to take place. Topsoil must be striped and stockpiled separately during site preparation and replaced on completion where revegetation will take place. Any site camps and laydown areas requiring clearing must be located within already disturbed areas as far as possible, or away from watercourses, alluvial areas and other sensitive features (rocky outcrops). 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	SLIGHT	LOW -		DIFFICULT	LOW -
		NO-GO	NO IMPACT							
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS FLORA SPECIES	<p>Loss of flora species of special concern during pre-construction site clearing activities. Several special of concern are known from surrounding areas, which could be destroyed during site preparation.</p> <p><i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i></p>	DIRECT	LOCALISED	SHORT TERM	UNLIKELY	SLIGHT	LOW -	<ul style="list-style-type: none"> A flora search and rescue is recommended before commencement. Respective permits to be obtained beforehand. 	EASY	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	UNLIKELY	SLIGHT	LOW -		EASY	LOW -
		NO-GO	NO IMPACT							

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
	<i>No-go alternative would result in no impact on floral species.</i>									
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS ALIEN INVASIVE SPECIES	Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species and removal of exotic and alien invasive species during construction. Post construction disturbed areas having no vegetation cover are often susceptible to invasion by weedy and alien species, which can not only become invasive but also prevent natural flora from becoming established. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on alien invasive species.</i>	DIRECT	LOCALISED	SHORT TERM	PROBABLE	SLIGHT	LOW -	<ul style="list-style-type: none"> ✦ Alien trees and weeds must be removed from the site as per CARA/ NEMBA requirements. ✦ A suitable weed and alien invasive plant management plan to be implemented in construction and operation phases. ✦ After clearing and construction is completed, an appropriate cover crop may be required, should natural re-establishment of grasses not take place in a timely manner, such as along road verges. This will also minimise dust. 	EASY	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	PROBABLE	SLIGHT	LOW -		EASY	LOW -
		NO-GO	NO IMPACT							NO IMPACT
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS EROSION	Susceptibility of some areas to erosion because of construction related disturbances. Removal of vegetation cover and soil disturbance may result in some areas being susceptible to soil erosion after completion of the activity. <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on erosion.</i>	DIRECT	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -	<ul style="list-style-type: none"> ✦ Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted once construction is completed. ✦ Topsoil must be stripped and stockpiled separately and replaced on completion. ✦ If natural vegetation re-establishment does not occur, a suitable grass must be applied. 	EASY	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -		EASY	LOW -
		NO-GO	NO IMPACT							NO IMPACT
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS ECOLOGICAL PROCESSES	Disturbances to ecological processes: Activity may result in disturbances to ecological processes such as fragmentation (road, etc). <i>Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard.</i> <i>No-go alternative would result in no impact on ecological processes.</i>	DIRECT	LOCALISED	SHORT TERM	PROBABLE	SLIGHT	LOW -	<ul style="list-style-type: none"> ✦ Blanket clearing of vegetation must be limited to the development footprint, and the area to be cleared must be demarcated before any clearing commences. 	REVERSIBLE	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	PROBABLE	SLIGHT	LOW -		DIFFICULT	LOW -
		NO-GO	NO IMPACT							NO IMPACT
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS AQUATIC AND RIPARIAN PROCESSES	Aquatic and Riparian processes: Diversion and increased velocity of surface water flows – Changes to the hydrological regime and increased potential for erosion. Impact of changes to water quality. Loss of riparian vegetation / aquatic habitat. Loss of species of special concern. <i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same</i>	DIRECT	LOCALISED	SHORT TERM	PROBABLE	SLIGHT	LOW -	<ul style="list-style-type: none"> ✦ Suitable structures to be constructed at watercourse crossings that do not alter flows. ✦ Stormwater discharge into watercourses to be protected against erosion. 	EASY	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	PROBABLE	SLIGHT	LOW -		EASY	LOW -
		NO-GO	NO IMPACT							NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY / MITIGATION	SIGNIFICANCE POST-MITIGATION
	<i>developer and the EMPs will be prepared to the same standard. No-go alternative would result in no impact on aquatic and riparian processes.</i>									
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS FAUNAL HABITAT	Loss of Faunal Habitat: Activity may result in the loss of habitat for faunal species, which could result in disturbance and displacement of faunal species. <i>Cumulative impact, on a localised scale, would be LOW should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard. No-go alternative would result in no impact on faunal habitat.</i>	DIRECT	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -	<ul style="list-style-type: none"> Blanket clearing of vegetation must be limited to the construction footprint required. Rocky outcrop areas and Riverine Rabbit Habitat to be avoided as far as possible. It is important that clearing activities are kept to the minimum and take place in a phased manner, where applicable. This allows any smaller animal species to move into safe areas and prevents wind and water erosion of the cleared areas. 	REVERSIBLE	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -		REVERSIBLE	LOW -
		NO-GO	NO IMPACT							NO IMPACT
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS FAUNAL PROCESSES	Impacts to faunal processes because of the activity such as erection of barriers to movement. <i>Cumulative impact, on a localised scale, would be LOW should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPs will be prepared to the same standard. No-go alternative would result in no impact on faunal processes.</i>	DIRECT	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -	<ul style="list-style-type: none"> The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the local impact associated with the footprint would be of low significance if mitigation measures are adhered to. Small mammals within the habitat on and around the affected area are generally mobile and likely to be transient to the area. They will most likely vacate the area once construction commences. As with all construction sites there is a latent risk that there will be some accidental mortalities. Specific measures are made to reduce this risk. The risk of species of special concern is low, and it is unlikely that there will be any impact to populations of such species because of the activity. Reptiles such as lizards are less mobile compared to mammals, and some mortalities could arise. It is recommended that a faunal search and rescue be conducted before construction commences, although experience has shown that there could still be some mortalities as these species are mobile and may thus move onto site once construction is underway. A reptile handler should be on call for such circumstances. Should any amphibian migrations occur between wetland areas during construction, appropriate measures (including temporarily suspending works in the affected area) should be implemented. 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -		DIFFICULT	LOW -
		NO-GO	NO IMPACT							NO IMPACT
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS	Loss of faunal SSC due to construction activities: Activities associated with bush clearing, killing of perceived dangerous	DIRECT	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -	<ul style="list-style-type: none"> A pre-commencement faunal search and rescue is recommended. Respective permits to be obtained beforehand. 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	SHORT TERM	MAY OCCUR	SLIGHT	LOW -		DIFFICULT	LOW -
		NO-GO	NO IMPACT							NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY/ MITIGATION	SIGNIFICANCE POST-MITIGATION
FAUNAL SPECIES	<p>fauna, may lead to increased mortalities among faunal species.</p> <p>The possible artificial increase in Pied Crow abundance (also termed native invaders) and other bird of prey that use powerline pylons for nest sites may have substantial long-term negative impacts on faunal populations as nest building will occur throughout the operational phase.</p> <p>It is anticipated that this impact will be most severe in regions where no other power line infrastructures exist, providing nesting sites in an otherwise treeless environment.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on faunal species.</i></p>							<ul style="list-style-type: none"> ✦ No animals are to be harmed or killed during the course of operations. ✦ Workers are NOT allowed to snare any faunal species. <p><i>Predation from possible influx of birds of prey using OHL for nest sites:</i></p> <ul style="list-style-type: none"> ✦ The use of pylon designs that are less favourable for nesting sites (see Figure 76). ✦ The monitoring of powerlines by avifaunal specialists or bird monitors. Nests found on the powerline should be identified to species level. An adaptive management approach can then be implemented, where identified problematic nests can be removed by maintenance personnel and nest deterrents fitted where needed. ✦ The fitting of nest deterrents/discouragers on horizontal and cross beam sections where self-supporting pylons are used. ✦ The design of the anti-climb fence must not offer any suitable sites for nests. This can be done by modifying structures so that they are angled downwards to avoid having horizontal platforms. Anti-climb fences must also be set as low as possible on the towers to discourage nesting by Pied Crows. ✦ Record prey species below Corvid nests (not limited to powerlines) and use findings to implement culling if required. Targeting culling at individuals that prey on tortoises. ✦ Remove available food and water that have been artificially created o No open dumpsite and carcass pits – All waste, organic and inorganic, including oil spills, and any existing agricultural byproduct needs to be environmentally safely disposed of and covered. ✦ Avoid using livestock feeding sites to attract corvids and locate away from sensitive habitats. <p><i>Remove existing artificial nest sites including old broken windmills and telephone/electric poles. This should be done with the advice from an avifaunal specialist</i></p>		
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: HABITAT LOSS,	The development may fragment an already highly fragmented landscape which may create barriers to gene flow where subpopulations are disconnected and isolated. Roads and fences can affect the quality and quantity of available habitat, most notably through fragmentation, creating barriers to animal movement. Erosion from construction may degrade the	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> ✦ Minimising the project footprint by utilising existing roads and disturbed areas as much as technically possible. ✦ Locate developments away from identified sensitive habitats, this includes no go zones and buffer zones for turbine pads, electrical 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		DIFFICULT	LOW -
		NO-GO	NO IMPACT						NO IMPACT	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY/MITIGATION	SIGNIFICANCE POST-MITIGATION
DEGRADATION AND FRAGMENTATION	<p>habitat and direct loss of habitat will occur due to necessity of access roads.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on habitat loss, degradation and fragmentation with regards to faunal species.</i></p>							<p><i>substations and housing facilities as well as construction laydown areas.</i></p> <ul style="list-style-type: none"> ✦ <i>Implementing adequate dust control and erosion control.</i> ✦ <i>Careful planning of road layout to minimise the length of roads traversing through riverine habitats and rocky ridges that have been identified as Very high or high sensitivity which may create barriers and fragment habitats.</i> ✦ <i>Establish wildlife passes, where artificial barriers are found; this particularly refers to physical barriers such as roads and fences.</i> ✦ <i>Develop and implement a site-specific spill management plan.</i> 		
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: MORTALITY FROM ROAD COLLISION	<p>There is an increased collision risk from increased traffic levels at the site and in the general area. This impact is likely to be of highest concern during construction but is also expected during the operational phase. Roads and roadsides may attract SCC such as Riverine Rabbits and Karoo Dwarf Tortoises due to verge edge enhancement of vegetation and roads may be used to facilitate movement, thus further increasing collision risks. Access roads that traverse riverine habitats require careful planning and monitoring to reduce risk of rabbit mortality.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact on faunal species in relation to road collision mortality.</i></p>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> ✦ Careful planning of roads to minimise the length that traverses through riverine and rocky habitats that have been identified as Very high or high sensitivity. ✦ Use existing roads as much as possible. ✦ Roadkill monitoring program on both internal and external public roads targeting sensitive habitats and wildlife corridors. Roadkill Monitoring programs must be initiated at pre-construction phase and continued during construction and post-construction as well as conducted over different seasons. ✦ Pre-construction road planning to identify target sites for wildlife crossing structures which should be considered during the EIA process and with pre-construction roadkill monitoring findings. Wildlife crossing structures must be made in consultation with road planner, construction manager and wildlife biologist. This is generally more cost effective than retro fixing existing roads. ✦ Assess efficiency of roadkill mitigation approaches via a post-implementation roadkill monitoring program. ✦ Implementation of speed limits on both internal access WEF roads (40km/h) as well as external public roads (60km/h). ✦ Reduced speed limits of 30km/h where roads (both internal and external) cross High and Very high sensitivity areas identified; including riverine habitat, koppies and ecotones which may harbour sensitive species and generally have higher species diversity and abundance ✦ Wildlife warning signage and speed reduction measures where roads cross High and Very 	<i>DIFFICULT</i>	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		<i>DIFFICULT</i>	LOW -
		NO-GO	NO IMPACT						NO IMPACT	NO IMPACT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY/MITIGATION	SIGNIFICANCE POST-MITIGATION
								high sensitivity areas. ✦ Education and awareness campaigns on SCC and their habitat must form part of staff induction procedures to help increase awareness, respect and responsibility towards the environment for all staff and contractors. ✦ Inductions on safe wildlife passing and driving to reduce possible injury and roadkill alongside roads. ✦ There is higher risk of collision when animals are more active which is typically from late afternoon to early morning. During these times a low speed limit (30km/h) needs to be implemented. Night-time driving should be avoided as much as possible but if necessary, speed needs to be reduced significantly to avoid collisions. Lagomorph species (hares and rabbits) often freeze in headlights and require headlights to be momentarily turned off to allow the animal to move off the road. ✦ Reduced speeds also need to be implemented during reduced visibility such as misty conditions that have been observed on the site. ✦ Induction must include reporting of any vehicle/wildlife collision or found roadkill to the appointed Roadkill monitoring personnel. ✦ Search and rescue of slow-moving species, specifically Karoo Dwarf Tortoises, during the construction phase. IUCN guidelines for translocation of sensitive species should be consulted. Tortoises will need to be carefully relocated and provided shelter and water-rich food as well as monitoring of threatened species to ensure of their survival. Should a subpopulation be found further consultations with a herpetologist will be required for appropriated mitigation.		
PREDATION FROM POSSIBLE INFLUX OF PIED CROW AND OTHER BIRD OF PREY THAT USE POWERLINE PYLONS FOR NEST SITES	Power line infrastructure are often used for nesting sites and may lead to the proliferation of crows in the region (Cunningham et al. 2015). In the past three decades Pied Crow numbers have increased significantly in South Africa with their spread facilitated by electrical infrastructure (Cunningham et al. 2015; Fincham et al. 2015). A strong relationship has been found between the rate of population increase and density of power line infrastructure in shrubland biomes (Cunningham et al. 2015). This is particularly due to the expansion of power lines in the largely treeless, semi-arid landscapes of the Karoo. Pied Crows are generalist predators, preying on a wide range of species, with evidence of heavy predation pressures on	DIRECT CUMULATIVE NO-GO	LOCALISED LOCALISED	PERMANENT PERMANENT	POSSIBLE POSSIBLE	MODERATE MODERATE	MODERATE - MODERATE -	✦ The use of pylon designs that are less favourable for nesting sites. ✦ The monitoring of powerlines by avifaunal specialists or bird monitors. Nests found on the powerline should be identified to species level. An adaptive management approach can then be implemented, where identified problematic nests can be removed by maintenance personnel and nest deterrents fitted where needed. ✦ The fitting of nest deterrents/discouragers on horizontal and cross beam sections where	<i>DIFFICULT</i> <i>DIFFICULT</i>	LOW - LOW -

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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	<p>threatened or restricted-range species such as tortoises. The development may thus create increased predation pressures on the Karoo Dwarf Tortoise and several other susceptible vulnerable faunal species of the region.</p> <p>The possible artificial increase in Pied Crow abundance (also termed native invaders) may have substantial long-term negative impacts on faunal populations as nest building will occur throughout the operational phase. Furthermore, we currently have very little understanding of the ecological consequences and ecosystem-level implications of these native invaders. It is anticipated that this impact will be most severe in regions where no other power line infrastructures exist, providing nesting sites in an otherwise treeless environment.</p> <p>The design of the pylon may influence the opportunities for nesting sites. Pylons which have a lattice structure with horizontal sections provide numerous nesting sites on various levels. Additionally, anti-climb fences are also providing nesting sites for Pied Crows and other species. It is likely that crows (and other birds) will also nest on insulator carriers which can cause electrical problems if conducive materials such as wires are used or if a nest becomes wet during rain. The existing powerlines that run into the Gamma Substation have four different pylon designs and provide an opportunity to assess which design are less favourable for nesting sites. Cross Rope Suspension Towers were found to be less desirable and provide fewer opportunities for nesting sites.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Overhead Line construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact from a cumulative influx of pied crow perspective.</i></p>							<p>self-supporting pylons are used.</p> <ul style="list-style-type: none"> ✦ The design of the anti-climb fence must not offer any suitable sites for nests. This can be done by modifying structures so that they are angled downwards to avoid having horizontal platforms. Anti-climb fences must also be set as low as possible on the towers to discourage nesting by Pied Crows. ✦ Record prey species below Corvid nests (not limited to powerlines) and use findings to implement culling if required. Targeting culling at individuals that prey on tortoises. ✦ Remove available food and water that have been artificially created <ul style="list-style-type: none"> ▪ No open dumpsite and carcass pits – All waste, organic and inorganic, including oil spills, and any existing agricultural byproduct needs to be environmentally safely disposed of and covered. ▪ Avoid using livestock feeding sites to attract corvids and locate away from sensitive habitats. ✦ Remove existing artificial nest sites including old broken windmills and telephone/electric poles. This should be done with the advice from an avifaunal specialist 		
<p>POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN:</p> <p>CUMULATIVE IMPACT</p>	<p>The cumulative impact is of concern, given the fact that the renewable-energy industry is rapidly expanding in South Africa. The local fauna is already impacted and threatened by past and current land use and the combination of these existing anthropogenic impacts with planned developments may impact the local fauna with unexpectedly large effects. Cumulative effects can also result where the construction phase occurs at several locations simultaneously or if a new project begins construction immediately following the completion of another. Cumulative effects can cause a small localized effect (which may have a limited effect on its own) to have a significant impact on population level as there may be thresholds where the cumulative effects increase</p>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> ✦ <i>It is important to evaluate the consequences of each development before the next is begun.</i> ✦ <i>Use a precautionary approach and aim to minimise negative effects even when the effects are not fully known.</i> ✦ <i>Ensure the construction phase is done in as short a period as possible and avoid breeding season, typically in the spring after good rains.</i> ✦ <i>Construction needs to be done during daytime, avoiding noise and disturbance when faunal communities are most likely active, particularly where the construction is in proximity to their habitat. Sensitive habitats near construction will need to be</i> 	<i>DIFFICULT</i>	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		<i>DIFFICULT</i>	LOW -
		NO-GO	NO IMPACT						NO IMPACT	

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	<p>disproportionally.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no impact from a cumulative faunal species of conservation concern loss perspective.</i></p>							<p>clearly marked.</p> <ul style="list-style-type: none"> Relating construction phase of the development with neighbouring developments and farming activity to ensure construction does not begin immediately after the completion of another or simultaneously. The developer instigates a proactive mitigation measure by initiating a multi-stakeholder dialogue at a workshop to clarify these concerns and how they might be taken forward and co-funded. The aim of this mitigation is to reduce current impacts that threaten the survival of SCC populations. We recommend a biodiversity wildlife corridor approach whereby protecting sensitive habitats is made a priority. This may include species refuge areas where no form of indiscriminate wildlife killing/snaring is allowed, no or highly reduced livestock grazing, and no pest control including locust spraying is carried out. Poaching and the use of hunting dogs at site is prohibited. 		
<p>POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN:</p> <p>CASCADING IMPACT ACROSS TROPHIC LEVELS</p>	<p>The effect of the OHL and wind farm on one species may have indirect cascading effects (knock on effect) on other species within the same community due to ecological relations to one another. This means that an effect on one species may in turn affect many others within the same ecosystem. Cascading effects may be complex and unpredictable as it may be the result of different types of interactions including competition, predation, parasitism, or symbiosis.</p> <p><i>Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters' Overhead Lines construction timelines overlap. However, it is important to note that the Overhead Line infrastructure is proposed by the same developer and the EMPs will be prepared to the same standard.</i></p> <p><i>No-go alternative would result in no cascading impact across the trophic levels due to the proposed WEF.</i></p>	DIRECT	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -	<ul style="list-style-type: none"> Initiate a general Fauna Biodiversity Monitoring program A Fauna Biodiversity program must be initiated pre-construction to have baseline population status and monitoring must be ongoing post-construction to identify any changes in occupancy in certain species' population which may in turn indirectly impact other fauna populations. We recommend the use of multiple monitoring methods including and not limited to; camera trapping in diverse habitats, targeted camera trapping for SCC; small mammal monitoring with the use of Sherman traps; the use of Conservation Scent Detection Dog teams to assist in detecting SCC. 	DIFFICULT	LOW -
		CUMULATIVE	LOCALISED	PERMANENT	DEFINITE	MODERATE	MODERATE -		DIFFICULT	LOW -
		NO-GO	NO IMPACT						NO IMPACT	

DECOMMISSIONING PHASE

****DUE TO THE FACT THAT NO WIND ENERGY FACILITY'S HAVE BEEN DECOMMISSIONED IN SOUTH AFRICA, CES BELIEVES IT RESPONSIBLE TO STIPULATE THAT FUTHER ASSESSMENT IN THE FORM OF A DECOMMISSIONING ENVIRONMENTAL MANAGEMENT PROGRAMME BE DRAFTED, IN CONSULTATION WITH SPECIALISTS, WHEN THIS PHASE BECOMES RELEVANT.**

AGRICULTURAL IMPACT ASSESSMENT

The agricultural impacts associated with the decommissioning phase will be similar to those listed in the construction phase and the associated mitigations measures must be updated and implemented to reduce potential adverse impacts.

AQUATIC IMPACT ASSESSMENT

The aquatic impacts associated with the decommissioning phase will be similar to those listed in the construction phase and the associated mitigations measures must be updated and implemented to reduce potential adverse impacts.

AVIFAUNAL IMPACT ASSESSMENT

The avifaunal impacts associated with the decommissioning phase will be similar to those listed in the construction phase and the associated mitigations measures must be updated and implemented to reduce potential adverse impacts.

HERITAGE IMPACT ASSESSMENT

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

ISSUE	DESCRIPTION OF IMPACT	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (PROBABILITY / LIKELIHOOD)	SEVERITY / BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	REVERSABILITY/ MITIGATION	SIGNIFICANCE POST-MITIGATION
<i>The heritage impacts associated with the decommissioning phase will be similar to those listed in the construction phase and the associated mitigations measures must be updated and implemented to reduce potential adverse impacts.</i>										
PALAEONTOLOGICAL IMPACT ASSESSMENT										
<i>None identified by specialist</i>										
RIVERINE RABBIT IMPACT ASSESSMENT										
<i>The socio-economic impacts associated with the decommissioning phase will be similar to those listed in the construction phase and the associated mitigations measures must be updated and implemented to reduce potential adverse impacts.</i>										
SOCIO-ECONOMIC IMPACT ASSESSMENT										
<i>The socio-economic impacts associated with the decommissioning phase will be similar to those listed in the construction phase and the associated mitigations measures must be updated and implemented to reduce potential adverse impacts.</i>										
TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT										
<i>The terrestrial biodiversity impacts associated with the decommissioning phase will be similar to those listed in the construction phase and the associated mitigations measures must be updated and implemented to reduce potential adverse impacts.</i>										