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										
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.										
AGRICULTURAL IMPACT ASSESSMENT										
None identified by specialist										
AQUATIC IMPACT ASSESSMENT										
None identified by specialist										
AVIFAUNAL IMPACT ASSESSMENT										
None identified by specialist										
BAT IMPACT ASSESSMENT										
None identified by specialist										
HERITAGE IMPACT ASSESSMENT										
None identified by specialist										
NOISE IMPACT ASSESSMENT										
None identified by specialist										
PALAEONTOLOGICAL IMPACT ASSESSMENT										
None identified by specialist										
RIVERINE RABBIT IMPACT ASSESSMENT										
None identified by specialist										
SOCIO-ECONOMIC IMPACT ASSESSMENT										
None identified by specialist										
TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT										
None identified by specialist										
VISUAL IMPACT ASSESSMENT										
None identified by specialist										
WAKE EFFECT STUDY										
None identified by specialist										
CONSTRUCTION PHASE										
AGRICULTURAL IMPACT ASSESSMENT										
OCCUPATION OF LAND	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 facility means that only an insignificant proportion of the available agricultural land is impacted in this way. The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of future agricultural production potential. *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 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*	**DIRECT**	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**DEFINITE**	**LOW -**	*The allowable development limit on land of low and medium agricultural sensitivity with a land capability of < 8, as this site has been verified to be, is 2.5 ha per MW. This would allow the proposed facility of 270 MW to occupy an agricultural footprint of 675 hectares. The wind facility being assessed will occupy an agricultural footprint of < 81 hectares. It is therefore confirmed that the agricultural footprint of this development will be well within the allowable limit. It will in fact be approximately eight times smaller than what the development limits allow.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**DEFINITE**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	to disturbance of agricultural system as no known construction activities are present on site.									
SOIL EROSION AND DEGRADATION	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 EMPr, are likely to be effective in preventing soil erosion. Loss of topsoil can result from poor topsoil management during construction related excavations. *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 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 disturbance of agricultural system as no known construction activities are present on site.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW -**	*Mitigation measures to prevent soil degradation are all inherent in the project design and / or are standard, best-practice for construction sites.* *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. 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.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
AQUATIC IMPACT ASSESSMENT										
VEHICULAR MOVEMENT (TRANSPORTATION OF CONSTRUCTION MATERIALS)	Loss of freshwater vegetation, associated habitat and ecosystem services from indirect impacts; Transportation of construction materials can result in disturbances to soils, and increased risk of sedimentation/erosion; and Soil and stormwater contamination from oils and hydrocarbons originating from construction vehicles. *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 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 disturbance of aquatic habitats as no known construction activities are present on site.*	**DIRECT**	**LOCALISED**	**MEDIUM TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**	*All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is essential;* *Retain as much indigenous vegetation as possible;* *All vegetation removed as part of the site clearing activities (specifically where large areas need to be cleared) must be transported from the construction site (may not be stockpiled) and disposed of at a registered waste disposal facility;* *During construction of the surface infrastructure within the 100 m GN509 Zone of Regulation (e.g., access roads), regular spraying of non-potable water or the use of chemical dust suppressants, that are approved for use near freshwater ecosystems must be implemented to reduce dust and to ensure no smothering of vegetation within the freshwater features occurs from excessive dust settling. It must be noted that specifics as to what type of dust suppressant (grey water vs. chemical dust*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**MEDIUM TERM**	**POSSIBLE**	**MODERATE**	**MODERATE -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
REMOVAL OF VEGETATION AND ASSOCIATED	Earthworks could be potential sources of sediment, which may be transported as runoff into the downgradient freshwater ecosystem areas;	**DIRECT**	**LOCALISED**	**MEDIUM TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY**	**MEDIUM**	**POSSIBLE**	**MODERATE**	**MODERATE -**		*REVERSIBLE*	**LOW -**

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DISTURBANCES TO SOILS	Exposure of soils, leading to increased runoff, and erosion, and thus increased sedimentation of the freshwater features; Increased sedimentation of the freshwater features, leading to smothering of the vegetation associated with the freshwater features; and Proliferation of alien and/or invasive vegetation as a result of disturbances. *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 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 disturbance of aquatic habitats as no known construction activities are present on site.*		**AREA**	**TERM**				*suppressant) that will be utilised as part of the proposed development was not available at the time of assessment. Should this detail become available, it is recommended that the freshwater ecologist provide a statement on the suitability of the use of the proposed dust suppressant;* • *The freshwater features outside the construction footprint not having authorised road crossings must be considered as no-go areas. No construction vehicles, nor construction personnel or vehicles may traverse through these freshwater features (except on approved road crossings);* • *As far as possible, existing roads must be utilised to gain access to sites;* • *Contractor laydown areas, and material storage facilities to remain outside of the freshwater features and their associated 100 m NEMA / GN509 ZoR as it would also help the proponent avoid the LN3 activities triggered within 100 m of watercourses;* • *All vehicle re-fuelling is to take place in specifically designated re-fuelling areas that must be located outside of the 100 m NEMA / GN509 ZoR; and'* • *No vegetation may be removed from the 100 m ZoR surrounding the freshwater features where no infrastructure is planned, as this provides a natural buffer zone around the freshwater features which plays a role in dispersing surface runoff into the freshwater features, and thus prevents sedimentation and erosion thereof.*		
		NO-GO	**NO IMPACT**						**NO IMPACT**	
REMOVAL OF VEGETATION AND TOPSOIL AND ASSOCIATED STOCKPILING; GROUND-BREAKING AND EARTHWORKS RELATING TO FOUNDATIONS AND TRENCHES; MIXING AND CASTING OF CONCRETE FOR CONSTRUCTION PURPOSES; BACKFILLING OF EXCAVATED AND DISTURBED AREAS; AND MISCELLANEOUS ACTIVITIES BY CONSTRUCTION	Earthworks could be potential sources of sediment, which may be transported as runoff into the downgradient freshwater ecosystem areas; Disturbances of soils leading to increased alien vegetation proliferation within the terrestrial buffer zone surrounding the freshwater features, with the potential to affect the freshwater habitat; Altered runoff patterns within the local catchment of the freshwater features, potentially leading to increased erosion and sedimentation of the receiving freshwater environment; Potential impacts on the water quality of surface water runoff (when present) which may potentially enter the downgradient freshwater features and contamination of soils due to concrete casting; and Potential of backfill material entering the freshwater features, increasing the sediment loads therein.	**DIRECT**	**LOCALISED**	**MEDIUM TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**	• *Though the proposed turbines are located outside the 100 m GN509 Zone of Regulation, indirect impacts to the receiving freshwater environment are likely during construction, particularly on the freshwater features located downgradient of the turbines. As such appropriate mitigation measures are provided.* • *The contractor laydown areas, material storage facilities, and the O&M building (if applicable) must remain outside of the freshwater features. It is also strongly recommended that these be located outside the 100 m NEMA / GN509 ZoR of the freshwater features. This in itself is considered a mitigation measure which complies with the mitigation hierarchy as advocated by the DFFE et al. (2013).* • *With regards to ground-breaking activities outside the delineated extent of a freshwater*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**MODERATE**	**MODERATE -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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PERSONNEL	*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 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 disturbance of aquatic habitats as no known earthworks activities are present on site.*							*feature:* ○ *During excavation activities, the topsoil and vegetation must be stockpiled separately from other material outside the delineated extent of the freshwater features;* ○ *Excavated materials must not be contaminated, and it must be ensured that the minimum surface area is taken up by any stockpiled materials. The mixture of the lower and upper layers of the excavated soil must be kept to a minimum, so as for later use as backfill material after construction has commenced;* ○ *All exposed soils must be protected from wind using tarpaulins for the duration of the construction phase to prevent potential erosion and sedimentation of the freshwater features;* ○ *Suitable drainage must be insured along the turbine foundations, in order to ensure that water does not pond or drain in a concentrated manner into the nearby freshwater features. This must be considered as part of the stormwater management plan and be overseen by the Environmental Control Officer (ECO);* ○ *Construction of the proposed surface infrastructure may result in disturbance to the natural buffer zone surrounding the freshwater features which may result in the reduction of surface roughness. This can be mitigated by ensuring that no concentrated runoff from the surface infrastructure construction areas enter the freshwater features by installing silt traps or placing haybales down gradient of the construction footprint (until suitable basal vegetation cover has been restored) to ensure no sediment laden or concentrated runoff generates from the construction footprint; and* ○ *It is highly recommended that an alien vegetation management plan be compiled during the planning phase and implemented concurrently with the commencement of construction.*		

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								▲ *With regards to concrete mixing on site:* ○ *Concrete and cement-related mortars can be toxic to aquatic life. Proper handling and disposal must minimise or eliminate discharges into the freshwater features. High alkalinity associated with cement, can dramatically affect and contaminate both soil and ground water. The following measures must be adhered to:* ○ *Fresh concrete and cement mortar must not be mixed near the freshwater features. Mixing of cement may be done within the construction camp, however, may not be mixed on bare soil, and must be within a lined, bound or bunded portable mixer. Consideration must be taken to use ready mix concrete;* ○ *No mixed concrete shall be deposited directly onto the ground within the freshwater features (outside of the designated area) or associated riparian habitat. A batter board or other suitable platform/mixing tray is to be provided onto which any mixed concrete can be deposited whilst it awaits placing;* ○ *A washout area must be designated outside of the freshwater features, and wash water must be treated on-site or discharged to a suitable sanitation system;* ○ *Cement bags must be disposed of in the demarcated hazardous waste receptacles and the used bags must be disposed of through the hazardous substance waste stream and* ○ *Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided.* ▲ *With regards to backfilling of excavated areas:* ○ *Stockpiled material must be used as backfill material;* ○ *All excavated areas must be backfilled to the natural ground level with excavated material; and* ○ *Soil must be suitably compacted, and all construction material must be removed from the site upon the*		

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								completion of construction or used in the rehabilitation process.
								• *Rehabilitation of the construction footprint areas:*
								  ○ *All footprint areas which have been compacted must be ripped and revegetated with indigenous vegetation as soon as the construction activities have been completed. This will prevent soil erosion and the creation of gullies within the operational area; and*
								  ○ *The operational area must regularly be inspected for alien and invasive vegetation species which might have established due to the construction activity related disturbances.*		

CREATION OF NEW ROAD CROSSINGS WITHIN THE SOUT RIVER AND THE LOWER FOOTHILL TRIBUTARIES ASSOCIATED WITH THE KLEIN BRAK AND SOUT RIVER SYSTEMS **AND** **CREATION OF NEW ROAD CROSSINGS WITHIN THE MOUNTAIN STREAM DRAINAGE LINES (NO RIPARIAN VEGETATION) AND UPPER FOOTHILL TRIBUTARIES (NO RIPARIAN VEGETATION) ASSOCIATED WITH THE KLEIN BRAK AND SOUT RIVER SYSTEMS**	Earthworks and exposure of soil could result in sedimentation of the freshwater features, which may be transported as runoff into the downstream freshwater ecosystem areas and may smother vegetation associated with the freshwater features; Altered water quality (if surface water is present) as a result of vehicle movement and construction activities; and Proliferation of alien and/or invasive vegetation as a result of disturbances. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to disturbance of aquatic habitats as no known road work activities are present on site.*	**DIRECT**	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**MODERATE**	**MODERATE -**	• *It is imperative that all construction works be undertaken during the dry periods when there is no flow within the freshwater features, and thus no diversion of flow would be necessary. It is also recommended that existing crossings through freshwater features be prioritised for upgrading rather than development of new crossings, where possible;* • *The throughflow structures must be designed to ensure that the structures are geotechnically sound and that they are hydraulically stable, even if a 1:100 year flood event was to occur. The designs must include culverts installed intermittently to ensure a free draining landscape. It is recommended that a suitably qualified hydrologist be consulted to provide guidance on the relevant sizes and width requirements to ensure that hydraulic functioning of the system is maintained;* • *In addition, the crossings must be designed such that should they be overtopped, they remain stable and do not lead to excessive downstream erosion and incision. It must be ensured that the final design accounts for appropriate wetting frequencies and patterns are maintained in the pre-development condition (with input from the freshwater ecologist, where necessary);* • *The reaches of the freshwater features where no activities are planned to occur must be considered no-go areas. These no-go areas can be marked at a maximum distance of 5 m upstream and downstream of the proposed road upgrade crossing. This 5 m construction Right of Way would allow for construction*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**SEVERE**	**HIGH -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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								personal, vehicles (if applicable) to enter the freshwater feature crossing where the road is proposed to be constructed; • *The clearing of vegetation within the footprint area must be kept to a minimum to avoid unnecessary disturbance within the active channel;* • *The removed vegetation must be stockpiled outside of the delineated boundary of a freshwater feature. The footprint areas of these stockpiles must be kept to a minimum, and may not exceed a height of 2 m. Should the vegetation not be suitable for reinstatement after the construction phase or be alien/invasive vegetation species, all material must be disposed of at a registered garden refuse site and may not be burned or mulched on site;* • *See impact below with regards to excavation and soil compaction activities within the freshwater features.* • *See impact above for control measures specific to concrete works.*		
SITE PREPARATION PRIOR TO CONSTRUCTION ACTIVITIES; REMOVAL OF VEGETATION AND ASSOCIATED DISTURBANCES TO SOIL; DISTURBANCES TO SOIL OF THE FRESHWATER FEATURES; MOVEMENT OF CONSTRUCTION MACHINERY/ VEHICLES WITHIN THE FRESHWATER FEATURES; AND POSSIBLE SPILLS / LEAKS FROM CONSTRUCTION VEHICLES.	Earthworks and exposure of soil could result in sedimentation of the freshwater features, which may be transported as runoff into the downstream freshwater ecosystem areas and may smother vegetation associated with the freshwater ecosystem areas; and Proliferation of alien and/or invasive vegetation as a result of disturbances. *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 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 disturbance of aquatic habitats as no known construction activities are present on site.*	**DIRECT**	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**MODERATE**	**MODERATE -**	• *The construction footprint must be limited to a construction Right of Way that comprises a 5 m construction buffer (upstream and downstream of the freshwater ecosystem crossing) only.* • *Upgrading of the informal roads must take cognisance of the delineated extent of the freshwater feature traversed by the existing informal access road and that located within close proximity to the road. Should the road be increased in width, the road must be expanded on the side opposite of a freshwater feature, to ensure that the remaining natural buffer between the access road and the freshwater feature remains intact;* • *Material to be used (gravel – if applicable) as part of the upgrading of the existing roads must be stockpiled outside the delineated extent of the freshwater features (preferably at least 32 m from the freshwater feature) to prevent sedimentation thereof and to avoid any other vegetation being impacted by the construction activities. These stockpiles may not exceed a height of 2 m and must be protected from wind using tarpaulins;* • *The disturbed area surrounding the road must be revegetated with suitable indigenous vegetation to prevent the establishment of alien vegetation species and to prevent erosion from occurring;*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**SEVERE**	**HIGH -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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								• *The alien vegetation management plan as compiled by the terrestrial/botanical ecologist is highly recommended and supported by the freshwater specialist and must be implemented concurrently with the commencement of construction; and* • *All existing alien and invasive vegetation must be removed. All material must be disposed of at a registered garden refuse site and may not be burned or mulched on site.* • *With regards to excavation and soil compaction activities within the freshwater ecosystems (including that associated with the installation of underground cabling)* • *Although the proposed freshwater ecosystems crossings upgrades are associated with generally existing farm roads, and as such the most significant impacts have already occurred, the existing gravel roads are relatively small with no formal through flow structures in most cases. The following are applicable with regards to excavation works and any concrete related activities:* • *During the excavation activities, any soil/sediment or silt removed from the freshwater feature may be temporarily stockpiled in the road reserve but outside the delineated extent of the freshwater feature. These stockpiles may not exceed 2 m in height, and their footprint must be kept to a minimum. Stockpiling of removed materials may only be temporary (may only be stockpiled during the period of construction at a particular site) and must be disposed of at a registered waste disposal facility;* • *During trenching activities, seepage water may be present within the trench -invariably this will be filled with silt and be muddy. Therefore, any seepage must not be discharged straight into the river channel but through a silt trapping area first before entering the downstream reach;* • *Excavated materials must not be contaminated, and it must be ensured that the minimum surface area is taken up. Mixture of the lower and upper layers of the excavated soil must be kept to a minimum, for later usage as backfill material or as part of rehabilitation activities;* • *For trenching of the cables, the topsoil must be stored separately and may not be contaminated. Furthermore, the soil layers*		

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								must be placed in the same order and the topsoil returned last; • *Care must be taken to ensure that no scouring or erosion occurs as a result of the proposed culvert crossing. Installation of riprap or gabion mattresses and/or concrete aprons associated with any culverts;* • *All construction material (with specific mention of prefabricated culvert structures) must be stockpiled in the laydown area and must only be imported to the construction site when required;* • *Machinery/vehicles used to install culvert structures must be parked on the existing road surface and may not enter the freshwater features; and* • *Reno-mattresses or riprap must be installed at the outlet side of the culvert/bridge structures to ensure energy dissipation and prevent concentrated runoff into the downstream freshwater feature. The reno mattress/riprap must be installed flush with the culvert outlet.* • *See impact 3 above for control measures specific to concrete works.*		
AVIFAUNAL IMPACT ASSESSMENT										
HABITAT DESTRUCTION	With the current proposed layout of up to 40 turbines and associated infrastructure such as roads, laydown areas, collector substations etc, the wind farm could impact on approximately 160 hectares of habitat for clearing. Given the relatively undisturbed nature of vegetation on site, most of this is likely to be natural vegetation. This is a small proportion of the overall site extent, and the habitat is neither particularly unique, nor threatened, or in limited availability. However, the fragmented nature of the remaining habitat will experience an "edge effect", whereby an area greater than the exact footprint of construction is affected by the impact under consideration. Of course, the effect on the avifaunal community is not as simple as the surface area affected. In addition to surface area alteration, the effect of large, dispersed infrastructure projects such as wind farms on birds is likely to be far more complex through factors such as habitat fragmentation, disruption of territories and other factors. These effects have however proven extremely difficult to measure. Since this habitat destruction is largely unavoidable, and our confidence in the effectiveness of habitat rehabilitation is uncertain, we anticipate that the impact significance will remain unchanged by mitigation.	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**SLIGHT**	**LOW -**	• *The constraint areas identified by this study (which build on those identified in the screening phase) should be adhered to.* • *A pre-construction avifaunal walk down should be conducted to confirm final layout and identify any sensitivities that may arise between the conclusion of the EIA process and the construction phase.* • *All human activities associated with construction, operation and decommissioning should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary Impact on the receiving environment.* • *Use should be made of existing roads as far as possible.* • *All staff, vehicle and machinery activities should be strictly controlled at all times so as to ensure that the absolute minimum of surface area is impacted.* • *Care should be taken not to introduce or propagate alien plant species/weeds during construction.* • *Any underground cabling should follow roads at all times to reduce the impact on the habitat by grouping these linear infrastructures.* • *Should more than one power line be*	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**SLIGHT**	**LOW -**		*ACHIEVABLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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HABITAT DISTURBANCE	Effects of disturbance on birds are particularly likely during breeding and could include loss of breeding productivity; temporary or permanent abandonment of breeding; or even abandonment of nest site. The avoidance measures (in the form of large No-go buffers) already taken to protect the various eagle nests and their breeding have reduced the significance of this impact to Low Negative significance pre-mitigation and it will remain Low Negative post-mitigation.	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**SLIGHT**	**LOW -**	*constructed in parallel with another either new or pre-existing power line, the pylon structures should be staggered as per Pallett et al. (2022) to increase visibility to large, slow-moving species, especially bustards and cranes.*	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**SLIGHT**	**LOW -**		*ACHIEVABLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
BAT IMPACT ASSESSMENT										
MODIFICATION OF BAT HABITAT (ROOSTING, FORAGING, COMMUTING)	Vegetation clearing for access roads, turbines and their service areas and other infrastructure, as well as noise and dust generated during the construction phase, will negatively and indirectly impact bats by removing habitat used for foraging and commuting, through disturbance, and displacement (Kunz et al. 2007b, Millon et al. 2018, Bennun et al. 2021). This impact is likely to have species specific effects; clutter edge species (e.g., Cape serotine) are more likely to be impacted by habitat modification given their greater association with physical habitat features compared to high-flying species (e.g., Egyptian free-tailed bat). Construction of WEF infrastructure could result in destruction (direct impact) of bat roosts (rocky crevices, buildings) and disturbance (indirect impact) of bat roosts potentially resulting in roost abandonment. Bat mortality can occur if roosts which contain bats are destroyed. Installation of new infrastructure in the landscape (e.g., buildings, turbines, road culverts) can inadvertently provide new roosting spaces for some bat species, attracting them to areas with wind turbines and potentially increasing the likelihood of collisions. *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 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 disturbance of bat habitats.*	**DIRECT AND INDIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**	***Avoid:*** • *Limit potential for bats to roost in project infrastructure (e.g., buildings, turbines, road culverts) by ensuring they are properly sealed such that bats cannot gain access.* • *No construction activities at night. No placement of infrastructure (except roads) in no-go areas.* ***Minimise:*** • *Minimise clearing of vegetation, minimise disturbance and destruction of farm buildings on site, minimise removal of trees, minimise disturbance and destruction of rocky outcrops, and where this is required, these features should be examined for roosting bats. This study assumes that all buildings and rocky outcrops are potentially roosts and must be buffered since numerous species use these features for roosting.* • *Apply good construction abatement control practices to reduce emissions and pollutants (e.g., noise, erosion, waste) created during construction.* ***Restore:*** *Rehabilitate all areas disturbed during construction (including aquatic habitat).*	*REVERSIBLE*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**SEVERE**	**HIGH -**		*REVERSIBLE*	**MODERATE-**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
HERITAGE IMPACT ASSESSMENT										
LOSS OF HERITAGE RESOURCES: STONE AGE OCCURANCES	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	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**	• *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)*	*REVERSIBLE, EASILY ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT AND LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW – AND LOW (+)**
		NO-GO							**NO IMPACT**	

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	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. *Cumulative 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* *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to destruction of archaeological resources.*							• *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, 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.* • *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.* • *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.*		
LOSS OF HERITAGE RESOURCES: ROCKSHELTER (SRc02) AND CORBEL BUILDING (SRC01)	Significant archaeological resources such as a rock shelter (SRC02)and a corbel building (SRC01) may be damaged during the construction phase. *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* *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to destruction of archaeological resources.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**MODERATE -**		*REVERSIBLE*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**SHORT AND LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW – AND LOW (+)**
		NO-GO							**NO IMPACT**	
NOISE IMPACT ASSESSMENT										
CONSTRUCTION NOISE: DAYTIME	Daytime ambient sound levels could range from 35 dBA to more than 72 dBA, averaging at 45 dBA. Daytime ambient sound levels are thus typical of a rural noise district most of the times, though it is expected that introduced noises will be audible over large distances during quiet periods (during low wind conditions).	**DIRECT**	**LOCALISED**	**SHORT TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**	• *The significance of the noise impact is low for daytime construction activities and no additional mitigation is required or recommended. General measures are recommended to ensure that annoyance with the project is minimised. It is therefore recommended that the applicant plan process access roads t pass further than 60m from*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**SHORT TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	Various construction activities (development of access roads, laydown areas, the hard standing areas, excavation of foundations, concreting of foundations and the erection of the wind turbines, other infrastructure) taking place simultaneously during the day will increase ambient sound levels due to air-borne noise. Depending on the location of access roads, traffic noises may be audible during passing and could change the ambient sound levels at NSR staying within 100m from (potential) access routes. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to daytime construction noise.*							*residential dwellings of the identified NSR.*		
CONSTRUCTION NOISE: NIGHTTIME	Night-time ambient sound levels could range between 27 dBA to more than 64 dBA, averaging at 41.9 dBA. Night-time ambient sound levels are higher than expected for a rural noise district, but this is likely due to the measurement period taking place during a period with increased wind speeds, resulting in more wind-induced noises. Ambient sound levels are expected to be low during period of low winds, and it is expected that introduced noises will be audible over large distances during quiet periods (during low wind conditions). Various construction activities (likely limited to the pouring of concrete as well as erection of WTG components) taking place simultaneously at night will increase ambient sound levels due to air-borne noise, using the criteria of the author. The projected noise levels, the change in ambient sound levels as well as the potential noise impact is defined per NSR. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to night-time construction noise.*	**DIRECT**	**LOCALISED**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW -**	• *The significance of the noise impact is low and additional mitigation is not required, yet some general management measures are included to ensure that the potential annoyance that may be created due to night-time construction noises are minimized. Potential mitigation measures would include:* ○ *Minimizing night-time activities when working within 2,000m from any NSR. Work should only take place at one WTG location to minimize potential night-time cumulative noises (when working at night within 2,000m from NSR);* ○ *The applicant must notify the NSR when night-time activities will be taking place within 1,000m from the NSR; and* ○ *The applicant must plan the completion of noisiest activities (such a pile driving, rock breaking and excavation) during the daytime period (even though it is expected that it is highly unlikely that this may take place at night).*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**REGIONAL**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to loss of palaeontological resources.*	**DIRECT**	**LOCALISED**	**LONG TERM**	**POSSIBILITY**	**MODERATE TO SEVERE**	**LOW -**	*Impact severity can be effectively (albeit only partially) mitigated through:* • *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.* • *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**	
RIVERINE RABBIT IMPACT ASSESSMENT										
MORTALITY FROM ROAD COLLISION, BUSHMEAT HUNTING AND OTHER CONSTRUCTION RELATED ACTIVITIES	The probability of vehicle-related mortality will increase with the added traffic. This would potential be within the site as well as on the larger public roads to the site such as the R381. This impact is likely to be of highest concern during construction but is also expected during operational phase. Roadkill is a significant source of mortality for riverine rabbits across their range. It is possible that the increase in traffic associated with construction would increase the probability of roadkill. 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 areas of potential conflict (High sensitivity) can be implemented as this reduces collision risk, and a reduction of roads within the drainage should be considered. Bushmeat hunting and active interference with Riverine Rabbits by construction employees may also result in reduced Riverine Rabbit occurrence within the AoI All employees should be educated	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**SEVERE**	**MODERATE -**	• *Careful planning of roads to minimise the length of roads traversing through riverine habitats that have been identified as Very high or high sensitivity.* • *Use existing roads as much as possible.* • *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.* • *Implementation of speed limits on both internal access WEF roads (40km/h) as well as external public roads (60km/h).* • *Reduced speed limits of 40km/h where roads (both internal and external) cross High and Very high sensitivity areas identified.* • *Wildlife warning signage and speed reduction measures where roads cross High and Very high sensitivity areas.* • *There is higher risk of collision when riverine*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**SEVERE**	**MODERATE -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	thoroughly on the potential impact of hunting in the AoI, and encouraged to report any sightings of the species during construction to their line managers. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on the local Riverine Rabbit population.*							*rabbits are active which is typically from late afternoon to early morning. Traffic should be reduced during the early hours of the morning (04:00 – 09:00) and early evening (18:00 – 22:00). During these times a low speed limit (40km/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 (40km/h) also need to be implemented during reduced visibility such as misty conditions that have been observed on the site.* • *Roadkill monitoring program needs to be implemented on both internal and external public roads targeting sensitive habitats and wildlife corridors. The program must be initiated at pre-construction phase and continued during construction and post-construction as well as conducted over different seasons.* • *Assess efficiency of roadkill mitigation approaches via a post-implementation roadkill monitoring program.* • *Education and awareness campaigns on riverine rabbits 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.* • *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 construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.* • *Inductions on safe wildlife passing and driving to reduce possible injury and roadkill alongside roads.* • *Induction must include reporting of any vehicle/wildlife collision or found roadkill to the appointed Roadkill monitoring personnel.* • *Any trenches built must have slopes that allow any dispersing rabbits that fall in to escape and must be backfilled.* • *Prohibit all employees from hunting;*		

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								• *Prohibit open fires.*		
LOSS OF HABITAT	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 AoI. 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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on the local Riverine Rabbit population.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**LIKELY**	**SEVERE**	**HIGH -**	• *Locate developments away from identified sensitive habitats for riverine rabbits, this includes no go zones and buffer zones for turbine pads, electrical substations and housing facilities as well as construction laydown areas.* • *Minimize project footprint by utilizing existing roads and disrupted areas as much as possible.* • *Careful planning of road layout to minimise the length of roads traversing riparian areas that have been identified as Very high or high sensitivity which may create barriers and fragment habitats.* • *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.* • *Implement adequate dust control and erosion control.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**LIKELY**	**SEVERE**	**HIGH -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
DISTURBANCE THROUGH CONSTRUCTION	The construction of roads, turbine hard-stands, roads and laydown areas etc. will result in noise and activity, which may displace rabbits out of home ranges. Noise effect from construction and associated human activities during this phase is highly probable and will likely reduce once the WEF is operational. Mitigation should include minimizing noise and educating workers. The buffered sensitive habitats will also ensure construction and associated disturbance noise is likely negligible. As a result, once mitigations are applied the potential disturbance and/or displacement of the species from home range is likely to be low. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on the local Riverine Rabbit population.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**LIKELY**	**SEVERE**	**HIGH -**	• *Construction must occur outside of identified sensitive habitats for riverine rabbits, this includes no-go zones and buffer zones for turbine pads, electrical substations and housing facilities as well as construction laydown areas.* • *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.* • *Implementing adequate noise reduction measures where possible on machinery.* • *Minimize noise disturbance during constructions by restricting noise to day time (9am – 5pm) periods when rabbits are less active.* • *Ensure the construction phase is done in as a short period as possible.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**LIKELY**	**SEVERE**	**HIGH -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
SOCIO-ECONOMIC IMPACT ASSESSMENT										
TEMPORARY EMPLOYMENT	During the construction phase, there will be temporary employment associated with the project. It has been established that approximately 250 employment opportunities will become available over the 24-month construction period. Of these about 55% will be allocated to unskilled, 30% to semi-skilled and 15% to skilled workers. Semi-	**DIRECT**	**LOCAL**	**SHORT TERM**	**DEFINITE**	**MODERATELY BENEFICIAL**	**SOME BENEFITS**	• *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.* • *Involve the Ubuntu LM and PKSDM from the early processes (from financial close already if*	*DIFFICULT*	**SOME BENEFITS**
		CUMULATIVE	**NATIONAL**	**SHORT TERM**	**DEFINITE**	**MODERATELY BENEFICIAL**	**HIGH +**		*DIFFICULT*	**HIGH +**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*							*possible). Determine their existing processes with regards to a labour desk and streamline employment processes between the various stakeholders.* • *Appoint a Community Employer Relations Officer / CLO. Communicate with communities through this one channel to ensure transparency, limit unrealistic expectations and to avoid conflict.*		
LOCAL PROCUREMENT	In order to meet or better targets set by the DMRE, the Developer is aiming for approximately 40% of total capital expenditure to be local. It is anticipated that many of the high-technology turbine components would be imported and that other technical components will be sourced from larger industrial areas in other parts of the province / country. Even though the Preferential Procurement Policy will only be formulated closer to the time, positive impacts on local and national economies are 'definite' since 25% of the DMRE scorecard is based on local content. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**DIRECT**	**NATIONAL**	**SHORT TERM**	**DEFINITE**	**MODERATELY BENEFICIAL**	**MODERATE +**	• Maximise local content of procurement by procuring from the local and regional study areas as far as possible. • Do a value-chain analysis of services required (directly and indirectly related to construction such as transport, laundry, catering, etc.). Communicate this to the PKSDM and Ubuntu LED Units at least 4 months prior to the tender process commencing in order for SMME's to prepare. • Include minimum thresholds in the CSMP for local employment, BBEEE procurement, SMME targets, local services providers, etc.	*ACHIEVABLE*	**MODERATE +**
		CUMULATIVE	**NATIONAL**	**SHORT TERM**	**DEFINITE**	**MODERATELY BENEFICIAL**	**HIGH +**		*ACHIEVABLE*	**HIGH +**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
INDUCED LOCAL ECONOMIC IMPACTS	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	**DIRECT**	**NATIONAL**	**SHORT TERM**	**DEFINITE**	**SLIGHTLY BENEFICIAL**	**LOW +**	• Maximise the Project's local content as far as possible.	*VERY DIFFICULT*	**LOW +**
		CUMULATIVE	**NATIONAL**	**SHORT TERM**	**DEFINITE**	**SLIGHTLY BENEFICIAL**	**LOW +**		*VERY DIFFICULT*	**LOW +**

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	as: Business opportunities for the service and manufacturing industries (locally and nationally), e.g. transport, Personal Protective Equipment, maintenance work, general consumables, civil works; ▲ 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.; ▲ Local accommodation facilities that house the workers sourced from outside the direct Project sending area and spin-offs for the tourism industry. Since at least 20% of the South African workforce has to be residents from local communities a large portion of these induced impacts will manifest locally. Definite positive impacts of 'low significance' will manifest. Wallet loose b *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**NO-GO**	**NO IMPACT**						**NO IMPACT**	
TRAINING / SKILLS DEVELOPMENT	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: ▲ 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. 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'	**DIRECT**	**REGIONAL**	**SHORT TERM**	**DEFINITE**	**SLIGHTLY BENEFICIAL**	**LOW +**	▲ 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.	*ACHIEVABLE*	**MODERATE +**
		CUMULATIVE	**REGIONAL**	**SHORT TERM**	**DEFINITE**	**SLIGHTLY BENEFICIAL**	**MODERATE +**		*ACHIEVABLE*	**MODERATE +**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS										
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	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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*							▲ 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).		
EMPLOYMENT EQUITY	Statistics obtained from the IP4 overview (DMRE, December 2021) indicate that during the construction phases, Black South African citizens, Youths and rural local communities have primarily been the beneficiaries of RE projects, as they respectively represent 81%, 44% and 48% of total job opportunities created by IPP's to date. However, woman and the disabled could still be significantly empowered as they represent a mere 10% and 0.4% of total jobs created. Pre-mitigation positive impacts of employment equity will hold benefits of 'low overall significance' if only the DMRE's minimum requirements are implemented. With mitigation, the intensity of the impact will increase, and the overall significance can be increased to hold 'moderate benefits'. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**DIRECT**	**REGIONAL**	**SHORT TERM**	**DEFINITE**	**MODERATELY SEVERE**	**LOW +**	▲ Obtain inputs from the local and district municipalities on the contents of the Procurement strategy and Employment Equity Plan to be implemented. ▲ Set targets for the employment of Youth, women and the disabled in the respective CSMPs.	*ACHIEVABLE*	**MODERATE +**
		CUMULATIVE	**REGIONAL**	**SHORT TERM**	**DEFINITE**	**MODERATELY SEVERE**	**LOW +**		*ACHIEVABLE*	**MODERATE +**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
IMPACTS ASSOCIATED WITH AN INFLUX OF JOBSEEKERS / TEMPORARY CONSTRUCTION WORKERS	Negative impacts that could manifest for local communities and the local and district municipalities due to an influx of jobseekers / temporary construction workers include: Conflict between locals and 'outsiders' if the outside labour force receives preference; Conflict due to cultural differences; ▲ Increase in the size and number of informal settlements and additional pressure on local government for housing and related services;	**DIRECT**	**REGIONAL**	**SHORT TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**	Employment / Temporary construction workers: ▲ Clearly identify the beneficiary communities / labour sending area and compile the employment strategy in collaboration with the affected municipalities' LED Units. ▲ Contractually oblige contractors and sub-contractors to only source labour through the labour desk / job registration database and make this known to the target communities. ▲ Work through limited communication channels	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**REGIONAL**	**SHORT TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**		*ACHIEVABLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	• Increase in the unemployment rate if jobseekers and/or workers do no return to their places of residence post construction; • Unwanted pregnancies, an increase in HIV/AIDS and other sexually transmitted diseases (STDs) and additional pressure on health care services; • An increase in single parent households and a subsequent reliance on social grants; • An increase in drug and alcohol abuse and other social issues should unemployment levels increase. Poor conduct of construction workers and inadequate management of the construction site could result in health and safety risks for landowners that include: • Unauthorized access / trespassing resulting in theft, stock poaching, safety and security issues as well as potential damage to the veld and natural grazing; • Fire hazards at the construction site and the possibility of fires spreading and damaging surrounding farmland and infrastructure; • Pollution problems, flies, rodents and pests and possible contamination of water resources (insufficient sanitation facilities, littering and refuse) and so forth. 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. 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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.*							(e.g. Ward Councillors and the Employer Relations Officer / CLO). • Be vigilant not to raise unrealistic expectations amongst the local communities and workers with regards to employment, skills requirements, local procurement and so forth. Ensure transparency through the Ward Councillors, CLO and the EMC / Forum. • No recruitment of temporary workers at the access to the construction site. • As part of their Social Management Plan's (SMP's), contractors to provide a transport and housing plan: (i) no workers are allowed to be housed on site or in informal housing / settlements; (ii) allow workers that do not live nearby time to return to their families at regular intervals or over weekends. • No workers to remain on site after shifts. • 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. • Security, safety and environmental health: • 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. • Join the local community policing forum or similar initiative for the duration of construction. • Keep the local SAPS, other emergency services, Ward Councillors, landowners and other relevant stakeholders informed about the construction progress and time-lines. • Develop a Fire / Emergency Management Plan in conjunction with affected and neighbouring landowners. • 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. • 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. • 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.		

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	No-go alternative would not impact the SEIA ratings significantly.							• 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. • Awareness / community engagement: • Keep open communication channels with the landowners and address any potential issues as a matter of priority. • 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. • Make a complaints register / log book available at the entrance to the construction site and act immediately should issues arise. • 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.		
LAND USE IMPACTS	Main land uses in the study area pertain to livestock farming (mainly sheep and goat) and grazing for game. The land has a long term grazing capacity of 24 to 28 hectares per large stock unit (LSU). Small patches of cultivation can be found along water courses and in close proximity to farmsteads. Farms are also used for residential and leisure purposes, albeit farmsteads are scattered and dispersed and the nearest farmstead is located about 1 km from a turbine. No direct impacts on residential land uses are therefore foreseen. For the duration of the short-term construction period no grazing is possible at the construction site/s. Should 32 turbines be constructed, the area cleared of vegetation for construction amounts to 124.68 ha (4.5 LSU), which has a negligible direct impact on grazing land uses. *Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it is*	**DIRECT**	**LOCALISED**	**SHORT TERM**	**DEFINITE**	**SLIGHT**	**LOW -**	• Rehabilitate the veld to its original state post construction.	*VERY DIFFICULT*	**LOW -**
		CUMULATIVE	**LOCALISED**	**SHORT TERM**	**DEFINITE**	**SLIGHT**	**LOW -**		*VERY DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	important to note that the 5 WEFs and their associated infrastructure are proposed by the same developer and the EMPrs will be prepared to the same standard. *No-go alternative would not impact the SEIA ratings significantly.*									
INTRUSION IMPACTS	Intrusion impacts could indirectly impact agricultural land uses, thereby having a negative effect on incomes of landowners, such as: ▲ 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. 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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**DEFINITE**	**MODERATELY SEVERE**	**MODERATE -**	▲ *Comply with the EMPr 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.*	*DIFFICULT*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**DEFINITE**	**MODERATELY SEVERE**	**MODERATE -**		*DIFFICULT*	**MODERATE -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
HEALTH AND SAFETY RISKS FOR WORKERS	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 risks are broadly associated with: • Construction related accidents due to structural safety of Project infrastructure, possibly resulting in fatalities; • Dust generation and air pollution resulting	**DIRECT**	**LOCALISED**	**SHORT TERM**	**MAY OCCUR**	**SEVERE**	**MODERATE -**	▲ *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 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.*	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**SHORT TERM**	**MAY OCCUR**	**SEVERE**	**MODERATE -**		*ACHIEVABLE*	**MODERATE -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*							• *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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on vegetation.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**SLIGHT**	**LOW -**	• *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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on floral species.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**SLIGHT**	**LOW -**	• *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**	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on alien invasive species.*	**DIRECT**	**LOCALISED**	**SHORT TERM**	**DEFINITE**	**SLIGHT**	**LOW -**	• *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.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**SHORT TERM**	**DEFINITE**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on erosion.*	**DIRECT**	**LOCALISED**	**SHORT TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**	• *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*	**LOW -**
		CUMULATIVE	**LOCALISED**	**SHORT TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**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). *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on ecological processes.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**SLIGHT**	**LOW -**	• *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*	**LOW -**
		CUMULATIVE	**LOCALISED**	**PERMANENT**	**DEFINITE**	**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	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• *Suitable structures to be constructed at watercourse crossings that do not alter flows.* • *Stormwater discharge into watercourses to be protected against erosion.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	species of special concern. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on aquatic and riparian processes.*									
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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on XX.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**SLIGHT**	**LOW -**	• *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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on XX.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**LOW -**	• *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 retile handler should be on call for such circumstances.* • *Should any amphibian migrations occur between wetland areas during construction,*	*DIFFICULT*	**LOW -**
		CUMULATIVE	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**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**
								appropriate measures (including temporarily suspending works in the affected area) should be implemented.		
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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on faunal species.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• *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 species.*	*DIFFICULT*	**LOW -**
		CUMULATIVE	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**		*DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: **HABITAT LOSS, DEGRADATION AND FRAGMENTATION**	The development may fragment an already highly fragmented landscape which may create barriers to geneflow 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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on habitat loss, degradation and fragmentation with regards to faunal species.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• *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: **DISTURBANCE**	Disturbance will be primarily in the form of visual and noise effects as well as general human activities. Visual stimuli from movements of the turbine blades may cause a disturbance which may be far reaching due to the site being open and unobscured. Noise effect from construction and associated human activities during this phase is highly probable. This impact will reduce once the WEF is operational however there will be continued noise pollution from turbines from both the hub and the swish of the blades. *Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• Implementing adequate noise reduction measures, including the use of insulation to reduce noise output from turbine hubs. • Temporal (curtailment) restrictions. Temporal restriction strategies can focus on altering turbine operation during times or weather conditions when wildlife is most active or where a negative impact has been found during the monitoring program. • Targeted operational timing by working with wind facility managers to target specific turbines under certain weather conditions where a negative impact has been identified. This may require changing the minimum windspeed at which turbines begin to turn and	*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
	is important to note that the 5 WEFs and their associated 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 on disturbance of faunal species of conservation concern.*							generate energy (cut-in speed) so that they idle during gentle wind and in so doing reduce noise during periods of low ambient noise. • Minimise development lighting in order to minimise light pollution, disturbance to animals at night; • Minimize noise disturbance during constructions where construction takes place within 1000 m of Very high and high sensitivity habitats. Restricting noise to daytime (9 am – 4 pm) periods when most fauna are less active.		
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: **MORTALITY FROM ROAD COLLISION**	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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on faunal species in relation to road collision mortality.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• 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 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.	*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										
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								• 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 CONSERVATION CONCERN: **CUMULATIVE IMPACT**	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 disproportionally. *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*	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED** **NO IMPACT**	**PERMANENT** **PERMANENT**	**DEFINITE** **DEFINITE**	**MODERATE** **MODERATE**	**MODERATE -** **MODERATE -**	• *It is important to evaluate the consequences of each development before the next is begun.* • *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*	*DIFFICULT* *DIFFICULT* **NO IMPACT**	**LOW -** **LOW -**

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	associated 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 from a cumulative faunal species of conservation concern loss perspective.*							*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.*		
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: **CASCADING IMPACT ACROSS TROPHIC LEVELS**	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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no cascading impact across the trophic levels due to the proposed WEF..*	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED** **NO IMPACT**	**PERMANENT** **PERMANENT**	**DEFINITE** **DEFINITE**	**MODERATE** **MODERATE**	**MODERATE -** **MODERATE -**	*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* *DIFFICULT* **NO IMPACT**	**LOW -** **LOW -**
VISUAL IMPACT ASSESSMENT										
POTENTIAL VISUAL IMPACT OF CONSTRUCTION ON SENSITIVE VISUAL RECEPTORS IN CLOSE PROXIMITY TO THE FACILITY	During the construction period, there will be an increase in heavy vehicles utilising the roads to the construction sites that may cause, at the very least, a visual nuisance to other road users and landowners in the area in close proximity (within 5km). Within the region, dust as a result of construction activities may also be visible, as such it will result in a visual impact occurring during construction. This impact is likely to be of high significance before mitigation and moderate significance post mitigation on the identified sensitive visual receptors within this zone: ▪ Users of the various secondary roads ▪ Residents of the following homesteads:	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED** **NO IMPACT**	**SHORT TERM** **SHORT TERM**	**PROBABLE** **POSSIBLE**	**SEVERE** **SEVERE**	**HIGH -** **HIGH -**	*Ensure that vegetation is not unnecessarily removed during the construction period.* *Reduce the construction period through careful logistical planning and productive implementation of resources.* *Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e., in already disturbed areas) wherever possible.* *Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads.* *Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed*	*MODERATE* *MODERATE* **NO IMPACT**	**MODERATE -** **MODERATE-**

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	○ Taaibosfontein ○ Erasmuskraal ○ Ramfontein The following homesteads are located on farm portions earmarked for the Victoria West WEF, thereby reducing the probability of this impact occurring on these specific receptors (i.e. it is assumed that these landowners are supportive of WEF developments and their associated visual impacts): ▪ Altona ▪ Spes Bona ▪ Lakenvlei ▪ Stampfontein ▪ Quaggasfontein *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no visual impacts related to construction activities.*							*regularly at licensed waste facilities.* *Reduce and control construction dust using approved dust suppression techniques as and when required (i.e., whenever dust becomes apparent).* *Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts.* *Rehabilitate all disturbed areas immediately after the completion of construction works.*		
WAKE EFFECT STUDY										
None identified by specialist										
OPERATIONAL PHASE										
AGRICULTURAL IMPACT ASSESSMENT										
OCCUPATION OF LAND	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 facility means that only an insignificant proportion of the available agricultural land is impacted in this way. The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of future agricultural production potential. *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 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*	**DIRECT**	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**DEFINITE**	**LOW -**	*The allowable development limit on land of low and medium agricultural sensitivity with a land capability of < 8, as this site has been verified to be, is 2.5 ha per MW. This would allow the proposed facility of 270 MW to occupy an agricultural footprint of 675 hectares. The wind facility being assessed will occupy an agricultural footprint of < 81 hectares. It is therefore confirmed that the agricultural footprint of this development will be well within the allowable limit. It will in fact be approximately eight times smaller than what the development limits allow.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**DEFINITE**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	to disturbance of agricultural system as no known construction activities are present on site.									
SOIL EROSION AND DEGRADATION	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 EMPr, are likely to be effective in preventing soil erosion. Loss of topsoil can result from poor topsoil management during construction related excavations. *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 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 disturbance of agricultural system as no known construction activities are present on site.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW -**	*Mitigation measures to prevent soil degradation are all inherent in the project design and / or are standard, best-practice for construction sites.* *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. 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.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	*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.*						**NO IMPACT**	
INCREASED FINANCIAL SECURITY FOR FARMING OPERATIONS	Reliable and predictable income will be generated by the 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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW +**		*ACHIEVABLE*	**LOW +**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW +**		*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.	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**POSSIBLE**	**SLIGHT**	**LOW +**		*ACHIEVABLE*	**LOW +**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**POSSIBLE**	**SLIGHT**	**LOW +**		*ACHIEVABLE*	**LOW +**

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	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 EMPrs will be prepared to the same standard. *No-go alternative would result in no impact related to disturbance of agricultural system as no known construction activities are present on site.*	**NO-GO**	**NO IMPACT**						**NO IMPACT**	
AQUATIC IMPACT ASSESSMENT										
PROACTIVE MONITORING TO ENSURE STRUCTURAL INTEGRITY IS MAINTAINED AND TO IDENTIFY EARLY SIGNS OF FAILURE / EROSION.	No direct impacts perceived. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to erosion of aquatic habitats.*	**DIRECT**	**LOCALISED**	**LONG TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**	• *No indiscriminate movement of construction equipment through the freshwater features may be permitted during standard operational activities or maintenance activities. Use must be made of the existing freshwater ecosystem crossings only;* • *Vehicles used in the development site must be regularly washed (on a non-permeable surface or off-site) to avoid the dispersal of seeds on any alien or invasive species into the freshwater features;* • *Hot spots for the build-up of debris and excess sediment must be identified and when necessary, debris/excess sediment must be removed by hand to prevent future flooding and potential damage to infrastructure;* • *Routine maintenance of the roads must be undertaken to ensure that no concentration of flow and subsequent erosion occurs due to the road crossings/instream infrastructure. Such maintenance activities must specifically be undertaken after high rainfall events;* • *Stormwater runoff from the road crossings must be monitored (by the O&M Manager, to ensure it does not result in erosion of the freshwater features. Stormwater must be allowed to diffusely spread across the landscape, by ensuring adequate surface roughness in the freshwater feature (through vegetation and rocky areas);* • *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 roads, monitoring for erosion must be undertaken; and* • *Should erosion be observed, caused by the road crossings/instream infrastructure, the area must be rehabilitated by infilling the erosion*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**LONG TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
CONCENTRATED RUNOFF ENTERING THE FRESHWATER FEATURES **AND** **DISTURBANCE TO THE VEGETATION WITHIN AND SURROUNDING THE FRESHWATER FEATURES.**	Concentrated runoff from the road crossings leading to erosion and subsequent sedimentation of the freshwater features (increase in the sediment load) and turbulent flows when surface water is present; Higher flood peaks into the freshwater features due to reduced surface roughness in the freshwater features. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to disturbance of freshwater features.*	**DIRECT**	**LOCALISED**	**LONG TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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								gully and revegetation thereof with suitable indigenous vegetation. Use can also be made of rocks collected from the surrounding area to infill any area prone to erosion (however, these must be sustainably sourced not taken from the surrounding freshwater features including rivers in the local area).		
AVIFAUNAL IMPACT ASSESSMENT										
DISPLACEMENT THROUGH DISTURBANCE	The indications from operational wind farms are that this impact may be of fairly low importance, although it is acknowledged that a longer term or more detailed means of measuring this impact may be required. The impact of human-induced disturbance during the operational phase of the development is likely to be less severe than during the construction phase. Birds may be displaced from using the landscape for breeding, foraging and commuting purposes due to the loss of habitat, increased noise pollution and human presence. This may reduce population size or force individuals into suboptimal habitat. For the proposed project we consider this impact to be of Low Negative significance. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to disturbance of avifaunal habitats.*	**DIRECT**	**STUDY AREA**	**LONG-TERM**	**DEFINITE**	**SLIGHT**	**LOW -**	• *All human activities associated with construction, operation and decommissioning should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary impact on the receiving environment.* • *A post-construction inspection must be conducted by an avifaunal specialist to confirm that all aspects have been appropriately handled and in particular that road and hard stand verges do not provide additional substrate for raptor prey species. It is essential that the new wind farm does not create favourable conditions for such mammals in high risk areas. We therefore recom-mend that within the first year of operations a full assessment of this aspect be made by the ornithologist contracted for post-construction monitoring. If such conditions have been created, case-specific solutions will need to be developed and implemented by the wind farm. It is strongly recommended that rodenticides not be used at the newly established Operation and Maintenance (O&M) buildings or around auxiliary infrastructure on the project site. While pest control of this nature may be effective, even so-called "environmentally friendly" rodenticides are toxic and pose significant secondary poisoning risk to predatory avifauna, especially owls.* • *Should more than one power line be constructed in parallel with another either new or pre-existing power line, the pylon structures should be staggered as per Pallett et al. (2022) to increase visibility to large, slow-moving species, especially bustards and cranes.*	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**DEFINITE**	**SLIGHT**	**LOW -**		*ACHIEVABLE*	**LOW -**
		NO-GO	**NO IMPACT**							
DISPLACEMENT THROUGH HABITAT LOSS	As for disturbance above, the indications from operational wind farms are that this impact may be of fairly low importance, although it is acknowledged that a longer term or more detailed means of measuring this impact may be required. Birds may be displaced from using the landscape for breeding, foraging and commuting purposes due to the loss of habitat, increased noise pollution and human presence. This may reduce population size or force individuals into suboptimal habitat. *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*	**DIRECT**	**STUDY AREA**	**LONG-TERM**	**DEFINITE**	**SLIGHT**	**LOW -**		*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**LONG-TERM**	**DEFINITE**	**SLIGHT**	**LOW -**		*ACHIEVABLE*	**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
	associated 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 disturbance of avifaunal habitats.*									
MORTALITY FROM COLLISIONS WITH TURBINES	Turbine collisions have been discussed in depth in the literature section of this report. They represent the greatest risk to avifauna at this development. Turbine blades are not always visible to birds flying at rotor swept height and evasive action is not always possible. Striking a moving blade almost certainly results in death or serious injury. In the case of resident species, or those that occupy home ranges on a fairly permanent basis, fatalities represent the loss of individuals in the greater study area, both directly (due to fatalities themselves) as well as indirectly (due to the loss of breeding potential, particularly between monogamous pairs). Human caused fatalities of regionally Red Listed or otherwise threatened bird species are always cause for concern and should be avoided as far as possible. The estimated fatalities we have predicted are therefore of some concern for the relevant species, in particular Verreaux's Eagle, Ludwig's Bustard, Martial Eagle, Black Harrier and Jackal Buzzard. There are currently no established thresholds for acceptable impacts on bird species in South Africa. To establish these thresholds would require complex modelling incorporating accurate information on many factors for each species (including population size, age-specific fatality rates, breeding productivity, etc). Such modelling and information are not available in South Africa at present. In the absence of this information, we are forced to make a somewhat subjective decision as to the acceptability of the estimated annual fatalities. *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 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 disturbance of avifaunal habitats.*	**DIRECT**	**REGIONAL**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**	• *All human activities associated with construction, operation and decommissioning should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary impact on the receiving environment.* • *A post-construction inspection must be conducted by an avifaunal specialist to confirm that all aspects have been appropriately handled and in particular that road and hard stand verges do not provide additional substrate for raptor prey species. It is essential that the new wind farm does not create favourable conditions for such mammals in high risk areas. We therefore recom-mend that within the first year of operations a full assessment of this aspect be made by the ornithologist contracted for post-construction monitoring. If such conditions have been created, case-specific solutions will need to be developed and implemented by the wind farm. It is strongly recommended that rodenticides not be used at the newly established Operation and Maintenance (O&M) buildings or around auxiliary infrastructure on the project site. While pest control of this nature may be effective, even so-called "environmentally friendly" rodenticides are toxic and pose significant secondary poisoning risk to predatory avifauna, especially owls.* • *An observer-led turbine Shutdown on Demand (SDOD) programme must be implemented on site from COD. This programme must consist of a suitably qualified, trained and resourced team of observers present on site for all daylight hours 365 days of the year. This team must be stationed at vantage points with full visible coverage of all turbine locations. The observers must detect incoming priority bird species, track their flights, judge when they enter a turbine proximity threshold, and alert the control room to shut down the relevant turbine until the risk has reduced. A full detailed method statement or protocol must be designed by an ornithologist prior to COD, and included as an annexure of the EMP.* • *The combination of hub height and rotor*	*DIFFICULT*	**MODERATE -**
		CUMULATIVE	**REGIONAL**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**		*DIFFICULT*	**MODERATE -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
FATAL TURBINE COLLSIONS: MIGRATORY SPECIES (BLACK HARRIER)	Turbine collisions have been discussed in depth in the literature section of this report. They represent the greatest risk to avifauna at this development. The impact for Black Harrier is of greater consequence and wider significance: this migratory	**DIRECT**	**REGIONAL**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**		*ACHIEVABLE*	**MODERATE -**
		CUMULATIVE	**REGIONAL**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**		*ACHIEVABLE*	**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
	species is near endemic to South Africa (more than 70% of the population occurs within the country), and loss of any individuals of this Endangered species thus jeopardise the global population. The "Probability" of this impact is rated as "May Occur", which is to say that with an already highly threatened population of only ~1 000 individuals, the likelihood of collision with turbines on this specific site is not particularly high. However, the implications of even a single fatality are far-reaching, long-lasting and cumulative. In the case of migratory species, we conclude that the impact of bird collision with turbines is of Moderate Negative significance. There are various mitigation measures described in Section 7 and these will reduce the significance somewhat. The degree of this reduction is however uncertain, as the mitigation measures are largely unproven in these conditions. At this stage, we judge that the significance post-mitigation will be of Moderate Negative significance. *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 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 disturbance of avifaunal habitats.*	**NO-GO**	**NO IMPACT**					*diameter must be optimised to maximise the lower blade tip height above ground. Raising the lower blade tip height from a typical 30m above ground to 80m above ground will reduce collision risk for cranes, Ludwig's Bustards, Black Harrier and korhaans, which typically fly low over the ground. Raising the lower blade tip from 30 to 80m above ground as a mitigation measure benefited every target species (in terms of reduced predicted mortality). Low sample size in this study was a limitation although it has been predicted to significantly reduce fatality rates on similar projects and we recommend the implementation of this measure.* • *All turbine blades must be painted according to a protocol currently under development by the South African Wind Energy Association (SAWEA) from the outset. Provision must be made by the developer for the resolution of any technical, warranty, supplier challenges that this may present.* • *Any residual impacts after all possible mitigation measures have been implemented will need to be mitigated off site. The facility will need to address other sources of mortality of priority species in a measurable way so as to compensate for residual effects on the facility itself. This will need to be detailed in a Biodiversity Action Plan.* • *Should more than one power line be constructed in parallel with another either new or pre-existing power line, the pylon structures should be staggered as per Pallett et al. (2022) to increase visibility to large, slow-moving species, especially bustards and cranes.*	**NO IMPACT**	
MORTALITY FROM POWERLINE COLLISIONS	Collision with power line infrastructure has been discussed in depth in the literature section of this report. Unmitigated, it represents a moderately high risk to avifauna at this development, particularly to bustards, storks, cranes and flamingos (collision). Large-bodied birds often lack the manoeuvrability to avoid poorly-marked power lines in flight when commuting in the landscape. This impact is relatively easily mitigated, however, our understanding from recent literature is that mitigation such as power line pylon staggering is not 100% effective and partial losses may still occur *Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF clusters construction timelines overlap. However, it*	**DIRECT**	**STUDY AREA**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**	• *The constraint areas identified by this study (which build on those identified in the screening phase) should be adhered to.* • *Any residual impacts after all possible mitigation measures have been implemented will need to be mitigated off site. The facility will need to address other sources of mortality of priority species in a measurable way so as to compensate for residual effects on the facility itself. This will need to be detailed in a Biodiversity Action Plan.* • *The pole design of any overhead power line should be approved by an ornithologist in terms of the electrocution risk it may pose to large birds such as eagles.* • *Should more than one power line be*	*ACHIEVABLE*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**		*ACHIEVABLE* **NO IMPACT**	**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**
	is important to note that the 5 WEFs and their associated 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 disturbance of avifaunal habitats.*							*constructed in parallel with another either new or pre-existing power line, the pylon structures should be staggered as per Pallett et al. (2022) to increase visibility to large, slow-moving species, especially bustards and cranes.*		
MORTALITY FROM POWERLINE ELECTROCUTIONS	Electrocution refers to the scenario where a bird is perched or attempts to perch on the electrical structure and causes an electrical short circuit by physically bridging the air gap between live components and/or live and earthed components. This is particularly true for raptors with larger wingspans such as Verreaux's and Martial Eagles. In a treeless landscape such as the proposed site the risk is exaggerated as the birds will certainly perch on pylons if available and may also nest on them. Once correctly installed, such infrastructure should not pose any danger to perching birds and no fatalities will occur *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 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 disturbance of avifaunal habitats.*	**DIRECT**	**STUDY AREA**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**	• *The constraint areas identified by this study (which build on those identified in the screening phase) should be adhered to.* • *Any residual impacts after all possible mitigation measures have been implemented will need to be mitigated off site. The facility will need to address other sources of mortality of priority species in a measurable way so as to compensate for residual effects on the facility itself. This will need to be detailed in a Biodiversity Action Plan.* • *The pole design of any overhead power line should be approved by an ornithologist in terms of the electrocution risk it may pose to large birds such as eagles.* • *Should more than one power line be constructed in parallel with another either new or pre-existing power line, the pylon structures should be staggered as per Pallett et al. (2022) to increase visibility to large, slow-moving species, especially bustards and cranes.*	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**LONG-TERM**	**PROBABLE**	**MODERATELY SEVERE**	**MODERATE -**		*ACHIEVABLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
BAT IMPACT ASSESSMENT										
BAT FATALITY	Bat mortality (direct impact) through collisions with wind turbine blades is the principal impact of wind energy facilities on bats (Cryan and Barclay 2009, Arnett et al. 2016). *Cumulative impact, on a localised scale, would be moderate 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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to bats.*	**DIRECT**	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**SEVERE**	**HIGH -**	***Avoid:*** • *No placement of turbines within no-go areas.* ***Minimise:*** • *Maintain a minimum blade sweep of 30 m to avoid impacts to lower flying bats such as clutter-edge species (e.g., Cape serotine, Natal long-fingered bat)* • *Minimise the rotor diameter* • *Turbine blades must be feathered, or a similar technique should be used, to prevent free-wheeling below the turbine cut-in speed.* • *Implement post-construction fatality monitoring and apply additional curtailment or deterrents if fatality thresholds are exceeded.*	*REVERSIBLE*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**SEVERE**	**HIGH -**		*REVERSIBLE*	**MODERATE -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
LIGHT POLLUTION	Construction of infrastructure will increase ecological light pollution from artificial lighting associated with the substation and other operational and maintenance buildings associated with the project. Light pollution can alter ecological dynamics (Horváth et al. 2009). Lighting attracts and can cause direct mortality of insects, reducing	**DIRECT AND INDIRECT**	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**SLIGHT**	**LOW -**	**Avoid:** No placement of substations and operational and maintenance buildings within no-go areas. **Minimise:** • Use as little lighting as possible, maximise use of motion-sensor lighting, avoid sky-glow by using hoods, increase spacing between lighting	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**SEVERE**	**HIGH -**		*REVERSIBLE*	**MODERATE -**
		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
	the prey base for bats, especially bat species that are light-phobic. These species may also be displaced from previous foraging areas due to lighting. Other bat species forage around lights, attracted by higher numbers of insects. This may bring these species into the vicinity of the project and indirectly increase the risk of collision with wind turbines. *Cumulative impact, on a localised scale, would be moderate 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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to bats.*							units, and using low intensity lighting (Rydell 1992, Stone 2012).		
HERITAGE IMPACT ASSESSMENT										
LOSS OF HERITAGE RESOURCES: STONE AGE OCCURANCES	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). *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* *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to destruction of archaeological resources.*	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**	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. Furthermore, the majority of sites of archaeological and heritage significance would have been recorded and/or assessed in preceding phases. *Cumulative impact:* • *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.* • *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.*	*EASILY REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT AND LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW – AND LOW (+)**
		NO-GO							**NO IMPACT**	
LOSS OF HERITAGE RESOURCES: ROCKSHELTER (SRc02) AND CORBEL BUILDING (SRC01)	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).	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**PROBABLE**	**MODERATE**	**LOW -**	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. Furthermore, the majority of sites of archaeological	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT AND LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW – AND 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
	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 EMPrs will be prepared to the same standard. *No-go alternative would result in no impact related to destruction of archaeological resources.*	**NO-GO**						and heritage significance would have been recorded and/or assessed in preceding phases. During the Operations Phase, the continuation of management measures for the rock shelter (SRC02) and a corbel building (SRC01) -should the sites be retained -should be tracked and continuous ECO site monitoring will be required.	**NO IMPACT**	
NOISE IMPACT ASSESSMENT										
DAYTIME OPERATION OF WTG CONSIDERING THE WORST-CASE SPL	WTG will only operate during period with increased winds, when ambient sound levels are higher than periods with no or low winds. As discussed and motivated in Section 6.4 of the Noise Impact Assessment (as proposed in Table 6-2 and illustrated in Figure 4-28), ambient sound levels will likely be higher, with this assessment assuming an ambient sound level of 41.5 dBA. Numerous WTG of the Taaibos South WEF operating simultaneously during the day will increase ambient sound levels due to air-borne noise from the WTG. The projected noise levels and the change in ambient sound levels is defined for the identified NSR in Appendix F, Table 4 of the Noise Impact Assessment. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to daytime operational noise.*	**DIRECT**	**LOCALISED**	**LONG TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**	• *The significance of the noise impact is low and no additional mitigation is recommended.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**LONGTERM**	**UNLIKELY**	**SLIGHT**	**LOW -**		*REVERSIBLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
NIGHT-TIME OPERATION OF WTG CONSIDERING THE WORST-CASE SPL	WTG will only operate during period with increased winds, when ambient sound levels are higher than periods with no or low winds. As discussed and motivated in Section 6.4 of the Noise Impact Assessment (as proposed in Table 6-2 and illustrated in Figure 4-29), ambient sound levels will likely be higher with this assessment assuming an ambient sound level of 41.5 dBA. Numerous WTG of the Taaibos South WEF operating simultaneously at night will increase ambient sound levels due to air-borne noise from the WTG. The projected noise levels, the change in ambient sound levels as well as the potential noise impact is defined per NSR in Appendix F, Table 5 (using the criteria of the author/EARES) of the Noise	**DIRECT**	**LOCALISED**	**LONG TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**	• *The significance of the noise impact is low and no additional mitigation is recommended, though future noise-monitoring is recommended.*	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**LOCALISED**	**LONGTERM**	**UNLIKELY**	**SLIGHT**	**LOW -**		*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**
	Impact Assessment. It is expected that the sounds from the operating WTG may be audible at night. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact related to night-time operational noise.*									
PALAEONTOLOGICAL IMPACT ASSESSMENT										
None identified by specialist										
RIVERINE RABBIT IMPACT ASSESSMENT										
DISTURBANCE THROUGH NOISE POLLUTION	Disturbance will be primarily in the form of visual and noise effects as well as general human activities. Visual stimuli from movements of the turbine blades may cause a disturbance, this may be far reaching due to the site being open and unobscured. This impact will reduce once the WEF is operational however there will be continued noise pollution from turbines sound from both the hub as well as from the swish of the blades. Riverine Rabbits rely on hearing for predator detection and avoidance and so may be more susceptible to noise due to impaired hearing and masking effect. We do not know the effect of turbine noise on Riverine Rabbits, they may choose to avoid an area and relocate, it may also alter their activity pattern or cause behavioural abnormalities due to adverse effects on their nervous system where displacement is not observed. Wind turbine noise varies with design and size and noise reduction is continuously improving with new turbine design, however it is very likely that the Riverine rabbit hearing frequency range overlaps with the frequency range of wind turbine noise. Habitat specialist species, such as riverine rabbits, may be limited in their ability to relocate should they be disturbed. Consequently, the difficulty in providing definitive levels of the point at which noise will have an impact necessitates a conservative approach to buffering preferred riverine rabbit habitat. The potential riverine rabbit habitat on the plateau has been buffered by a minimum of 350m and higher potential habitat, including where the presence of rabbits has been confirmed, has been buffered by 700m, which would reduce the potential significance of this impact. Given the distance between the turbines and High sensitivity zones, it is assumed, with a low level of certainty, that this	**DIRECT**	**STUDY AREA**	**SHORT TERM**	**POSSIBLE**	**SEVERE**	**HIGH -**	• Precautionary buffers of 700m for identified very high sensitivity areas, whilst taking into consideration topographical variations at the site; i.e. turbines that are obstructed by a hill may be placed closer to riverine habitats as visual and noise impact would be buffered by the topography of the land. • Precautionary buffers of 350m for secondary drainage lines that consist mostly of poor degraded riverine habitat and identified as either Medium or Low sensitivity. • Implementing adequate noise reduction measures, including the use of insulation to reduce noise output from turbine hubs. • Temporal (curtailment) restrictions. Temporal restriction strategies can focus on altering turbine operation during times or weather conditions when wildlife is most active or where a negative impact has been found during the monitoring program. • Changing the minimum windspeed at which turbines begin to turn and generate energy (cut-in speed), so that they idle during gentle wind, reduces noise during periods of low ambient noise. • Targeted operational timing by working with wind facility managers to target specific turbines under certain weather conditions where a negative impact has been identified. • Measure sound pressure levels at the WEF site, taking measurements at ~0.25m from the ground with two sets of measurements taken; one when turbines are active and one when inactive and at different distances from turbines including within Riverine rabbit habitat.	*REVERSIBLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**SHORT TERM**	**POSSIBLE**	**SEVERE**	**HIGH -**		*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**
	impact would be of generally low magnitude. *Cumulative impact, on a localised scale, would be HIGH 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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on the local Riverine Rabbit population.*							• Minimize noise disturbance during construction. Restrict noise to daytime (9am – 5pm) periods when rabbits are less active.		
DEGRADATION OF HABITAT BY EROSION	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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on the local Riverine Rabbit population.*	**DIRECT AND INDIRECT**	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**SEVERE**	**MODERATE -**	• *Implement a Site Erosion Management and Control Plan to prevent erosion from high-lying areas impacting downstream ecosystems*	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**SEVERE**	**MODERATE -**		*ACHIEVABLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
MORTALITY BY COLLISION	There is an increased collision risk from expected increased traffic levels at the site. This impact is likely to be of highest concern during construction but is expected to continue during operational phase. Roads and roadsides may attract riverine rabbits due to edge enhancement of vegetation on verges and the potential facilitation of movement, thus further increasing collision risks. Access roads that traverse riverine habitats require careful planning and monitoring to reduce risk of rabbit mortality. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on the local Riverine Rabbit population.*	**DIRECT AND INDIRECT**	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**SEVERE**	**HIGH -**	• *Careful planning of roads to minimise the length that traverses riverine 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 in conjunction 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*	*ACHIEVABLE*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**MEDIUM TERM**	**POSSIBLE**	**SEVERE**	**HIGH -**		*ACHIEVABLE*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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								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 40km/h where roads (both internal and external) cross High and Very high sensitivity areas identified.* • *Wildlife warning signage and speed reduction measures where roads cross High and Very high sensitivity areas.* • *Education and awareness campaigns on riverine rabbits 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.* • *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 construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.* • *Inductions on safe wildlife passing and driving to reduce possible injury and roadkill alongside roads.* • *There is higher risk of collision when riverine rabbits are active which is typically from late afternoon to early morning. Traffic should be reduced during the early hours of the morning (04:00 – 09:00) and early evening (18:00 – 22:00). During these times a low speed limit (40km/h) needs to be implemented.* • *Night-time driving should be avoided as much as possible but if necessary, speed needs to be reduced significantly (<40km/h) 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.*		
SOCIO-ECONOMIC IMPACT ASSESSMENT										
NEW EMPLOYMENT AND ECONOMIC IMPACTS	Direct and indirect employment opportunities will manifest during the operational lifespan of the Project and result in an increase in household	**DIRECT**	**REGIONAL**	**LONG TERM**	**DEFINITE**	**MODERATELY BENEFICIAL**	**MODERATE +**	• *Maximise local employment and procurement (from the local and district municipalities) wherever possible.*	*DIFFICULT*	**MODERATE +**
		CUMULATIVE	**REGIONAL**	**LONG TERM**	**DEFINITE**	**MODERATELY**	**MODERATE +**		*DIFFICULT*	**MODERATE +**

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	earnings and improved livelihoods for the affected households through salaries and wages. • *WEF Projects of this nature employ between ten to fifteen permanent workers, of which about 50% would be skilled (Operations Manager, technicians, electricians, engineers, mechanics, Health & Safety Officer, etc.) and 50% semi-skilled (security, site maintenance, etc.).* • *Temporary workers would be sourced through service providers to perform contract maintenance work such as civil works, site maintenance, site clearing to minimise the potential of veld fires, painting of buildings, plumbing and so forth.* • *Job creation as a result of the funding spent on SED projects, such as construction / infrastructure projects, literacy / education programmes, sport development, etc.* • *Indirect and induced employment created through procurement of components, equipment, goods and services to maintain the infrastructure and access roads.* 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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly*					**BENEFICIAL**		• *Coordinate the effort to obtain temporary employment, service providers, SMME's etc. required for maintenance work, with the municipal LED Units.*		
		NO-GO	**NO IMPACT**						**NO IMPACT**	
INCREASE IN LIVELIHOODS FOR DIRECTLY BENEFITTING LANDOWNERS	During the operational period the IPP will sign a long-term lease agreement with the affected landowners where turbines (up to 32) and associate infrastructure are located, thereby compensating them through an annual fee. Details of the option-to-lease agreements are confidential. However, the compensation will increase the landowners'	**DIRECT**	**LOCALISED**	**LONG TERM**	**DEFINITE**	**MODERATELY BENEFICIAL**	**MODERATE +**	• Consider the potential increase in rates and taxes when lease agreements are negotiated with landowners.	*VERY DIFFICULT*	**MODERATE +**
		CUMULATIVE	**LOCALISED**	**LONG TERM**	**DEFINITE**	**MODERATELY BENEFICIAL**	**MODERATE +**		*VERY DIFFICULT*	**MODERATE +**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS

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	incomes and revenue and can be used to further invest in their properties, increase productivity and employment, or improve financial security. It is however also worth noting that the rezoning of agricultural land for renewable energy infrastructure purposes usually results in higher payable property taxes, which, if not considered during the negotiation process, could result in a negative trade-off for landowners. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on XX.*									
SOCIO-ECONOMIC CONTRIBUTION / COMMUNITY DEVELOPMENT	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. 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 for: 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; • 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.	**DIRECT**	**REGIONAL**	**LONG TERM**	**DEFINITE**	**SLIGHTLY BENEFICIAL**	**LOW +**	• 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 and meetings and existing community channels used by the various wards. • 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.	*ACHIEVABLE*	**MODERATE +**
		CUMULATIVE	**REGIONAL**	**LONG TERM**	**DEFINITE**	**SLIGHTLY BENEFICIAL**	**LOW +**		*ACHIEVABLE*	**MODERATE +**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	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 are proposed by the same developer and the EMPrs will be prepared to the same standard. *No-go alternative would not impact the SEIA ratings significantly.*									
TRAINING / SKILLS DEVELOPMENT / CAPACITY BUILDING	Training and skills development initiatives during operations are likely to occur in the following ways: Formal and on-the-job training for permanent and temporary employees to allow them to perform their tasks safely and adequately; • 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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**DIRECT**	**REGIONAL**	**LONG TERM**	**MAY OCCUR**	**SLIGHTLY BENEFICIAL**	**LOW +**	• 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.	*ACHIEVABLE*	**MODERATE +**
		CUMULATIVE	**REGIONAL**	**LONG TERM**	**MAY OCCUR**	**SLIGHTLY BENEFICIAL**	**LOW +**		*ACHIEVABLE*	**MODERATE +**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
LAND USE IMPACTS	The total footprint of the turbines and ancillary infrastructure is 76.68 ha post-construction. With a grazing capacity of 26 to 28 hectares per LSU, the loss in land amounts to a loss of only about 2.7 LSU. No high potential agricultural or cultivated land will be lost. *Cumulative impact, on a localised scale, would be*	**DIRECT**	**LOCALISED**	**LONG TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**	• *None suggested*	*VERY DIFFICULT*	**LOW -**
		CUMULATIVE	**LOCALISED**	**LONG TERM**	**UNLIKELY**	**SLIGHT**	**LOW -**		*VERY DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	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 EMPrs will be prepared to the same standard. *No-go alternative would not impact the SEIA ratings significantly.*									
IMPACTS ON LAND VALUES	Incomes earned through long-term lease agreements will have an economic benefit and could increase farmland values and returns for the duration of operations. However, impacts on farmland values remain an inconclusive topic, since emotional factors and negative perceptions associated with the wind farm facility (such as aesthetics, visual impacts, noise, sense of place and so forth) could affect individual prospective buyers' interests and possibly prolong sales periods, which could be to the detriment of land values. In addition to negative perceptions, other variables such as the impact on land uses, location, proximity of wind turbines and lease agreement terms can have a significant impact on the marketability of rural land holdings (Peardon, 2013). It is thus the opinion of the SEIA Specialist that negative impacts on land values during the operational phase of the Taaibos South WEF are unlikely, but that individual negative perceptions towards the infrastructure could affect property sales negatively in terms of possible prolonged sale periods and fewer buyers' interests. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**DIRECT**	**STUDY AREA**	**LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**	• *None suggested*	*VERY DIFFICULT*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**		*VERY DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
IMPACTS ON TOURISM	Should impacts on tourism as a result of this project manifest, it will likely be due to visual impacts and impacts on sense of place. At this stage tourism in the PKSDM district contributes 15.6% to the provincial GVA, of which the Ubuntu LM is only a small contributor. Only one accommodation / tourism establishments has been identified in the study area, i.e. Meltonwold, a historical Karoo Guest Farm located	**DIRECT**	**STUDY AREA**	**LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**	• Should the affected tourism establishment raise complaints and/or concerns, consult with them and consider to remove the turbine/s that they perceive could be problematic.	*VERY DIFFICULT*	**LOW -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**MAY OCCUR**	**SLIGHT**	**LOW -**		*VERY DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**							

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	about 8 km north of the nearest wind turbine. The VIA (Nuleaf, October 2022) determined that the potential visual impact on sensitive receptors within the local area (5 – 10 km offset) is likely to be of high significance. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*									
IMPACTS ON SENSE OF PLACE	The Project is located in an area with low crime levels and has an overall feeling of solitude and stillness. The social impact associated with the long-term impact on the sense of place for this WEF 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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**DIRECT**	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**MODERATE SEVERE**	**MODERATE -**	• Implement an effective Land Use Management programme in collaboration with the landowners. • Implement all mitigation and management measures as proposed • Rehabilitate the veld to its original state post the operational phase.	*VERY DIFFICULT*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**MODERATE SEVERE**	**MODERATE -**		*VERY DIFFICULT*	**MODERATE -**
		NO-GO	**NO IMPACT**							
INTRUSION IMPACTS	The NIA (de Jager, October 2022) rated both daytime and night-time operational activities (noises form wind turbines) when considering the worst-case scenario with a low negative significance. The VIA (Nuleaf Planning & Environmental, October 2022) rated the visual impact on visual receptors in close proximity (within 5km) with a very high negative significance and those located between 5 and 20 km ranging from between high and moderate negative significance. The visual impact of shadow flicker is rated with a moderate significance. Traffic on local access roads will not increase significantly as maintenance and repairs to infrastructure will be done intermittently. *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*	**DIRECT**	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**MODERATE SEVERE**	**MODERATE -**	• Implement an effective Land Use Management programme (procedures when gates are opened and closed, road maintenance, methods to address potential veld fires, no-go areas, etc.) in collaboration with the landowners. • Implement all mitigation and management measures as proposed in the VIA and NIA Specialist reports.	*VERY DIFFICULT*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**MODERATE SEVERE**	**MODERATE -**		*VERY DIFFICULT*	**MODERATE -**
		NO-GO	**NO IMPACT**							

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	associated infrastructure are proposed by the same developer and the EMPrs will be prepared to the same standard. *No-go alternative would not impact the SEIA ratings significantly.*									
CONTRIBUTION TO NATIONAL POWER SUPPLY	The proposed Taaibos 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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would not impact the SEIA ratings significantly.*	**DIRECT** **CUMULATIVE** **NO-GO**	**NATIONAL** **NATIONAL**	**LONG TERM** **LONG TERM**	**DEFINITE** **DEFINITE**	**SLIGHTLY BENEFICIAL** **SLIGHTLY BENEFICIAL**	**MODERATE +** **MODERATE +**	• None suggested.	*VERY DIFFICULT* *VERY DIFFICULT*	**MODERATE +** **MODERATE +**
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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on vegetation.*	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED**	**PERMANENT** **PERMANENT**	**DEFINITE** **DEFINITE**	**SLIGHT** **SLIGHT**	**LOW -** **LOW -**	• *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* *DIFFICULT*	**LOW -** **LOW -**
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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on floral species.*	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED**	**PERMANENT** **PERMANENT**	**DEFINITE** **DEFINITE**	**SLIGHT** **SLIGHT**	**LOW -** **LOW -**	• *A flora search and rescue is recommended before commencement.* • *Respective permits to be obtained beforehand.*	*EASY* *EASY*	**LOW -** **LOW -**
POTENTIAL TERRESTRIAL BIODIVERSITY IMPACTS	Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species and removal of exotic and alien invasive species during	**DIRECT** **CUMULATIVE**	**LOCALISED** **LOCALISED**	**SHORT TERM** **SHORT**	**DEFINITE** **DEFINITE**	**SLIGHT** **SLIGHT**	**LOW -** **LOW -**	• *Alien trees and weeds must be removed from the site as per CARA/ NEMBA requirements.* • *A suitable weed and alien invasive plant*	*EASY* *EASY*	**LOW -** **LOW -**

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ALIEN INVASIVE SPECIES	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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on alien invasive species.*			**TERM**				*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-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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on erosion.*	**DIRECT**	**LOCALISED**	**SHORT TERM**	**POSSIBLE**	**SLIGHT**	**LOW -**	• *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**	**POSSIBLE**	**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). *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on ecological processes.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**SLIGHT**	**LOW -**	• *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*	**LOW -**
		CUMULATIVE	**LOCALISED**	**PERMANENT**	**DEFINITE**	**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. *Cumulative impact, on a localised scale, would be moderate should the Taaibos and Soutrivier WEF*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• *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**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**		*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
	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 EMPrs will be prepared to the same standard. *No-go alternative would result in no impact on aquatic and riparian processes.*									
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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on faunal habitat.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**SLIGHT**	**LOW -**	• *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. *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on faunal procesess.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**LOW -**	• *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 retile 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**	

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
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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on faunal species.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• *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 species.*	*DIFFICULT*	**LOW -**
		CUMULATIVE	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**		*DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: **HABITAT LOSS, DEGRADATION AND FRAGMENTATION**	The development may fragment an already highly fragmented landscape which may create barriers to geneflow 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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on habitat loss, degradation and fragmentation with regards to faunal species.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• *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: **DISTURBANCE**	Disturbance will be primarily in the form of visual and noise effects as well as general human activities. Visual stimuli from movements of the turbine blades may cause a disturbance which may be far reaching due to the site being open and unobscured. Noise effect from construction and associated human activities during this phase is highly probable. This impact will reduce once the WEF is operational however there will be continued noise pollution from turbines from both the hub and the swish of the blades. *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 are proposed by the same developer and the EMPrs will be prepared to the*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• Implementing adequate noise reduction measures, including the use of insulation to reduce noise output from turbine hubs. • Temporal (curtailment) restrictions. Temporal restriction strategies can focus on altering turbine operation during times or weather conditions when wildlife is most active or where a negative impact has been found during the monitoring program. • Targeted operational timing by working with wind facility managers to target specific turbines under certain weather conditions where a negative impact has been identified. This may require changing the minimum windspeed at which turbines begin to turn and generate energy (cut-in speed) so that they idle during gentle wind and in so doing reduce noise during periods of low ambient noise.	*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

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	same standard. *No-go alternative would result in no impact on disturbance of faunal species of conservation concern.*							• Minimise development lighting in order to minimise light pollution, disturbance to animals at night; • Minimize noise disturbance during constructions where construction takes place within 1000 m of Very high and high sensitivity habitats. Restricting noise to daytime (9 am – 4 pm) periods when most fauna are less active.		
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: **MORTALITY FROM ROAD COLLISION**	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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on faunal species in relation to road collision mortality.*	**DIRECT**	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**	• 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 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.	*DIFFICULT*	**LOW -**
		CUMULATIVE	**LOCALISED**	**PERMANENT**	**DEFINITE**	**MODERATE**	**MODERATE -**		*DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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								• 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 CONSERVATION CONCERN: **CUMULATIVE IMPACT**	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 disproportionally. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.*	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED** **NO IMPACT**	**PERMANENT** **PERMANENT**	**DEFINITE** **DEFINITE**	**MODERATE** **MODERATE**	**MODERATE -** **MODERATE -**	• *It is important to evaluate the consequences of each development before the next is begun.* • *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*	*DIFFICULT* *DIFFICULT* **NO IMPACT**	**LOW -** **LOW -**

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	No-go alternative would result in no impact from a cumulative faunal species of conservation concern loss perspective.							*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.*		
POTENTIAL RISKS TO FAUNA SPECIES OF CONSERVATION CONCERN: **CASCADING IMPACT ACROSS TROPHIC LEVELS**	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. *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 are proposed by the same developer and the EMPrs will be prepared to the same standard.* *No-go alternative would result in no cascading impact across the trophic levels due to the proposed WEF.*	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED** **NO IMPACT**	**PERMANENT** **PERMANENT**	**DEFINITE** **DEFINITE**	**MODERATE** **MODERATE**	**MODERATE -** **MODERATE -**	▲ *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* *DIFFICULT* **NO IMPACT**	**LOW -** **LOW -**
VISUAL IMPACT ASSESSMENT										
POTENTIAL VISUAL IMPACT OF FACILITY OPERATIONS ON SENSITIVE VISUAL RECEPTORS IN CLOSE PROXIMITY (< 5KM) TO THE PROPOSED DEVELOPMENT	The visual impacts of facility operations on sensitive visual receptors (i.e., residents of homesteads, as well as, observers travelling along the secondary road) in close proximity to the proposed Taaibos South WEF (within 5km) is expected to be of very high significance. Sensitive visual receptors within this zone include: ▪ Users of the various secondary roads ▪ Residents of the following homesteads: o Taaibosfontein o Erasmuskraal o Ramfontein The following homesteads are located on farm portions earmarked for the Victoria West WEF, thereby reducing the probability of this impact occurring on these specific receptors (i.e. it is assumed that these landowners are supportive of	**DIRECT** **CUMULATIVE** **NO-GO**	**LOCALISED** **LOCALISED** **NO IMPACT**	**LONG TERM** **LONG TERM**	**DEFINITE** **DEFINITE**	**SEVERE** **SEVERE**	**VERY HIGH -** **VERY HIGH -**	▲ *Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint.* ▲ *Maintain the general appearance of the facility as a whole.* ▲ *Monitor rehabilitated areas, and implement remedial action as and when required.*	*VERY DIFFICULT* *VERY DIFFICULT* **NO IMPACT**	**VERY HIGH -** **VERY HIGH -**

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	WEF developments and their associated visual impacts): ▪ Altona ▪ Spes Bona ▪ Lakenvlei ▪ Stampfontein ▪ Quaggasfontein *Cumulative impact, on a localised scale, would be very high 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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on sensitive visual receptors.*									
POTENTIAL VISUAL IMPACT OF FACILITY OPERATIONS ON SENSITIVE VISUAL RECEPTORS WITHIN THE LOCAL AREA (BETWEEN 5 - 10KM) SURROUNDING THE PROPOSED DEVELOPMENT	The visual impact of facility operations on sensitive visual receptors (i.e. users of the various secondary roads and residents of homesteads) within the local area (between 5 - 10km offset) is expected to be of high significance. Sensitive visual receptors within this zone include: ▪ Users traveling along the various secondary roads, potential visibility is however scattered along the length of these roads and visual intrusion where possible will be brief. ▪ Residents of the following homesteads: o Arizona o Schimmelfontein o Taaibosfontein o Suikerkolk o Duikerfontein o Ramfontein The following homesteads are located on farm portions earmarked for the Victoria West WEF, thereby reducing the probability of this impact occurring on these specific receptors (i.e. it is assumed that these landowners are supportive of WEF developments and their associated visual impacts): ▪ Boshoek ▪ Oppermanskraal ▪ Slypfontein ▪ Stampfontein *Cumulative impact, on a localised scale, would be high should the Taaibos and Soutrivier WEF clusters operational timelines overlap, which is likely. However, it is important to note that the 5 WEFs and*	**DIRECT**	**STUDY AREA**	**LONG TERM**	**DEFINITE**	**SEVERE**	**HIGH -**	▲ *Retain / re-establish and maintain large trees, natural features and noteworthy natural vegetation in all areas outside of the activity footprint.* ▲ *Retain natural pockets (wetland, river and other sensitive vegetation zones) as buffers within the property and along the perimeter.* ▲ *Dust suppression techniques should be in place at all times during the site development and operational phases.* ▲ *Access roads will require an effective dust suppression management programme, such as regular wetting and/or the use of non-polluting chemicals that will retain moisture in the road surface.* ▲ *Downscaling of operations.* ▲ *Keeping infrastructure at minimum heights.* ▲ *Introducing landscaping measures such as vegetating berms.* ▲ *Avoid the use of highly reflective material.* ▲ *Metal surfaces, where they occur, should be painted in natural soft colours that would blend in with the environment.* ▲ *Maintain the general appearance of the site as a whole.* ▲ *Lighting should be kept to a minimum wherever possible.* ▲ *Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the activity – this is especially relevant where the edge of the activity is exposed to residential properties.* ▲ *Wherever possible, lights should be directed downwards to avoid illuminating the sky.* ▲ *Avoid high pole top security lighting along the*	*VERY DIFFICULT*	**HIGH -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**DEFINITE**	**SEVERE**	**HIGH -**		*VERY DIFFICULT*	**HIGH -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	their associated 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 on sensitive visual receptors.*							*periphery of the site and use only lights that are activated on movement.*		
POTENTIAL VISUAL IMPACT OF FACILITY OPERATIONS ON SENSITIVE VISUAL RECEPTORS WITHIN THE DISTRICT (BETWEEN 10 - 20KM) SURROUNDING THE PROPOSED DEVELOPMENT	The visual impact of facility operations on sensitive visual receptors (i.e. users of the various secondary road, arterial R63 and the national N12 road, visitors to region, and residents of homesteads) within the district (between 10 - 20km offset) is expected to be of moderate significance. Sensitive visual receptors within this zone include: ▪ Users traveling along portions of the N12, R63 and various secondary roads, potential visibility is however scattered along the length of these roads and visual intrusion where possible will be brief. ▪ Residents of the following homesteads: o Rietfontein o Klipgat o Witbank o Ystervarkpoort o Moreson o Bitterwater o Meltonwold o Rooivlakte o Biesiespoort o Burgershoek o Suikerkolk o Jakkalsdans o Nuwelande o Duikerfontein o Droëfontein o Midlands o Slangfontein o Uilspoort o Grootfontein o Taaiboschfontein o Rocklands o Vlakfontein o Leeufontein o Gansfontein o Bultfontein The following homesteads are located on farm portions earmarked for the Victoria West WEF, thereby reducing the probability of this impact occurring on these specific receptors (i.e. it is assumed that these landowners are supportive of WEF developments and their associated visual impacts): ▪ Oppermanskraal	**DIRECT**	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**MODERATE**	**MODERATE -**	▲ *Retain / re-establish and maintain large trees, natural features and noteworthy natural vegetation in all areas outside of the activity footprint.* ▲ *Retain natural pockets (wetland, river and other sensitive vegetation zones) as buffers within the property and along the perimeter.* ▲ *Dust suppression techniques should be in place at all times during the site development and operational phases.* ▲ *Access roads will require an effective dust suppression management programme, such as regular wetting and/or the use of non-polluting chemicals that will retain moisture in the road surface.* ▲ *Downscaling of operations.* ▲ *Keeping infrastructure at minimum heights.* ▲ *Introducing landscaping measures such as vegetating berms.* ▲ *Avoid the use of highly reflective material.* ▲ *Metal surfaces, where they occur, should be painted in natural soft colours that would blend in with the environment.* ▲ *Maintain the general appearance of the site as a whole.* ▲ *Lighting should be kept to a minimum wherever possible.* ▲ *Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the activity – this is especially relevant where the edge of the activity is exposed to residential properties.* ▲ *Wherever possible, lights should be directed downwards to avoid illuminating the sky.* ▲ *Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on movement.*	*VERY DIFFICULT*	**MODERATE -**
		CUMULATIVE	**STUDY AREA**	**LONG TERM**	**PROBABLE**	**MODERATE**	**MODERATE -**		*VERY DIFFICULT*	**MODERATE -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	

SYNTHESIS OF SPECIALIST IMPACTS AS EXTRACTED FROM THE SPECIALIST REPORTS										
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	▪ Stampfontein ▪ Oorlogsfontein ▪ Slypfontein *Cumulative impact, on a localised scale, would be moderate 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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on sensitive visual receptors.*									
POTENTIAL VISUAL IMPACT OF FACILITY OPERATIONS ON SENSITIVE VISUAL RECEPTORS WITHIN THE REGION (> 20KM)	The visual impact of facility operations on sensitive visual receptors (i.e., users of the various secondary roads, visitors to the region, and residents of homesteads) within the region (beyond the 20km offset) is expected to be of low significance. Sensitive visual receptors within this zone include: ▪ Users traveling along portions of the N12, R63, R381 and various secondary roads, potential visibility is however scattered along the length of these roads and visual intrusion where possible will be brief. ▪ Residents of various homesteads (refer to Section 6.6 of the VIA for a full list). The following homesteads are located on farm portions earmarked for the Victoria West WEF, thereby reducing the probability of this impact occurring on these specific receptors (i.e. it is assumed that these landowners are supportive of WEF developments and their associated visual impacts): ▪ Liebenbergsdam ▪ Boschrug ▪ Blindefontein ▪ Drupfontein ▪ Middlewater *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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on sensitive visual receptors.*	**DIRECT**	**REGIONAL**	**LONG TERM**	**UNLIKELY**	**MODERATE**	**LOW -**	▲ *Retain / re-establish and maintain large trees, natural features and noteworthy natural vegetation in all areas outside of the activity footprint.* ▲ *Retain natural pockets (wetland, river and other sensitive vegetation zones) as buffers within the property and along the perimeter.* ▲ *Dust suppression techniques should be in place at all times during the site development and operational phases.* ▲ *Access roads will require an effective dust suppression management programme, such as regular wetting and/or the use of non-polluting chemicals that will retain moisture in the road surface.* ▲ *Downscaling of operations.* ▲ *Keeping infrastructure at minimum heights.* ▲ *Introducing landscaping measures such as vegetating berms.* ▲ *Avoid the use of highly reflective material.* ▲ *Metal surfaces, where they occur, should be painted in natural soft colours that would blend in with the environment.* ▲ *Maintain the general appearance of the site as a whole.* ▲ *Lighting should be kept to a minimum wherever possible.* ▲ *Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the activity – this is especially relevant where the edge of the activity is exposed to residential properties.* ▲ *Wherever possible, lights should be directed downwards to avoid illuminating the sky.* ▲ *Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on movement.*	*VERY DIFFICULT*	**LOW -**
		CUMULATIVE	**REGIONAL**	**LONG TERM**	**UNLIKELY**	**MODERATE**	**LOW -**		*VERY DIFFICULT*	**LOW -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
POTENTIAL VISUAL IMPACT OF	The receiving environment has a relatively small number of populated places, and it can be expected	**DIRECT**	**LOCALISED**	**LONG TERM**	**PROBABLE**	**SEVERE**	**HIGH -**	▲ *Aviation standards and CAA Regulations for turbine lighting must be followed.*	*MODERATE*	**MODERATE -**
		CUMULATIVE	**LOCALISED**	**LONG TERM**	**PROBABLE**	**SEVERE**	**HIGH -**		*MODERATE*	**MODERATE -**

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OPERATIONAL LIGHTING AT NIGHT ON SENSITIVE VISUAL RECEPTORS IN THE REGION	that any light trespass and glare from the security and after-hours operational lighting for the facility will have some significance. In addition, the remote sense of place and rural ambiance of the local area increases its sensitivity to such lighting intrusions. Another source of glare light is the aircraft warning lights mounted on top of the hub of the wind turbines. While these lights are less aggravating due to the toned-down red colour, they do have the potential to be visible from a greater distance then general operational lighting, especially due to the strobing effect of the lights, a function specially designed to attract the viewers' attention. The Civil Aviation Authority (CAA) prescribes these warning lights and the potential to mitigate their visual impacts is low. The possibility of limiting aircraft warning lights to the turbines on the perimeter according to CAA requirements, thereby reducing the overall impact, is recommended to be investigated. Some ground-breaking new technology in the development of strobing lights that only activate when an aircraft is detected nearby. This may aid in restricting light pollution at night and should be investigated and implemented by the project proponent, if available and permissible by the CAA. This new technology is referred to as needs-based night lights, which basically deactivates the wind turbine's night lights when there is no flying object within the airspace of the WEF. The system relies on the active detection of aircraft by radar sensors, which relays a switch-on signal to the central wind farm control to activate the obstacle lights. Last is the potential lighting impact is known as sky glow. Sky glow is the condition where the night sky is illuminated when light reflects off particles in the atmosphere such as moisture, dust or smog. The sky glow intensifies with the increase in the number of light sources. Each new light source, especially upwardly directed lighting, contributes to the increase in sky glow. The general lighting of the facility may contribute to the effect of sky glow in an otherwise dark environment. The visual impacts as a result of operational lighting at night on sensitive visual receptors in the region is likely to be of high significance and may be mitigated to moderate should the required CAA lighting be approved to be installed on the	**NO-GO**	**NO IMPACT**					• *The possibility of limiting aircraft warning lights to the turbines on the perimeter according to CAA requirements, thereby reducing the overall impact, must be investigated.* • *Install aircraft warning lights that only activate when the presence of an aircraft is detected, if permitted by CAA.* • *Shield the sources of light by physical barriers (walls, vegetation, or the structure itself).* • *Limit mounting heights of lighting fixtures, or alternatively use foot-lights or bollard level lights.* • *Make use of minimum lumen or wattage in fixtures.* • *Make use of down-lighters, or shielded fixtures.* • *Make use of Low-Pressure Sodium lighting or other types of low impact lighting.* • *Make use of motion detectors on security lighting. This will allow the site to remain in relative darkness, until lighting is required for security or maintenance purposes.*	**NO IMPACT**	

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	perimeter and/or the installation of needs-based night lights be allowed. Best practice guidelines for other general site lighting that may occur on the site have also been taken into consideration. *Cumulative impact, on a localised scale, would be high 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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on sensitive visual receptors.*									
POTENTIAL VISUAL IMPACT OF SHADOW FLICKER ON SENSITIVE VISUAL RECEPTORS IN CLOSE PROXIMITY TO THE PROPOSED DEVELOPMENT	Shadow flicker only occurs when the sky is clear, and when the turbine rotor blades are between the sun and the receptor (i.e. when the sun is low). De Gryse in Scenic Landscape Architecture (2006) found that "most shadow impact is associated with 3-4 times the height of the object". Based on this research, a 1.3km buffer along the edge of the outer most turbines is identified as the zone within which there is a risk of shadow flicker occurring. One unamed homestead is located within the 1.3km buffer. Of note is that this homestead is located on a property involved in this development, thereby reducing the probability of this impact occurring. It is expected that the shadow flicker experienced by motorist traveling along roads will be fleeting and not constitute a shadow flicker visual impact of concern. *Cumulative impact, on a localised scale, would be high 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 EMPrs will be prepared to the same standard.* *No-go alternative would result in no impact on sensitive visual receptors.*	**DIRECT**	**LOCALISED**	**LONG TERM**	**POSSIBLE**	**MODERATE**	**MODERATE -**	*None possible.*	*DIFFICULT*	**MODERATE -**
		CUMULATIVE	**LOCALISED**	**LONG TERM**	**POSSIBLE**	**MODERATE**	**MODERATE -**		*DIFFICULT*	**MODERATE -**
		NO-GO	**NO IMPACT**						**NO IMPACT**	
WAKE EFFECT STUDY										
WAKE EFFECTS	The operational Noblesfontein WEF does lie downwind of an important wind sector, but distance and terrain effects are likely to mean no significant impact is experienced at that site. *Cumulative impact, on a localised scale, would be low should the Taaibos and Soutrivier WEF clusters operational timelines overlap, this is likely. However, it is important to note that the 5 WEFs and their associated infrastructure are proposed by the*	**DIRECT**	**NO IMPACT**					*None suggested*		
		CUMULATIVE	**NO IMPACT**							
		NO-GO	**NO IMPACT**						**NO IMPACT**	

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	same developer and the EMPrs will be prepared to the same standard. *No-go alternative would result in no impact related to wake effect as no WEFs would be present on these land parcels.*									
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 DECOMISSIONING 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.										
BAT IMPACT ASSESSMENT										
The bat 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										
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.										
NOISE IMPACT ASSESSMENT										
The noise 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.										
PALAEONTOLOGICAL IMPACT ASSESSMENT										
None identified by specialist										
RIVERINE RABBIT IMPACT ASSESSMENT										
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.										
SOCIO-ECONOMIC IMPACT ASSESSMENT										
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.										
TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT										
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.										
VISUAL IMPACT ASSESSMENT										
The visual 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.										
WAKE EFFECT STUDY										
None identified by specialist										