

**CUMULATIVE IMPACT ASSESSMENT – MITIGATION SUMMARY**

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
<b>Soil and Land Capability</b>	<ul style="list-style-type: none"> <li>Allow periodic grazing of sheep within the PV site in order to minimise the loss of grazing land and allow agricultural production to remain virtually unaffected. However, it has been noted by Mainstream that this would not be possible due to power purchase agreement (PPA) guarantees and security concerns.</li> <li>Solar PVs should be located outside of any of the identified drainage channels, as is currently the case.</li> <li>Construction activities should as far as possible be limited to the identified sites for the proposed solar facility and the identified access routes.</li> <li>Where transmission lines need to be constructed over/through the drainage channels, disturbance of the channels should be limited. These areas should be rehabilitated after construction is complete.</li> <li>Existing road infrastructure should be utilized as far as possible to minimize the overall disturbance created by the proposed projects. Where access routes need to be constructed through ephemeral streams, disturbance of the channel should be limited.</li> <li>All crossings over drainage channels or stream beds should be such that the flow within the drainage channel is not impeded.</li> <li>Road infrastructure and power transmission</li> </ul>	<ul style="list-style-type: none"> <li>Allow periodic grazing of sheep within the PV site in order to minimise the loss of grazing land and allow agricultural production to remain virtually unaffected. However, it has been noted by Mainstream that this would not be possible due to power purchase agreement (PPA) guarantees and security concerns.</li> <li>Solar PVs should be located outside of any of the identified drainage channels, as is currently the case.</li> <li>Construction activities should as far as possible be limited to the identified sites for the proposed solar facility and the identified access routes.</li> <li>Where transmission lines need to be constructed over/through the drainage channels, disturbance of the channels should be limited. These areas should be rehabilitated after construction is complete.</li> <li>Existing road infrastructure should be utilized as far as possible to minimize the overall disturbance created by the proposed projects. Where access routes need to be constructed through ephemeral streams, disturbance of the channel should be limited.</li> <li>All crossings over drainage channels or stream beds should be such that the flow within the drainage channel is not impeded.</li> <li>Road infrastructure and power transmission</li> </ul>	<ul style="list-style-type: none"> <li>Particularly on the red sands of the site, precautions should be taken to avoid excessive disturbance and revegetation should take place as soon as possible after construction to avoid wind erosion.</li> <li>Wherever possible, roads and tracks should be constructed so as to run along the contour.</li> <li>All roads and tracks running down the slope must have water diversion structures present to redirect runoff and dissipate the energy of the water so as to reduce erosion potential.</li> <li>Any extensive cleared areas that are no longer or not required for construction activities should be re-seeded with locally-sourced seed of suitable species. Bare areas can also be packed with brush removed from other parts of the site, encourage natural vegetation regeneration and limit erosion.</li> <li>All construction vehicles should remain on properly demarcated roads. No construction vehicles should be allowed to drive over the vegetation except where no cleared roads are available. In such cases a single track should be used and multiple paths should not be formed.</li> <li>Regular monitoring for erosion to ensure that no erosion problems are occurring at the site as a result of the roads and other infrastructure. All erosion problems observed should be</li> </ul>	<ul style="list-style-type: none"> <li>Undertake a rehabilitation plan of all surfaces affected immediately after construction to restore surface characteristics in such a way that it resembles the original and will allow a gradual natural re-vegetation where such has been cleared.</li> <li>Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated (storm water and erosion management plan required, together with revegetation of adjacent areas).</li> <li>Strictly prevent leakage of oil or other chemicals or any other form of pollution, be clear about immediate remedial actions that must be taken should accidental spills occur.</li> <li>Make use of existing tracks as far as possible, where additional construction activities or maintenance is required, ensure that off-road impact by heavy machinery is restricted to designated areas only and only previously disturbed sites or laydown areas are used for storing and handling materials and machinery.</li> <li>Reinforce portions of existing access routes that are prone to erosion, create structures or low banks to drain the access road rapidly during occasional heavy rainfall events, yet preventing erosion of</li> </ul>	<ul style="list-style-type: none"> <li>An optimised road layout must be designed.</li> <li>It is recommended that livestock are moved to grazing camps away from the active building sites/areas. This should be done in consultation with the landowner.</li> <li>Allow normal agricultural activities to continue in unaffected areas.</li> <li>Initiate land rehabilitation and re-vegetation as soon as possible (lay down areas).</li> <li>Due to the overarching site characteristics, and the nature of the proposed development, the remaining viable mitigation measures are limited and will most likely revolve around erosion control, these mitigation measures are applicable for Construction and Operational Phases; 132kV Proposed Transmission Lines:</li> <li>The soil erosion plan and associated recommendations should be employed.</li> <li>Clearing activities should be kept to a minimum.</li> <li>In the unlikely event that heavy rains are expected, activities should be put on hold to reduce the risk of erosion.</li> <li>If additional earthworks are required, any steep or large embankments that are expected to be exposed during the 'rainy' months should be armoured with fascine like structures. If earth works are required then storm</li> </ul>	<ul style="list-style-type: none"> <li>Implement an effective system of run-off control, when it is required, that collects and disseminates run-off water from hardened surfaces and prevents potential down slope erosion. This should be in place and maintained during all phases of the development.</li> <li>Encourage and maintain vegetation growth throughout the site to stabilise the soil against wind erosion.</li> <li>Strip and stockpile topsoil from all areas where soil will be disturbed.</li> <li>After cessation of disturbance, re-spread topsoil over the surface.</li> <li>Dispose of any sub-surface spoils from excavations where they will not impact on agricultural land (for example use a road surfacing), or where they can be effectively covered with topsoil.</li> <li>Minimise road footprint and control vehicle access on roads only.</li> <li>Control dust as per standard construction site practice.</li> </ul>	<ul style="list-style-type: none"> <li>Implement an effective system of run-off control, when it is required, that collects and disseminates run-off water from hardened surfaces and prevents potential down slope erosion. This should be in place and maintained during all phases of the development.</li> <li>Strip and stockpile topsoil from all areas where soil will be disturbed.</li> <li>After cessation of disturbance, re-spread topsoil over the surface.</li> <li>Dispose of any sub-surface spoils from excavations where they will not impact on agricultural land (for example use a road surfacing), or where they can be effectively covered with topsoil.</li> <li>Minimise road footprint and control vehicle access on roads only.</li> <li>Control storage, use and disposal of potential contaminants or hazardous materials.</li> <li>Remove contaminants and contaminated topsoil and replace topsoil in affected areas.</li> <li>Implement measures to avoid/reduce chemical spillages during the operation of the facility (such as spill kits).</li> </ul>	<ul style="list-style-type: none"> <li>Soil needs to be stockpiled in such a manner that it can be used for rehabilitation after decommissioning.</li> <li>It is recommended that the majority of site preparation activities be undertaken during the dry season;</li> <li>Minimise soil removal and construction activities on windy days. Temporary cessation of construction activities could be required during very windy periods;</li> <li>A storm water management plan should be implemented during the construction phase;</li> <li>Clearing of vegetation should be supervised to ensure that no more than the minimum area of land that is needed is cleared;</li> <li>Re-vegetate soil stockpiles to avoid erosion losses;</li> <li>Ensure stockpiles are placed on a free draining location so as to limit erosion loss;</li> <li>Minimise the period of exposure of soil surfaces through planning;</li> <li>Limit stockpile height – a safe height (below 2 m) can be regarded as the height at which material can be placed without repeated traffic over already placed material; and</li> <li>Site remediation should be undertaken on a concurrent basis during the construction phase to ensure that vegetation is restored to disturbed areas, which will restore some of the site's flood attenuation capabilities</li> </ul>	<p><b>Section 6.1</b>  <b>Section 6.2</b>  <b>Section 6.3</b>  <b>Section 6.5</b>  <b>Section 6.7</b>  <b>Section 7.8</b>  <b>Section 7.9</b>  <b>Section 7.10</b></p>

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<p>lines should coincide as much as possible to minimize the impact.</p> <ul style="list-style-type: none"> <li>Any disturbed areas should be rehabilitated to ensure that these areas do not become subject to erosion or invasive alien plant growth.</li> <li>All crossings over drainage channels or stream beds after the construction phase should be rehabilitated such that the flow within the drainage channel is not impeded.</li> <li>All materials on the construction sites should be properly stored and contained. Disposal of waste from the sites should also be properly managed. Construction workers should be given ablution facilities at the construction sites that are located at least 100 m away from any drainage areas/ephemeral streams and regularly serviced. These measures should be addressed, implemented and monitored in terms of the EMP for the construction phase.</li> <li>Storm water run-off infrastructure must be maintained to mitigate both the flow and water quality impacts of any storm water leaving the energy facilities site. Should any erosion features develop, they should be stabilised as soon as possible.</li> <li>Clearing activities should be kept to a minimum (panel/turbine and road footprint).</li> <li>In the unlikely event that heavy rains are expected activities should be put on hold to reduce the risk of erosion.</li> </ul>	<p>lines should coincide as much as possible to minimize the impact.</p> <ul style="list-style-type: none"> <li>Any disturbed areas should be rehabilitated to ensure that these areas do not become subject to erosion or invasive alien plant growth.</li> <li>All crossings over drainage channels or stream beds after the construction phase should be rehabilitated such that the flow within the drainage channel is not impeded.</li> <li>All materials on the construction sites should be properly stored and contained. Disposal of waste from the sites should also be properly managed. Construction workers should be given ablution facilities at the construction sites that are located at least 100 m away from any drainage areas/ephemeral streams and regularly serviced. These measures should be addressed, implemented and monitored in terms of the EMP for the construction phase.</li> <li>Storm water run-off infrastructure must be maintained to mitigate both the flow and water quality impacts of any storm water leaving the energy facilities site. Should any erosion features develop, they should be stabilised as soon as possible.</li> <li>Clearing activities should be kept to a minimum (panel/turbine and road footprint).</li> <li>In the unlikely event that heavy rains are expected activities should be put on hold to reduce the risk of erosion.</li> </ul>	<p>rectified as soon as possible.</p> <ul style="list-style-type: none"> <li>All maintenance vehicles to remain on the demarcated roads.</li> <li>Some fauna will avoid the site during construction as a result of the noise and human activity at the site and this is part of construction, it cannot be avoided during the construction phase.</li> <li>Only the facility itself should be fenced-off.</li> <li>The minimum amount of lighting should be used at night and this should be of the low-UV emitting kind that attracts less insects.</li> </ul>	<p>the track and surrounding areas.</p> <ul style="list-style-type: none"> <li>Maintain vegetation cover n areas outside the PV arrays.</li> <li>If topsoil needs to be removed, volumes need to be estimated and adequate areas designated for the storage and/or rehabilitation of such topsoil.</li> <li>Keep levelling earthworks and soil disturbance to the minimum practically possible, implement a comprehensive topsoil management, soil erosion control and rehabilitation plan once layouts have been finalised.</li> <li>Monitor the area regularly after larger rainfall events to determine where erosion may be initiated and then mitigate by modifying the soil microtopography and revegetation efforts accordingly.</li> <li>Strictly prevent leakage of oil or other chemicals and pollutants.</li> <li>Avoid disturbance to pans/seasonal washes.</li> <li>Minimise the removal of vegetation and the disturbance of topography.</li> <li>Design and construct/ install measures which will prevent erosion from panel-washing during operation to ensure that this is adequately dissipated to sheet flow.</li> <li>Ensure adequate dissipation of concentrated flow to sheet flow from hard surfaces (including panels) to avoid and minimise erosion. This can be achieved by strategically placing stones downstream of</li> </ul>	<p>water control and wind screening should be undertaken to prevent soil erosion.</p> <ul style="list-style-type: none"> <li>Interact with landowners during the routing process.</li> <li>Loss of agricultural resources/ production during the operational phase of the two Turbine Layout Alternatives (46 and 58)</li> <li>Initiate land rehabilitation and re-vegetation as soon as possible and continue to visually monitor land for early detection of degradation.</li> <li>Allow grazing around the turbines (sheep and wildlife). This mitigation will minimise the loss of grazing land and reduce the impact on agricultural production.</li> <li>Implement measures as provided in the EMP, which includes procedures for dealing with dust pollution events including watering of roads, etc.</li> </ul>			<p>and reduce vulnerability to erosion.</p> <ul style="list-style-type: none"> <li>Where feasible, activities that are usually undertaken by machinery (such as vegetation removal), should be replaced with manual labour;</li> <li>Heavy vehicle movement over soil stockpiles should be prevented;</li> <li>Traffic over project areas that have not been stripped of topsoil should be minimised;</li> <li>Stripping operations should only be executed when soil moisture content will minimise the risk of compaction (i.e. during dry season);</li> <li>During stockpiling, preferably use the 'end-tipping' method to keep stockpiled soils loose;</li> <li>Limit stockpile height – a safe height can be regarded as the height at which material can be placed without repeated traffic over already placed material.;</li> <li>Preserve looseness of stockpiled soil by applying fertiliser and seeding by hand;</li> <li>Where topsoil is partially removed, the soil surface can be loosened via tillage/ripping; and</li> <li>Soil should be loosened after construction activities, as per rehabilitation plan.</li> <li>All waste products must be managed according to a waste management plan;</li> <li>All construction materials should be stored in bunded areas to ensure that material loss during surface flow events are prevented;</li> <li>Vehicles should be services and checked</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<ul style="list-style-type: none"> <li>If earth works are required then storm water control and wind screening should be undertaken to prevent soil loss from the site.</li> <li>Clearing activities should be kept to a minimum (turbine and road footprint).</li> <li>Where earthworks are required, any steep or large embankments that are expected to be exposed during the 'rainy' months should either be armoured with fascine like structures. A fascine structure usually consists of a natural wood material and is used for the strengthening an earthen structures or embankments.</li> </ul>	<ul style="list-style-type: none"> <li>If earth works are required then storm water control and wind screening should be undertaken to prevent soil loss from the site.</li> <li>Clearing activities should be kept to a minimum (turbine and road footprint).</li> <li>Where earthworks are required, any steep or large embankments that are expected to be exposed during the 'rainy' months should either be armoured with fascine like structures. A fascine structure usually consists of a natural wood material and is used for the strengthening an earthen structures or embankments.</li> </ul>		<p>hardened surface areas.</p> <ul style="list-style-type: none"> <li>Place hessian/geofabric (or similar) attached to rows of stakes to decrease flow velocities where appropriate.</li> <li>Avoid construction during heavy rainfall events where possible.</li> <li>Implement stormwater management and other erosion (including wind) prevention measures</li> <li>Construction vehicles are to remain within the development area and avoid unnecessary disturbance.</li> <li>Ensure timeous repair of erosion.</li> <li>Maintain measures which will prevent erosion from panel-washing during operation to ensure that this is adequately dissipated to sheet flow.</li> <li>Maintain measures which will prevent erosion from water/waste treatment works to ensure that this is adequately dissipated to sheet flow.</li> <li>Soil stockpiles should be stored in sheltered areas at the site on the leeward side of hills and inselbergs and covered where possible;</li> <li>Limit speed at the site to &lt; 40 km/hr and enforce code of conduct for operation of vehicles.</li> <li>Should the prevailing wind speed increase to levels above 5.4 m/s (~20 km/hr), any land clearing activity should be stopped until wind speeds decrease to below the afore mentioned threshold level.</li> <li>Utilise dust suppression measures, particularly on access roads.</li> </ul>				<p>for leaks on a daily basis to minimise spillage of hydrocarbon contaminants during the construction phase;</p> <ul style="list-style-type: none"> <li>The vehicle hard park should have a concrete surface and drip trays installed overnight to minimise spillage of hydrocarbon contaminants. The vehicle hard park area should be separated from clean water areas with berms or channels; and</li> <li>Spillage should be managed through an emergency spill response plan.</li> <li>Minimising areas of disturbance;</li> <li>Plan earthworks in phases so that exposed areas are minimised;</li> <li>Stockpiles should be sloped and vegetated to keep potential of erosion as low as possible;</li> <li>For the sites comprising coarse graded soils, plan earthworks for the dry season; and</li> <li>For the site at Aggeneys and Van Rhynsdorp workings can be scheduled for the wet season or surfaces can be lightly sprayed during and after workings to keep the exposed surface moistened.</li> <li>Minimising the use of heavy machinery for the clearing/stripping activities;</li> <li>Minimise traffic over the areas to be cleared/stripped/ or constructed upon;</li> <li>Restrict heavy vehicle movement over stockpiles.</li> <li>Where possible workings can be scheduled to coincide with the wet season to limit the effect of wind erosion. However</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
				<ul style="list-style-type: none"> <li>Continue monitoring until it can be demonstrated that vegetation is self-sustaining and no erosion channels exist (approximately 2 years following completion of decommissioning).</li> <li>Conduct regular maintenance within dedicated area for vehicles to avoid and minimise leaks.</li> <li>Ensure legislative requirements are met for sanitation.</li> <li>Chemical/petroleum/oil storage are to be bunded using an impervious surface.</li> <li>Carry out regular maintenance of any onsite chemical/ petroleum/oil storage tank.</li> <li>Implement disposal of e-Waste or hazardous waste at an appropriately licensed landfill site.</li> <li>Carry out rehabilitation following leaks and spills.</li> <li>Conduct removal of contaminated soils to suitable licenced landfill sites.</li> <li>During maintenance of the substation, used oils and old transformers must be disposed of correctly. Used transformers are classified as hazardous waste and should be disposed of at a hazardous landfill site.</li> <li>Keep the amount of land that needs to be cleared (or development footprint) to a minimum at any given time thereby reducing the amount of erodible surface area.</li> <li>Avoid unnecessary removal of vegetation cover and soil.</li> <li>Rehabilitate disturbed areas to original</li> </ul>				<p>operations during heavy rain should also be avoided to limit the potential for surface runoff and subsequently erosion;</p> <ul style="list-style-type: none"> <li>Soil stockpiles must be effectively sloped to avoid runoff;</li> <li>Stockpiles must be vegetated to limit runoff and exposure to wind;</li> <li>Mechanical loosening of soil after operations should be instigated (where applicable).</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
				<p>agricultural potential and re-vegetate using appropriately chosen indigenous grasses.</p> <ul style="list-style-type: none"> <li>Allow access of livestock and wildlife to grazing on the broader farm portion (outside of the development footprint).</li> <li>Maintain ongoing interaction with the farmer regarding appropriate stocking rates on the development area and the farm as a whole.</li> </ul>					
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>Wherever possible, restrict construction activities to designated turbine sites and lay-down areas.</li> <li>Avoid Platbakkies Succulent Shrubland gravel patches. Specifically locate turbines and associated infrastructure such as roads beyond a 30 m buffer around the patches.</li> <li>Micro-site turbines with the aid of a botanist, to avoid sensitive sites.</li> <li>Place underground cables in shallow trenches alongside the internal access roads to avoid additional impacts to those caused by roads.</li> <li>Avoid drainage lines and maintain a buffer of at least 30 m from drainage lines.</li> <li>Collect seeds from <i>Parkinsonia africana</i> (wild green hair trees) to be cultivated offsite. The cultivated shrubs could be planted on the site and effectively used for visual screening of the PV infrastructure where required while simultaneously keeping them as part of the vegetation on the site.</li> <li>No mitigation measures with regards to flora impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Wherever possible, restrict construction activities to designated turbine sites and lay-down areas.</li> <li>Avoid Platbakkies Succulent Shrubland gravel patches. Specifically locate turbines and associated infrastructure such as roads beyond a 30 m buffer around the patches.</li> <li>Micro-site turbines with the aid of a botanist, to avoid sensitive sites.</li> <li>Place underground cables in shallow trenches alongside the internal access roads to avoid additional impacts to those caused by roads.</li> <li>Avoid drainage lines and maintain a buffer of at least 30 m from drainage lines.</li> <li>Collect seeds from <i>Parkinsonia africana</i> (wild green hair trees) to be cultivated offsite. The cultivated shrubs could be planted on the site and effectively used for visual screening of the PV infrastructure where required while simultaneously keeping them as part of the vegetation on the site.</li> <li>No mitigation measures with regards to flora impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Vegetation clearing to be kept to a minimum. If possible the ground grass layer should be left intact and only the larger woody plants cleared.</li> <li>All areas to be cleared should be clearly demarcated.</li> <li>Sensitive areas as demarcated on the sensitivity map should be avoided, and where such areas cannot be avoided specific mitigation measures to reduce their impact would need to be implemented.</li> <li>Only those individuals of protected plant species directly within the development footprint should be cleared.</li> <li>A search and rescue operation for protected species which could survive translocation such as Hoodia and Aloe should be conducted prior to construction.</li> <li>Apart from within the PV area where the developer intends building over the drainage lines, drainage lines and other no-go areas should be demarcated at the site by an ecologist as part of the</li> </ul>	<ul style="list-style-type: none"> <li>Harvesting of plant material or other damage to fauna and flora must be prevented and avoided, and disciplinary measures to be put in place.</li> <li>Chemical / petroleum / oil storage area to be bunded using an impervious surface.</li> <li>Introduction of alien plant species must be prevented, an on-going management of alien species control should be carried out.</li> <li>Disturb the surface as little as possible and only where necessary during construction.</li> <li>Construct all roads and fences in such a way that they do not significantly alter existing runoff patterns and allow for ample drainage where necessary.</li> <li>Undertake a rehabilitation plan of all surfaces affected immediately after construction to restore surface characteristics in such a way that it resembles the original and will allow a gradual natural re-vegetation where such has been cleared.</li> <li>Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed</li> </ul>	<ul style="list-style-type: none"> <li>The seasonal drainage lines should be treated as ecologically sensitive and should be avoided. No construction should take place within 50m of the nominal centre line of such drainage lines. This recommendation has been taken into consideration for the amended new turbine layouts.</li> <li>It was found that the most botanically and ecologically sensitive areas are north of the Eskom 440kV transmission line servitude on Namies Suid 212/0 and Vogelstruis Hoek 88/1. It is strongly recommended that all wind turbines and any other infrastructure proposed for this area should be relocated to less sensitive areas in the southern part of the study area in Bushmanland Arid Grassland. This recommendation has been taken into consideration for the revised new turbine layouts.</li> <li>It was recommended by McDonald, 2012 that no wind turbines should be located in Aggeneys Gravel Vygieveld or</li> </ul>	<ul style="list-style-type: none"> <li>The principle mitigation should be avoidance of identified sensitive areas, i.e. seasonal drainage lines and any quartzite koppies.</li> <li>No protected trees were found in the study area so no permits would be required for removal of such trees. However, a permit would be required from Northern Cape Province, Department of Environment &amp; Nature Conservation to clear natural vegetation.</li> <li>Access roads must be clearly demarcated and strictly observed. There should be no indiscriminate driving of vehicles 'in the veld', i.e. off designated roads and access routes.</li> <li>Construction and laydown areas must be clearly marked and no activity should occur outside these areas apart from access.</li> <li>Toilet facilities must be provided during the construction phase. The veld should not be used for ablutions.</li> <li>Lay-down areas must be levelled and scarified after construction to encourage growth of grasses which would be the first cover species, followed by shrubs.</li> </ul>	<ul style="list-style-type: none"> <li>The principle mitigation should be avoidance of identified sensitive areas, i.e. seasonal drainage lines and any quartzite koppies.</li> <li>No protected were found in the study area so no permits would be required for removal of such trees. However, a permit would be required from Northern Cape Province, Department of Environment &amp; Nature Conservation to clear natural vegetation.</li> <li>Access roads must be clearly demarcated and strictly observed. There should be no indiscriminate driving of vehicles 'in the veld', i.e. off designated roads and access routes.</li> <li>Construction and laydown areas must be clearly marked and no activity should occur outside these areas apart from access.</li> <li>Toilet facilities must be provided during the construction phase. The veld should not be used for ablutions.</li> <li>Lay-down areas must be levelled and scarified after construction to encourage growth of grasses which would be the first cover species, followed by shrubs.</li> </ul>	<ul style="list-style-type: none"> <li>The no-go and high ecologically sensitive areas should be demarcated and avoided at all costs;</li> <li>A flora survey of the project development footprint should be undertaken during the wet-season to try and identify Red Data and protected plant species that might not have been identified during dry-season surveys. If found, the necessary permits should be obtained prior to the removal or destruction of these species;</li> <li>No vegetation removal should be allowed outside the designated project development footprint;</li> <li>A representative sample of indigenous plant species should be selected and relocated to an on-site nursery. During site remediation and rehabilitation, these species should be replanted on disturbed areas as per the rehabilitation plan;</li> <li>Where possible, the removal and destruction of indigenous vegetation should be avoided (i.e. adhering to the designated internal road network); and</li> </ul>	<p><b>Section 6.1</b> <b>Section 6.3</b> <b>Section 6.4</b> <b>Section 6.6</b> <b>Section 6.7</b> <b>Section 7.1</b> <b>Section 7.2</b> <b>Section 7.3</b> <b>Section 7.4</b> <b>Section 7.9</b></p>

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
			<p>preconstruction activities for the site.</p> <ul style="list-style-type: none"> <li>Any vegetation clearing that needs to take place as part of maintenance activities, should be done in an environmentally friendly manner, including avoiding the use of herbicides and using manual clearing methods wherever possible.</li> <li>Soil disturbance and vegetation clearing should be kept to minimum.</li> <li>Cleared areas that are not going to be used should be revegetated with locally-collected seed of indigenous species.</li> <li>Regular monitoring to ensure that alien plants are not increasing as a result of the disturbance that has taken place.</li> <li>All alien plants present at the site should be controlled at least annually using the best practice methods for the species present.</li> <li>Bare soil should be kept to a minimum, and at least some grass or low shrub cover should be encouraged under the panels.</li> <li>Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person.</li> <li>The collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. The rocky outcrops are particularly sensitive in this regard and construction personnel should not be allowed off of the construction site and onto these areas.</li> </ul>	<p>sufficiently to prevent accelerated erosion from being initiated.</p> <ul style="list-style-type: none"> <li>Strictly prevent leakage of oil or other chemicals or any other form of pollution, be clear about immediate remedial actions that must be taken should accidental spills occur.</li> <li>Make use of existing tracks as far as possible, where additional construction activities or maintenance is required, ensure that off-road impact by heavy machinery is restricted to designated areas only and only previously disturbed sites or designated laydown areas are used for storing and handling materials and machinery.</li> <li>Ensure an adequate plant search and rescue program prior to commencement of activity, especially geophytes and succulents may need to be relocated.</li> <li>Reinforce portions of existing access routes that are prone to erosion, create structures or low banks to drain the access road rapidly during occasional heavy rainfall events, yet preventing erosion of the track and surrounding areas.</li> <li>Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated (storm water and erosion management plan required, together with revegetation of adjacent areas).</li> <li>After decommissioning, if the access road or</li> </ul>	<p>Bushmanland Inselberg Shrubland and that recommendation is upheld here.</p> <ul style="list-style-type: none"> <li>Access roads should be designed for in order for construction to have minimal impact and should where possible not bisect drainage lines.</li> <li>Access roads must be clearly demarcated and strictly observed. There should be no indiscriminate driving of vehicles 'in the veld' i.e. off designated roads and access routes.</li> <li>Construction and laydown areas must be clearly marked and no activity should occur outside these areas apart from access.</li> <li>Toilet facilities must be provided during the construction phase. The veld should not be used for ablutions.</li> <li>Lay-down areas must be levelled and scarified after construction to encourage growth of grasses which would be the first cover species, followed by shrubs.</li> <li>No alien invasive species such as Prosopis spp. (mesquite) should be introduced.</li> <li>Re-seeding of disturbed sites is not recommended. The veld should be allowed to regenerate unaided.</li> <li>Any rock excavated for the turbine base (foundation) construction must be spread in the disturbed lay-down areas. It should not remain in piles.</li> <li>The ECO must oversee pre-construction site clearing.</li> <li>Any sensitive plants must be observed by the Environmental</li> </ul>	<ul style="list-style-type: none"> <li>No alien invasive species such as Prosopis spp. (mesquite) should be introduced.</li> <li>Any sensitive plants listed in the flora report must be avoided. If necessary the turbine locations must be reviewed or roads re-aligned to avoid these plants. Appropriate mitigation should be applied if sensitive plants cannot be avoided.</li> <li>The Environmental Control Officer (ECO) must oversee pre-construction site cleaning.</li> <li>Re-seeding of disturbed sites is not recommended. The veld should be allowed to regenerate unaided.</li> <li>Any rock excavated for solar PV panel (foundation) construction must be spread in the disturbed lay-down areas. It should not remain in piles.</li> <li>Any fauna directly vulnerable to the construction activities must be removed to a safe location by a suitably qualified person, the process overseen by the ECO.</li> <li>Where possible, vegetation should be rehabilitated to restore faunal biodiversity on site.</li> <li>The collection, hunting or harvesting of any fauna on site should be strictly forbidden.</li> <li>All staff on site should receive environmental education so as to ensure that no hunting, indiscriminate killing or harvesting of animals occurs.</li> <li>Fires should be limited to within fire-safe demarcated areas.</li> </ul>	<ul style="list-style-type: none"> <li>No alien invasive species such as Prosopis spp. (mesquite) should be introduced.</li> <li>Any sensitive plans listed in the flora report must be avoided. If necessary the turbine locations must be reviewed or roads re-aligned to avoid these plants. Appropriate mitigation should be applied if sensitive plants cannot be avoided.</li> <li>The Environmental Control Officer (ECO) must oversee pre-construction site cleaning.</li> <li>Re-seeding of disturbed sites is not recommended. The veld should be allowed to regenerate unaided.</li> <li>Any fauna directly vulnerable to the construction activities must be removed to a safe location by a suitably qualified person, the process overseen by the ECO.</li> <li>Where possible, vegetation should be rehabilitated to restore faunal biodiversity on site.</li> <li>The collection, hunting or harvesting of any fauna on site should be strictly forbidden.</li> <li>All staff on site should receive environmental education so as to ensure that no hunting, indiscriminate killing or harvesting of animals occurs.</li> <li>Fires should be limited to within fire-safe demarcated areas.</li> <li>No dogs should be allowed on site.</li> <li>All hazardous materials must be stored in the necessary containers and in demarcated areas to prevent a spill or contamination of the</li> </ul>	<ul style="list-style-type: none"> <li>An alien invasive and weed control programme should be implemented throughout the project lifetime.</li> <li>Veld management measures will have to be employed in areas outside the project development footprint, but within the fence boundary. This can be achieved by allowing gaps in fencing for fauna species to move between grazing areas during prescribed times of the year.</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
			<ul style="list-style-type: none"> <li>All staff and contractors should undergo an environmental induction course by the ECO.</li> <li>Fires should only be allowed within fire-safe demarcated areas.</li> <li>No fuelwood collection should be allowed on-site.</li> <li>No dogs should be allowed on site.</li> <li>All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill.</li> <li>Should the site need to be fenced, the fencing should be constructed in manner which allows for the passage of small and medium sized mammals, at least at strategic places, such as along drainage lines or other areas of dense vegetation.</li> <li>If electrified strands are to be use, there should be no strands within 20 cm of the ground because tortoises retreat into their shells when electrocuted and eventually succumb from repeated shocks.</li> <li>No unauthorized persons should be allowed onto the site. Staff present during the operational phase should receive environmental education so as to ensure that that no hunting, killing or harvesting of plants and animals occurs.</li> </ul>	<p>portion thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation.</p> <ul style="list-style-type: none"> <li>As soon as the areas affected have been demarcated, carry out a thorough search and rescue operation of all plant species of conservation concern by a horticultural specialist or suitably qualified staff and the ECO before any disturbance or heavy machinery in the area will be allowed.</li> <li>Note: many of the species of conservation concern are very small or bulbous species may be dormant, follow-up where topsoil will be removed.</li> <li>Ensure that off-road impact by heavy machinery is restricted to designated areas only and only previously disturbed sites or designated laydown areas are used for storing and handling materials and machinery.</li> <li>Training and awareness programmes for employees on the significance of the ecology to be carried out at regular intervals.</li> <li>Implement measures to ensure no living organisms can come into contact with or entangled by any electrical wiring that might cause short circuits, injury or death.</li> <li>Maintain vegetation cover in areas outside the PV areas.</li> </ul>	<p>Control Officer (ECO) and if necessary the turbine location changes or roads re-aligned to avoid these plants. If sensitive plants cannot be avoided appropriate mitigation should be applied.</p> <ul style="list-style-type: none"> <li>The construction phase should be closely monitored by an ECO who should identify any areas that would require rehabilitation in the post-construction phase.</li> <li>If any provincially protected Aloe species such as Aloe claviflora and Aloe dichotoma are unavoidably affected, they should be relocated to 'safe' sites under permits from the Department no Environment &amp; Nature Conservation, Northern Cape Province.</li> <li>The nationally protected tree species, <i>Boscia albitrunca</i>, was found as scattered individuals. It should be possible to avoid affecting these trees and every effort must be made to do so. If unavoidable, permits for damage or removal of trees of this species must be obtained from the Department of Agriculture, Forestry and Fisheries.</li> <li>In all cases construction of access roads must be designed for minimal impact as set out in the EMPr.</li> <li>All construction must take place within the footprint of the proposed Namies WEF.</li> <li>All vehicles should remain within demarcated working areas and stick to construction and access roads.</li> </ul>	<ul style="list-style-type: none"> <li>No dogs should be allowed on site.</li> <li>All hazardous materials must be stored in the necessary containers and in demarcated areas to prevent a spill or contamination of the site. Any accidental chemical, fuel and oil spills should be cleaned up as soon as possible with the appropriate methods.</li> <li>No unauthorised persons should be allowed onto the site.</li> <li>All vehicles on site need to adhere to a low speed limit to prevent collision with any animals.</li> <li>Access and connecting roads should be strictly adhered to during construction as well as during operation.</li> <li>Areas of Moderate sensitivity and their buffers should preferably be avoided with turbine placement, laydown areas and other associated infrastructure. Only access and connecting roads may intrude on Moderate sensitivity buffers if no other alternative exists.</li> <li>Conduct construction beginning of January to end of May to limit actions that will close up, compact, excavate, seal off or damage burrows in any way.</li> <li>If an area with burrows is to be used, investigate first to determine the presence and identify of inhabitants during a preconstruction survey. If inhabited, carefully dig them up and evict the inhabitants and relocate them (less than 2km away) in an ethical manner by a suitably qualified and experienced person.</li> </ul>	<ul style="list-style-type: none"> <li>site. Any accidental chemical, fuel and oil spills should be cleaned up as soon as possible with the appropriate methods.</li> <li>No unauthorised persons should be allowed onto the site.</li> <li>All vehicles on site need to adhere to a low speed limit to prevent collision with any animals.</li> <li>Access and connecting roads should be strictly adhered to during construction as well as during operation.</li> <li>Areas of Moderate sensitivity and their buffers should preferably be avoided with turbine placement, laydown areas and other associated infrastructure. Only access and connecting roads may intrude on Moderate sensitivity buffers if no other alternative exists.</li> <li>Conduct construction beginning of January to end of May to limit actions that will close up, compact, excavate, seal off or damage burrows in any way.</li> <li>If an area with burrows is to be used, investigate first to determine the presence and identify of inhabitants during a preconstruction survey. If inhabited, carefully dig them up and evict the inhabitants and relocate them (less than 2km away) in an ethical manner by a suitably qualified and experienced person.</li> <li>All traffic, noise and light pollution should be kept to a minimum such that the shy animals return to site soon after the construction phase.</li> <li>Driving should be kept to the already existing</li> </ul>		

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
					<ul style="list-style-type: none"> <li>The construction phase must be closely monitored by an ECO who needs to identify any areas that would require rehabilitation in the post-construction phase.</li> <li>The site must be cleared in sections as required for construction and not all simultaneously.</li> <li>Before vegetation clearance commences areas must be walked and slow moving animals removed out of the impact area.</li> <li>Construction workers should be made aware of slow moving and cryptic species such as tortoises.</li> <li>Any snakes found on site shall be removed from site and released into an area away from the site, without harm.</li> <li>The contractor shall ensure that the time a trench is left exposed is kept to a minimum, and that open trenches are inspected on a daily basis for animals which may have fallen or become trapped. Any animals found trapped in any trenches shall be freed without harm.</li> </ul>	<ul style="list-style-type: none"> <li>All traffic, noise and light pollution should be kept to a minimum such that the shy animals return to site soon after the construction phase.</li> <li>Driving should be kept to the already existing and pre-designated access/construction roads only, and drivers be made alert of the possibility of tortoise mortalities. When vehicles/machinery is driven through untracked terrain for the first time, it is recommended that the route to be walked out or slowly driven with an observer assigned to check for tortoise.</li> <li>Fencing should only be used where absolutely necessary. Fencing should be constructed in a way that it allows for the passage of small and medium sized fauna. Small palisade fencing with gaps between bars may be useful to allow most small animals to pass through. If electrified fencing is to be used, the fencing should not be electrified within 50 cm of the ground to prevent mortality of any small fauna, specifically tortoise and snakes. Staff on site need to be vigilant to prevent larger fauna from entering and becoming trapped within any fenced off areas.</li> </ul>	<ul style="list-style-type: none"> <li>and pre-designated access/construction roads only, and drivers be made alert of the possibility of tortoise mortalities. When vehicles/machinery is driven through untracked terrain for the first time, it is recommended that the route to be walked out or slowly driven with an observer assigned to check for tortoise.</li> <li>Fencing should only be used where absolutely necessary. Fencing should be constructed in a way that it allows for the passage of small and medium sized fauna. Small palisade fencing with gaps between bars may be useful to allow most small animals to pass through. If electrified fencing is to be used, the fencing should not be electrified within 50 cm of the ground to prevent mortality of any small fauna, specifically tortoise and snakes. Staff on site need to be vigilant to prevent larger fauna from entering and becoming trapped within any fenced off areas.</li> </ul>		
<b>Avifauna</b>	<ul style="list-style-type: none"> <li>Post-construction Monitoring of the local avifauna for a one year (12 month) period in accordance with Birdlife South Africa's guidelines for solar energy facilities must be done.</li> <li>Restricting the construction footprint to a bare minimum.</li> <li>Demarcation of 'no-go' areas identified during</li> </ul>	<ul style="list-style-type: none"> <li>Post-construction Monitoring of the local avifauna for a one year (12 month) period in accordance with Birdlife South Africa's guidelines for solar energy facilities must be done.</li> <li>Restricting the construction footprint to a bare minimum.</li> <li>Demarcation of 'no-go' areas identified during</li> </ul>	<ul style="list-style-type: none"> <li>The length of any new power lines that need to be installed should be kept to a minimum.</li> <li>Ensure that all new lines are marked with bird flight diverters along their entire length. If the new lines were to run parallel to existing unmarked lines this would potentially create a net benefit as this could reduce the</li> </ul>	<ul style="list-style-type: none"> <li>Implement measures to ensure no living organisms can come into contact with or entangled by any electrical wiring that might cause short circuits, injury or death.</li> <li>Powerline construction should take fauna into account, especially birds and nesting sites.</li> <li>A avifauna walkthrough survey to be conducted</li> </ul>	<p><b>Displacement of priority species and collisions with the turbines</b></p> <ul style="list-style-type: none"> <li>A 1.2km no-go buffer is proposed around the Martial Eagle nest situated at 29°18'52.00"S 19°10'9.71"E.</li> <li>A 200m no-go buffer is proposed around water points.</li> <li>A 50m no-turbine buffer is proposed around</li> </ul>	<ul style="list-style-type: none"> <li>Very little is known of the types or magnitudes of impacts on wildlife caused by industrial solar projects. Monitoring should be implemented to search the ground between arrays of heliostat mirrors on a weekly basis (every two weeks at the longest) for at least one year to determine the</li> </ul>	<ul style="list-style-type: none"> <li>A 1.5km no-go buffer is proposed around the Martial Eagle nest situated at 29°19'49.65"S 19°20'34.87"E</li> <li>Should the Martial Eagle nest become active before construction commences, monitoring of the breeding pair of Martial Eagles should be implemented during the construction phase,</li> </ul>	None.	<b>Section 6.8</b>



Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<p>the pre-construction monitoring phase to minimise disturbance impacts associated with the construction of the facility.</p> <ul style="list-style-type: none"> <li>Reducing and maintaining noise disturbance to a minimum particularly with regards to blasting on the ridge-top associated with excavations for foundations for wind turbines. Blasting should not take place during the breeding seasons (mostly spring) of the resident avifaunal community (the avifaunal monitoring programme should recommend the season) and in particular for priority species. Blasting should be kept to a minimum and, where possible, synchronized with neighbouring blasts.</li> <li>Excluding development or disturbance from sensitive areas. Currently these include the Secretarybird nest site and the two wetland sites (the 'Granite Pan' and Steenbok Pan). These currently fall outside or on the edge of the footprint area for the wind energy facility but will be impacted during the construction phase.</li> <li>Minimising the length of any new powerlines installed, and ensuring that all new lines are marked with bird flight diverters along their entire length. It is imperative that all new powerline infrastructure is adequately insulated and bird friendly when configured.</li> <li>Distribution lines connecting each turbine to the installation</li> </ul>	<p>the pre-construction monitoring phase to minimise disturbance impacts associated with the construction of the facility.</p> <ul style="list-style-type: none"> <li>Reducing and maintaining noise disturbance to a minimum particularly with regards to blasting on the ridge-top associated with excavations for foundations for wind turbines. Blasting should not take place during the breeding seasons (mostly spring) of the resident avifaunal community (the avifaunal monitoring programme should recommend the season) and in particular for priority species. Blasting should be kept to a minimum and, where possible, synchronized with neighbouring blasts.</li> <li>Excluding development or disturbance from sensitive areas. Currently these include the Secretarybird nest site and the two wetland sites (the 'Granite Pan' and Steenbok Pan). These currently fall outside or on the edge of the footprint area for the wind energy facility but will be impacted during the construction phase.</li> <li>Minimising the length of any new powerlines installed, and ensuring that all new lines are marked with bird flight diverters along their entire length. It is imperative that all new powerline infrastructure is adequately insulated and bird friendly when configured.</li> <li>Distribution lines connecting each turbine to the installation</li> </ul>	<p>collision risk posed by the older line.</p> <ul style="list-style-type: none"> <li>All new power line infrastructure should be bird-friendly in configuration and adequately insulated (Lehman et al. 2007). These activities should be supervised by someone with experience in this field.</li> <li>Ensure that any maintenance on the transmission infrastructure of the site retains the bird-friendly design features.</li> <li>Any electrocution and collision events that occur should be recorded, including the species affected and the date. If repeated collisions occur within the same area, then further mitigation and avoidance measures may need to be implemented.</li> </ul>	<p>prior to construction to determine if powerlines need to be fitted with 'flappers' to make the powerlines more visible to the birds.</p> <ul style="list-style-type: none"> <li>An avifauna specialist should ground-truth the powerline construction areas before development commences in order to ensure no breeding pairs or chicks or conservation significant species are located in the areas and, if there are, how to mitigate the situation before construction begins.</li> <li>No powerline towers may be placed within 32 m of a pan.</li> </ul>	<p>drainage lines (optimal Red Lark habitat). A total exclusion zone will not be feasible, as the internal road network will have to cross drainage lines at some point. However, the construction of infrastructure in drainage lines should be kept to an absolute minimum, and avoided where possible.</p> <ul style="list-style-type: none"> <li>Monitoring of the breeding pair of Martial Eagles should be implemented during the construction phase, to ascertain if the 1.2km buffer zone is effective to prevent disturbance of the birds.</li> <li>The construction of turbine No 1 should be timed to take place outside the breeding season i.e. between November and April.</li> <li>Formal monitoring should be resumed once the turbines have been constructed, as per best practice guidelines (Jenkins et al. 2011). The purpose of this would be to establish if displacement of priority species has occurred and to what extent. The exact time when post-construction monitoring should commence, will depend on the construction schedule, and will be agreed upon with the site operator once these timelines have been finalised.</li> <li>The duration of the post-construction monitoring would need to be for at least an equivalent period to the pre-construction monitoring (four seasons); and then for at several years thereafter (depending on the outcome of the post-construction</li> </ul>	<p>magnitude of collision fatalities. Searches should be done on foot. Searches should be conducted randomly or at systematically selected arrays of heliostat mirrors to the extent that equals 33% or more of the project, including all ground between the power towers and the nearest array of heliostat mirrors. Detection trails should be integrated into the searches. The exact scope and nature of the post-construction monitoring will be informed on an ongoing basis by the result of the monitoring through a process of adaptive management.</p> <ul style="list-style-type: none"> <li>The environmental management plan should provide for the on-going management of bird impacts that may emerge as the post-construction monitoring will be informed on an ongoing basis by the result of the monitoring through a process of adaptive management.</li> <li>Depending on the results of the carcass searches, a range of mitigation measures will have to be considered if mortality levels turn out to be significant, including minor modifications of panel and mirror design to reduce the illusory characteristics of solar panels.</li> <li>Formal monitoring should be implemented once the solar arrays have been constructed. Monitoring should take the form of walk-transects counts, in order to make it comparable to the pre-construction surveys that were implemented in the broader study</li> </ul>	<p>to ascertain if the 2km buffer zone is effective to prevent disturbance of the birds.</p> <ul style="list-style-type: none"> <li>Should the Martial Eagle nest become occupied before construction commences, it is recommended that the flight activity of the juvenile Martial Eagle is monitored by monthly direct observations from October – March prior to construction commencing, i.e. after fledging up until it leaves its natal territory, to assess its flight patterns during this period when it will be most vulnerable to potential collision. This should give an indication of the extent of the potential curtailment (if any) that would be required to minimise the risk of collisions, i.e. which turbines and for what period, should this nest be utilised during the operational phase. This monitoring should be conducted pro-actively, i.e. before the first turbines are constructed in order to have baseline information available on flight behaviour before the turbines become operational. This will help in the pro-active identification of high risk areas which could form the focus of subsequent monitoring.</li> <li>A 200m no-go buffer is proposed around water points to prevent disturbance and displacement of breeding Southern Pale Chanting Goshawks.</li> <li>A 50m no-turbine is proposed around drainage lines (optimal Red Lark habitat). A total exclusion zone will not be feasible, as the</li> </ul>		

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<p>network should be buried underground to mitigate the considerable risk of avian collision that would be posed by overhead lines.</p> <ul style="list-style-type: none"> <li>Additional mitigation arising from the results of pre-construction monitoring might include re-scheduling construction or maintenance activities on site, adjusting the siting of turbines positioned in areas subsequently identified as particularly important for disturbance and/or displacement of sensitive, priority bird species.</li> <li>The project should consider marking the turbine blades as a way to reduce collisions.</li> <li>An exclusion zone of at least 1 km must be adopted from the known Verreaux's Eagle pair nest site.</li> </ul>	<p>network should be buried underground to mitigate the considerable risk of avian collision that would be posed by overhead lines.</p> <ul style="list-style-type: none"> <li>Additional mitigation arising from the results of pre-construction monitoring might include re-scheduling construction or maintenance activities on site, adjusting the siting of turbines positioned in areas subsequently identified as particularly important for disturbance and/or displacement of sensitive, priority bird species.</li> <li>The project should consider marking the turbine blades as a way to reduce collisions.</li> <li>An exclusion zone of at least 1 km must be adopted from the known Verreaux's Eagle pair nest site.</li> </ul>			<p>monitoring). Thereafter the need for additional monitoring will be determined and agreed to with the developer. The exact scope and nature of the post-construction monitoring will be informed on an ongoing basis by the result of the monitoring through a process of adaptive management.</p> <ul style="list-style-type: none"> <li>Construction activity should be restricted to the immediate footprint of the infrastructure, and in particular to the proposed road network. Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of priority species.</li> </ul> <p><b>Collisions with the turbines</b></p> <ul style="list-style-type: none"> <li>A 1.2km no-go buffer is proposed around the Martial Eagle nest situated at 29°18'52.00"S 19°10'9.71"E.</li> <li>A 200m no-go buffer is proposed around water points.</li> <li>It is strongly recommended that the option of tagging one or both of the adult Martial Eagles with a satellite tracking device are investigated to establish actual use of the site by the birds, for future adaptive management purposes i.e. to establish which turbines potentially pose the highest risk to the birds, and whether selective curtailment might be necessary. This should ideally take place before the site become operational to establish whether the birds have adapted their use of the site to</li> </ul>	<p>area. The purpose of this would be to establish if displacement of priority species has occurred and to what extent. The exact time when post-construction monitoring should commence, will depend on the construction schedule, and will be agreed upon with the site operator once these timelines have been finalised.</p> <ul style="list-style-type: none"> <li>As an absolute minimum, post-construction monitoring should be undertaken for the first two (preferably three) years of operation, and then repeated again in year 5, and again every five years thereafter. The exact scope and nature of the post-construction monitoring will be informed on an ongoing basis by the result of the monitoring through a process of adaptive management.</li> <li>Construction activity should be restricted to the immediate footprint of the infrastructure, and in particular to the proposed road network. Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of priority species.</li> <li>The recommendations of the ecological and botanical specialist studies must be strictly implemented, especially as far as limitation of the construction footprint and rehabilitation of disturbed areas is concerned.</li> </ul>	<p>internal road network will have to cross drainage lines at some point. However, the construction of infrastructure in drainage lines should be kept to an absolute minimum, and avoided where possible.</p> <ul style="list-style-type: none"> <li>Formal monitoring should be resumed once the turbines have been constructed, as per the most recent edition of the best practice guidelines (Jenkins et al. 2011). The purpose of this would be to establish if displacement of priority species has occurred and to what extent. The exact time when post-construction monitoring should commence will depend on the construction schedule, and will be agreed upon with the site operator once these timelines have been finalised.</li> <li>As an absolute minimum, post-construction monitoring should be undertaken for the first two (preferably three) years of operation, and then repeated again year 5, and again every five years thereafter. The exact scope and nature of the post-construction monitoring will be informed on an ongoing basis by the results of the monitoring through a process of adaptive management.</li> <li>Construction activity should be restricted to the immediate footprint of the infrastructure, and in particular to the proposed road network. Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of priority species.</li> </ul>		

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
					<p>accommodate the turbines.</p> <ul style="list-style-type: none"> <li>It is also recommended that the flight activity of the juvenile Martial Eagle is monitored by monthly direct observations from October – March i.e. after fledging up until it leaves its natal territory, to assess its the flight patterns during this period when it will be most vulnerable to potential collision (ideally this should happen pre-construction). This should give an indication of the extent of the potential curtailment (if any) that would be required to minimize the risk of collisions i.e. which turbines and for what period.</li> <li>Formal monitoring should be resumed once the turbines have been constructed, as per best practice guidelines (Jenkins et al. 2011) (see previous section Displacement). The duration of the post-construction monitoring would need to be for at least an equivalent period to the pre-construction monitoring (four seasons); and then for at several years thereafter (depending on the outcome of the post-construction monitoring). Thereafter the need for additional monitoring will be determined and agreed to with the site operator. The exact scope and nature of the post-construction monitoring will be informed on an ongoing basis by the result of the monitoring through a process of adaptive management. The</li> </ul>		<p><b>Collisions with the turbines</b></p> <ul style="list-style-type: none"> <li>From a potential collision perspective no relocation of turbine positions is currently required.</li> <li>A 2km no-go buffer is proposed around the Martial Eagle nest situated at 29°19'49.65"S 19°20'34.87"E</li> <li>A 200m no-go buffer is proposed around water points as they serve as focal points for raptor activity.</li> <li>Formal monitoring should be resumed once the turbines have been constructed, as per the most recent edition of the best practice guidelines (Jenkins et al. 2011). The exact scope and nature of the post-construction monitoring will be informed on an ongoing basis by the result of the monitoring through a process of adaptive management. The purpose of this would be (a) establish if and to what extent displacement of priority species has occurred through the altering of flight patterns post-construction and (b) to search for carcasses at turbines.</li> <li>As an absolute minimum, post-construction monitoring should be undertaken for the first two (preferably three) years of operation, and then repeated again in year 5, and again every five years thereafter. The exact scope and nature of the post-construction monitoring will be informed on an ongoing basis by the result of the monitoring through a process of adaptive management.</li> </ul>		

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
					<p>purpose of this would be (a) to establish if and to what extent displacement of priority species has occurred through the altering of flight patterns post-construction, and (b) to search for carcasses at turbines.</p> <ul style="list-style-type: none"> <li>The environmental management plan should provide for the on-going inputs of a suitable experienced ornithological consultant to oversee the post-construction monitoring and assist with the on-going management of bird impacts that may emerge as the post-construction monitoring programme progresses.</li> <li>Depending on the results of the carcass searches, a range of mitigation measures will have to be considered if mortality levels turn out to be significant, including selective curtailment of problem turbines during high risk periods.</li> <li>If turbines are to be lit at night, lighting should be kept to a minimum and should preferably not be white light. Flashing strobe-like lights should be used where possible (provided this complies with Civil Aviation Authority regulations).</li> <li>Lighting of the wind farm (for example security lights) should be kept to a minimum. Lights should be directed downwards (provided this complies with Civil Aviation Authority regulations).</li> </ul> <p><b>Collisions with the proposed 132kV transmission line</b></p> <ul style="list-style-type: none"> <li>The proposed transmission line for</li> </ul>		<ul style="list-style-type: none"> <li>The environmental management plan should provide for the on-going inputs of a suitable experienced ornithological consultant to oversee the post-construction monitoring and assist with the on-going management of bird impacts that may emerge as the post-construction monitoring programme progresses.</li> <li>Depending on the results of the carcass searches, a range of mitigation measures will have to be considered if mortality levels turn out to be significant, including selective curtailment of problem turbines during high risk periods.</li> <li>If turbines are to be lit at night, lighting should be kept to a minimum and should preferably not be white light. Flashing strobe-like lights should be used where possible (provided this complies with Civil Aviation Authority regulations).</li> <li>Lighting of the wind farm (for example security lights) should be kept to a minimum. Lights should be directed downwards (provided this complies with Civil Aviation Authority regulations).</li> </ul>		

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
					<p>evacuation of the electricity generated by the Namies WEF should be marked with Bird Flight Diverters for its entire length on the earth wire of the line, five metres apart, alternating black and white (Appendix E of the Bird Impact Assessment indicates the preferred Bird Flight Diverters to be used).</p> <ul style="list-style-type: none"> <li>Disturbance associated with the proposed 132kV power line</li> <li>If possible, construction activity within a 1.2km distance from the Martial Eagle nest situated at 29°18'52.00"S 19°10'9.71"E should be avoided / kept to a minimum between November and March in order to minimize the potential disturbance to the breeding birds.</li> </ul>				
<b>Surface Water</b>	<ul style="list-style-type: none"> <li>Limit operational activities as far as possible to the delineated site and the identified access routes.</li> <li>Monitor invasive alien plant growth on an ongoing basis to ensure that disturbed areas do not become infested with invasive alien plants.</li> <li>Locate any septic tanks at least 100 m (measured from top of bank) from the ephemeral streams and at least 1 000 m away from the springs or any boreholes/wellpoints.</li> <li>Compile a stormwater management plan and maintain storm water run-off infrastructure to mitigate both the flow and water quality impacts of any storm water leaving the site.</li> <li>Stabilise any erosion areas soon as possible should they develop.</li> </ul>	<ul style="list-style-type: none"> <li>Limit operational activities as far as possible to the delineated site and the identified access routes.</li> <li>Monitor invasive alien plant growth on an ongoing basis to ensure that disturbed areas do not become infested with invasive alien plants.</li> <li>Locate any septic tanks at least 100 m (measured from top of bank) from the ephemeral streams and at least 1 000 m away from the springs or any boreholes/wellpoints.</li> <li>Compile a stormwater management plan and maintain storm water run-off infrastructure to mitigate both the flow and water quality impacts of any storm water leaving the site.</li> <li>Stabilise any erosion areas soon as possible should they develop.</li> </ul>	<ul style="list-style-type: none"> <li>Particularly on the red sands of the site, precautions should be taken to avoid excessive disturbance and revegetation should take place as soon as possible after construction to avoid wind erosion.</li> <li>Wherever possible, roads and tracks should be constructed so as to run along the contour.</li> <li>All roads and tracks running down the slope must have water diversion structures present to redirect runoff and dissipate the energy of the water so as reduce erosion potential.</li> <li>Any extensive cleared areas that are no longer or not required for construction activities should be re-seeded with locally-sourced seed of suitable species. Bare areas can also be packed</li> </ul>	<ul style="list-style-type: none"> <li>Ensure all mitigation recommendations for PV arrays and access roads are implemented.</li> <li>Ensure that runoff to pans is adequately slowed down to prevent erosion, but not obstructed or deflected to such an extent that runoff patterns into the pans are changed.</li> <li>Monitor the area below the PV panels regularly after larger rainfall events to determine where erosion may be initiated and then mitigate by modifying the soil microtopography and re-vegetation efforts accordingly.</li> <li>Aim to maintain a reasonable cover of indigenous perennial vegetation throughout the operational phase within and on the periphery of the PV array, preferably low density perennial</li> </ul>	<ul style="list-style-type: none"> <li>Construction activities should as far as possible be limited to the identified sites for the proposed wind energy facilities and the identified access routes. A buffer of 30m (measured from top of bank) should be maintained adjacent to the identified ephemeral streams of the Nam se Laagte River and 50m from the T_Goob se Laagte. A no-go area is recommended for the northern portion of the site.</li> <li>Any of the cleared areas should be rehabilitated after construction is completed. All materials on the construction sites should be properly stored and contained. Disposal of waste from the sites should also be properly managed. Construction workers</li> </ul>	<ul style="list-style-type: none"> <li>It is advised the transmission alignment servitude is not cleared within any of the aquatic areas shown in this report.</li> <li>No new structures must be placed within the active channels (lowest part of the water course, where water has flowed in the recent past).</li> <li>Vehicles should be limited from crossing the broader alluvial systems to either existing routes or access these areas from the opposite end where suitable.</li> <li>Where existing road crossings need to be upgraded the following mitigation is proposed: <ul style="list-style-type: none"> <li>Additional energy dissipation structures should be placed in a manner that flows are managed</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>All wind turbines, towers and infrastructure is placed outside of the demarcated water course and alluvial rivers.</li> <li>No new structures must be placed within the active channels (lowest part of the water course, where water has flowed in the recent past).</li> <li>Vehicles should be limited from crossing the broader alluvial systems to either existing routes or access these areas from the opposite end where suitable.</li> <li>Where existing road crossings need to be upgraded the following mitigation is proposed: <ul style="list-style-type: none"> <li>Additional energy dissipation structures should be placed in a manner that flows are managed</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>It is recommended that the majority of site preparation activities be undertaken during the dry season;</li> <li>A storm water management plan should be implemented during the construction phase and operational phase;</li> <li>No activities may be allowed with the delineated drainage lines and buffer zones;</li> <li>Clearing of vegetation should be supervised to ensure that no more than the minimum area of land that is needed is cleared; and</li> <li>Site remediation should be undertaken on a concurrent basis according to the rehabilitation plan during the construction phase to ensure that vegetation is restored to disturbed areas, which will restore some of the site's flood</li> </ul>	<p><b>Section 6.5</b> <b>Section 6.6</b> <b>Section 6.7</b> <b>Section 7.6</b> <b>Section 7.8</b> <b>Section 7.10</b></p>

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<ul style="list-style-type: none"> <li>The stormwater management plan should address the discharge of runoff into the watercourses flowing across the site to ensure that erosion of the river channels does not occur.</li> </ul>	<ul style="list-style-type: none"> <li>The stormwater management plan should address the discharge of runoff into the watercourses flowing across the site to ensure that erosion of the river channels does not occur.</li> </ul>	<p>with brush removed from other parts of the site, encourage natural vegetation regeneration and limit erosion.</p> <ul style="list-style-type: none"> <li>All construction vehicles should remain on properly demarcated roads. No construction vehicles should be allowed to drive over the vegetation except where no cleared roads are available. In such cases a single track should be used and multiple paths should not be formed.</li> </ul>	<p>grasses that can be mowed as need be to reduce fuel loads.</p> <ul style="list-style-type: none"> <li>Monitor the establishment of alien invasive species around pans and remove as soon as detected, whenever possible before regenerative material can be formed.</li> </ul>	<p>should be given ablation facilities at the construction sites that are located at least 100m away from the drainage lines/ephemeral streams and regularly serviced. These measures should be addressed, implemented and monitored in terms of the EMP for the construction phase.</p> <ul style="list-style-type: none"> <li>Monopoles for transmission lines should be placed outside of the recommended buffers for the streams. Where the access route to the lines needs to be constructed through the drainage channels, disturbance of the channels should be limited. These areas should be rehabilitated after construction is complete and the areas monitored for growth of invasive alien plants. The collection point should be located outside of the 30m of any delineated drainage lines.</li> <li>Existing road infrastructure should be utilized as far as possible to minimize the overall disturbance created by the proposed project. Where access routes need to be constructed through ephemeral streams, disturbance of the channel should be limited. All crossings over drainage channels or stream beds should be such that the flow within the drainage channel is not impeded. Road infrastructure and power transmission lines should coincide as much as possible to minimize the impact. Any disturbed areas</li> </ul>	<p>prior to being discharged back into the natural water courses, thus not only preventing erosion, but would support the maintenance of natural base flows within these systems, i.e. hydrological regime (water quantity and quality) is maintained.</p> <ul style="list-style-type: none"> <li>Any crossings must be designed in such a manner so as not to impede or divert any baseflows or increase upstream flood inundation. The use of portal culverts spanning up to 2m are suggested for the large crossings and pipe culverts for the smaller crossings. It is however recommended that box culverts be selected over pipe culverts as they are less restrictive in terms of flow and also aid in reducing habitat fragmentation.</li> <li>Clearing of vegetation should be kept to a minimum and any areas that were used as laydown or construction</li> </ul>	<p>prior to being discharged back into the natural water courses, thus not only preventing erosion, but would support the maintenance of natural base flows within these systems, i.e. hydrological regime (water quantity and quality) is maintained.</p> <ul style="list-style-type: none"> <li>Any crossings must be designed in such a manner so as not to impede or divert any baseflows or increase upstream flood inundation. The use of portal culverts spanning up to 2m are suggested for the large crossings and pipe culverts for the smaller crossings. It is however recommended that box culverts be selected over pipe culverts as they are less restrictive in terms of flow and also aid in reducing habitat fragmentation.</li> <li>Clearing of vegetation should be kept to a minimum and any areas that were used as laydown or construction</li> </ul>	<p>attenuation capabilities and reduce vulnerability to erosion.</p> <ul style="list-style-type: none"> <li>It is recommended that the majority of site preparation activities be undertaken during the dry season;</li> <li>A storm water management plan should be implemented during the construction phase;</li> <li>Upslope water should be directed away from cleared areas,</li> <li>Erosion of cleared areas needs to be prevented e.g. by placing rocks in this area,</li> <li>Soil and vegetation needs to be replaced at decommissioning,</li> <li>Clearing of vegetation should be supervised to ensure that no more than the minimum area of land that is needed is cleared;</li> <li>Site remediation should be undertaken on a concurrent basis during the construction phase to ensure that vegetation is restored to disturbed areas, which will restore some of the site's flood attenuation capabilities and reduce vulnerability to erosion;</li> <li>All waste products must be managed according to a waste management plan;</li> <li>All construction materials should be stored in banded areas to ensure that material loss during surface flow events are prevented;</li> <li>Vehicles should be serviced and checked for leaks on a daily basis to minimise spillage of hydrocarbon contaminants during the construction phase;</li> <li>The vehicle hard park area should be separated from clean</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
					<p>should be rehabilitated to ensure that these areas do not become subject to erosion or invasive alien plant growth.</p> <ul style="list-style-type: none"> <li>Operational activities should as far as possible be limited to the delineated site for the proposed development and the identified access routes. Invasive alien plant growth should be monitored on an ongoing basis to ensure that these disturbed areas do not become infested with invasive alien plants.</li> <li>Any septic tanks constructed for the project should be located at least 100m (measured from top of bank) from the ephemeral streams and at least 1000m away from any boreholes/wellpoints being utilised on the site. Storm water run-off infrastructure must be maintained to mitigate both the flow and water quality impacts of any storm water leaving the wind energy facilities site. Should any erosion features develop, they should be stabilised as soon as possible.</li> <li>All crossings over drainage channels or stream beds after the construction phase should be rehabilitated such that the flow within the drainage channel is not impeded. Maintenance of transmission lines should only take place via the designated access routes.</li> <li>Maintenance of infrastructure related to the project should only take place via the designated access</li> </ul>	<p>camps areas must be rehabilitated.</p> <ul style="list-style-type: none"> <li>Appropriate ablution facilities should be provided for construction workers during construction and on-site staff during the operation of the facility.</li> <li>Strict use and management of all hazardous materials used on site.</li> <li>Strict management of potential sources of pollution (e.g. litter, hydrocarbons from vehicles and machinery, cement during construction, etc.).</li> <li>Containment of all contaminated water by means of careful run-off management on the development site.</li> <li>Strict control over the behaviour of construction workers.</li> <li>Working protocols incorporating pollution control measures (including approved method statements by the contractor) should be clearly set out in the Construction Environmental Management Plan (CEMP) for the project and strictly enforced.</li> </ul>	<p>camps areas must be rehabilitated.</p> <ul style="list-style-type: none"> <li>Appropriate ablution facilities should be provided for construction workers during construction and on-site staff during the operation of the facility.</li> <li>Strict use and management of all hazardous materials used on site.</li> <li>Strict management of potential sources of pollution (e.g. litter, hydrocarbons from vehicles and machinery, cement during construction, etc.).</li> <li>Containment of all contaminated water by means of careful run-off management on the development site.</li> <li>Strict control over the behaviour of construction workers.</li> <li>Working protocols incorporating pollution control measures (including approved method statements by the contractor) should be clearly set out in the Construction Environmental Management Plan (CEMP) for the project and strictly enforced.</li> </ul>	<p>water areas with berms or channels; and</p> <ul style="list-style-type: none"> <li>Spillage should be managed through an emergency spill response plan.</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
					routes. Disturbed areas along the access routes should be monitored to ensure that these areas do not become subject to erosion or invasive alien plant growth.				
<b>Heritage</b>	<ul style="list-style-type: none"> <li>Orange Hill and its surroundings must be considered a no-go area and a 700 m buffer must be implemented.</li> <li>SMS Hill and its surroundings must be considered a no-go area and a 1.9 km north/south buffer must be implemented (approximately 450 m from all recorded heritage resources).</li> <li>Gobees se Pan and its immediate surroundings must be considered a no-go area and a 1.2 km east/west, 1.3 km north/south buffer implemented (approximately 350 m from all recorded heritage resources).</li> <li>Springbokvlei and its immediate surroundings must be considered a no-go area and a 900 m east/west, 1 000 m north/south buffer implemented (approximately 200 m from all recorded heritage resources).</li> </ul>	<ul style="list-style-type: none"> <li>Orange Hill and its surroundings must be considered a no-go area and a 700 m buffer must be implemented.</li> <li>SMS Hill and its surroundings must be considered a no-go area and a 1.9 km north/south buffer must be implemented (approximately 450 m from all recorded heritage resources).</li> <li>Gobees se Pan and its immediate surroundings must be considered a no-go area and a 1.2 km east/west, 1.3 km north/south buffer implemented (approximately 350 m from all recorded heritage resources).</li> <li>Springbokvlei and its immediate surroundings must be considered a no-go area and a 900 m east/west, 1 000 m north/south buffer implemented (approximately 200 m from all recorded heritage resources).</li> </ul>	<ul style="list-style-type: none"> <li>From an archaeological perspective, there would be no inhibitors to the construction of the solar facility</li> </ul>	<ul style="list-style-type: none"> <li>A no-go space must be left at and surrounding the locale between 29.28490°S, 18.73832°E and 29.28517°S, 18.74018°E, with a 100 m buffer zone measured from the edges of the rock outcrop.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigation of the affected archaeological resources would entail either avoidance of the relevant area or excavation, collection and analysis of stone artefacts from the area to be impacted. Alternative 1 is preferred because it has fewer turbines (smaller spatial impact) and aligns better with the space in between the two significant archaeological sites.</li> <li>Avoid using the roads through Namies and accessing the site via another route, either southwards from the Aggeneys-Namies road or northwards from the Loop 10 road.</li> <li>Move the turbines further away from the Namies village but it is believed that the presently planned 2 km buffers for Alternative 1 and 1.6 km for Alternative 2 are sufficient.</li> </ul>	<ul style="list-style-type: none"> <li>No mitigation suggested for PV, substations and connections as well as for the access roads. Widening of the N14 access road will result in impacts to graves and historic ruins. Use one of the alternatives or routing the road south of Namies as mitigation.</li> <li>A no-development buffer zone of a radius of 500 m must be implemented around Boorwater Farm and the Namies school building.</li> </ul>	<ul style="list-style-type: none"> <li>A no-development buffer zone of a radius of 500 m must be implemented around Boorwater Farm and the Namies school building.</li> <li>Avoid Namies by moving the access road to the south of the village site. Use of the alternative or the second alternative access road is supported.</li> </ul>	<ul style="list-style-type: none"> <li>Although some archaeological material will be impacted, the impact is considered Low. Lack of site boundaries or associated organic remains or reduces scientific value greatly. In the unlikely event that unmarked graves are present and found during the construction phase, work at that location must be halted, the feature should be cordoned off and the heritage authority (SAHRA) notified. They are likely to suggest mitigation in the form of exhumation. No mitigation has been suggested.</li> <li>A Visual Impact Assessment by a specialist which considers the proposed impact of the development on the Cultural Landscape, particularly the archaeological landscape.</li> </ul>	<b>Section 6.11</b>
<b>Social</b>	<ul style="list-style-type: none"> <li>Source local labour, businesses and resources for supply, where possible.</li> <li>Compile relevant and clearly defined procurement standards to govern choices of suppliers, products and the methods and procedures that are to be used to communicate with pertinent suppliers. These standards need to be carefully defined and analysed by the developer, for quality</li> </ul>	<ul style="list-style-type: none"> <li>Source local labour, businesses and resources for supply, where possible.</li> <li>Compile relevant and clearly defined procurement standards to govern choices of suppliers, products and the methods and procedures that are to be used to communicate with pertinent suppliers. These standards need to be carefully defined and analysed by the developer, for quality</li> </ul>	No Social data	<ul style="list-style-type: none"> <li>Procure materials, goods and services from local/regional suppliers where feasible.</li> <li>Liaise with local business initiatives and enterprise development agencies to build on existing local enterprises.</li> <li>Identify opportunities where training can be carried out to develop local skills.</li> <li>Implement labour-intensive technologies</li> </ul>	<ul style="list-style-type: none"> <li>The developer should encourage the EPC contractor to increase the local procurement practices and employment of people from local communities as far as feasible to maximise the benefits to the local economies. Currently the requirement is that the IPP's score in the bid is evaluated as follows: 30% based on economic development (ie: on local content, job</li> </ul>	<ul style="list-style-type: none"> <li>Where feasible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically semi- and low- skilled job categories.</li> <li>Before the construction phase commences the proponent should meet with representatives from the Local Municipality to establish what skills exist in the area and develop a database.</li> </ul>	<ul style="list-style-type: none"> <li>Where feasible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically semi- and low- skilled job categories.</li> <li>Before the construction phase commences the proponent should meet with representatives from the Local Municipality to establish what skills exist in the area and develop a database.</li> </ul>	<ul style="list-style-type: none"> <li>The employment of locals (particularly women and previously disadvantaged individuals) should be encouraged and contractors should be contractually bound to giving preference to local persons;</li> <li>Positions should only be filled by outsiders if the required skills are not available in the local study area;</li> <li>Goods and services should only be sourced from outside the local</li> </ul>	<b>Section 6.13 Section 6.14 Section 7.7 Section 7.8 Section 7.11 Section 7.12</b>



Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<p>and sustainability purposes, as well as for monitoring and evaluation of the suppliers and service providers.</p> <ul style="list-style-type: none"> <li>Establish an educational notice board in order to provide an ideal practical learning environment for local and district schools.</li> <li>Source supplies from local labour, businesses and resources, where possible.</li> <li>It is recommended that the local government and stakeholders undertake the necessary studies to ascertain as to whether establishing manufacturing activities in the area related to the proposed activities and the green energy industry is feasible.</li> <li>Source supplies of services, labour and products from the local and regional economies. It is recommended that local labour, resources and businesses be sourced during the construction stage.</li> <li>Implement labour contracts whereby Contractors are required to employ a certain percentage of local labour.</li> <li>Encourage the local authority to implement a services management plan to monitor demand on infrastructure services so that upgrades or new services can be installed in a timeous manner.</li> <li>Provide basic construction skills programs pertaining to the projects in order to maximise the benefits of the project in the</li> </ul>	<p>and sustainability purposes, as well as for monitoring and evaluation of the suppliers and service providers.</p> <ul style="list-style-type: none"> <li>Establish an educational notice board in order to provide an ideal practical learning environment for local and district schools.</li> <li>Source supplies from local labour, businesses and resources, where possible.</li> <li>It is recommended that the local government and stakeholders undertake the necessary studies to ascertain as to whether establishing manufacturing activities in the area related to the proposed activities and the green energy industry is feasible.</li> <li>Source supplies of services, labour and products from the local and regional economies. It is recommended that local labour, resources and businesses be sourced during the construction stage.</li> <li>Implement labour contracts whereby Contractors are required to employ a certain percentage of local labour.</li> <li>Encourage the local authority to implement a services management plan to monitor demand on infrastructure services so that upgrades or new services can be installed in a timeous manner.</li> <li>Provide basic construction skills programs pertaining to the projects in order to maximise the benefits of the project in the</li> </ul>		<p>and methods where practical.</p> <ul style="list-style-type: none"> <li>Investigate opportunities for reuse of materials and extension of the life of the operation such as through retrofitting.</li> <li>Implement skills and career development through the decommissioning process.</li> <li>Encourage small scale enterprise development, including through reuse of materials made available through dismantling of the PV facility.</li> <li>Implement measures for assisting employees with seeking alternative employment.</li> <li>Employ people from the local region where feasible.</li> <li>Carry out early identification of existing community initiatives which can be expanded.</li> <li>Conduct consultation with stakeholders regarding community development projects requiring enhancement.</li> <li>Carry out targeted support to existing community development projects in line with identified needs.</li> <li>Institute and maintain 24 hour security and access control to the project site.</li> <li>Set up signage warning of on-site hazards.</li> <li>Clearly demarcate construction areas.</li> <li>Construct and maintain security fencing on the perimeter and around electrical substations.</li> <li>Develop and implement emergency response procedures.</li> <li>Verify the technical competency of staff</li> </ul>	<p>creation) and 70% on price per MW/h.</p> <ul style="list-style-type: none"> <li>The developer should engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods, and products from local suppliers where feasible.</li> <li>The operator of the proposed development should be encouraged to procure materials, goods and products required for the operation of the facility from local suppliers to increase the positive impact in the local economy as far as possible.</li> <li>Organise local community meetings to advise the local labour on the project that is planned to be established and the jobs that can potentially be applied for.</li> <li>Establish a local skills desk (in Pofadder) to determine the potential skills that could be sourced in the area.</li> <li>Recruit local labour as far as feasible.</li> <li>Employ labour-intensive methods in construction where feasible.</li> <li>Sub-contract to local construction companies where possible.</li> <li>Use local suppliers where feasible and arrange with the local Small and Medium Enterprises to provide transport, catering, and other services to the construction crew.</li> <li>Facilitate knowledge and skills transfer between foreign experts and South African professionals during the pre-</li> </ul>	<ul style="list-style-type: none"> <li>Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase.</li> <li>The recruitment selection process should seek to promote gender equality and the employment of women whenever possible.</li> <li>The proponent, in consultation with the Local Municipality should develop a database of local companies, specifically companies that qualify as Black Economic Empowerment (BEE) companies that qualify as potential service providers prior to the commencement of the tender process for construction contractors.</li> <li>Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically semi and low-skilled job categories. This will reduce the potential impact that this category of worker could have on local family and social networks.</li> <li>The proponent and the contractor should develop a Code of Conduct for the construction phase. The code should identify what types of behaviour and activities by construction workers are not permitted. Construction workers that breach code of good conduct should be dismissed. All dismissals must comply with the South African labour legislation.</li> <li>The proponent and contractor should implement and HIV/AIDS awareness</li> </ul>	<ul style="list-style-type: none"> <li>Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase.</li> <li>The recruitment selection process should seek to promote gender equality and the employment of women whenever possible.</li> <li>The proponent, in consultation with the Local Municipality should develop a database of local companies, specifically companies that qualify as Black Economic Empowerment (BEE) companies that qualify as potential service providers prior to the commencement of the tender process for construction contractors.</li> <li>Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically semi and low-skilled job categories. This will reduce the potential impact that this category of worker could have on local family and social networks.</li> <li>The proponent and the contractor should develop a Code of Conduct for the construction phase. The code should identify what types of behaviour and activities by construction workers are not permitted. Construction workers that breach code of good conduct should be dismissed. All dismissals must comply with the South African labour legislation.</li> <li>The proponent and contractor should implement and HIV/AIDS awareness</li> </ul>	<p>municipal area if it is not available in this area; and</p> <ul style="list-style-type: none"> <li>Orlight SA should create conditions conducive to the involvement of local businesses, entrepreneurs and SMMEs.</li> <li>Orlight SA should actively seek to contribute positively to the local municipal area, and to build capacity and strengthen skills in this area; and</li> <li>Orlight SA should either contribute to existing LED programmes implemented or planned by the local municipality, or initiate programmes of their own that are aligned with the local municipal LED objectives.</li> <li>An influx of job-seekers should be proactively discouraged by being transparent about the local employment policy to be adopted by the project and by requiring verification of local residence status from job applicants;</li> <li>The establishments of informal housing/ or settlements should be actively prevented by implementing an effective system through which the erection of such structures can be reported and dismantled as soon as possible;</li> <li>Adequate accommodation and ablution facilities should be made available to the construction workforce; and</li> <li>A code of conduct for the construction workforce should be developed and they should be contractually bound to it and their</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<p>local municipality and to leave a lasting influence on the workforce.</p> <ul style="list-style-type: none"> <li>Implement an educational initiative during the construction phase of the proposed wind and solar facilities as it provides an ideal practical learning environment for local and district schools.</li> </ul>	<p>local municipality and to leave a lasting influence on the workforce.</p> <ul style="list-style-type: none"> <li>Implement an educational initiative during the construction phase of the proposed wind and solar facilities as it provides an ideal practical learning environment for local and district schools.</li> </ul>		<p>operating and managing the facility.</p> <ul style="list-style-type: none"> <li>Implement and carry out regular review of emergency response procedures.</li> <li>Implement regular maintenance of vehicles.</li> <li>Minimise construction activities between 6pm and 6am in sites close to homestead.</li> <li>Ensure placement of accommodation / construction camp away from the resident farmer's household.</li> <li>Enforce strict speed limits for vehicles moving on the property.</li> <li>Develop and put into effect a code of conduct for employees.</li> <li>Enhance and/or support local and provincial authority initiatives on HIV/AIDS and communicable disease awareness.</li> <li>Include conditions for contractors to provide HIV/AIDS education and introduce rotation to enable contract workers not residing in the area to visit their homes regularly.</li> <li>Provide recreational facilities such as soccer fields for construction workers and facilitate access to nearby towns for shopping, religious gatherings etc.</li> <li>Manage expectations of job creation through the information and communication programme.</li> <li>Maintain close liaison with local and provincial law enforcement agencies.</li> <li>Incorporate into the code of conduct for employees including punitive measures for theft and related crimes.</li> </ul>	<p>establishment and construction phases.</p> <ul style="list-style-type: none"> <li>Set up apprenticeship programmes to build onto existing or develop new skills of construction workers, especially those coming from the local communities.</li> <li>Where possible, local labour should be considered for employment to increase the positive impact on the local economy.</li> <li>Local Small and Medium Enterprises should be approached to investigate the opportunities for supplying inputs required for the maintenance and operation of the facility, as far as feasible.</li> <li>Renewable developers in the area should in conjunction consider establishing vocational training programmes for the local labour force to promote the development of skills required by the wind energy industry and thus provide for the opportunities for these people to be employed in other similar facilities elsewhere around Khai-Ma LM or other parts of the country.</li> <li>Set up a recruitment office in the nearby towns (i.e. Pofadder) and adhere to strict labour recruitment practices that would reduce the desire of potential job seekers to loiter around the properties in hope to find temporary employment.</li> <li>Employ locals as far as feasible through the creation of the local skills database and recruitment of suitable candidates.</li> </ul>	<p>programme for all construction workers at the outset of the construction phase.</p> <ul style="list-style-type: none"> <li>The movement of construction workers on and off the site, specifically construction workers from outside the area, should be closely managed and monitored by the contractors. In this regard the contractors should be responsible for making the necessary arrangements for transporting non-local workers to and from site on a daily basis.</li> <li>The contractor should make the necessary arrangements for allowing workers from outside the area to return home over weekends and or on a regular basis during the construction phase. This would reduce the risk posed by construction workers from the outside area on local family structures and social networks.</li> <li>It is recommended that no construction workers, with the exception of security personnel, should be permitted to stay overnight on the site.</li> <li>The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase which are proven to be associated with the construction of the solar energy facility will be compensated for. The agreement should be signed before the construction phase begins.</li> <li>The proponent should hold contractors liable for compensating</li> </ul>	<p>programme for all construction workers at the outset of the construction phase.</p> <ul style="list-style-type: none"> <li>The movement of construction workers on and off the site, specifically construction workers from outside the area, should be closely managed and monitored by the contractors. In this regard the contractors should be responsible for making the necessary arrangements for transporting non-local workers to and from site on a daily basis.</li> <li>The contractor should make the necessary arrangements for allowing workers from outside the area to return home over weekends and or on a regular basis during the construction phase. This would reduce the risk posed by construction workers from the outside area on local family structures and social networks.</li> <li>It is recommended that no construction workers, with the exception of security personnel, should be permitted to stay overnight on the site.</li> <li>The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase which are proven to be associated with the construction of the solar energy facility will be compensated for. The agreement should be signed before the construction phase begins.</li> <li>The proponent should hold contractors liable for compensating</li> </ul>	<p>working conditions should be fair.</p> <ul style="list-style-type: none"> <li>Employment opportunities during the decommissioning phase should go to as many local residents as possible, minimising the adverse effect the inevitable job losses will have on the local population;</li> <li>Project infrastructure should be decommissioned appropriately and in consultation with the local municipality;</li> <li>Retrenchments must be aligned with South African labour legislation, and workers should be notified in advance of impending retrenchments; and</li> <li>Orlight SA should consider providing skills training to employees so as to improve their chances of gainful employment elsewhere.</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
				<ul style="list-style-type: none"> <li>Establish and maintain transparency in recruitment procedure.</li> <li>Ensure transparency in recruitment procedures.</li> <li>Maintain effective communication with local community structures and stakeholders during all project phases to address potential and real tensions.</li> <li>A communication and information programme should be used to maximise procurement from local service providers.</li> <li>Include management and enhancement measures for local and BBBEE employment in the EMP.</li> <li>Adhere to OHS legal requirements and measures contained in the EMP.</li> <li>Establish and implement OHS procedures for employees on site, including use of Personal Protection Equipment (PPE).</li> <li>Conduct regular staff training on OHS.</li> <li>Implement an employee code of conduct which incorporates safety issues including prohibition of operating vehicles and machinery after use of substances which could impair reflexes.</li> <li>Implement measures to ensure that disposal at appropriately licenced landfill sites is carried out.</li> <li>Use construction waste rock/soil for rehabilitation of the disused quarry on the farm Zuurwater.</li> <li>Apply the hierarchy of waste management to project activities.</li> </ul>	<ul style="list-style-type: none"> <li>Control the movement of workers between the site and areas of residence to minimise loitering around the proposed facility by providing scheduled transportation services between the urban areas and the construction site.</li> <li>Engage communities with respect to their possible involvement during construction in providing supporting services such as catering, temporary housing of workers, transportation, etc.</li> <li>Formalise trading and service provision on the site, by providing a dedicate area for such services and signing contracts with service providers.</li> <li>Set up a gate and controlled access system to monitor the movement of people to and from the property, as well as to reduce the influx of job seekers to the site itself.</li> <li>Ensure that any damages or losses to the nearby farms that can be linked to the conduct of the construction workers are adequately reimbursed.</li> <li>Assign a person to deal with complaints and concerns of the affected parties.</li> <li>Adhere to strict labour recruitment practices that would increase the use of local labour.</li> <li>Provide adequate signage along the R14 to warn motorists of the construction activities taking place on the site.</li> <li>Engage with local authorities and inform them of the development as well as discuss with them the ability of the</li> </ul>	<ul style="list-style-type: none"> <li>farmers and communities in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors and neighbouring landowners. The agreement should also cover losses and costs associated with fires caused by construction workers or construction related activities.</li> <li>The EMPr must outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested.</li> <li>Contractors appointed by the proponent must ensure that all workers are informed at the outset of the construction phase of the conditions contained on the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms.</li> <li>Contractors appointed by the proponent must ensure that construction workers who are found guilty of stealing livestock, poaching and/or damaging farm infrastructure are dismissed and charged. This should be contained in the Code of Conduct. All dismissals must be in accordance with South African labour legislation.</li> <li>The housing of construction workers on the site should be limited to security personnel.</li> <li>Contractor to ensure that open fires on the site for cooking or heating are not allowed</li> </ul>	<ul style="list-style-type: none"> <li>farmers and communities in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors and neighbouring landowners. The agreement should also cover losses and costs associated with fires caused by construction workers or construction related activities.</li> <li>The EMPr must outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested.</li> <li>Contractors appointed by the proponent must ensure that all workers are informed at the outset of the construction phase of the conditions contained on the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms.</li> <li>Contractors appointed by the proponent must ensure that construction workers who are found guilty of stealing livestock, poaching and/or damaging farm infrastructure are dismissed and charged. This should be contained in the Code of Conduct. All dismissals must be in accordance with South African labour legislation.</li> <li>The housing of construction workers on the site should be limited to security personnel.</li> <li>Contractor to ensure that open fires on the site for cooking or heating are not allowed</li> </ul>		

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
				<ul style="list-style-type: none"> <li>Ensure that sanitation facilities are well managed and used appropriately so as not to pose a health and environmental hazard.</li> <li>Consider the NEM: Waste Act.</li> </ul>	<p>municipality to meet the demands for social and basic services created by the migrant construction workers.</p> <ul style="list-style-type: none"> <li>Where feasible, assist the municipality in ensuring that the quality of the local social and economic infrastructure does not deteriorate making use of the social responsibility allocations.</li> <li>A three-year social development and economic development programme could be devised by the developer throughout the project's lifespan.</li> <li>The plan should be developed in consultation with local authorities and local communities to identify community projects that would result in the greatest social benefits.</li> <li>The plan should be reviewed on an annual basis and where necessary updated.</li> <li>When devising enterprise development initiatives, the focus should be on creating sustainable and self-sufficient enterprises.</li> </ul>	<p>except in designated areas.</p> <ul style="list-style-type: none"> <li>Contractor to ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard, special care should be taken during the hot risk dry, windy summer months.</li> <li>Contractor to provide adequate fire-fighting equipment on-site.</li> <li>Contractor to provide fire-fighting training to selected construction staff.</li> <li>As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the fire-fighting costs borne by farmers and local authorities.</li> <li>Use of fire prevention and fire management strategies for the solar energy facility.</li> <li>The landowners and developer should ensure that they join the local fire protection agency.</li> <li>The establishment of a Community Trust should be discussed with the Local Municipality and other relevant stakeholders.</li> <li>The proponent should implement a training and skills development programme for locals</li> </ul>	<p>except in designated areas.</p> <ul style="list-style-type: none"> <li>Contractor to ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard, special care should be taken during the hot risk dry, windy summer months.</li> <li>Contractor to provide adequate fire-fighting equipment on-site.</li> <li>Contractor to provide fire-fighting training to selected construction staff.</li> <li>As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the fire-fighting costs borne by farmers and local authorities.</li> <li>Use of fire prevention and fire management strategies for the solar energy facility.</li> <li>The landowners and developer should ensure that they join the local fire protection agency.</li> <li>The establishment of a Community Trust should be discussed with the Local Municipality and other relevant stakeholders.</li> <li>The proponent should implement a training and skills development programme for locals</li> </ul>		

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
						<p>during the first 5 years of the operation phase. The aim of the programme should be to maximise the number of South African's and locals employed during the operational phase of the project.</p> <ul style="list-style-type: none"> <li>The proponent in consultation with the local municipality should establish criteria for identifying and funding community projects and initiatives in the area. The criteria should be aimed at maximising the benefits for the community as a whole and not individuals within the community.</li> <li>The proponent in consultation with the local municipality should ensure that strict financial management controls, including annual audits, should be implemented to ensure that the funds generated for the community trust from the solar energy facility are managed for benefit of the community as a whole and not individuals within the community.</li> <li>The proponent should liaise with representatives from the local municipality and local tourism representatives to raise awareness of the proposed facility as this could improve tourism in the area.</li> </ul>	<p>during the first 5 years of the operation phase. The aim of the programme should be to maximise the number of South African's and locals employed during the operational phase of the project.</p> <ul style="list-style-type: none"> <li>The proponent in consultation with the local municipality should establish criteria for identifying and funding community projects and initiatives in the area. The criteria should be aimed at maximising the benefits for the community as a whole and not individuals within the community.</li> <li>The proponent in consultation with the local municipality should ensure that strict financial management controls, including annual audits, should be implemented to ensure that the funds generated for the community trust from the solar energy facility are managed for benefit of the community as a whole and not individuals within the community.</li> <li>The proponent should liaise with representatives from the local municipality and local tourism representatives to raise awareness of the proposed facility as this could improve tourism in the area.</li> </ul>		
<b>Visual</b>	<ul style="list-style-type: none"> <li>LED directional lighting, with no overhead lighting, should be used to prevent light spillage.</li> <li>Lighting should be kept to an efficient minimum while still keeping within the safety norms. See Annexure 3 of the Visual Impact Assessment for an explanation, and additional information concerning the</li> </ul>	<ul style="list-style-type: none"> <li>LED directional lighting, with no overhead lighting, should be used to prevent light spillage.</li> <li>Lighting should be kept to an efficient minimum while still keeping within the safety norms. See Annexure 3 of the Visual Impact Assessment for an explanation, and additional information concerning the</li> </ul>	No measures since site is not visible from any main roads or other important vantage points.	<ul style="list-style-type: none"> <li>Minimise the size of the laydown area and work areas.</li> <li>Implement strict procedures for location and management of the construction site, laydown and work areas.</li> <li>Avoid littering.</li> <li>Minimise the removal of vegetation.</li> <li>Rehabilitate disturbed construction areas to</li> </ul>	<ul style="list-style-type: none"> <li>Traffic management to limit congestion on the roads by large vehicles.</li> <li>Management procedures to restrict vehicle speed on the gravel roads need to be set in place to limit vehicle dust.</li> <li>Management procedures to restrict vehicle speed on the gravel roads need to be</li> </ul>	<ul style="list-style-type: none"> <li>Retain/re-establish and maintain natural vegetation in all areas outside of the development footprint.</li> <li>Plan ancillary infrastructure (i.e. substation and workshop) in such a way and in such a location that clearing of vegetation is minimised. Consolidate existing infrastructure as far as</li> </ul>	<ul style="list-style-type: none"> <li>Retain/re-establish and maintain natural vegetation in all areas outside of the development footprint.</li> <li>Plan ancillary infrastructure (i.e. substation and workshop) in such a way and in such a location that clearing of vegetation is minimised. Consolidate existing infrastructure as far as</li> </ul>	<ul style="list-style-type: none"> <li>The additional housing that might be built should be constructed in line with the already existing housing infrastructure. If the dwellings are placed within an already existing urban or peri-urban context then there will not be a drastic change to the visual landscape of the town. Temporary</li> </ul>	<b>Section 6.12</b>

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
	<p>implementation of the night lighting mitigation measures for the preferred location of the facility, a copy of 'Good Neighbour – Outdoor Lighting' by The New England Light Pollution Advisory Group (NELPAG) and Sky Publishing Corporation has been included.</p> <ul style="list-style-type: none"> <li>Rehabilitation of previously modified areas should be continually undertaken.</li> </ul>	<p>implementation of the night lighting mitigation measures for the preferred location of the facility, a copy of 'Good Neighbour – Outdoor Lighting' by The New England Light Pollution Advisory Group (NELPAG) and Sky Publishing Corporation has been included.</p> <ul style="list-style-type: none"> <li>Rehabilitation of previously modified areas should be continually undertaken.</li> </ul>		<p>original agricultural potential and re-vegetate using appropriate indigenous grasses.</p> <ul style="list-style-type: none"> <li>Minimise reflective surfaces.</li> <li>Appropriate choice of colour buildings.</li> <li>Ensure the site is kept neat and tidy (free of litter and refuse) at all times.</li> <li>Any disturbance to the sparse vegetation on site should be kept to a minimum.</li> <li>Ensure that the PV panels do not cause disruption of passing traffic on the N14.</li> <li>Ensure fence boundaries and onsite buildings are maintained, in order to keep the site looking neat.</li> <li>Keep the site free of debris and litter, and alien invasive species.</li> <li>Put in place measures for the efficient management of the facility.</li> </ul>	<p>set in place to limit vehicle dust.</p> <ul style="list-style-type: none"> <li>Dust management and location of the construction yard to the south of the turbine site (away from low hill to the north).</li> <li>Ripping of compacted earth on site footprint followed shortly by rehabilitation to veld grasses to prevent windblown dust.</li> <li>Continued rehabilitation to veld grasses.</li> <li>Utilisation of the existing road as the main access route.</li> <li>Dust management during construction and quick rehabilitation of laydowns areas.</li> <li>Ripping of all roads, followed by rehabilitation and restoration.</li> <li>Effective light management needs to be incorporated into the design of the lighting to ensure that the visual influence is limited without jeopardising operational safety and;</li> <li>Utilisation of specific frequency LED lighting with a green hue on perimeter security fencing.</li> <li>Directional lighting on the more exposed areas of operation, where point light source is an issue;</li> <li>No use of overhead lighting and, if possible, locate the light source closer to the operation; and</li> <li>If possible, the existing overhead lighting method should be phased out and replaced with an alternative lighting using closer to source, directed LED technology.</li> </ul>	<p>possible, and make use of already disturbed areas rather than prioritise sites wherever possible.</p> <ul style="list-style-type: none"> <li>Use existing roads wherever possible. Where new roads are required to be constructed, these should be planned carefully, taking due cognisance of the local topography. Roads should be laid out along the contour wherever possible, and should never traverse slopes at 90 degrees. Construction of roads should be undertaken with adequate drainage structures in place to forego potential erosion problems.</li> <li>Rehabilitate all construction areas.</li> <li>Ensure that vegetation is not cleared unnecessarily to make way for infrastructure.</li> <li>Maintain the general appearance of the facility as a whole.</li> <li>Monitor rehabilitated areas, and implement remedial action as and when required.</li> <li>Remove infrastructure not required for the post-decommissioning use of the site.</li> <li>Rehabilitate all areas. Consult an ecologist regarding rehabilitation specification.</li> <li>Monitor rehabilitated areas post-decommissioning and implement remedial actions.</li> <li>Maintain roads to avoid erosion and suppress dust.</li> <li>Shield the sources of light by physical barriers (walls, vegetation, or the structure itself).</li> <li>Limit mounting heights of lighting fixtures, or alternatively use foot-</li> </ul>	<p>possible, and make use of already disturbed areas rather than prioritise sites wherever possible.</p> <ul style="list-style-type: none"> <li>Use existing roads wherever possible. Where new roads are required to be constructed, these should be planned carefully, taking due cognisance of the local topography. Roads should be laid out along the contour wherever possible, and should never traverse slopes at 90 degrees. Construction of roads should be undertaken with adequate drainage structures in place to forego potential erosion problems.</li> <li>Rehabilitate all construction areas.</li> <li>Ensure that vegetation is not cleared unnecessarily to make way for infrastructure.</li> <li>Maintain the general appearance of the facility as a whole.</li> <li>Monitor rehabilitated areas, and implement remedial action as and when required.</li> <li>Remove infrastructure not required for the post-decommissioning use of the site.</li> <li>Rehabilitate all areas. Consult an ecologist regarding rehabilitation specification.</li> <li>Monitor rehabilitated areas post-decommissioning and implement remedial actions.</li> <li>Mount aircraft warning lights on the turbines representing the outer perimeter of the facility. In this manner, fewer warning lights can be utilised to delineate the facility as one large obstruction.</li> <li>Shield the sources of light by physical barriers</li> </ul>	<p>housing can easily be disassembled after the Solar PV Power Plant has been built.</p> <ul style="list-style-type: none"> <li>Recommendations about positioning of the Solar PV Power Plant components, based on the VIA and viewshed analyses that compare various options for placement within the study area was given. Although the study area straddles the N14, the visual impact of construction activities and the installation of the Solar PV Power Plant components will be reduced if activities are restricted within the recommended development areas.</li> <li>The infrastructure should be demolished and removed as quickly and efficiently as possible.</li> <li>Best practice rehabilitation methods should be adopted</li> <li>No vegetation removal should be allowed outside the designated project development footprint;</li> <li>A representative sample of indigenous plant species should be selected and relocated to an on-site nursery. During site remediation and rehabilitation, these species should be replanted on disturbed areas as per the rehabilitation plan;</li> <li>Where possible, the removal and destruction of indigenous vegetation should be avoided (i.e. adhering to the designated internal road network); and</li> <li>An alien invasive and weed control programme should be implemented throughout the project lifetime;</li> </ul>	

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
						<ul style="list-style-type: none"> <li>lights or bollard level lights.</li> <li>• Make use of minimum lumen or wattage in fixtures.</li> <li>• Make use of down-lighters, or shielded fixtures.</li> <li>• Make use of Low Pressure Sodium lighting or other types of low impact lighting.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>(walls, vegetation, or the structure itself).</li> <li>• Limit mounting heights of lighting fixtures, or alternatively use foot-lights or bollard level lights.</li> <li>• Make use of minimum lumen or wattage in fixtures or alternatively use foot-lights or bollard level lights.</li> <li>• Make use of minimum lumen or wattage in fixtures.</li> <li>• Make use of down-lighters, or shielded fixtures.</li> <li>• Make use of Low Pressure Sodium lighting or other types of low impact lighting.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• The possible tourism aspect of the solar PV power plant should be explored and promoted; and</li> <li>• Exotic tree species have been introduced in the town of Aggeneys along avenues. Planting of fast-growing species between receptors and the proposed Solar PV Power Plant is an option for visual screening; however it is not advised considering water scarcity and the threat of spreading of alien invasive species.</li> </ul>	
<b>Traffic</b>	<ul style="list-style-type: none"> <li>• Ensure that road junctions have good sightlines;</li> <li>• Implement traffic control measures where necessary;</li> <li>• Transport components overnight as far as possible; and</li> <li>• Engage with the roads authorities prior to construction to ensure the necessary road upgrades, permits, traffic escorts etc are scheduled.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that road junctions have good sightlines;</li> <li>• Implement traffic control measures where necessary;</li> <li>• Transport components overnight as far as possible; and</li> <li>• Engage with the roads authorities prior to construction to ensure the necessary road upgrades, permits, traffic escorts etc are scheduled.</li> </ul>	No data	<ul style="list-style-type: none"> <li>• Implement efficient scheduling of goods delivery and water.</li> <li>• Implement measures for conduct of employee and contractor drivers.</li> <li>• Install temporary high visibility advanced warning signs Types W107 and W108 (intersection ahead) on the N14 in both directions at project commencement.</li> <li>• Install permanent high visibility advance warning signs Types W107 and W108 (Intersection Ahead) on the N14 once operation commences.</li> <li>• Maintain communication with SANRAL regarding their requirements for measures to be instituted.</li> <li>• Implement a 60m buffer on the N14.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that road junctions have good sightlines;</li> <li>• Transport the materials in the least amount of trips as possible;</li> <li>• Adhere to the speed limit;</li> <li>• Engage with the roads authorities prior to construction to ensure the necessary road upgrades, permits, traffic escorts etc. are scheduled;</li> <li>• Implement traffic control measures where necessary; and</li> <li>• Transport components overnight as far as possible.</li> </ul>	<ul style="list-style-type: none"> <li>• The transport components to the site along the N7 and N14 should be planned to avoid weekends and holiday periods as far as possible.</li> <li>• The section of the Old Springbok Road immediately opposite the farmsteads of Mr Gerhard and Wimpie Visser should be sealed should be discussed with the affected farmers. The road should be maintained during the construction phase.</li> <li>• Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.</li> <li>• The contractor must ensure that damage</li> </ul>	<ul style="list-style-type: none"> <li>• The transport components to the site along the N7 and N14 should be planned to avoid weekends and holiday periods as far as possible.</li> <li>• The section of the Old Springbok Road immediately opposite the farmsteads of Mr Gerhard and Wimpie Visser should be sealed should be discussed with the affected farmers. The road should be maintained during the construction phase.</li> <li>• Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.</li> <li>• The contractor must ensure that damage</li> </ul>	<ul style="list-style-type: none"> <li>• Considering the low traffic volumes and excellent sight distances at the accesses, no road widening is recommended;</li> <li>• Temporary warning signs should however be erected on the N14 on both sides of the accesses to indicate heavy vehicles turning (sign TW344/5 with appropriate wording); and</li> <li>• Care should however be taken to strengthen the N14 road edges with concrete edge beams at the accesses, each 40 m long, to prevent edge-breaks in the asphalt surface.</li> <li>• Traffic and transportation rules should be implemented;</li> <li>• Directly affected individuals (including surrounding land owners) should be aware and satisfied</li> </ul>	<b>Section 6.15</b> <b>Section 7.5</b>

Aspect	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/346/AM1	Construction of the Wind and Photovoltaic (PV) Energy Facilities, including the Construction of the Wind and PV Substations and Gridline Connections, Near Springbok, within the Nama-Khoi Local Municipality, Northern Cape Province. DEA Ref: 14/12/16/3/2/447	The Proposed Boesmanland Solar Farm Portion 6 (A Portion Of Portion 2), Farm 62 Zuurwater, Aggeneys, Northern Cape Province. DEA Ref: 12/12/20/2602	75MW PV plant on the Farm Zuurwater No 62 in the Namakwa District, Northern Cape Province, Phase 4. DEA Ref: 14/12/16/3/3/2/473	Proposed Wind Energy Facility and Associated Infrastructure on Namies Wind Farm Pty Ltd, near Aggeneys, Northern Cape Province. DEA Ref: 14/12/16/3/3/2/550	Proposed 75MW Korana Wind Energy Facility, near Poffader in the Northern Cape. DEA Ref: 14/12/16/3/3/2/683	Proposed 140MW Khâi-Mai Wind Energy Facility near Pofadder. DEA Ref: 14/12/16/3/3/2/680	Construction of the 70MW Orlight SA Photovoltaic Solar Power Plant on portion 1 of the farm Aroams 57 RD near Aggeneys within the Khai-Ma Local Municipality, Northern Cape Province DEA Ref: 12/12/20/2630	EMP Reference
				<ul style="list-style-type: none"> <li>No exclusive right-turn lanes or left-turn deceleration lanes are deemed necessary. Access approach from the site to the N14 only needs to be single lane which will be able to accommodate both the left-turning and right-turning traffic.</li> <li>Establish and enforce a strict code of conduct for employees and contractors which includes adherence to traffic rules.</li> </ul>		<p>caused by construction related traffic to the Old Springbok Road is repaired on a regular basis throughout the construction phase. The costs associated with the repair must be borne by the contractor.</p> <ul style="list-style-type: none"> <li>All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.</li> <li>The contractor should ensure that workers are informed that no waste can be thrown out of the vehicle windows while being transported and from the site. Workers who throw waste out windows should be fined.</li> <li>Waste generated during the construction phase should be transported to the nearest registered landfill site. The Pofadder landfill site does not have the required operating standards to prevent windblown litter from being generated.</li> </ul>	<p>caused by construction related traffic to the Old Springbok Road is repaired on a regular basis throughout the construction phase. The costs associated with the repair must be borne by the contractor.</p> <ul style="list-style-type: none"> <li>All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.</li> <li>The contractor should ensure that workers are informed that no waste can be thrown out of the vehicle windows while being transported and from the site. Workers who throw waste out windows should be fined.</li> <li>Waste generated during the construction phase should be transported to the nearest registered landfill site. The Pofadder landfill site does not have the required operating standards to prevent windblown litter from being generated.</li> </ul>	<p>with the contractor's traffic-related logistics;</p> <ul style="list-style-type: none"> <li>Appropriate warning signs should be erected on the access road to the site;</li> <li>Access roads should be maintained; and</li> <li>All construction vehicles should be roadworthy and have the required permits and/ or licenses to carry their load.</li> <li>Access to the eastern and western sides of the development should be provided off the N14, opposite each other, at the current farm accesses located approximately 1.5 km north-west of the Namies / Lus gravel road T-junction.</li> </ul>	