

BASIC ASSESSMENT REPORT

Table 3: Impact Assessment summary (No-go alternative, Pre mitigation and Post mitigation)

Impact score:

0-10 = Low

10-20 = Medium

>20 = High

Impact	Applicable Alternative	Description of no go alternative (current status quo)	No go (current status quo)	Pre-mitigation	Post-Mitigation
Construction:					
Noise and Dust	All alternatives	From a regional perspective, the power station currently generates noise and dust during its everyday activities. No construction work is taking place on the feasible site at present. The PV facility would not significantly increase these levels during construction	-9	-11.25	-9
Cement mixing during construction	All alternatives	No cement mixing is currently taken place on the site, thus this will be a new impact.	0	-6	-1.5
Power line route layout Alternative 1(S2): Impact on Wetlands	S2	The wetlands are at present degraded but not impacted upon	0	-13	-13
Power line route layout Alternative 1(S1): Impact on Wetlands	S1	The wetlands are at present degraded but not impacted upon	0	-13	-6.5
PV facility Design (Impact on future groundwater)	Alternative site 1	The ADF has, and is likely to continue, impacting on the environment and specifically the quality of the groundwater. The current design will occupy an area of 17ha. Rainwater falling onto the PV arrays will be collected as per the rain water management system as described in section 5.2. The implication of this is that a significant volume of rainwater that historically infiltrated the ADF (and consequently had the potential to pollute ground water), will be collected and discharged away from the ADF. Therefore, ground water quality has been affected historically, but the PV facility will likely have a positive effect on the status quo going forward.	-21	-21	-9.75
Habitat loss through site clearance	Alternative site 1	The current site has been impacted upon by historical land use changes. Remnant secondary grassland still exists on the site that will be impacted upon.	-10	-16	-14

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Impact	Applicable Alternative	Description of no go alternative (current status quo)	No go (current status quo)	Pre-mitigation	Post-Mitigation
Impacts on threatened fauna	Site alternative 1	The current site has been impacted upon by historical land use changes that have negatively affected fauna and flora	-10	-5	-2
Establishment and spread of declared weeds and alien invader plants.	All alternatives	The current site has been impacted upon by historical land use changes that have negatively affected fauna and flora	-10	-9	-2
Topsoil removal and stockpiling	All alternatives	No topsoil stockpiles exist on the site at present, this it would constitute a new impact	0	-10	-2
Heritage resource	All alternatives	No heritage resources exist on site, and none will be affected	0	N/A	N/A
Operational Phase					
Improved economic development (positive impact)	Alternative site 1	The PV facility will improve the current status quo, by increasing employment opportunities. They will be limited and temporary	0	+7	+7
Sense of place impact from PV facility	Alternative site 1	The current sense of place has been affected by the presence of the power station (i.e. the visual resource is already disturbed). The PV Facility will add to the current visual intrusion caused by the power station. This change is however not expected to be significant considering the nature and extent of the existing infrastructure.	-8	-16	-9
Loss of arable land	Alternative site 1	The land on which the PV facility is located not will not be available for arable use. The portion of land located on the ADF (7ha portion) is presently unsuitable for arable use. However the portion of land proposed for the PV facility (10ha portion) that is located off the ADF will not be available in the future.	0	-3	-3
Water use during operation	Alternative site 1	No water use is currently taking place on the site, although the power station does use large quantities water as per their WUL. The PV facility would only require water to clean PV panels and the quantities are insignificant when compared to the overall power station water use.	0	0	0

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Impact	Applicable Alternative	Description of no go alternative (current status quo)	No go (current status quo)	Pre-mitigation	Post-Mitigation
Impact on future land use	Alternative site 1	The use of a brownfield site for a portion of the PV facility is an improvement in the current status quo, if mitigated	-25	-20	-5
Sense of place impact from ADF end use change	Alternative site 1	The end use change is seen as a positive effect, since the ADF will be converted to a renewable energy generation facility. The facility design will inter alia address some of the negative aspects typically associated with ADFs, improving the long term usefulness of the ADF in the sense that it provides a suitable development area for renewable energy.	-16	-12	-2
Impact of PV facility on the surface and ground water resources during operation	Alternative site 1	The current status quo has polluted ground water resources. The increase in coverage area to collect rain water (in the form of a rain water management system,) will have a positive effect on ground water pollution in the long term. Any increase above the status quo coverage will likely reduce future potential ground water pollution.	-17.5	-17.5	11.25
Impact on storm water quality	Alternative site 1	Storm water emanating from the PV facility panels may periodically become polluted by the power station and other local air pollution sources (e.g. ash, low level domestic burning, etc). Particulates settling on the PV arrays will likely become mobilised during rainfall events. Any additional storm water management mitigations from the DWA from/as part of the WUL process and WUL consultation will be incorporated. Eskom must ensure that the receiving environment is not contaminated by storm water, if it is deemed polluted.	-11	-11	-2.75
Storm water control and treatment	Alternative site 1	The site (both the ADF portion and the non-ADF portion) has insufficient storm water management measures at present. The PV facility will improve this.	-17.5	-17.5	-5
Decommissioning					
Impact on groundwater	Alternative site 1	If the PV facility is decommissioned, and removed, it is possible that ground water will continue to be polluted in future from the historical ADF. The impacts of the decommissioning should be re-investigated and the hydrogeological model updated prior to decommissioning, to predict the extent of the potential impact and consequently mitigate this where necessary.	-17.5	0	0

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Impact	Applicable Alternative	Description of no go alternative (current status quo)	No go (current status quo)	Pre-mitigation	Post-Mitigation
Impact on future land use	Alternative site 1	The PV facility construction will have a positive impact on future land use on the ADF. Decommissioning will revert the land to its current undesirable state.	-25	0	0
Improved economic development (positive impact)	Alternative site 1	The PV facility will improve the current status quo, by creating limited employment opportunities and providing renewable energy. Decommissioning would remove this positive impact.	0	0	0

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Impact name:	<i>Water use during construction</i>	
Phase:	<i>Construction</i>	
Alternative:	<i>All Alternatives</i>	
Description of impact:	<i>Water will be used for the construction of the PV facility. The applicant will utilize water from the Grootvlei power station (water licence holder). The use of alternative dust suppressants such as silicone sprays will be undertaken.</i>	
Environmental Risk		
<p style="text-align: center;"> — Pre-mitigation — Post-mitigation </p>		
Environmental Risk (Pre-mitigation)	-16.25	
Environmental Risk (Post-mitigation)	-5.25	Medium
Degree of confidence in impact prediction:		
Recommended Mitigation Measures		
<i>The applicant must use water from a licenced source.</i>		
Impact Prioritisation		
Public Response	1.00	
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts	1.00	
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low to moderate.</i>		
Degree of potential irreplaceable loss of resources	1.00	
<i>Unlikely to result in irreplaceable loss of resources.</i>		
Prioritisation Factor	1.00	
Final Significance	-5.25	

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Impact name:	<i>Power line route layout: Impact on Wetlands</i>	
Phase:	<i>Construction</i>	
Alternative:	<i>Alternative S2</i>	
Description of impact:	<p><i>Historically the biodiversity in the surrounding area has been modified permanently by the construction and operation of the Grootwei Power Station and associated activities. The topography, wetlands and underlying soils have been altered and therefore vegetation and species composition have been altered. The power lines will have an impact on habitat loss, through clearing for pylon foundations and subsequent temporary access roads. The impact on water flow would be temporary.</i></p>	
Environmental Risk	<div style="text-align: center;"> <p>The radar chart displays five axes: Extent of Impact, Duration of Impact, Magnitude of Impact, Reversibility of Impact, and Probability. The scale for each axis ranges from 0 to 5. Two lines are plotted: a blue line for 'Pre-mitigation' and a red line for 'Post-mitigation'. The 'Pre-mitigation' line shows high values (around 4-5) for all categories, while the 'Post-mitigation' line shows much lower values (around 1-3) for all categories, indicating a significant reduction in environmental risk after mitigation measures are implemented.</p> </div>	
Environmental Risk (Pre-mitigation)	-13.00	
Environmental Risk (Post-mitigation)	-13.00	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures	<p>Soil disturbance during construction must be minimised by staying with demarcated areas Existing access roads must be where ever possible to avoid new soil disturbance The spanning of the power line must be done in such a manner that no linear soil disturbance is created, this the construction equipment must stay within existing infrastructure to reach pylon positions</p> <ol style="list-style-type: none"> 1. The area to be cleared must be fenced or demarcated to avoid unnecessary direct impacts to the vegetation beyond the limits of construction. 2. Any area that is disturbed beyond the foot print of the aide must be rehabilitated after construction. 3. Use indigenous vegetation to rehabilitate disturbed areas. Stripped topsoil must be used to rehabilitate disturbed areas. 4. Topsoil that has been removed should be used for rehabilitation of disturbed areas. This should be done as soon as possible to ensure that seeds and other vegetative propagates within the soil are able to grow within rehabilitated areas and provide a bank of species indigenous to the site. 	
Impact Prioritisation		
Public Response	1.00	
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts	1.00	
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low.</i>		
Degree of potential irreplaceable loss of resources	2.00	
<i>Unlikely to result in irreplaceable loss of resource</i>		
Prioritisation Factor	1.17	
Final Significance	-15.17	

BASIC ASSESSMENT REPORT

Impact name:	Power line route layout: Impact on Wetlands	
Phase:	Construction	
Alternative:	Alternative S1	
Description of impact:	<p><i>Historically the biodiversity in the surrounding area has been modified permanently by the construction and operation of the Grootvlei Power Station and associated activities. The topography, wetlands and underlying soils have been altered and therefore vegetation and species composition have been altered. The power lines will have an impact on habitat loss, through clearing for pylon foundations and subsequent temporary access roads. The impact on water flow would be temporary.</i></p>	
Environmental Risk	<div style="text-align: center;"> <p>The radar chart displays two data series: Pre-mitigation (blue line) and Post-mitigation (red line). The Y-axis represents the score from 0 to 5. The X-axis categories are Extent of Impact, Duration of Impact, Magnitude of Impact, Reversibility of Impact, and Probability. Pre-mitigation scores are consistently 4 across all categories, while Post-mitigation scores are consistently 3 across all categories.</p> </div>	
Environmental Risk (Pre-mitigation)	-13.00	
Environmental Risk (Post-mitigation)	-6.50	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures	<p><i>Soil disturbance during construction must be minimised by staying with demarcated areas</i></p> <p><i>Existing access roads must be where ever possible to avoid new soil disturbance</i></p> <p><i>The spanning of the power line must be done in such a manner that no linear soil disturbance is created, this the construction equipment must stay within existing infrastructure to reach pylon positions</i></p> <ol style="list-style-type: none"> <i>1. The area to be cleared must be fenced or demarcated to avoid unnecessary direct impacts to the vegetation beyond the limits of construction.</i> <i>2. Any area that is disturbed beyond the foot print of the aide must be rehabilitated after construction.</i> <i>3. Use indigenous vegetation to rehabilitate disturbed areas. Stripped topsoil must be used to rehabilitate disturbed areas.</i> <i>4 T opsoil that has been removed should be used for rehabilitation of disturbed areas. This should be done as soon as possible to ensure that seeds and other vegetative propagates within the soil are able to grow within rehabilitated areas and provide a bank of species indigenous to the site.</i> 	
Impact Prioritisation		
Public Response	1.00	
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts	1.00	
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low.</i>		
Degree of potential irreplaceable loss of resources	2.00	
<i>Unlikely to result in irreplaceable loss of resource</i>		
Prioritisation Factor	1.17	
Final Significance	-7.58	

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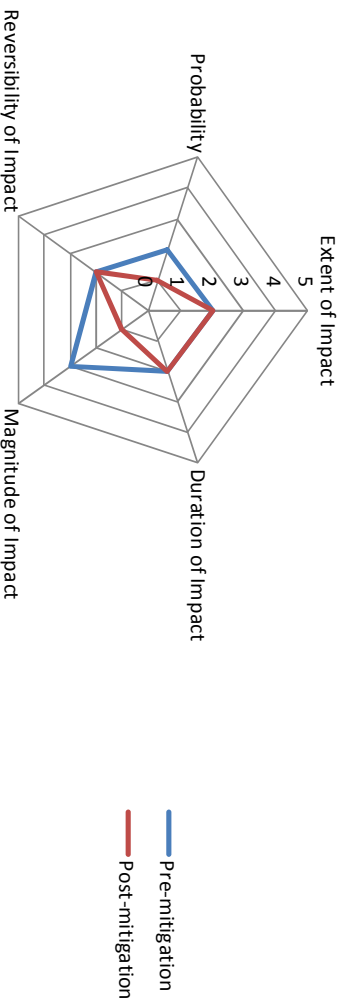
Impact name:	<i>PV facility Design - 45 % impermeable (Impact on future groundwater)</i>																		
Phase :	<i>Planning and design</i>																		
Alternative :	<i>Preferred Alternative (Alternative site 1)</i>																		
Description of impact:	<i>The PV facility footprint & rain water catchment system will make the ADF 45% impermeable. The impact associated with this are increased precipitation run-off and erosion with a positive impact on future ground water pollution. By reducing future rain water infiltration by a minimum of 45% the current status quo is significantly improved. Limited rain water infiltration may still occur having a negligible negative impact on ground water quality in future. This alternative with a minimum impermeability of 45% is the preferred option.</i>																		
Environmental Risk	<div style="text-align: center;"> <p>The radar chart displays two data series: 'Pre-mitigation' (blue line) and 'Post-mitigation' (red line). The five axes represent different impact categories, each scored from 0 to 5. The 'Pre-mitigation' series consistently scores higher than the 'Post-mitigation' series across all categories, indicating a significant reduction in environmental risk after mitigation measures are implemented.</p> <table border="1"> <caption>Radar Chart Data</caption> <thead> <tr> <th>Category</th> <th>Pre-mitigation</th> <th>Post-mitigation</th> </tr> </thead> <tbody> <tr> <td>Extent of Impact</td> <td>5</td> <td>2</td> </tr> <tr> <td>Duration of Impact</td> <td>4</td> <td>3</td> </tr> <tr> <td>Magnitude of Impact</td> <td>4</td> <td>3</td> </tr> <tr> <td>Reversibility of Impact</td> <td>4</td> <td>3</td> </tr> <tr> <td>Probability</td> <td>4</td> <td>2</td> </tr> </tbody> </table> </div>	Category	Pre-mitigation	Post-mitigation	Extent of Impact	5	2	Duration of Impact	4	3	Magnitude of Impact	4	3	Reversibility of Impact	4	3	Probability	4	2
Category	Pre-mitigation	Post-mitigation																	
Extent of Impact	5	2																	
Duration of Impact	4	3																	
Magnitude of Impact	4	3																	
Reversibility of Impact	4	3																	
Probability	4	2																	
Environmental Risk (Pre-mitigation)	-21.25																		
Environmental Risk (Post-mitigation)	-9.75																		
Degree of confidence in impact prediction:	Medium																		
Recommended Mitigation Measures	<p><i>The rain water catchment system must be implemented as indicated in the conceptual design. Any additional stormwater management mitigations from the DWA from/as part of the WUL process and WUL consultation will be incorporated. Eskom must ensure that the receiving environment is not contaminated by stormwater, if it is deemed polluted.</i></p>																		
Impact Prioritisation																			
Public Response	3.00																		
DWA and DEA expressed interest in current status quo and legal requirements																			
Cumulative Impacts	2.00																		
Ground water pollution will have a noticeable cumulative effect.																			
Degree of potential irreplaceable loss of resources	2.00																		
Water resources will be irreversibly affected																			
Prioritisation Factor	1.67																		
Final Significance	-16.25																		

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Impact name:	<i>Habitat loss through site clearance</i>	
Phase:	<i>Construction</i>	
Alternative:	<i>All Alternatives</i>	
Description of Impact:	<p style="text-align: center;"><i>Site alternative 1 is located in an area that is dominated by secondary grassland and therefore biodiversity constraints are fairly low. The site is significantly impacted on by the already existing ash disposal facility, a boundary road and historical ploughing. Development on site will cause a slight fragmentation on the secondary grassland vegetation.</i></p>	
Environmental Risk	<p>The radar chart displays five impact factors on a scale of 0 to 5. The 'Pre-mitigation' scenario (blue line) shows high risk levels: Extent of Impact (4), Duration of Impact (4), Magnitude of Impact (4), Reversibility of Impact (4), and Probability (4). The 'Post-mitigation' scenario (red line) shows significantly reduced risk: Extent of Impact (2), Duration of Impact (2), Magnitude of Impact (2), Reversibility of Impact (2), and Probability (2).</p>	
Environmental Risk (Pre-mitigation)	-16.25	
Environmental Risk (Post-mitigation)	-13.75	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures	<ol style="list-style-type: none"> 1) <i>The area to be cleared must be fenced or demarcated to avoid unnecessary direct impacts to the vegetation beyond the limits of construction.</i> 2) <i>Any area that is disturbed beyond the foot print of the aide must be rehabilitated after construction.</i> 3) <i>Use indigenous vegetation to rehabilitate disturbed areas. Stripped topsoil must be used to rehabilitate disturbed areas.</i> 4) <i>Topsoil that has been removed should be used for rehabilitation of disturbed areas. This should be done as soon as possible to ensure that seeds and other vegetative propagates within the soil are able to grow within rehabilitated areas and provide a bank of species indigenous to the site.</i> 	
Impact Prioritisation		
Public Response	1.00	
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts	1.00	
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low</i>		
Degree of potential irreplaceable loss of resources	2.00	
<i>The secondary vegetation will be affected and this will have a permanent a permanent impact the flora and fauna on the</i>		
Prioritisation Factor	1.17	
Final Significance	-16.04	

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Impact name:	<i>Impacts on threatened fauna</i>
Phase:	<i>Construction</i>
Alternative:	<i>All Alternatives</i>
Description of Impact:	<i>No threatened fauna should be affected on the feasible alternative site.</i>
Environmental Risk	



Environmental Risk (Pre-mitigation)

-4.50

Environmental Risk (Post-mitigation)

-1.75

Degree of confidence in Impact prediction:

Medium

Recommended Mitigation Measures

By selecting the feasible alternative site, impacts on threatened species has been reduced.

Impact Prioritisation

Public Response

1.00

No responses were received on this issue during the public consultation process.

Cumulative Impacts

1.00

If mitigation measures are applied then the cumulative impact is anticipated to be low

Degree of potential irreplaceable loss of resources

1.00

Unlikely to result in irreplaceable loss of resources.

Prioritisation Factor

1.00

Final Significance

-1.75

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Impact name:	<i>Establishment and spread of declared weeds and alien invader plants.</i>																			
Phase:	<i>Construction and operation</i>																			
Alternative:	<i>All Alternatives</i>																			
Description of Impact:	<p><i>The proposed site for the PV plant is heavily impacted on by various anthropogenic activities which have resulted in very little natural vegetation left and thus allowing the encroachment and establishment of alien and invasive plant species . Several species listed as alien invasive species are present on site. The various alien species that occur within the sites could become problematic in the absence of control measures.</i></p>																			
Environmental Risk	<p>The radar chart shows five axes representing different impact metrics, each with a scale from 0 to 5. Two data series are plotted: 'Pre-mitigation' (blue line) and 'Post-mitigation' (red line). The 'Post-mitigation' series shows a consistent and significant reduction in impact across all five categories compared to the 'Pre-mitigation' series.</p> <table border="1"> <caption>Approximate values from the radar chart</caption> <thead> <tr> <th>Category</th> <th>Pre-mitigation</th> <th>Post-mitigation</th> </tr> </thead> <tbody> <tr> <td>Extent of Impact</td> <td>4.5</td> <td>2.5</td> </tr> <tr> <td>Duration of Impact</td> <td>4.0</td> <td>2.0</td> </tr> <tr> <td>Magnitude of Impact</td> <td>4.0</td> <td>2.0</td> </tr> <tr> <td>Reversibility of Impact</td> <td>3.5</td> <td>1.5</td> </tr> <tr> <td>Probability</td> <td>3.0</td> <td>1.5</td> </tr> </tbody> </table>		Category	Pre-mitigation	Post-mitigation	Extent of Impact	4.5	2.5	Duration of Impact	4.0	2.0	Magnitude of Impact	4.0	2.0	Reversibility of Impact	3.5	1.5	Probability	3.0	1.5
Category	Pre-mitigation	Post-mitigation																		
Extent of Impact	4.5	2.5																		
Duration of Impact	4.0	2.0																		
Magnitude of Impact	4.0	2.0																		
Reversibility of Impact	3.5	1.5																		
Probability	3.0	1.5																		
Environmental Risk (Pre-mitigation)	-9.00																			
Environmental Risk (Post-mitigation)	-2.00																			
Degree of confidence in impact prediction:	Medium																			
Recommended Mitigation Measures	<ol style="list-style-type: none"> 1) <i>Disturbed areas should be rehabilitated as quickly as possible.</i> 2) <i>Soil stockpiles should not be translocate from areas with alien plants into the site and within the site alien plants on stockpiles must be controlled so as to avoid the development of a soil seed bank of alien plants within the stock-piled soil.</i> 3) <i>Any alien plants must be immediately controlled to avoid establishment of a soil seed bank.</i> 4) <i>An on-going monitoring programme should be implemented to detect and quantify any aliens that may become established and provide information for the management of aliens.</i> 																			
Impact Prioritisation																				
Public Response	1.00																			
Cumulative Impacts	1.00																			
Degree of potential irreplaceable loss of resources	2.00																			
Natural vegetation will be affected, the site will have a permanent impact on the flora on site.	1.17																			
Prioritisation Factor	1.17																			
Final Significance	-2.33																			

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Impact name:	<i>Loss of Wetland Vegetation</i>	
Phase:	<i>Construction</i>	
Alternative:	<i>All Alternatives</i>	
Description of Impact:	<p><i>Some permanent loss of wetland vegetation may occur during the construction of the power line required to connect the PV facility to the power station. This loss of vegetation will occur through damage caused by vehicles and heavy machinery used as well as in areas where construction material is stockpiled. This is based on the extent of wetland areas that will be impacted which are currently largely modified.</i></p>	
Environmental Risk	<div style="text-align: center;"> <p>The radar chart displays two data series: 'Pre-mitigation' (blue line) and 'Post-mitigation' (red line). The chart has five axes: 'Extent of Impact', 'Duration of Impact', 'Magnitude of Impact', 'Reversibility of Impact', and 'Probability'. The scale on each axis ranges from 0 to 5. The Pre-mitigation series shows high scores across all categories, while the Post-mitigation series shows significantly lower scores, indicating a reduction in risk after mitigation measures are implemented.</p> </div>	
Environmental Risk (Pre-mitigation)	-14.00	
Environmental Risk (Post-mitigation)	-10.50	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures	<ol style="list-style-type: none"> 1) Areas where vegetation is disturbed must be landscaped and re-vegetated by indigenous surrounding species. 2) Any alien species growing in these areas will need to be removed; 3) Seeding with an appropriate seed mix (consult local vegetation experts) should be implemented if there is a qualified opinion that vegetation cannot recover by itself from a botanist. 4) It is recommended that all material stockpiles, temporary construction access routes must ploughed and re-vegetated upon completion of construction activities on site. 5) Service roads should be maintained as informal road utilising by all means existing informal road networks observed on site, construction of new roads should be avoided at all times where possible to limit any additional impacts that could be avoided on site. 	
Impact Prioritisation		
Public Response	1.00	
Cumulative Impacts	1.00	
No responses were received on this issue during the public consultation process.		
Cumulative Impacts	1.00	
If mitigation measures are applied then the cumulative impact is anticipated to be low		
Degree of potential irreplaceable loss of resources	1.00	
Unlikely to result in irreplaceable loss of resources.		
Prioritisation Factor	1.00	
Final Significance	-10.50	

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Impact name:	<i>Topsoil removal and stockpiling</i>	
Phase:	<i>Construction</i>	
Alternative:	<i>All Alternatives</i>	
Description of Impact:	<p><i>Topsoil removal and stock piling could have a detrimental effect on natural vegetation. The removal of the topsoil layer during site levelling and clearing will significantly reduce the soil fertility of the site. It is likely that weeds and alien vegetation will establish themselves on the cleared areas and on the soil stockpiles themselves. It is very important that the weeds and alien vegetation be controlled and removed, to prohibit the spread of alien vegetation into the natural ecosystem. Stockpiles and topsoil will act as seed bases if alien vegetation is not removed.</i></p>	
Environmental Risk	<p>The radar chart shows five categories: Extent of Impact, Duration of Impact, Magnitude of Impact, Reversibility of Impact, and Probability. The scale ranges from 0 to 5. The Pre-mitigation risk (blue line) is approximately 4.5 for Extent, 4.0 for Duration, 4.0 for Magnitude, 4.0 for Reversibility, and 4.0 for Probability. The Post-mitigation risk (red line) is significantly lower, approximately 1.5 for Extent, 1.5 for Duration, 1.5 for Magnitude, 1.5 for Reversibility, and 1.5 for Probability.</p>	
Environmental Risk (Pre-mitigation)	-10.00	
Environmental Risk (Post-mitigation)	-2.25	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures	<ol style="list-style-type: none"> 1) <i>Disturbance of indigenous natural vegetation must be kept to a minimum.</i> 2) <i>Disturbed areas should be rehabilitated as quickly as possible.</i> 3) <i>Soil stockpiles should not be translocate from areas with alien plants into the site and within the site alien plants on stockpiles must be controlled so as to avoid the development of a soil seed bank of alien plants within the stock-piled soil.</i> 4) <i>Any alien plants must be immediately controlled to avoid establishment of a soil seed bank that would take decades to remove.</i> 5) <i>An on-going monitoring programme should be implemented to detect and quantify any aliens that may become established and provide information for the management of aliens.</i> 	
Impact Prioritisation		
Public Response	1.00	
Cumulative Impacts	1.00	
No responses were received on this issue during the public consultation process.		
Cumulative Impacts	1.00	
If mitigation measures are applied then the cumulative impact is anticipated to be low.		
Degree of potential irreplaceable loss of resources	2.00	
Likely to result in irreplaceable loss of resources.		
Prioritisation Factor	1.17	
Final Significance	-2.63	

BASIC ASSESSMENT REPORT

Impact name:	<i>Noise during construction</i>	
Phase:	Construction	
Alternative:	All Alternatives	
Description of Impact:	<p><i>Plant will generate noise during construction. The initial grading and levelling on site would constitute the greatest noise impact, of a temporary nature. The construction of the facility will be based on a pre-fabricated system, therefore no cutting, drilling etc would be required during assembly. It is anticipated that construction will take 12 months. There are nearby residential areas adjacent to the study area with a substantial number of sensitive noise receptors in the area.</i></p>	
Environmental Risk	<p>The radar chart displays five impact factors on the axes, each with a scale from 0 to 5. Two lines represent 'Pre-mitigation' (blue) and 'Post-mitigation' (red). The 'Post-mitigation' line is consistently closer to the center (0) than the 'Pre-mitigation' line, indicating a reduction in risk across all categories. The 'Probability' and 'Duration of Impact' categories show the most significant reduction.</p>	
Environmental Risk (Pre-mitigation)	-13.00	
Environmental Risk (Post-mitigation)	-9.00	Medium
Degree of confidence in impact prediction:		
Recommended Mitigation Measures		
<p><i>1) Noise should be minimised by using hand labour where feasible.</i></p> <p><i>2) Noise generating activities must be limited to between 08h00 and 17h00.</i></p> <p><i>3) Noise generating work on weekends and public holidays should be limited from 09h00 until 13h00</i></p>		
Impact Prioritisation		
Public Response	1.00	
No responses were received on this issue during the public consultation process.		
Cumulative Impacts	1.00	
The impact should not have a cumulative affect, unless more developments are approved in the same area.		
Degree of potential irreplaceable loss of resources	1.00	
No irreplaceable resources would be affected		
Prioritisation Factor	1.00	
Final Significance	-9.00	

BASIC ASSESSMENT REPORT

Impact name:	<i>Sense of place impact from PV facility</i>	
Phase :	<i>Construction</i>	
Alternative :	<i>Alternative site 1</i>	
Description of Impact:	<p><i>The PV development will be located within the Grootvlei Power station. The study area therefore has existing infrastructure so the proposed development will blend in with its immediate surroundings. The feasible site is furthest away from Grootvlei Village (the most sensitive visual receptors in the area). The solar arrays may have an impact of reflection to nearby receptors.</i></p>	
Environmental Risk		
Environmental Risk (Pre-mitigation)		-16.25
Environmental Risk (Post-mitigation)		-9.00
Degree of confidence in impact prediction:		Medium
Recommended Mitigation Measures	<p><i>If feasible the applicant may consider the use of non reflective solar arrays</i></p> <ol style="list-style-type: none"> <i>1) Dust suppression techniques must be in place at all times during the construction, operational and the decommissioning phases. Access roads will require an effective dust suppression management programme, such as the use of non-polluting chemicals that will retain moisture in the perimeter road surface.</i> <i>2) If feasible, vegetation screens (a combination of indigenous trees and shrubs such as Rhus pyroides and Buddleja salvitrolla) should be planted along the boundaries of the proposed project to screen sensitive viewing areas as per the specialist Visual Impact Assessment report.</i> <i>3) The vegetation screen must be maintained in order to ensure that the plants remain as an effective screen and buffer zone for the life of the project.</i> <i>4) Light pollution should be kept to a minimum wherever possible as light at night travels great distances. If security lighting is used at the solar park it should only be used where absolutely necessary and carefully directed.</i> <i>5)The negative impact of night lighting, glare and spotlight effects, can be mitigated using the following methods:</i> <ul style="list-style-type: none"> <i>• Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the development;</i> <i>• Avoid high pole top security lighting along the periphery of the site and if possible only use lights that are activated on movement at illegal entry to the site;</i> <i>• The lights will therefore be off for most of the time and would alert security personnel should the lights suddenly come on at night or</i> <i>• In preference, utilize closed circuit TV security systems with infrared capability, which will minimize the need for security lighting</i> 	
Impact Prioritisation		
Public Response		1.00
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts		1.00
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low to moderate.</i>		
Degree of potential irreplaceable loss of resources		1.00
<i>Unlikely to result in irreplaceable loss of resources.</i>		
Prioritisation Factor		1.00
Final Significance		-9.00

BASIC ASSESSMENT REPORT

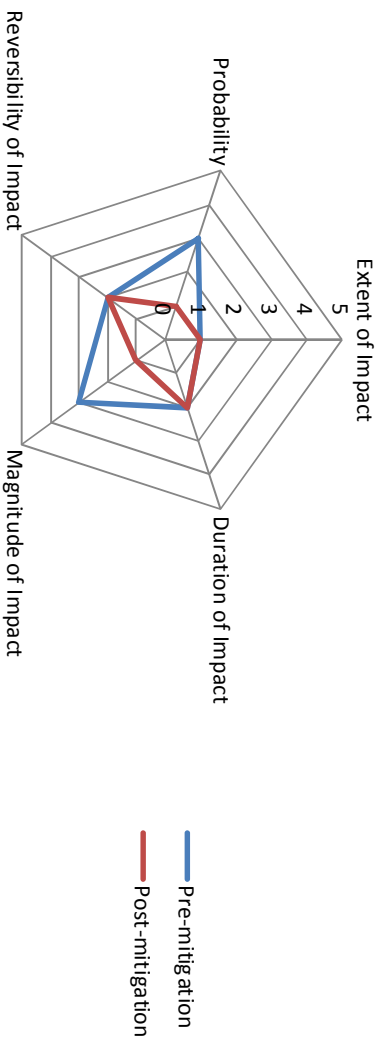
Impact name:	<i>Loss of arable land</i>	
Phase:	<i>Construction</i>	
Alternative:	<i>All Alternatives</i>	
Description of Impact:	<i>The top soil of many parts of the power station property and on the feasible site is disturbed. The fact that the land is already disturbed mitigates this impact somewhat, as is not suitable for grazing and cultivation due to the already existing disturbances.</i>	
Environmental Risk		
Environmental Risk (Pre-mitigation)	-2.75	
Environmental Risk (Post-mitigation)	-2.75	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures	<i>None required - The feasible site is not suitable for other agricultural uses</i>	
Impact Prioritisation		
Public Response	1.00	
Cumulative Impacts	<i>No responses were received on this issue during the public consultation process.</i>	
Cumulative Impacts	1.00	
Degree of potential irreplaceable loss of resources	<i>If mitigation measures are applied then the cumulative impact is anticipated to be low to moderate.</i>	
Degree of potential irreplaceable loss of resources	1.00	
Prioritisation Factor	<i>Unlikely to result in irreplaceable loss of resources.</i>	
Prioritisation Factor	1.00	
Final Significance	-2.75	

BASIC ASSESSMENT REPORT

Impact name:	<i>Heritage resource</i>	
Phase :	<i>Construction</i>	
Alternative :	<i>All Alternatives</i>	
Description of Impact:	<i>A specialist HIA study was undertaken for the development footprint. No features were identified on the feasible site.</i>	
Environmental Risk (Pre-mitigation)	N/A	
Environmental Risk (Post-mitigation)	N/A	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures		
<i>As a precaution, a toolbox talk should be held to inform contractors on typical sign of heritage features and that all work must be stopped should any artefacts be unearthed.</i>		
Impact Prioritisation		
Public Response	1.00	
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts	1.00	
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low to moderate.</i>		
Degree of potential irreplaceable loss of resources	1.00	
<i>Unlikely to result in irreplaceable loss of resources.</i>		
Prioritisation Factor	1.00	
Final Significance	N/A	

BASIC ASSESSMENT REPORT

Impact name:	<i>Cement mixing for PV foundations</i>
Phase:	<i>Construction</i>
Alternative:	<i>All Alternatives</i>
Description of impact:	<i>Improper mixing of the concrete could pollute soil and water resources</i>
Environmental Risk	



Environmental Risk (Pre-mitigation)	-6.00
Environmental Risk (Post-mitigation)	-1.50
Degree of confidence in impact prediction:	Medium

Recommended Mitigation Measures

- *Ready mix concrete must be utilised where feasible.*
- *If a concrete batching area needs to be established, the relevant permits must be obtained.*
- *All waste must be removed by the contractor before leaving the site.*
- *Disturbing the ash capping should be avoided where ever possible. Where the contractor is required to remove ash it must be taken to a at a suitably licenced waste disposal facility.*

Impact Prioritisation	
Public Response	1.00
Cumulative Impacts	1.00
Degree of potential irreplaceable loss of resources	1.00
Prioritisation Factor	1.00
Final Significance	-1.50

BASIC ASSESSMENT REPORT

Impact name:	<i>Improved economic development (positive impact)</i>	
Phase:	Operation	
Alternative:	Alternative site 1	
Description of impact:	<p><i>The operation of the PV plant will assist in providing energy for the operation of the Grovlei power station. This project is part of a national project by Eskom to support renewable energy and to reduce its carbon emissions. Employment opportunities will be temporary during construction and a few limited employment opportunities will be created during operation</i></p>	
Environmental Risk	<div style="text-align: center;"> <p>Legend: — Pre-mitigation — Post-mitigation</p> </div>	
Environmental Risk (Pre-mitigation)	7.00	
Environmental Risk (Post-mitigation)	7.00	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures		
Impact Prioritisation		
Public Response	1.00	
Cumulative Impacts	1.00	
Degree of potential irreplaceable loss of resources	1.00	
Prioritisation Factor	1.00	
Final Significance	7.00	

BASIC ASSESSMENT REPORT

Impact name:	<i>Impact on future land use (contaminated land)</i>	
Phase:	<i>Operation</i>	
Alternative:	<i>All Alternatives</i>	
Description of impact:	<p><i>Historically the environment in the surrounding area has been modified permanently by the construction and operation of the Grootvlei Power Station and associated activities. The Ash disposal facility has historically impacted upon the topography, underlying soils and ground water. The ash disposal facility will be used to construct a portion of the PV facility thus changing the future end use of the ash dam. The PV end use is seen as a positive impact since it is a beneficial use of contaminated land, and will be used for renewable energy generation. The PV facility will improve the current status quo of the ash disposal facility greatly reducing the future impact on the environment.</i></p>	
Environmental Risk	<div style="text-align: center;"> <p>The radar chart displays two data series: Pre-mitigation (blue line) and Post-mitigation (red line). The Y-axis represents the 'Extent of Impact' from 0 to 5. The X-axis categories are: Extent of Impact, Duration of Impact, Magnitude of Impact, Reversibility of Impact, and Probability. The Pre-mitigation scores are approximately: Extent (3.5), Duration (4.5), Magnitude (4.5), Reversibility (4.5), Probability (4.5). The Post-mitigation scores are approximately: Extent (2.5), Duration (3.5), Magnitude (3.5), Reversibility (3.5), Probability (3.5).</p> </div>	
Environmental Risk (Pre-mitigation)	-20.00	
Environmental Risk (Post-mitigation)	12.50	
Degree of confidence in Impact prediction:	Medium	
Recommended Mitigation Measures	<ul style="list-style-type: none"> • <i>Proper care should be taken with maintenance activities on the ash disposal facilities. No unnecessary excavation may be undertaken that will disturb the consolidated ashcrete layer.</i> • <i>The storm water management measures included in the conceptual design of the PV facility must be maintained.</i> • <i>Continued water quality monitoring must be implemented as indicated in the Geohydrological report.</i> 	
Impact Prioritisation		
Public Response	1.00	
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts	1.00	
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low.</i>		
Degree of potential irreplaceable loss of resources	2.00	
<i>Unlikely to result in irreplaceable loss of resource</i>		
Prioritisation Factor	1.17	
Final Significance	14.58	

BASIC ASSESSMENT REPORT

Impact name:	<i>Sense of place impact from ADF end use change</i>																			
Phase:	<i>Operation</i>																			
Alternative:	<i>Alternative site 1</i>																			
Description of impact:	<p><i>The disposal site is an existing landscape feature. The construction of the PV plant on a portion of the ash disposal site would not impact negatively on the sense of place since the ADF at present is a less than desirable landscape feature. In addition vegetation rehabilitation would be conducted and the feature's profile would blend in it's immediate surroundings (Grootvlei Power Station and associated infrastructure).</i></p>																			
Environmental Risk	<table border="1" style="display: none;"> <caption>Radar Chart Data</caption> <thead> <tr> <th>Category</th> <th>Pre-mitigation</th> <th>Post-mitigation</th> </tr> </thead> <tbody> <tr> <td>Extent of Impact</td> <td>4.5</td> <td>2.5</td> </tr> <tr> <td>Duration of Impact</td> <td>4.5</td> <td>2.5</td> </tr> <tr> <td>Magnitude of Impact</td> <td>4.5</td> <td>2.5</td> </tr> <tr> <td>Reversibility of Impact</td> <td>4.5</td> <td>2.5</td> </tr> <tr> <td>Probability</td> <td>4.5</td> <td>2.5</td> </tr> </tbody> </table>		Category	Pre-mitigation	Post-mitigation	Extent of Impact	4.5	2.5	Duration of Impact	4.5	2.5	Magnitude of Impact	4.5	2.5	Reversibility of Impact	4.5	2.5	Probability	4.5	2.5
Category	Pre-mitigation	Post-mitigation																		
Extent of Impact	4.5	2.5																		
Duration of Impact	4.5	2.5																		
Magnitude of Impact	4.5	2.5																		
Reversibility of Impact	4.5	2.5																		
Probability	4.5	2.5																		
Environmental Risk (Pre-mitigation)	-12.00																			
Environmental Risk (Post-mitigation)	-2.25																			
Degree of confidence in impact prediction:	Medium																			
Recommended Mitigation Measures	<ul style="list-style-type: none"> • <i>Vegetation cover should be established on the portion of the disposal site that will not be utilized for the construction of the PV to blend with the scenic vista.</i> • <i>Periodic monitoring should be undertaken to ensure vegetation cover is adequate</i> 																			
Impact Prioritisation																				
Public Response	1.00																			
Cumulative Impacts	1.00																			
Degree of potential irreplaceable loss of resources	1.00																			
Prioritisation Factor	1.00																			
Final Significance	-2.25																			

BASIC ASSESSMENT REPORT

Impact name:	<i>Impact of PV facility on the surface and ground water resources during operation</i>																		
Phase:	<i>Operation</i>																		
Alternative:	<i>Alternative site 1</i>																		
Description of impact:	<i>The Rain water catchment system will make the ADF a minimum of 45% impermeable and will reduce the future potential of the ADF to pollute surface and ground water. Overall this impact is positive when compared to the no-go alternative and current status quo. The beneficial result of the reducing water pollution by PV facility will be a long term positive impact.</i>																		
Environmental Risk	<div style="text-align: center;"> <p>Extent of Impact</p> <table border="1"> <caption>Radar Chart Data</caption> <thead> <tr> <th>Category</th> <th>Pre-mitigation (Blue)</th> <th>Post-mitigation (Red)</th> </tr> </thead> <tbody> <tr> <td>Probability</td> <td>4</td> <td>5</td> </tr> <tr> <td>Duration of Impact</td> <td>3</td> <td>4</td> </tr> <tr> <td>Magnitude of Impact</td> <td>3</td> <td>4</td> </tr> <tr> <td>Reversibility of Impact</td> <td>3</td> <td>4</td> </tr> <tr> <td>Extent of Impact</td> <td>3</td> <td>4</td> </tr> </tbody> </table> <p>Legend: — Pre-mitigation — Post-mitigation</p> </div>	Category	Pre-mitigation (Blue)	Post-mitigation (Red)	Probability	4	5	Duration of Impact	3	4	Magnitude of Impact	3	4	Reversibility of Impact	3	4	Extent of Impact	3	4
Category	Pre-mitigation (Blue)	Post-mitigation (Red)																	
Probability	4	5																	
Duration of Impact	3	4																	
Magnitude of Impact	3	4																	
Reversibility of Impact	3	4																	
Extent of Impact	3	4																	
Environmental Risk (Pre-mitigation)	-17.50																		
Environmental Risk (Post-mitigation)	11.25																		
Degree of confidence in impact prediction:	Medium																		
Recommended Mitigation Measures	<ul style="list-style-type: none"> • <i>The rain water catchment system must be implemented as indicated in the conceptual design.</i> • <i>Any additional management mitigations from the DWA from/as part of the WUL process and WUL consultation will be incorporated. Eskom must ensure that the receiving environment is not contaminated.</i> 																		
Impact Prioritisation																			
Public Response	1.00																		
No responses were received on this issue during the public consultation process.																			
Cumulative Impacts	1.00																		
If mitigation measures are applied then the cumulative impact is anticipated to be low to moderate.																			
Degree of potential irreplaceable loss of resources	2.00																		
Pollution would affect irreplaceable fresh water in natural systems.																			
Prioritisation Factor	1.17																		
Final Significance	13.13																		

BASIC ASSESSMENT REPORT

Impact name:	<i>Impact of fugitive emissions on storm water quality</i>																			
Phase:	<i>Operation</i>																			
Alternative:	<i>Alternative site 1</i>																			
Description of impact:	<i>A potential source of storm water pollution is fugitive emission depositing on the PV panels during dry periods, and being washed off the panels (primarily during the first rain events). It is uncertain at this stage whether the pollution would be significant or not.</i>																			
Environmental Risk	<p>The radar chart displays two data series: Pre-mitigation (blue line) and Post-mitigation (red line). The Y-axis represents the 'Extent of Impact' from 0 to 5. The X-axis categories are Probability, Duration of Impact, Magnitude of Impact, and Reversibility of Impact. The Pre-mitigation risk is significantly higher than the Post-mitigation risk across all categories.</p> <table border="1"> <caption>Environmental Risk Data</caption> <thead> <tr> <th>Category</th> <th>Pre-mitigation</th> <th>Post-mitigation</th> </tr> </thead> <tbody> <tr> <td>Extent of Impact</td> <td>4.5</td> <td>3.5</td> </tr> <tr> <td>Duration of Impact</td> <td>4.5</td> <td>3.5</td> </tr> <tr> <td>Magnitude of Impact</td> <td>4.5</td> <td>3.5</td> </tr> <tr> <td>Reversibility of Impact</td> <td>4.5</td> <td>3.5</td> </tr> <tr> <td>Probability</td> <td>4.5</td> <td>3.5</td> </tr> </tbody> </table>		Category	Pre-mitigation	Post-mitigation	Extent of Impact	4.5	3.5	Duration of Impact	4.5	3.5	Magnitude of Impact	4.5	3.5	Reversibility of Impact	4.5	3.5	Probability	4.5	3.5
Category	Pre-mitigation	Post-mitigation																		
Extent of Impact	4.5	3.5																		
Duration of Impact	4.5	3.5																		
Magnitude of Impact	4.5	3.5																		
Reversibility of Impact	4.5	3.5																		
Probability	4.5	3.5																		
Environmental Risk (Pre-mitigation)	-11.00																			
Environmental Risk (Post-mitigation)	-2.75	Medium																		
Degree of confidence in impact prediction:																				
Recommended Mitigation Measures	<p><i>A storm water management system (Rain Water Catchment System) must be included into the final design. Any additional stormwater management mitigations from the DWA from/as part of the WUL process and WUL consultation will be incorporated. Eskom must ensure that the receiving environment is not contaminated by stormwater, if it is deemed polluted.</i></p> <p><i>on a regular basis for the</i></p>																			
Public Response	1.00																			
Cumulative Impacts	1.00																			
Degree of potential irreplaceable loss of resources	1.00																			
Prioritisation Factor	1.00																			
Final Significance	-2.75																			

BASIC ASSESSMENT REPORT

Impact name:	<i>Storm water control and treatment</i>	
Phase:	<i>Operation</i>	
Alternative:	<i>Alternative site 1</i>	
Description of impact:	<p><i>The PV facility will increase storm water discharge quantities and velocities from the site. This storm water must be captured and managed appropriately in order to ensure that storm water does not pollute the environment. The rain water catchment system will assist in capturing and managing storm water.</i></p> <p><i>The PV facility on the portion not on the ADF (10ha) will also require a storm water management measure, where necessary</i></p>	
Environmental Risk	<p>The radar chart displays five categories: Extent of Impact, Duration of Impact, Magnitude of Impact, Reversibility of Impact, and Probability. The scale ranges from 0 to 5. The Pre-mitigation score (blue line) is approximately 4.5, while the Post-mitigation score (red line) is approximately 1.5.</p>	
Environmental Risk (Pre-mitigation)	-17.50	
Environmental Risk (Post-mitigation)	-5.00	
Degree of confidence in impact prediction:	Medium	
Recommended Mitigation Measures	<p><i>The Rain Water Catchment System must be implemented as part of the final PV design to control storm water volumes.</i></p> <p><i>Any additional stormwater management mitigations from the DWA from/as part of the WUL process and WUL consultation will be incorporated. Eskom must ensure that the receiving environment is not contaminated by stormwater, if it is deemed polluted.</i></p>	
Impact Prioritisation		
Public Response	1.00	
<i>No responses were received on this issue during the public consultation process.</i>		
Cumulative Impacts	1.00	
<i>If mitigation measures are applied then the cumulative impact is anticipated to be low to moderate.</i>		
Degree of potential irreplaceable loss of resources	1.00	
<i>This impact would not normally result in the loss of irreplaceable resources</i>		
Prioritisation Factor	1.00	
Final Significance	-5.00	