

## APPENDIX C: ENVIRONMENTAL AWARENESS AND FIRE MANAGEMENT PLAN

All workers rendering a service to the site must undergo Environmental Awareness and Fire Management training, as stipulated in the EMPr. At a minimum, workers must be informed of the following mitigation and monitoring measures:

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
<b>A. DESIGN PHASE</b>					
1. Potential impacts resulting from the lack of overall compliance with the conditions of the EA (issued by the DEA).	Prevent non-compliance with the conditions of the EA.	1.1. Audit the implementation of the EMPr requirements.	Ensure that the requirements of the EMPr and EA are adequately provided for and incorporated into the design phase of the project.	On going	Project Developer
		1.2. Establish clear and transparent reporting of the activities undertaken with regard to all recommendations included in the EMPr.	Ensure that the requirements of the EMPr and EA are adequately provided for and incorporated into the design phase of the project.	On going	Project Developer
<b>B. CONSTRUCTION PHASE</b>					
2. Potential risk of fire due to construction activities or behaviour of staff on site during the construction phase.	Prevent fire on site resulting of workers smoking or starting fires (i.e. cooking, heating purposes).	2.1. Designate smoking areas, as well as areas for cooking, where the fire hazard could be regarded as insignificant.	Ad-hoc checks to ensure workers are smoking or cooking in designated areas only.	<ul style="list-style-type: none"> <li>Daily</li> </ul>	ECO & Contractor
		2.2. Educate workers on the dangers of open and/or unattended fires.	Ensure fire safety requirements are well understood and respected by construction personnel. Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	<ul style="list-style-type: none"> <li>On-going</li> <li>Once-off training and ensure that all new staff are inducted</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>ECO &amp; Contractor</li> <li>ECO/ Contractor</li> <li>ECO</li> </ul>
		2.3. Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be on the site for the duration of the construction phase.	Ensure fire safety requirements are well understood and respected by construction personnel. Provide basic fire safety training.	<ul style="list-style-type: none"> <li>On-going</li> </ul>	<ul style="list-style-type: none"> <li>ECO &amp; Contractor</li> </ul>
		2.4. Ensure that cooking takes place in a designated area shown on the site map. Ensure that no firewood or kindling may be gathered from the site or surrounds.	Check compliance with specified conditions using a report card, and allocate fines when necessary.	<ul style="list-style-type: none"> <li>On-going</li> </ul>	<ul style="list-style-type: none"> <li>ECO &amp; Contractor</li> </ul>
		2.5. Fire-fighting equipment must be made available at various appropriate locations on the construction site.	Ensure fire safety requirements are well understood and respected by workers.	<ul style="list-style-type: none"> <li>On-going</li> <li>Bi-annually</li> </ul>	<ul style="list-style-type: none"> <li>ECO &amp; Contractors</li> <li>Contractor</li> </ul>

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
			Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company.		
3. Inappropriate behaviour of civil contractors and sub-contractors during the construction phase.	Prevent unnecessary impacts on the surrounding environment by ensuring that contractors are aware of the requirements of the EMPr.  Ensure that contractors and sub-contractors do not induce impacts on the surrounding environment as a result of unplanned pollution on site.  Ensure that actions by on-site contractors and sub-contractors and workers are properly managed in order to minimise impacts to surrounding environment.	3.1. Ensure that the EMPr and the EA (should it be granted by the DEA), are included in all tender documentation and contractors and sub-contractor's contracts.	Check compliance with specified conditions using a report card, and allocate fines when necessary.	On-going	ECO & Contractor
		3.2. Contractors and sub-contractors must use the ablation facilities situated in a designated area within the site; and no bathing/washing should be permitted outside the designated area.	Check compliance with specified conditions using a report card, and allocate fines when necessary.	On-going	ECO & Contractor
		3.3. All litter will be deposited in a clearly labelled, closed, animal-proof disposal bin in the construction area; particular attention needs to be paid to food waste.	Check compliance with specified conditions using a report card, and allocate fines when necessary.	On-going	ECO & Contractor
		3.4. No person other than a qualified specialist or personnel authorised by the Project Developer, will disturb or remove plants outside the demarcated construction area.	Check compliance with specified conditions using a report card, and allocate fines when necessary.	On-going	ECO & Contractor
		3.5. No person other than a qualified specialist or personnel authorised by the Project Developer, will disturb animals on the site.	Check compliance with specified conditions using a report card, and allocate fines when necessary.	On-going	ECO & Contractor
		3.6. Educate workers on site about suitable behaviour on site and initiate environmental awareness. Staff must be informed that no trapping, snaring or feeding of any animal will be allowed.	Carry out Environmental Awareness Training.	Once-off training and ensure that all new staff are inducted.  Monthly	Contractor/ ECO  ECO
			Conduct audits of the signed attendance registers.		

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
4. Inappropriate planning and of site camp establishment.	Ensure that environmental issues are taken into consideration in the planning for site establishment.	4.1. All construction activities, materials, equipment and personnel must be restricted to the actual construction area specified (as required to undertake the construction work). The construction area must be demarcated by the Contractor.	Monitor compliance and record non-compliance and incidents.	Before construction	ECO
		4.2. The Contractor should install and maintain Construction Site Information Boards in the position, quantity, design and dimensions specified by the Project Developer.	Monitor compliance and record non-compliance and incidents.	Before construction	ECO
		4.3. General building materials should be stored in appropriate designated areas on site such that there will be no runoff from these areas towards sensitive systems. The site camp must be removed after construction.	Monitor compliance and record non-compliance and incidents.	Before construction	ECO
5. Increased animal road mortality.	Reduction in animal mortality.	5.1. The construction staff should be made aware of the presence of fauna and within the proposed project area. The construction personnel and staff must also be made aware of the general speed limits on site and must be alert at all times for potential crossings, and should be trained on how to react in these situations.	Carry out Environmental Awareness Training.  Conduct audits of the signed attendance registers.	Once-off training and ensure that all new staff are inducted.  Monthly	Contractor/ ECO  ECO
		5.2. To ensure that animals are not attracted to the site (and potentially resulting in increased road mortality), the waste collection bins and skips should be covered with suitable material, where appropriate, and the site camp must be kept clean on a daily basis.	Monitor the activities via visual inspections, and record and report any non-compliance.	Daily	Contractor & ECO
		5.3. Establish a monitoring programme to record the number of faunal road mortalities and collisions. If it is established that the number of collisions and faunal fatalities increase within an area, particularly with regards to smaller species (reptiles), then measures such as exclusion fences within these areas only should be installed.	Appropriate monitoring and recording should be undertaken.  Exclusion fences should be installed, if needed to direct animals to safe road crossings.	Weekly  As required	ECO  ECO & Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
6. Increased energy consumption during the construction phase.	Reduce energy consumption where possible.	6.1. Encourage the use of energy saving equipment at the site camp site (such as low voltage lights and low pressure taps) and promote recycling. Construction personnel must be made aware of energy conservation practices as part of the Environmental Awareness Training programme.	Contractor to monitor energy usage via audits.	Monthly	Contractor
			Carry out Environmental Awareness Training.	Once-off training and ensure that all new staff are inducted.	Contractor/ ECO
			Conduct audits of the signed attendance registers.	Monthly	ECO
7. Impact on the regional water balance as a result of increased water usage.	Reduce water usage during the construction phase.	7.1. Water conservation should be practiced as follows: <ul style="list-style-type: none"> <li>• Cleaning methods utilised for cleaning vehicles, floors, etc. should aim to minimise water use (e.g. sweep before wash-down).</li> <li>• Ensure that regular audits of water systems are conducted to identify possible water leakages.</li> </ul> 7.2. Avoid the use of potable water for dust suppression during the construction phase and consider the use of alternative approved sources, where possible.	Monitor via site audits and record non-compliance and incidents.	Monthly	Contractor & ECO
			7.3. Make construction personnel aware of the importance of limiting water wastage, as well as reducing water use.	Carry out Environmental Awareness Training with a discussion on water usage and conservation.	Once-off training and ensure that all new staff are inducted.
			Conduct audits of the signed attendance registers.	Monthly	ECO

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<b>C. OPERATIONAL PHASE</b>					
8. Potential risk of fire due to behaviour of staff on site during the operational phase.	Ensure appropriate and efficient fire prevention during the operational phase.	8.1. Designate smoking areas as well as areas for cooking, where the fire hazard could be regarded as insignificant.	Random inspections during a month to ensure workers are smoking or starting fires in designated areas only.	Monthly	Facility Manager
		8.2. Educate workers on the dangers of open and/or unattended fires.	Ensure fire safety requirements are well understood and respected by operational personnel.	On-going	Facility Manager
			Carry out Environmental Awareness Training.	Once-off training and ensure that all new staff are inducted.	Facility Manager
			Conduct audits of the signed attendance registers.	Monthly	Facility Manager
		8.3. Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be on the site for the duration of the operational phase.	Ensure fire safety requirements are well understood and respected by operational personnel. Provide basic fire safety training.	On-going	Project Developer
8.4. Ensure that adequate fire-fighting equipment is available and easily accessible on site.	Ensure fire safety requirements are well understood and respected by workers.	On-going	Facility Manager		
	Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company.	Bi-annually	Project Developer		
9. Increased energy consumption during the operational phase.	Reduce energy consumption where possible.	9.1. Encourage the use of energy saving equipment at the PV facility (such as low voltage lights and low pressure taps) and promote recycling. Operational personnel must be made aware of energy conservation practices as part of the environmental awareness training programme.	Monitor energy usage via site investigations.  Conduct training for all operational personnel.	Monthly  As and when required and ensure that all new staff are inducted.	Facility Manager  Project Developer/ Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
10. Impact on the regional water balance as a result of increased water usage.	Reduce water usage during operations.	10.1 Water conservation to be practiced in line with Energy Saving Policies as follows: 10.2 Cleaning methods utilised for cleaning vehicles, floors, the offices etc. should aim to minimise water use (e.g. sweep before wash-down). <ul style="list-style-type: none"> <li>• Where possible, encourage the re-use of water.</li> <li>• Ensure that regular audits of water systems are conducted to identify possible water leakages.</li> </ul> 10.3 Consider installing water saving devices (e.g. dual flush toilets, automatic shut-off taps, etc.).	Record water usage during the operational phase, conduct audits and record non-compliance and incidents.	Monthly	Facility Manager
		10.4 Carry out environmental awareness training with a discussion on water usage and conservation, and make operational personnel aware of the importance of limiting water wastage.	Conduct training for all operational personnel.	As and when required during operations and ensure that all new staff are inducted.	Facility Manager
11. Non respect of waste management practices.	Minimise the production of general waste.  Ensure compliance with relevant waste management legislation.  Minimise pollution of the environment.	11.1 Control and implement waste management plans. Ensure that relevant legislative requirements are respected. 11.2 Determine specific areas on site for temporary management of waste.	Control of waste management practices throughout operation phase.	Monthly	Facility Manager
		11.3 Promote waste reduction, re-use, and recycling opportunities on site during the operation phase. 11.4 Ensure an adequate and sustainable use of resources.	Monitor waste generation and collection throughout operation.	Monthly	Facility Manager
12. Excessive generation of waste water on site during the operation phase.	Maintain reasonable levels of waste water generation.	12.1 Waste water must be collected and disposed of at a suitable licenced disposal facility (unless the quality of that waste water is such that the waste water can be discharged to the environment, in accordance with the relevant legislation). Proof of disposal (i.e. waste disposal slips or waybills) should be retained on file for auditing purposes.	Waste water generation to be monitored throughout the operational phase.  Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	Quarterly	Facility Manager

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<b>D. DECOMMISSIONING PHASE</b>					
13. Ensure that the construction mitigation and management measures as included in the Final EMPR are adhered to during the decommissioning phase.					