

**HUMANSRUS SOLAR 3PV FACILITY:
OPEN SPACE MANAGEMENT PLAN**



**PRODUCED FOR CAPE EAPRAC
ON BEHALF OF HUMANSRUS SOLAR 3 (PTY) LTD**

BY



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OPEN SPACE MANAGEMENT PLAN - PURPOSE

The purpose of the Humansrus Solar 3 PV Facility Open Space Management Plan is to provide a framework for the integrated management of the natural and semi-natural areas within and adjacent to the Humansrus Solar 3 PV Facility.

PROBLEM OUTLINE

The Humansrus Solar 3 PV Facility would be approximately 220 ha in extent and would be likely to include some open, non-developed areas within the facility. In addition, it is likely that some natural vegetation would be able to persist beneath the panels which may require management and there are also likely to be a variety of fauna which are resident within the facility. Based on observations from existing facilities, fauna likely to be present within the facility after construction includes numerous rodents as well as species such as Ground Squirrels, Mongoose and Meerkat. Management of the fauna and flora within the facility will impact the biodiversity within the facility itself as well as in the adjacent areas in the case of inappropriate management. The purpose of the plan is therefore to ensure that the facility operates in a biodiversity compatible manner and does not have a long-term negative impact on the local environment.

RELATION TO OTHER SUBPLANS

Given that the goal of the Open Space Management Subplan is to ensure the biodiversity compatible management of the facility, it cannot be considered independently of the other environmental management subplans at the site. In particular the Erosion Management Subplan and Alien Invasive Management Subplan should be closely aligned with the Open Space Management Subplan.

OPEN SPACE MANAGEMENT SUBPLAN

The following elements are considered part of the Open Space Management Subplan

Access Control:

- Access to the facility should be strictly controlled.
- All visitors and contractors should be required to sign-in.
- Signage at the entrance should indicate that disturbance to fauna and flora is strictly prohibited.
- The fencing around the facility should consist of a single fence with electrified strands only on the inside of the fence and not the outside.

Prohibited Activities:

The following activities should not be permitted within the facility by anyone except as part of the other management programmes of EMP for the development.

- No fires within the site.
- No hunting, collecting or disturbance of fauna and flora, except where required for the safe operation of the facility and only by the Environmental Officer on duty and with the appropriate permits and landowner permission.
- No driving off of demarcated roads.
- No interfering with livestock.

Fire Risk Management:

Although fires are not a natural occurrence at the site, fires may occasionally occur under the right circumstances, such as following exceptional summer rainfall, when grass biomass may reach sufficient density to carry a fire. Ignition risk sources in the area include the following:

- Lightning strikes
- Personnel within the facility dropping cigarettes or other activities which pose a fire risk.
- Electrical shorts

The National Veld and Forest Fires Act places responsibility on the landowner to ensure that the appropriate equipment as well as trained personnel are available to combat fires. Therefore, the management of the facility should ensure that they have suitable equipment as well as trained personnel available to assist in the event of fire.

Firebreaks

Extensive firebreaks are not recommended as a fire-risk management strategy at the site. In the majority of years there is not sufficient biomass to carry a fire and the risk of fire is very low. In addition, the service roads within and around the facility will serve to break up the connectivity of the vegetation within the facility and would serve as fire breaks which would also retard the spread of fire around the site. Should a fire break around the perimeter of the facility be required, a strip of vegetation 5-10 m wide which includes the service road can be cleared manually and maintained relatively free of vegetation through manual clearing on an annual basis. However if alien species such as *Salsola kali* colonise these areas, more regular clearing should be implemented.

Grazing Management to Reduce Fire Risk

In the absence of livestock grazing, the biomass within the facility may build up which may not be desirable for biodiversity or the management of the facility. The simplest and most ecologically sound way to reduce the biomass within the facility would be through the use of livestock grazing. Small stock such as sheep are compatible with solar energy facilities and are commonly grazed within such facilities as they do not pose a danger to the electrical or other infrastructure of the facility. In order to reduce the biomass within the facility, it could be grazed once or twice a year, depending on the rainfall. If this is not possible and the vegetation is too tall or deemed a fire hazard, the vegetation can be brush-cut to about 10-15cm of the soil, and the excess material raked up and removed if necessary.

Alien Plant Control

Alien invasive plants should be controlled according to the Alien Invasive Management Plan. However, it is important to point out that the vegetation of the facility should comprise indigenous species and that a high abundance of alien species at the site, will impact biodiversity within the site itself as well as within the surrounding areas as the site will constitute a source of alien seed and propagules. Disturbance at the site will encourage alien species and vegetation management at the site, should be done using livestock or manual clearing. In areas where vegetation height needs to be controlled, plants should not be cleared to ground level, but should be cleared to no less than 20 cm above ground level. Unless manual methods are not effective, no herbicides should be used to control alien species.

Erosion Management

The facility should be inspected every 6 months for erosion problems or more frequently in the event of exceptional rainfall events. All erosion problems should be rectified according to the Erosion Management Subplan.

Faunal Management

It is highly likely that a variety of fauna will find the facility attractive and become resident within the facility. This includes species such as ground squirrels and mongoose as well as rodents and birds. The presence of fauna within the facility should be managed to minimise negative interactions between fauna and the facility. The following should apply:

- Birds are likely to nest on various parts of the facility, some species are likely to find the back of the panels attractive and nest among the support structures, while others may prefer more open areas such as communication masts or similar structures. Bird nests can be removed annually if they pose a threat to the safe operation of the facility, but this should only take place after the breeding season has been completed. If this becomes a significant problem, then they should rather be prevented from accessing these areas by covering them with fine mesh or similar material to exclude birds.
- The presence of rodents within the facility is likely to attract snakes. Snakes encountered within the facility may pose a danger to staff and should be removed unharmed to safety by a suitably qualified person.
- It is highly likely that smaller fauna will create burrows under the perimeter fence in order to move in and out the facility. Although the size of these burrows can be limited to prevent them compromising the security of the facility, they should not be closed up entirely and should remain large enough to allow fauna to pass through. These holes can be formalised with mesh or similar if required, but should not be smaller than about 20x20cm, which is much too small to pose a security risk.
- If there are any burrows or bird nests within the facility that might be affected by management activities, then these should be marked or cordoned off to prevent negative impact to these areas during management activities such as vegetation mowing.

- Resident fauna should not be habituated by feeding them scraps or other foodstuffs and it is not necessary to provide such species with water either as most arid fauna are independent of water.

Integrated & Adaptive Management

The management of the facility should meet with the landowner and other relevant local managers to review the management of the facility on a regular basis. Records of such meetings should be maintained including decisions and management outcomes resulting from such meetings. The Open Space Management plan should be reviewed annually for the first three years post-construction to evaluate the effectiveness of management actions so that these can be adapted as appropriate.

CONCLUSIONS

Based on observations from existing PV plants, is highly likely that a variety of small fauna will find the PV plant attractive and will become resident within the facility. The primary purpose of the open space management plan should be to maintain the vegetation of the site in a state which does not comprise a high proportion of alien species and which can still support the majority of smaller fauna which inhabit the area. This is best achieved through ensuring that the vegetation of the site consists of natural species and that management of the vegetation is largely through natural means such as livestock grazing or occasional mowing to 10-15 cm height. Small resident fauna are not likely to compromise the safety and operation of the facility and are likely to perform important ecological functions such as reducing rodent levels within the facility which are likely to increase as a result of protection from larger predators and owls. As a result, smaller fauna should be tolerated or passively encouraged to remain or forage within the facility. There are no PV facilities in the country that have been operational for more than a few years and so the long-term consequences of these facilities is not yet known and so management will need to be adaptive and respond to the various changes and challenges as they occur.