PLANT RESCUE AND PROTECTION PLAN

1. PURPOSE

The purpose of the Montana 2 Solar Energy Facility Plant Rescue and Protection Plan is to implement avoidance and mitigation measures, in addition to the mitigations included in the EMPr to reduce the impact of the development of the solar facility and associated infrastructure on listed and protected plant species and their habitats during construction and operation. This subplan is required in order to ensure compliance with national and provincial legislation for vegetation clearing and any required destruction or translocation of provincially and nationally protected species within the development footprint.

The Plan first provides some legislative background on the regulations relevant to listed and protected species, under the Western Cape Nature Conservation Laws Amendment Act, 2000 and trees protected under the National List of Protected Tree Species. This is followed by an identification of protected species present within the Montana 2 Solar Energy Facility development area and actions that should be implemented to minimise impact on these species and comply with legislative requirements.

2. IDENTIFICATION OF SPECIES OF CONSERVATION CONCERN

Plant species are protected at the national level as well as the provincial level and different permits may be required for different species depending on their protection level. At the national level, pprotected trees are listed by the Department of Forestry, Fisheries, and the Environment under the National List of Protected Trees, which is updated on a regular basis. Any clearing of nationally protected trees requires a permit from DAFF. At the provincial level, all species red-listed under the Red List of South African plants (http://redlist.sanbi.org/) as well as species listed under the Western Cape Nature Conservation Laws Amendment Act, 2000 are protected and require provincial permits. The Western Cape Nature Conservation Laws Amendment Act lists a variety of species as protected but also several whole families and genera as protected. Of particular relevance to the current study are the following, which are extracted from the legislation and are not intended to provide a comprehensive list of all protected species, only those which are likely to be encountered in the area. The reader is referred to the schedules of the Act for a full list of species listed under the act.

3. IDENTIFICATION OF LISTED SPECIES

In this section, the listed species observed to occur within the surrounding area are identified and listed below. Those present and the number affected within the development footprint would be clarified following the pre-construction walk-through. The list is not considered exhaustive and additional species may be observed to be present during the pre-construction walk-through, which should be conducted at a favourable time of year, such that there is a maximal chance of picking up geophytes and other species which may not be easily observed at other times of the year.

The project area is located within the Nama Karoo Biome, which is a large, landlocked region on the central plateau of the western half of South Africa and extends into south-eastern Namibia. This is an arid biome with majority of the river systems being non-perennial. Apart from the Orange River and the few permanent streams in the southwest that originate in higher-rainfall neighbouring areas, the limited number of perennial streams that originate in the Nama-Karoo are restricted to the more mesic east. The low

precipitation is unreliable (coefficient of variation of annual rainfall up to 40%) and droughts are unpredictable and prolonged. The unpredictable rainfall impedes the dominance of leaf succulents and is too dry in summer for dominance by perennial grasses alone, and the soils are generally too shallow, and the rainfall is too low for trees. Unlike other biomes of southern Africa, local endemism is very low and consequently, the Nama-Karoo Biome does not contain any centre of endemism. Despite relatively low floristic diversity, the Nama-Karoo vegetation has a high diversity of plant life forms. These include co-occurring ephemerals, annuals, geophytes, C3 and C4 grasses, succulents, deciduous and evergreen chamaephytes and trees. This is probably a consequence of an ecotonal and climatically unstable nature of the region

One species of flora protected under provincial legislation were recorded within the project area during the survey period, namely

- Aizoaceae (Drosanthemum hispidum)
- Aizoaceae (Psilocaulon coriarium)
- Aizoaceae (Ruschia intricata)
- Aizoaceae (Ruschia spinosa)
- Aizoaceae (Trichodiadema sp)
- Amaryllidaceae (Ammocharis coranica)
- ApocynaceaePachypodium succulentum
- Asparagaceae (Albuca sp)
- Euphorbiaceae (Euphorbia ferox)
- Euphorbiaceae (Euphorbia decepta)
- Hyacinthaceae (Dipcadi sp).

Notably, there are likely more protected flora species within the PAOI, but these were not recorded as the ideal survey period would have been during March as indicated by the Species Environmental Assessment Guideline (SANBI, 2020). This would have ensured that flora species are correctly identified, and a true representative sample of the species community structure is obtained. Therefore, it is imperative that a Search and Rescue effort be undertaken for protected plant species, and these species be relocated to proximal areas that will not be developed. A permit from the relevant authority, Cape Nature, must be obtained in order to achieve this. It is further recommended that not only protected species be relocated, but also succulent species of other taxonomic groups where it is feasible.

4. MITIGATION & AVOIDANCE OPTIONS

The primary mitigation and avoidance measure that must be implemented at the pre-construction phase is the Pre-construction Walk-Through of the development footprint. This defines which and how many individuals of listed and protected species are found within the development footprint. This information is required for the DFFE and Cape Nature Conservation permits which must be obtained before construction can commence.

Where listed plant species fall within the development footprint and avoidance is not possible, then it may be possible to translocate the affected individuals outside of the development footprint. However, not all species are suitable for translocation as only certain types of plants are able to survive the disturbance. Suitable candidates for translocation include most geophytes and succulents. Although there are exceptions, the majority of woody species do not survive translocation well and it is generally not

recommended to try and attempt to translocate such species. Recommendations in this regard would be made following the walk-through of the facility footprint before construction, where all listed and protected species within the development footprint will be identified and located.

5. RESCUE AND PROTECTION PLAN

5.1. Pre-construction

» Identification of all listed species which may occur within the site, based on the SANBI POSA database as well as the specialist BA studies for the site and any other relevant literature.
» Before construction commences at the site, the following actions should be taken:
- A walk-through of the final development footprint by a suitably qualified botanist/ecologist to locate and identify all listed and protected species which fall within the development footprint. This should happen during the flowering season at the site which, depending on rainfall, is likely to be during spring to early summer (August-October).
- A walk-through report following the walk-through which identifies areas where minor deviations to roads and other infrastructure can be made to avoid sensitive areas and important populations of listed species must be compiled. The report should also contain a full list of localities where listed species occur within the development footprint and the number of affected individuals in each instance, so that this information can be used to comply with the permit conditions required by the relevant legislation. Those species suitable for search as rescue should be identified in the walk-through report.
- A permit to clear the site and relocate species of concern is required frm Cape Nature before construction commences. A tree clearing permit is also required from DFFE to clear protected trees from the site.
- Once the permits have been issued, there should be a search and rescue operation of all listed species that cannot be avoided, which have been identified in the walk-through report as being suitable for search and rescue within the development footprint. Affected individuals should be translocated to a similar habitat outside of the development footprint and marked for monitoring purposes.

5.2. Construction

» Vegetation clearing should take place in a phased manner, so that large cleared areas are not left standing with no activity for long periods of time and pose a wind and water erosion risk. This will require coordination between the contractor and EO, to ensure that the EO is able to monitor activities appropriately.
» All cleared material should be handled according to the Revegetation and Rehabilitation Plan and used to encourage the recovery of disturbed areas.
» EO to monitor vegetation clearing at the site. Any deviations from the plans that may be required should first be checked for listed species by the EO and any listed species present which are able to survive translocation should be translocated to a safe site.
» All areas to be cleared should be demarcated with construction tape, survey markers or similar. All construction vehicles should work only within the designated area.
» Plants suitable for translocation or for use in rehabilitation of already cleared areas should be identified and relocated before general clearing takes place.

- Any listed species observed within the development footprint that were missed during the pre-construction plant sweeps should be translocated to a safe site before clearing commences.
- Many listed species are also sought after for traditional medicine or by collectors and so the EO and ECO should ensure that all staff attend environmental induction training in which the legal and conservation aspects of harvesting plants from the wild are discussed.
- The EO should monitor construction activities in sensitive habitats such as in dune areas carefully to ensure that impacts to these areas are minimised.

5.3. Operation

- Access to the site should be strictly controlled and all personnel entering or leaving the site should be required to sign in and out with the security officers.
- The collecting of plants or their parts should be strictly forbidden and signs stating so should be placed at the entrance gates to the site.

6. MONITORING & REPORTING REQUIREMENTS

The following reporting and monitoring requirements are recommended as part of the plant rescue and protection plan:

- Pre-construction walk-through report detailing the location and distribution of all listed and protected species must be compiled. This should include a walk-through of all infrastructure including all new access roads, cables, buildings and substations. The report should include recommendations of route adjustments where necessary, as well as provide a full account of how many individuals of each listed species will be impacted by the development. Details of plants suitable for search and rescue must also be included.
- Permit applications to NC-DENC and DFFE. This requires the walk-through report as well as the identification and quantification of all listed and protected species within the development footprint. The permit is required before any search and rescue or vegetation clearance can take place. Where large numbers of listed species are affected, a site inspection and additional requirements may be imposed by NC-DENC and/or DFFE as part of the permit conditions. All documentation associated with this process needs to be retained and the final clearing permit should be kept at the site.
- Active daily monitoring of clearing during construction by the EO must be undertaken to ensure that listed species and sensitive habitats are avoided. All incidents should be recorded along with the remedial measures implemented.
- Post construction monitoring of plants translocated during search and rescue to evaluate the success of the intervention. Monitoring for a year post-transplant should be sufficient to gauge success.

ANNEX 1. LIST OF PLANT SPECIES

List of plant species known from the surrounds of the broader study area and development area for Montana 2 Solar Energy Facility, based on observations from the site, as well as, the SANBI SIBIS database.

Family	Species	Family	Species
ACANTHACEAE	*Acanthopsis hoffmannseggiana*	ACANTHACEAE	*Barleria lichtensteiniana*
ACANTHACEAE	*Barleria rigida*	ACANTHACEAE	*Blepharis mitrata*
ACANTHACEAE	*Monechma desertorum*	ACANTHACEAE	*Monechma divaricatum*
ACANTHACEAE	*Monechma incanum*	ACANTHACEAE	*Monechma spartioides*
ACANTHACEAE	*Peristrophe cernua*	AIZOACEAE	*Aizoon asbestinum*
AIZOACEAE	*Aizoon schellenbergii*	AIZOACEAE	*Galenia africana*
AIZOACEAE	*Plinthus karooicus*	AIZOACEAE	*Trianthema parvifolia var. parvifolia*
AMARANTHACEAE	*Amaranthus praetermissus*	AMARANTHACEAE	*Amaranthus thunbergii*
AMARANTHACEAE	*Leucosphaera bainesii*	AMARANTHACEAE	*Sericocoma avolans*
APOCYNACEAE	*Adenium oleifolium*	APOCYNACEAE	*Brachystelma huttonii*
APOCYNACEAE	*Ceropegia sp.*	APOCYNACEAE	*Gomphocarpus tomentosus subsp. tomentosus*
APOCYNACEAE	*Huernia hystrix subsp. hystrix*	APOCYNACEAE	*Orbea variegata*
APOCYNACEAE	*Sarcostemma pearsonii*	ASPARAGACEAE	*Asparagus lignosus*
ASPHODELACEAE	*Aloe claviflora*	ASPHODELACEAE	*Aloe dichotoma*
ASTERACEAE	*Berkheya annectens*	ASTERACEAE	*Brachylaena ilicifolia*
ASTERACEAE	*Cineraria geraniifolia*	ASTERACEAE	*Cineraria saxifraga*
ASTERACEAE	*Cotula sericea*	ASTERACEAE	*Dicoma capensis*
ASTERACEAE	*Dimorphotheca cuneata*	ASTERACEAE	*Dimorphotheca sinuata*
ASTERACEAE	*Dimorphotheca zeyheri*	ASTERACEAE	*Eriocephalus microphyllus var. pubescens*
ASTERACEAE	*Euryops brachypodus*	ASTERACEAE	*Felicia echinata*
ASTERACEAE	*Felicia filifolia subsp. filifolia*	ASTERACEAE	*Felicia hyssopifolia subsp. hyssopifolia*
ASTERACEAE	*Felicia muricata subsp. cinerascens*	ASTERACEAE	*Felicia muricata subsp. muricata*
ASTERACEAE	*Felicia ovata*	ASTERACEAE	*Gazania leiopoda*
ASTERACEAE	*Geigeria ornativa*	ASTERACEAE	*Geigeria pectidea*
ASTERACEAE	*Gnaphalium capense*	ASTERACEAE	*Gnaphalium vestitum*
ASTERACEAE	*Gymnostephium ciliare*	ASTERACEAE	*Helichrysum sp.*
ASTERACEAE	*Ifloga sp.*	ASTERACEAE	*Kleinia longiflora*
ASTERACEAE	*Leysera tenella*	ASTERACEAE	*Matricaria sp.*
ASTERACEAE	*Metalasia pulcherrima forma pulcherrima*	ASTERACEAE	*Nidorella auriculata*
ASTERACEAE	*Nidorella sp.*	ASTERACEAE	*Osteospermum grandidentatum*
ASTERACEAE	*Osteospermum imbricatum*	ASTERACEAE	*Osteospermum junceum*
ASTERACEAE	*Othonna eriocarpa*	ASTERACEAE	*Pegolettia retrofracta*
ASTERACEAE	*Pentzia dentata*	ASTERACEAE	*Pentzia incana*
ASTERACEAE	*Pentzia pinnatisecta*	ASTERACEAE	*Pentzia spinescens*
ASTERACEAE	*Pteronia sordida*	ASTERACEAE	*Pteronia teretifolia*
ASTERACEAE	*Pteronia unguiculata*	ASTERACEAE	*Schistostephium crataegifolium*
ASTERACEAE	*Senecio asperulus*	ASTERACEAE	*Senecio erubescens var. erubescens*
ASTERACEAE	*Senecio hastatus*	ASTERACEAE	*Senecio juniperinus var. juniperinus*
ASTERACEAE	*Senecio macroglossus*	ASTERACEAE	*Senecio monticola*

Family	Species	Family	Species
ASTERACEAE	*Senecio othonniflorus*	ASTERACEAE	*Senecio puberulus*
ASTERACEAE	*Senecio retrorsus*	ASTERACEAE	*Senecio sp.*
ASTERACEAE	*Tarchonanthus camphoratus*	ASTERACEAE	*Tarchonanthus littoralis*
AYTONIACEAE	*Plagiochasma rupestre var. rupestre*	BIGNONIACEAE	*Rhigozum obovatum*
BIGNONIACEAE	*Rhigozum trichotomum*	BORAGINACEAE	*Ehretia rigida subsp. rigida*
BORAGINACEAE	*Heliotropium ciliatum*	BORAGINACEAE	*Lappula heteracantha*
BUDDLEJACEAE	*Buddleja saligna*	CAMPANULACEAE	*Wahlenbergia capillacea subsp. capillacea*
CAMPANULACEAE	*Wahlenbergia tenella var. tenella*	CAPPARACEAE	*Boscia foetida subsp. foetida*
CAPPARACEAE	*Cadaba aphylla*	CHENOPODIACEAE	*Salsola glabrescens*
CHENOPODIACEAE	*Salsola namibica*	CHENOPODIACEAE	*Salsola rabieana*
COLCHICACEAE	*Ornithoglossum viride*	CRASSULACEAE	*Cotyledon orbiculata var. orbiculata*
CRASSULACEAE	*Cotyledon woodii*	CUCURBITACEAE	*Coccinia rehmannii*
DIPSACACEAE	*Scabiosa angustiloba*	EBENACEAE	*Euclea undulata*
ERIOSPERMACEAE	*Eriospermum flagelliforme*	EUPHORBIACEAE	*Euphorbia avasmontana var. sagittaria*
EUPHORBIACEAE	*Euphorbia gariepina subsp. balsamea*	EUPHORBIACEAE	*Euphorbia glanduligera*
EUPHORBIACEAE	*Euphorbia inaequilatera var. inaequilatera*	EUPHORBIACEAE	*Euphorbia mauritanica var. mauritanica*
EUPHORBIACEAE	*Euphorbia rudis*	EUPHORBIACEAE	*Euphorbia spinea*
FABACEAE	*Acacia karroo*	FABACEAE	*Acacia mellifera subsp. detinens*
FABACEAE	*Amphithalea williamsonii*	FABACEAE	*Argyrolobium harveyanum*
FABACEAE	*Aspalathus subtingens*	FABACEAE	*Aspalathus tridentata subsp. staurantha*
FABACEAE	*Dipogon lignosus*	FABACEAE	*Indigastrum argyraeum*
FABACEAE	*Indigofera alternans var. alternans*	FABACEAE	*Indigofera angustata*
FABACEAE	*Indigofera auricoma*	FABACEAE	*Indigofera heterotricha*
FABACEAE	*Indigofera holubii*	FABACEAE	*Indigofera zeyheri*
FABACEAE	*Parkinsonia africana*	FABACEAE	*Pomaria lactea*
FABACEAE	*Prosopis glandulosa var. glandulosa*	FABACEAE	*Prosopis velutina*
FABACEAE	*Ptycholobium biflorum subsp. biflorum*	FABACEAE	*Tephrosia angulata*
FABACEAE	*Tephrosia capensis var. capensis*	FABACEAE	*Tephrosia dregeana var. dregeana*
FABACEAE	*Tephrosia grandiflora*	GERANIACEAE	*Monsonia burkeana*
GERANIACEAE	*Monsonia umbellata*	GERANIACEAE	*Pelargonium anethifolium*
GERANIACEAE	*Pelargonium inquinans*	GERANIACEAE	*Pelargonium reniforme subsp. reniforme*
GESNERIACEAE	*Streptocarpus sp.*	GISEKIACEAE	*Gisekia pharnacioides var. pharnacioides*
HYACINTHACEAE	*Albuca setosa*	HYACINTHACEAE	*Dipcadi ciliare*
HYACINTHACEAE	*Dipcadi viride*	HYACINTHACEAE	*Ledebouria undulata*
HYACINTHACEAE	*Ornithogalum tenuifolium subsp. tenuifolium*	IRIDACEAE	*Dierama pulcherrimum*
IRIDACEAE	*Tritonia strictifolia*	LOPHIOCARPACEAE	*Lophiocarpus polystachyus*
LORANTHACEAE	*Tapinanthus oleifolius*	MALPIGHIACEAE	*Triaspis hypericoides subsp. nelsonii*
MALVACEAE	*Hermannia abrotanoides*	MALVACEAE	*Hermannia flammea*
MALVACEAE	*Hermannia gracilis*	MALVACEAE	*Hermannia modesta*
MALVACEAE	*Hermannia mucronulata*	MALVACEAE	*Hermannia salviifolia var. grandistipula*
MALVACEAE	*Hermannia sp.*	MALVACEAE	*Hermannia spinosa*
MELIACEAE	*Nymania capensis*	MENISPERMACEAE	*Cissampelos capensis*

Family	Species	Family	Species
MESEMBRYANTHEMACEAE	*Lithops bromfieldii*	MESEMBRYANTHEMACEAE	*Psilocaulon coriarium*
MESEMBRYANTHEMACEAE	*Psilocaulon granulicaule*	MESEMBRYANTHEMACEAE	*Ruschia vulvaria*
MOLLUGINACEAE	*Limeum aethiopicum subsp. aethiopicum var. aethiopicum*	MOLLUGINACEAE	*Limeum myosotis var. confusum*
MOLLUGINACEAE	*Mollugo cerviana var. cerviana*	NEURADACEAE	*Grielum humifusum var. humifusum*
NYCTAGINACEAE	*Phaeoptilum spinosum*	OCHNACEAE	*Ochna arborea var. arborea*
OLEACEAE	*Olea capensis subsp. capensis*	ORCHIDACEAE	*Holothrix burchellii*
OROBANCHACEAE	*Hyobanche sanguinea*	OXALIDACEAE	*Oxalis bowiei*
OXALIDACEAE	*Oxalis imbricata var. violacea*	PASSIFLORACEAE	*Adenium repanda*
PEDALIACEAE	*Sesamum capense*	PHYLLANTHACEAE	*Phyllanthus incurvus*
PHYLLANTHACEAE	*Phyllanthus maderaspatensis*	PLANTAGINACEAE	*Plantago sp.*
POACEAE	*Anthephora pubescens*	POACEAE	*Aristida adscensionis*
POACEAE	*Aristida congesta subsp. barbicollis*	POACEAE	*Cenchrus ciliaris*
POACEAE	*Enneapogon desvauxii*	POACEAE	*Enneapogon scaber*
POACEAE	*Eragrostis annulata*	POACEAE	*Eragrostis biflora*
POACEAE	*Eragrostis echinochloidea*	POACEAE	*Eragrostis porosa*
POACEAE	*Eragrostis rotifer*	POACEAE	*Eragrostis sp.*
POACEAE	*Fingerhuthia africana*	POACEAE	*Panicum lanipes*
POACEAE	*Schmidtia kalahariensis*	POACEAE	*Setaria verticillata*
POACEAE	*Sporobolus nervosus*	POACEAE	*Stipagrostis anomala*
POACEAE	*Stipagrostis ciliata var. capensis*	POACEAE	*Stipagrostis obtusa*
POACEAE	*Stipagrostis uniplumis var. neesii*	POACEAE	*Stipagrostis uniplumis var. uniplumis*
POACEAE	*Tragus berteronianus*	POLYGALACEAE	*Polygala seminuda*
POLYGONACEAE	*Persicaria attenuata subsp. africana*	PORTULACACEAE	*Portulaca quadrifida*
PORTULACACEAE	*Talinum arnotii*	ROSACEAE	*Cliffortia linearifolia*
ROSACEAE	*Cliffortia serpyllifolia*	RUBIACEAE	*Kohautia caespitosa subsp. brachyloba*
RUBIACEAE	*Kohautia cynanchica*	RUBIACEAE	*Nenax microphylla*
RUBIACEAE	*Pavetta capensis subsp. capensis*	SANTALACEAE	*Thesium gnidiaceum var. gnidiaceum*
SCROPHULARIACEAE	*Aptosimum albomarginatum*	SCROPHULARIACEAE	*Aptosimum lineare var. lineare*
SCROPHULARIACEAE	*Aptosimum marlothii*	SCROPHULARIACEAE	*Aptosimum procumbens*
SCROPHULARIACEAE	*Aptosimum spinescens*	SCROPHULARIACEAE	*Jamesbrittenia atropurpurea subsp. pubescens*
SOLANACEAE	*Lycium oxycarpum*	SOLANACEAE	*Solanum capense*
SOLANACEAE	*Solanum nigrum*	THYMELAEACEAE	*Gnidia burchellii*
THYMELAEACEAE	*Gnidia nana*	THYMELAEACEAE	*Gnidia sp.*
THYMELAEACEAE	*Struthiola argentea*	VERBENACEAE	*Chascanum cuneifolium*
VERBENACEAE	*Chascanum incisum*	ZYGOPHYLLACEAE	*Tribulus terrestris*
ZYGOPHYLLACEAE	*Tribulus zeyheri subsp. zeyheri*	ZYGOPHYLLACEAE	*Zygophyllum dregeanum*
ZYGOPHYLLACEAE	*Zygophyllum flexuosum*	ZYGOPHYLLACEAE	*Zygophyllum lichtensteinianum*
ZYGOPHYLLACEAE	*Zygophyllum rigidum*		