PLANT RESCUE AND PROTECTION PLAN

1. PURPOSE

The purpose of the plant rescue and protection plan is to implement avoidance and mitigation measures to reduce the impact of the development of the Battery Energy Storage System and associated infrastructure related to the Gunstfontein Wind Energy Facility on listed and protected plant species and their habitats and to provide guidance on search and rescue of species of conservation concern.

2. RELEVANT ASPECTS OF THE SITE

The majority of the BESS area consists of Roggeveld Shale Renosterveld typical of the Sutherland Plateau area. The soils are fine-textured but sandy soils and are generally quite shallow with several areas of exposed bedrock within the BESS area. There are also a few areas of deeper soils which can be recognized by their somewhat taller vegetation. Typical and dominant species observed within the BESS study area include *Euryops lateriflorus, Dimorphotheca cuneata, Selago saxatilis, Rosenia oppositifolia, Pteronia tricephala, Pentzia punctata, Euryops annae, Dicerothamnus rhinocerotis, Ehrharta calycina, Ehrharta eburnea (NT), Senecio erosus, Romulea tortuosa subsp. tortuosa, Asparagus capensis, Euryops multifidus, Poa bulbosa, Oxalis obtusa, Berkheya spinosa, Chrysocoma ciliata, Romulea atrandra var. atrandra, Colchicum coloratum subsp. burchellii, Othonna auriculifolia, Diospyros austro-africana, Oxalis melanosticta var melanosticta and Oxalis pocockiae*.

It is important to note that the site falls within the Komsberg Centre of Diversity and Endemism and as such is an area with a known high abundance of species of concern and endemism. A list of species of conservation concern recorded from the wider area is provided below. Species of concern observed at the site during the field assessment includes *Eriocephalus grandiflorus* (Rare) and *Ehrharta eburnea* (NT) which are both quite widespread species that have healthy populations outside of the affected area.

Although it is possible that the development would generate some impact on these species, this would be minor as it is highly unlikely that the local populations would be compromised in any way by the development. Overall, the abundance of plant SCC within the site is low and the impact of the development on SCC would be acceptable and low.

In terms of the provincial legislation the following species and genera are protected and would require specific consideration during the pre-construction walk-through of the BESS footprint as required for biodiversity permitting purposes. The example species provided are to illustrate the typical species present and is not intended as an exhaustive list.

Schedule 1 (Specially Protected Species):

- All species of the genus Pelargonium (Family: Geraniaceae) (e.g. Pelargonium rapaceum)

Schedule 2 (Protected Species):

- All species of the family Mesembryanthemaceae: (e.g. Antimima pumila, Hammeria salteri, Cheiridopsis namaquensis, Lampranthus spp., Cleretum papulosum subsp. papulosum, Drosanthemum spp., Ruschia centrocapsula)

- All species of the family Amaryllidaceae: (e.g. Brunsvigia spp (B. bosmaniae), Haemanthus coccineus)
- All species of the genus Colchicum (Family Colchicaceae): e.g. (Colchicum coloratum, C. Cuspidatum).
- All species of the family Crassulaceae; e.g. (Tylecodon wallichii, T. ventricosus, Crassula deltoidea, C. columnaris, C. muscosa, C. umbella, C. glomerata, Adromischus filicaulis)
- All species of the family Iridaceae: (e.g. Romulea atrandra, R. tortuosa, komsbergensis, Hesperantha acuta, Moraea fugax)
- All species of the genus Oxalis (Family: Oxalidaceae): (e.g. Oxalis obtusa, O. melanostica, O.palmifrons)
- All species of the genus Lachenalia (Family: Hyacinthaceae): (e.g.Lachenalia aurioliae)

It is recommended that a Pre-construction Walk-Through Survey is conducted within the BESS footprint, to inform search-and-rescue efforts and permitting requirements. Species of concern should be recorded and may only be removed, transplanted, destroyed (or any other form of disturbance) after the necessary approval (permits) has been obtained from the relevant authority, i.e. the Department of Agriculture, Environmental Affairs, Rural Development and Land Reform. It is also important to note that species of ecological importance, local endemics and red-listed species should be translocated out of the development footprint, where these have a high probability of survival. These would be identified during the preconstruction walk-through.

3. PRINCIPLES OF SEARCH AND RESCUE

Successful plant rescue can only be achieved if:

- Species can be removed from their original habitat with minimal damage to the plant, especially the roots.
- All plants removed are safely stored and treated according to their specific requirements prior to being transplanted again.
- They are relocated into a suitable habitat and protected from further damage and all disturbances to aid their re-establishment.
- Timing of planting activities is planned with the onset of the growing season.
- Steps are taken where necessary to aid the initial establishment of vegetation, including occasional watering.

The following principles apply in terms of plant rescue and protection:

- Prior to construction, a walk-through of the final development footprint should be undertaken by a suitably qualified botanist/ecologist to locate and identify all listed and protected species which fall within the development footprint, as well as to identify species suitable for search and rescue.
- A permit is required to translocate or destroy any listed and protected species even if they do not leave the property. This permit should be obtained prior to any search and rescue operations being undertaken.
- Where suitable species are identified, a search and rescue operation of these species should be undertaken within the development footprint prior to the commencement of construction.

- As far as possible, timing of search and rescue activities should be planned with the onset of the growing season.
- Affected individuals should be translocated to a similar habitat outside of the development footprint and marked for monitoring purposes. For each individual plant that is rescued, the plant must be photographed before removal, tagged with a unique number or code and a latitude longitude position recorded using a hand-held GPS device.
- The rescued plants must be planted into a container to be housed within a temporary nursery on site or immediately planted into the target habitat.
- Rescued plants, if re-planted back in the wild, should be placed as close as possible to where they were originally removed. Re-planting into the wild must cause as little disturbance as possible to existing natural ecosystems. The position of he rescued individual/s must be recorded to aid in future monitoring of that plant.
- During construction, the ECO must monitor vegetation clearing at the site. Any deviations from the plans that may be required should first be checked for listed species by the ECO or Environmental Officer and any listed species present which are able to survive translocation should be translocated to a safe site.
- Any listed species suitable for translocation observed within the development footprint that were not previously observed be translocated to a safe site.
- The collecting of plants of their parts should be strictly forbidden. Appropriate signage in this regard should be placed at the entrance gates to the site. Staff should be informed of the legal and conservation aspects of harvesting plants from the wild as part of the environmental induction training.
- Sensitive habitats and area outside project development should be clearly demarcated as no go areas during the construction and operational phase to avoid accidental impacts.

4. PROTECTED PLANT SPECIES KNOWN TO OCCUR WITHIN THE BROAD VICINITY OF THE BESS

List of plant species of conservation concern which are known to occur in the broad vicinity of the Gunstfontein BESS. The list is derived from the SIBIS:SABIF website. Only two of these species can be confirmed present within the BESS 500 assessment region.

Family	Species	Threat status
AMARYLLIDACEAE	*Brunsvigia josephinae (Redouté) Ker Gawl.*	VU
	Strumaria karooica (W.F.Barker) Snijman	Rare
	Strumaria pubescens W.F.Barker	Rare
ANTHERICACEAE	*Chlorophytum lewisiae Oberm.*	Rare
APOCYNACEAE	*Duvalia parviflora N.E.Br.*	VU
	Hoodia pilifera (L.f.) Plowes subsp. pilifera	NT
ASPHODELACEAE	*Astroloba herrei Uitewaal*	VU
	Bulbine torta N.E.Br.	Rare
	Haworthia fasciata (Willd.) Haw.	NT
	Gasteria disticha	CR
	Haworthia serrata	CR
	Haworthia pulchella M.B.Bayer var. pulchella	Rare
ASTERACEAE	*Cineraria lobata L'Hér. subsp. lasiocaulis Cron*	Rare
	Antithrixia flavicoma	VU
	Euryops namaquensis	VU

	Eriocephalus grandiflorus M.A.N.Müll.	Rare
	Phymaspermum thymelaeoides	LC
	Pteronia hutchinsoniana Compton	Rare
	Relhania tricephala (DC.) K.Bremer	NT
COLCHICACEA	*Wurmbea capensis*	VU
CRASSULACEAE	*Adromischus humilis (Marloth) Poelln.*	Rare
	Adromischus phillipsiae (Marloth) Poelln.	Rare
	Adromischus mammillaris	EN
	Crassula alpestris Thunb. subsp. massonii (Britten & Baker f.) Toelken	Rare
EUPHORBIACEAE	*Euphorbia nesemannii R.A.Dyer*	NT
FABACEAE	*Amphithalea spinosa (Harv.) A.L.Schutte*	VU
	Amphithalea villosa Schltr.	VU
	Lotononis comptonii B.-E.van Wyk	EN
	Lotononis gracilifolia B.-E.van Wyk	EN
	Lotononis venosa B.-E.van Wyk	VU
GERANIACEAE	*Pelargonium denticulatum Jacq.*	Rare
	Pelargonium torulosum E.M.Marais	Rare
HYACINTHACEAE	*Lachenalia maximiliani Schltr. ex W.F.Barker*	Rare
IRIDACEAE	*Geissorhiza inaequalis L.Bolus*	Rare
	Geissorhiza karooica Goldblatt	NT
	Ixia linearifolia Goldblatt & J.C.Manning	Rare
	Ixia parva Goldblatt & J.C.Manning	VU
	Moraea aspera Goldblatt	VU
	Romulea eburnea J.C.Manning & Goldblatt	VU
	Romulea syringodeoflora M.P.de Vos	VU
MESEMBRYANTHEMACEAE	*Cleretum lyratifolium Ihlenf. & Struck*	Rare
	Lampranthus amoenus (Salm-Dyck ex DC.) N.E.Br.	EN
OXALIDACEAE	*Oxalis tenuipes T.M.Salter var. tenuipes*	Rare
POACEAE	*Ehrharta eburnea Gibbs Russ.*	NT
POLYGALACEAE	*Muraltia karroica Levyns*	VU
RUTACEAE	*Acmadenia argillophila I.Williams*	NT
SCROPHULARIACEAE	*Globulariopsis wittebergensis Compton*	Rare
	Oftia glabra Compton	Rare
	Selago albomontana Hilliard	Rare