



BirdLife South Africa

Position Statement on the effect of solar power facilities on birds

- BirdLife South Africa supports the use of renewable energy resources, including solar energy generation, in reducing greenhouse gas emissions.
- BLSA acknowledges that South Africa has been identified as one of the top 10 developing countries which needs to reduce its carbon emissions significantly.
- BLSA acknowledges the increased rate of energy demand in South Africa of 3% per year and thus the importance of solar energy and other renewable energy resources as sources of alternative energy.
- BLSA acknowledges that South Africa is amongst the top 10 countries in the world most suited for the generation of solar energy due to the percentage of incoming shortwave radiation.
- Two types of solar power generation are currently available:
 - o Solar photovoltaic (PV) electricity generation involves turning solar radiation directly into electricity in a solar panel.
 - o Concentrated Solar Power (CSP) farms (plants) consist of a series of mirrors/heliostats/trough panels which reflect sunlight. The reflected heat is concentrated onto a central receiver tower and standby focal points. The heat is used to raise steam to drive turbines and generators.
- BLSA's main concerns with PV and CSP farms are the displacement or the exclusion of nationally and/or globally threatened, rare, endemic, or range-restricted bird species from important habitats.
- CSP farms potentially have greater impact on birds than PV farms because of the associated central receiver tower, standby focal points and heliostats.
- Anticipated avifaunal issues concerned with the CSP farms are:

Issues relating to the CSP itself:

- Collision with heliostats (mirrors) and the central receiver tower. Reflective surfaces act as attractants for approaching birds. These surfaces may be confused for large water bodies (and can have similar effects as windows) and causes disorientation of flying birds, resulting in injury and/or death.
 - Mirrors are used to concentrate sunlight to create large amounts of heat and the heat could cause mortalities of close overflying birds.
 - Birds could be burnt when in the vicinity of the central receiver or when entering the standby focal points (specifically relevant to swallows, swifts and martins which spend most of their time in flight).
 - Pollution caused by leaching of chemical substances into waste water evaporation ponds. This could be lethal to birds using these ponds. Artificial evaporation ponds serve as an additional attractant to waterbirds, which could increase cumulative collision, burning or poisoning impacts.
 - Roosting, foraging, and nesting on or around the CSP plant infrastructure (i.e. attracting more birds to the solar facility).
 - Loss of habitat and disturbance of resident bird species caused by construction, operation and maintenance activities (of CSP and PV).
- BLSA acknowledges that the above impacts became significant only when a great number of birds occur within the vicinity of the CSP and are thus exposed to these mortality factors.

Issues relating directly to the associated infrastructure (CSP and PV):

- Collision and electrocution caused when perching on or flying into powerline infrastructure.
 - Habitat destruction and disturbance/exclusion of avifauna through construction (short-term) and maintenance (long-term) of new powerline infrastructure.
 - Habitat destruction and disturbance of birds caused by the construction and maintenance of new roads, pipelines and visitor centres.
- BLSA is also greatly concerned that avifaunal attractants may amplify the above impacts.

These attractants may be:

- Open water evaporation ponds on or in the vicinity of the CSP.
 - Heliostats (mirrors) and/or parabolic troughs.
 - Foraging spots under or around the panelling.
- Birds attracted to the above sources may enter one or more focal points when descending and, as a result, they could be burnt to death.
- BLSA recommends mitigation of avifaunal impacts by:

- Not constructing CSP plants in formally or informally protected areas or Important Bird Areas (IBAs), but in areas of low relevance for nature conservation.
 - Constructing CSP farms in already degraded areas.
 - Avoiding construction near drainage lines with trees where birds will be concentrated (e.g. in Karoo where most CSP farms are likely to be constructed).
 - Avoiding construction near large trees (e.g. in the Karoo) which serve as nesting and roosting sites for raptors and vultures.
 - Building solar arrays (a linked assembly of heliostats) outside known waterbird flight paths.
 - Not using chemicals/pesticides for the maintenance of land/vegetation and rather use mowing or grazing to retard vegetation growth.
 - Keeping evaporation ponds clean of pollutants.
 - Constructing new powerlines in such a way that they have minimal impact on birds (i.e. bird-friendly designs, appropriate wire marking devices).
 - Deconstruction of the plant after the expected life span of 20 years.
- The above mitigation factors should be rigorously applied to ensure minimal disruption of key bird species and their habitats.

References:

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