

**Appendix E12 – Correspondence with National Partner
Organisation: BirdLife South Africa**

Vivienne Thomson
EnviroAfrica
By email: vivienne@enviroafrica.co.za

8 September 2020

Dear Vivienne

RE: BASIC ASSESSMENTS FOR THE PROPOSED VISSESPAN SOLAR PV FACILITIES (PROJECTS 1-4)

Project 1 Ref. No. 14/12/16/3/3/1/2153, Project 2 Ref. No. 14/12/16/3/3/1/2154, Project 3 Ref. No. 14/12/16/3/3/1/2155, Project 4 Ref. No. 14/12/16/3/3/1/2156.

Thank you for approaching BirdLife South Africa for comment on the above proposed developments. BirdLife South Africa supports the responsible development of renewable energy. While we are not aware of any obvious “red flags” to development with regards to impacts on birds, the loss of Critical Biodiversity Areas and Endangered grassland habitat is a concern. However, it is impossible to provide an informed opinion of the proposed development without further information on the faunal communities potentially affected.

We have consulted the Southern African Bird Atlas Project 2 and habitat suitability models which indicate the area contains potential habitat for threatened species including Ludwig’s Bustard, *Neotis ludwigii* (Endangered) and Secretarybird, *Sagittarius serpentarius* (Vulnerable). It is, however, not clear how important this habitat is for these and other threatened species. For example, are there any leks or nests in the project area of influence? Based on the information available, we suspect (but cannot confirm) that greatest impact of the proposed developments will be as a result of the associated infrastructure (i.e. collisions with powerlines). Species affected would include water using the nearby wetlands) and pans (e.g. Lesser and Greater Flamingos, *Phoenicopterus minor* and *roseus*, Near Threatened).

In conclusion, we are of the opinion that there is insufficient information to make an informed decision and encourage you to appoint a bird specialist to thoroughly assess the impacts of the proposed development and propose an appropriate mitigation strategy.

Please see the attached guidelines for solar energy and birds for your future reference.

Yours sincerely



Samantha Ralston-Paton
Birds and Renewable Energy Project Manager

Vivienne Thomson

From: Sam Ralston <energy@birdlife.org.za>
Sent: 09 September 2020 09:50
To: Vivienne Thomson
Subject: Re: Visserspan Solar PV Facilities - Projects 1 to 4
Attachments: BLSA Visserspan PV BAR comment.pdf; BLSA Birds & Solar Energy 2017.pdf

Importance: High

Dear Vivienne
Please see that attached comment. Apologies I could not be more helpful.
Kind regards
Sam

On 01 Sep 2020, at 17:23, Vivienne Thomson <vivienne@enviroafrica.co.za> wrote:

Dear Samantha

Please find attached the combined draft layout drawings for the four proposed ground based, crystalline solar PV facilities proposed on Visserspan Farm No. 40, near Dealesville, Free State Province.

Individual draft layout drawings (per project) are available if required. Please zoom to at least 100% for drawing details.

Thank you,
Vivienne Thomson

<image001.jpg>

Environmental Consultant

EnviroAfrica cc

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Please consider the environment and only print this mail if necessary.

<Visserspan Cumulative Farm Layout - Projects 1 to 4.pdf>

Vivienne Thomson

From: Sam Ralston <energy@birdlife.org.za>
To: Vivienne Thomson
Sent: 07 September 2020 15:34
Subject: Read: Visserspan Solar PV Facility - Project 1 (Ref. No. 14/12/16/3/3/1/2153)

Your message

To: Sam Ralston
Subject: Visserspan Solar PV Facility - Project 1 (Ref. No. 14/12/16/3/3/1/2153)
Sent: 01 September 2020 17:23:01 (UTC+02:00) Harare, Pretoria

was read on 07 September 2020 15:33:35 (UTC+02:00) Harare, Pretoria.

Vivienne Thomson

From: Vivienne Thomson <vivienne@enviroafrica.co.za>
Sent: 01 September 2020 17:24
To: 'energy@birdlife.org.za'
Subject: Visserspan Solar PV Facilities - Projects 1 to 4
Attachments: Visserspan Cumulative Farm Layout - Projects 1 to 4.pdf

Importance: High

Dear Samantha

Please find attached the combined draft layout drawings for the four proposed ground based, crystalline solar PV facilities proposed on Visserspan Farm No. 40, near Dealesville, Free State Province.

Individual draft layout drawings (per project) are available if required. Please zoom to at least 100% for drawing details.

Thank you,
Vivienne Thomson



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Vivienne Thomson

From: Vivienne Thomson <vivienne@enviroafrica.co.za>
Sent: 01 September 2020 17:23
To: 'energy@birdlife.org.za'
Subject: Visserspan Solar PV Facility - Project 1 (Ref. No. 14/12/16/3/3/1/2153)
Attachments: Project 1 footprint (218ha).kmz; VisserspanStatusQuoShpFiles.zip; VisserspanRegionalMapESRishpfiles.zip

Importance: High

Dear Samantha

Thank you for the telephonic conversation this morning. The above project is one of four ground based, crystalline, solar PV facilities proposed for development on the Farm Visserspan No. 40, near Dealesville in the Free State. Visserspan Solar PV Facility - Project 1 is proposed to be built with arrays at a minimum above ground height of 500mm and a maximum tilt height of 5m. The actual panel tilt maximum height is 3m but the applicant may employ a waterless cleaning mechanism which attaches to the top rim of the array framework, extending the height by approximately another meter (and making the array more visible due to the cleaning mechanism's non-reflective nature). The tallest structure on the site will be the apex of the workshop roof at 6m.

Please find the requested kmz and cumulative status quo and regional shape files for the above proposed project, attached. All documents as, originally made available during the public participation process, are still available on EnviroAfrica's website at [www.enviroafrica.co.za / projects /](http://www.enviroafrica.co.za/projects/) for public participation (then scroll down to the required project).

As per our brief discussion:

- i. no avifaunal or faunal specialist studies have been conducted on the site, although botanical and freshwater specialist reports are available on the website;
- ii. a minimum of a 100m buffer around the pans on the site has been left (all pans fall outside the proposed PV development footprint);
- iii. some of the sites are within a CBA1 region containing Vaal-Vet Sandy Grassland (although portions of the CBA have been degraded due to grazing/farming activities);
- iv. there are no overhead power lines linked to any of these four applications since all electrical cables/evacuation power lines will run underground to a proposed common future sub-station from where evacuated power will tie-in to the Eskom grid. Underground electricity lines from the four Visserspan solar PV facilities only lead up to the proposed future sub-station. The development of the substation and connection to the Eskom grid does not form part of this application. Only if the proponent is successful in the next independent power producer (IPP) bidding process, will the design and various authorisation processes for construction of the proposed IPP sub-station and above ground pylons (for grid connection) take place.
- v. mitigation measures as listed in the BirdLife South Africa Position Statement on the Effect of Solar Power Facilities on Birds will be included in the final basic assessment report (BAR) and environmental management programme report (EMPr)

The cumulative proposed/draft layout for Projects 1 to 4 will be sent in a subsequent email due to possible email file size limitations (please zoom in to at least 100% for detail).

Please let me know if you require any other documentation to be able to comment on the above project.

Thank you,
Vivienne Thomson



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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:

- Gunerhan, H., Hepbasli, A. & Giresunli, U. 2009. Environmental impacts from the solar energy systems. *Energy Sources, Part A: Recovery, Utilization and Environmental Effects* 31: 131-138.
- McCrary, M.D., McKernan, R.L., Schreiber, R.W., Wagner, W.D. & Sciarotta, T.C. 1986. Avian mortality at a solar energy power plant. *Journal of Field Ornithology* 57: 135-141.
- Tsoutsos, T., Frantzeskaki, N. & Gekas, V. 2005. Environmental impacts from solar energy technologies. *Energy Policy* 33: 289-296.
- Wachholz, C. & Coath, M. 2009. Birdlife European Climate Change Coordination Group: Guidelines for good practices to deploy Solar energy.