Samarkand Solar PV Project, Uzbekistan
Critical Habitat Assessment

Prepared for Masdar

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Contents

1 INTRODUCTION

1.1 Purpose of Report

This report details the Critical Habitat Assessment (CHA) for the Samarkand Solar PV Project, which has been completed in line with IFC Performance Standard 6 (PS 6) and EBRD Performance Requirement 6 (PR 6) and the corresponding Guidance Notes (GN) as well as the ADB Safeguarding Policy Statement to identify if sections of the Project area are considered as Critical Habitat.

This CHA aims to:
- identify Critical Habitat qualifying species or habitats, Priority Biodiversity Features and Natural Habitat associated with the Project.
- Highlight future actions for the Project where applicable, including identification and filling of data gaps and the need for additional field surveys as well as outline details to be included in a Biodiversity Action Plan (BAP).

1.2 Project Background

The Project Site consists of a Solar PV Site and Overhead Line and is located in the Kattakurgan District, Samarkand region of Uzbekistan. The Project Site is approximately 20 km from Kattakurgan and approximately 50 km from Samarkand. The Solar PV Site boundary and route of the associated Overhead Line is shown in *Figure 1*.

Figure 1. Layout of the Project AoI comprising the proposed Solar PV Site and Overhead Line with 200m buffer

This document covers the development of a 220 MW solar PV project (Project Site) and consists of a Solar PV Site, covering an area of 438 ha, and a 4.5 km Overhead Line from an on-site substation to the existing Ishtihan substation.

This report has been carried out on a location where there are large gaps in available data due to the rarity of species and lack of historic local, regional, and national survey data. In certain specific cases the report ensures that a precautionary approach is taken when dealing with these species. In particular where wider population levels are unknown a precautionary assumption of low population levels is used and where species are not recorded within the survey area, but habitat is present that is suitable the species is considered to have potential to use the site over the lifetime of the project and is screened in.

2   ASSESSMENT FRAMEWORK AND METHODOLOGIES

2.1   Frameworks

2.1.1   International Finance Corporation (IFC) Performance Standard (PS) 6

In accordance with IFC PS 6, habitats are divided into modified habitats, natural habitats, and critical habitats. Critical Habitats (CH) are a subset of either modified or natural habitats supporting high biodiversity value, including:

- Habitat of significant importance to critically endangered and/or endangered species (International Union for Conservation of Nature and Natural Resources (IUCN) Red List)
- Habitat of significant importance to endemic and/or restricted-range species
- Habitat supporting globally significant concentrations of migratory species and/or congregatory species
- Highly threatened and/or unique ecosystems
- Areas associated with key evolutionary processes

Since habitat destruction is recognised as a major threat to the maintenance of biodiversity and to assess likely significance of impacts, IFC PS 6 requires the following depending on habitat status:

Modified Habitat: exercise care to minimise any conversion or degradation of such habitat, depending on scale of project, identify opportunities to enhance habitat and protect and conserve biodiversity as part of operations.

Natural Habitat: developer will not significantly convert or degrade such habitat unless no financial/technical feasible alternatives exist, or overall benefits outweigh cost (including those to biodiversity), and conversion or degradation is suitably mitigated. Mitigation must achieve no net loss of biodiversity where feasible; offset losses through creation of ecologically comparable area that is managed for biodiversity, compensation of direct users of biodiversity.

Critical Habitat: in areas of CH, the Developer will not implement project activities unless there are no measurable adverse impacts on the ability of the critical habitat to support established populations of species described or on the functions of the critical habitat; no reduction in population of a recognised critically endangered or endangered species and lesser impacts mitigated as per natural habitats.

2.1.2   European Bank for Reconstruction and Development (EBRD) Performance Requirement (PR) 6

The EBRD PR 6 sets objectives to protect and conserve biodiversity using a precautionary approach, utilise the mitigation hierarchy to achieve no net loss/net gains where appropriate, maintain ecosystem services, and promote good practice in the management and use of natural resources.

In addition to the Critical Habitat noted above, the PR 6 also builds on the requirements to preserve important areas of natural habitats, defining these as "Priority Biodiversity Features" (PBF), with a criterion-based qualitative approach also used to determine their significance.

2.2 Assessment Methods

2.2.1 General

The CHA comprises several steps in order to ensure the process is robust:

- Initial Screening – which involves making stakeholder consultation and/or an initial literature review *e.g*. Important Bird Areas in Uzbekistan; Red Data Book of Plants and Animals; IUCN Red List of Threatened Species and; World Database of Key Biodiversity Areas.
- Establishment of baseline which includes field data collection and verification of available information *e.g*. Habitat Survey; Bird Survey; Bat Survey; Invertebrate Survey; Reptile Survey.
- Critical habitat determination:
  - a) Determination of Ecologically Appropriate Area of Analysis.
  - b) Assessment against Critical Habitat criteria.

2.2.2 Literature review and stakeholder consultation

A literature review was performed in order to understand the baseline conditions of the Project as well as informing the CHA. Primary sources of Project-related information included reports / articles / books related to the site and on-line resources including but not limited to:

- Field data collection and verification of available information *e.g*. Habitat, flora and fauna surveys
- Red Data Book of Uzbekistan
- IUCN Red List of Threatened Species
- BirdLife International Important Bird and Biodiversity Areas (IBAs)
- World Database of Key Biodiversity Areas

Consultation with stakeholders has taken place and is ongoing. Where relevant, the outcomes of these discussions will be updated accordingly. Stakeholders consulted has included:

- Samarkand Regional Ecology Department (included the respective Heads from the Regional Department of Ecology, Biodiversity Division, Expertise Division and Air Protection Division) [26th November 2021].

2.2.3 Determination of Ecologically Appropriate Area of Analysis

IFC PS 6 requires identification of Ecologically Appropriate Area of Analysis (EAAA) to determine the presence of critical habitat for each species with regular occurrence in the Project's area of influence, or ecosystem, covered by Criteria 1-4. The boundaries of an EAAA are determined by taking into account the distribution of species or ecosystems (within and sometimes extending beyond the project's area of influence) and the ecological patterns, processes, features, and functions that are necessary for

maintaining them. This approach ensures that all important biodiversity within the project footprint and linked surrounding habitats are taken into consideration.

Criteria used to define CH under EBRD PR 6 are closely aligned to the IFC guidance and these require that the study area be defined by comparable parameters to the above. In essence any CH assessment must encompass all direct and indirect impacts within a broad landscape unit which is large enough to include features and functions relevant to the species being considered.

2.2.4   Assessment against Critical Habitat criteria

Criteria

The CH determination refers to the evaluation of the area in question with respect to each of the five CH criteria defined in IFC PS 6 GN and the six defined in EBRD PR 6 GN. Each criterion is described in detail in paragraphs GN70–GN83 of IFC PS 6 GN and Section 3.7 of EBRD PR 6 GN as summarised in Tables 1 and 2 below. Definitions and quantitative thresholds for each criterion of the assessment in both guidance notes follow those set out in the IFC guidance as this is considered the most appropriate source by both IFC and EBRD at the time of writing:

Table 1 – Critical Habitat Criteria as defined by IFC PS 6

Critical Habitat Criteria as defined by IFC PS 6	PS 6 Criterion Number
Critically Endangered (CR) and/or Endangered (EN) species	1
Endemic or restricted-range species	2
Migratory or congregatory species	3
Highly threatened and/or unique ecosystems	4
Key evolutionary processes	5

Table 2 – Critical Habitat Criteria as defined by EBRD PR 6

Critical Habitat Criteria as defined by EBRD PR 6	PR 6 Criterion Number
Highly threatened and/or unique ecosystems	i
Habitats of significant importance to endangered or Critically Endangered species	ii
Habitats of significant importance to endemic or range restricted species	iii
Habitats supporting globally significant concentrations of migratory or congregatory species	iv
Areas associated with key evolutionary processes	v
Ecological functions that are vital in maintaining the viability of biodiversity features described (as critical habitat features)	vi

PS 6 Criterion 1 and PR 6 Criterion ii: Critically Endangered (CR) and/or Endangered (EN) Species

Species or areas supporting species threatened with global extinction and listed as Critically Endangered (CR) and Endangered (EN) on the IUCN Red List or local equivalent trigger CH under these criteria. The principal thresholds for triggering CH are:

a) the EAAA contains "globally important concentrations" of an IUCN CR or EN species, defined as at least 0.5% of the global population AND over 5 reproductive units.

b) areas that support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds in (a).

c) is as appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.

PS 6 Criterion 2 and PR 6 Criterion iii: Endemic and/or Restricted-Range Species and Supporting Habitats

IFC GN6 - Paragraph 74 (2019) defines "endemic" as synonymous with "restricted range" species, and for terrestrial vertebrate and plant species, this criterion refers to species with a global range size of $\leq$ 50,000 km^2. In order to trigger CH under these criteria, the EAAA must contain $\geq$10% of the global population of such a species AND at least 10 reproductive units.

PS 6 Criterion 3 and PR 6 Criterion iv: Migratory or Congregatory Species and Supporting Habitats

Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem). Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis. Examples of Congregatory species are:

- Species that form colonies.
- Species that form colonies for breeding purposes and/or where large numbers of individuals of a species gather at the same time for non-breeding purposes (for example, foraging and roosting).
- Species that utilize a bottleneck site where significant numbers of individuals of a species occur in a concentrated period of time (for example, for migration).
- Species with large but clumped distributions where a large number of individuals may be concentrated in a single or a few sites while the rest of the species is largely dispersed (for example, wildebeest or Argali distributions).
- Source populations where certain sites hold populations of species that make an inordinate contribution to recruitment of the species elsewhere (especially important for marine species) (IFC PS 6 GN76-77).

Thresholds for these criteria as per IFC PS 6 GN78 are the following:

a) areas known to sustain, on a cyclical or otherwise regular basis, $\geq$ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle.

b) areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress.

PS 6 Criterion 4 and PR 6 Criterion i: Highly Threatened or Unique Ecosystems

As per IFC PS 6 GN79, it is necessary to use the Red List of Ecosystems where formal IUCN assessments have been performed. Where formal IUCN assessments have not been performed, assessments may be made using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally recognized NGOs).

Thresholds for these criteria as per IFC PS 6 GN80 are the following:

a) areas representing ≥5 percent of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN.
b) other areas, not yet assessed by IUCN, but determined to be of high priority for conservation by regional or national systematic conservation planning.

PS 6 Criterion 5 and PR 6 Criterion v: Key Evolutionary Processes

According to the GN81 of IFC PS 6, the structural attributes of a region, such as its topography, geology, soil, temperature, and vegetation, and combinations of these variables, can influence the evolutionary processes that give rise to regional configurations of species and ecological properties. In some cases, spatial features that are unique or idiosyncratic of the landscape have been associated with genetically unique populations or subpopulations of plant and animal species. Physical or spatial features have been described as surrogates or spatial catalysts for evolutionary and ecological processes, and such features are often associated with species diversification. By conserving species diversity within a landscape, the processes that drive speciation, as well as the genetic diversity within species, ensures the evolutionary flexibility in a system, which is especially important in a rapidly changing climate.

It should be noted that the IFC PS 6 GN provides qualitative guidance for assessing the projects against these criteria rather than quantitative thresholds, unlike PS 6 Criteria 1-4.

EBRD PR 6 Criterion vi: Ecological Functions that are Vital to Maintaining the Viability of the Biodiversity Features Described.

EBRD PR 6 describes this as "ecological functions without which critical biodiversity features could not persist." Examples of these are given as riparian zones and rivers, dispersal or migration corridors, hydrological regimes, seasonal refuges or food sources, keystone or habitat-forming species.

As with PR 6 Criterion v this item holds a qualitative threshold rather than a quantitative one, and as such the likelihood of triggering CH should be informed by survey data and the use of relevant expert opinions.

2.2.5 Assessment against Priority Biodiversity Feature criteria

Four criteria relating to the determination of PBF are presented within EBRD PR 6. As noted above there are no quantitative thresholds stated within the guidance for the determination of PBF and as such

background data, field data and expert opinion is used to complete a qualitative assessment. *Table 3* shows the criteria for defining PBFs with examples of each feature taken from the EBRD PR 6 guidance note.

Table 3 – Priority Biodiversity Feature (PBF) Criteria as Defined by EBRD PR 6

Feature	PR 6 PBF Criterion Number
Threatened Habitats	1
Vulnerable Species	2
Significant biodiversity features identified by stakeholders or governments (e.g. IBAs or KBAs)	3
Ecological structure and functions that are vital to maintaining the viability of priority biodiversity features	4

Examples of threatened habitats are given as: Habitats considered under pressure by national, regional or international assessments. They include natural and priority habitats identified under Annex I of the EU Habitats Directive.

Examples of Vulnerable species are given as: Species listed by the IUCN or any other national/regional lists (e.g., national Red Lists or Red Data Books) as Vulnerable or equivalent (N.B. in Uzbekistan the Vulnerable tier is split into Vulnerable: Rare and Vulnerable: Declining). These include animal and plant species of community interest identified under the EU Habitats Directive (Annex II).

Examples of Significant biodiversity features are given as: Key Biodiversity Areas and Important Bird and Biodiversity Areas

Examples of Ecological structure and functions needed to maintain the viability of priority biodiversity features are given as: Locations essential for priority biodiversity features, riparian zones and rivers, dispersal or migration corridors, hydrological regimes, seasonal refuges or food sources, keystone or habitat-forming species.

3   BASELINE ECOLOGICAL INFORMATION

3.1   Survey Timings and Methods

3.1.1   General

Original scoping and screening surveys were completed by Typsa in 2020 and 2021 and included winter Great Bustard (*Otis tarda*) surveys (Typsa, 2021. Great Bustard Winter Survey - Kattakurgan and Jizzakh Solar PV Projects).

An ESIA scoping site visit was undertaken in September 2021 and a subsequent ESIA site visit completed in November 2021. The survey teams from Green Business Innovation and AECOM consisted of biodiversity and socio-economics specialists who completed walkovers of the Project Site, the area immediately surrounding the Solar PV Site, and the proposed Overhead Line route. Observations included land use, flora and fauna and the team also conducted a series of meetings and interviews with local authorities and residents.

The ecological baseline (habitat identification, floral survey, terrestrial fauna and avifauna survey) was established by local biodiversity specialists between the 20th and 22nd September 2021 and by AECOM ecologists/local biodiversity specialist during site surveys on 26th, 27th and 28th November 2021 (referred to as the 'September 2021' and 'November 2021' surveys herein). These surveys included:
- Walkover transect surveys for birds, reptiles, mammals and rare and endemic species of plants within the Solar PV site;
- Walkover transect survey for habitat assessment categorization within the Solar PV site;
- Drive-over and point count surveys for the aforementioned ecological features along the transmission line (from the on-site substation to the existing Ishtihan substation) and also in areas adjacent to the proposed Project site.

The Solar PV site footprint (being relatively small) was surveyed on foot with a series of transects running from east to west and north to south directions. The area was traversed in a regular pattern in order to reduce the chances of missing any important biotic features.

The Project Area of Influence (AOI) detailed within the Critical Habitat and Impact Assessment report is defined as a 50m buffer surrounding the Solar PV Site and new substation, with a 200m buffer around the Overhead Line route centre line.

Baseline ecological data was gathered by Aecom within a 50 km radius from the Project Site; only faunal and habitat data considered to be of potential relevance to the aforementioned AOI has been included within this document.

3.1.2   Habitats and Flora

The aims of the September 2021 habitat and flora survey, which was undertaken by local botanical specialists, are as follows:

- Determine the habitat type and plant species present at and around the proposed Project site and highlight any IUCN threatened species and/or species listed in the Red Data Book of Uzbekistan. The vegetation was sampled by the local botanical specialists along a transect route using 10mx10m quadrats, using the Drude method44 for assigning vegetation cover and describing the vegetation type formations.
- Identify any exotic (non-native) or potentially invasive flora species.
- Identify the potential direct or indirect impacts, whether they are beneficial, adverse or neutral, on the current vegetation communities or protected species as a result of the construction and operation of the proposed Project.
- Identify feasible mitigation strategies as counter measures for the potential impacts.

Plant species were identified, and distributions were checked using relevant literature. The conservation status of each of the plant species documented was researched using the IUCN data bases. This was cross checked against the Uzbek Red List to determine the presence of species of conservation importance. The September 2021 survey was undertaken within the optimal survey season (April-September) for undertaking habitat surveys.

The site was appraised by an experienced botanist/ habitat surveyor from AECOM and a local biodiversity specialist during the November 2021 filed survey visit; the habitats and species present could be identified with confidence. Sufficient information was obtained during the September 2021 visit to allow ground-truthing of habitats and flora during the November visit.

The September and November 2021 surveys did not coincide with the optimum period for surveying those spring ephemeral species which are perennials (eg. *Liliaceae* and *Iridaceae*); these have bulbs, corms or tubers which enter a period of dormancy until sprouting in early spring. Nevertheless, the aboveground parts can still be detected and identified at the end of the growing season in late summer/early autumn. Also, the dead above ground parts of spring ephemeral species which are annuals (eg. *Papaveraceae*, *Chenopodiaceae*, *Compositae*, *Fabaceae*) could be detected and identified during the September 2021 visit. Therefore, the timing of the surveys is not considered to be a limitation in terms of this botanical and habitat appraisal.

3.1.3   Birds

The aims of the September and November 2021 bird surveys were to:

- Carry out field work to identify the micro-habitats within the proposed Project's footprint and identify the avifauna that may reside or frequent the area.
- Provide the IUCN rating for each of the fauna species determined to be present and protected status in Uzbekistan for each of the avifauna species determined to be present or potentially occurring at the Project site.
- Identify direct or indirect impacts to the local avifauna that could be the result of the construction and operation of the proposed Project.
- Determine relevant mitigation measures.

There are numerous factors that could influence the presence of avian species within the region such as season, weather conditions, and food availability. In order to account for this the bird distributions were researched to formulate an index similar to that used for terrestrial fauna species. In addition, the breeding and migratory habits were researched using Bird Life International databases to derive the species' lists. Birds that could potentially frequent the proposed Project site have been classified according to their migratory, breeding and resident statuses. This scale uses the following terms:

- Resident: These birds reside and breed within the local areas on a more or less permanent basis though may move within their distribution zone
- Non-breeding migrant: These birds do not breed in this area however may be found in the region during certain periods/ seasons as they either use this area as a temporary or seasonal home range. This includes Eurasian wintering migrants.
- Breeding migrant: These birds frequent the region specifically to breed and raise their young, however following the breeding season will move on to other areas.

Surveys for Sociable Lapwing at the Project Site have been carried out by AECOM in September 2022 in accordance with advice provided by ADB.

Following consultation with the Asian Development Bank (ADB), a species-specific survey for Asian Houbara was undertaken by local biodiversity specialists on 11th-13th April 2022. The aim of the Asian Houbara breeding survey was to detect communal display areas (leks) in areas of suitable breeding habitat within the project area following the methodology detailed in Sutherland et al, 1996.

The dates of the survey in early/mid-April coincide with the optimal period for lekking activity. The aim was to confirm presence/absence of breeding populations of Asian Houbara within the Solar PV Site. This species 'inhabits open, arid and sparsely vegetated steppe and semi-desert; it favours scattered shrubby vegetation, typically comprising xerophytic or halophytic plants (Birdlife International, 2022). The intensive agricultural areas which support the proposed transmission line do not represent suitable breeding habitat for this species and therefore element of the project was scoped out of the survey.

In terms of the survey methodology, watches from vantage points were made in the early morning from elevated points using high powered optical equipment (telescopes mounted on a tripod (as well as binoculars)). The surveys coincided with the recommended timeframes as advised by ADB (ie. early mornings in April). The location of the vantage points sought to avoid any disturbance to any lekking birds that may have been present.

Other bird species which were recorded incidentally during the April 2022 Asian Houbara survey were also recorded as part of this survey; this included breeding and migrating (spring passage) species and where encountered the following information was recorded for these records: species, number, behaviour, and flight direction (if relevant).

Surveys for Great Bustard were completed by Typsa in December 2020 as well as January and February 2021. National census surveys for this species were also completed in the Jizzakh region in 2019. The

Great Bustard survey 2020 – 2021 was undertaken utilising a point count / driven transect method which resulted in a total of 120 km of transects being driven around the Samarkand project, mostly encompassing the Kattakurgan Plains but also around the shores of Kattakurgan Reservoir. Additional transects were completed in the foothills of the Nuratau range to the north-east of the Samarkand Project site, which is also considered to be in the core wintering range of this species in Uzbekistan.

3.1.4 Mammals

The aims of the September and November 2021 faunal surveys were to:

- Carry out field survey work to identify the terrestrial fauna that may reside or range within the region of the proposed Project site.
- Where possible, interview local residents regarding faunal species that may have been observed in the Project Site.
- Provide the IUCN Red Data rating and protected status in Uzbekistan for each of the fauna species determined to be present or potentially occurring at the Project site.
- Identify of any direct or indirect impacts, whether they are beneficial, adverse or neutral, on the current terrestrial biodiversity and provide relevant mitigation measures.

Considering that the activity patterns of many terrestrial species are hugely variable (i.e. many are nocturnal), it is possible that certain small species (particularly small mammals, reptiles and amphibians) could have been overlooked during the daily site surveys.

3.1.5 Reptiles and Amphibians

Surveys for Central Asian Tortoise (*Testudo horsfieldii*) were undertaken by AECOM between 27th – 29th April 2022. The field survey was carried out by a local reptile specialist R.A. Nazarov and the findings are reported in Nazarov, R.A. (May 2022).

The purpose of the surveys was to confirm presence/absence and an estimation of population density within the Project site, to inform the ecological baseline, impact assessment and mitigation for this assessment. The surveys also aimed to record any other reptile species encountered during the tortoise surveys; to inform the ecological baseline, impact assessment and mitigation with respect to all reptile species present or potentially present within the Project Site.

The surveys were undertaken in April and were therefore within the active season for Central Asian tortoise when they are more commonly active above ground and therefore easier to detect. The survey involved the surveyors walking line transects within and immediately adjacent to the Solar PV site and the Overhead Line route during the daytime (three survey visits) and one nocturnal visit; observations of tortoises/other reptiles, tortoise/other reptile burrows and tortoise signs were recorded within distance bands so that population densities could be calculated.

3.2 Results

3.2.1 General Site Description

The Project Site (the Solar PV Site and the 4.5 km Overhead Line) is located in the Kattakurgan District, Samarkand region of Uzbekistan. It is within an agricultural landscape adjacent to several rural settlements in the Zarafshan river basin.

The Solar PV Site sits on flat and gently sloping cultivated land that mostly has been abandoned, but the area is densely indented by deep gullies, irrigation canals, ditches, and temporary watercourses, which have the potential to attract a wide range of species. The soils are light textured sierozems and are non-saline. Notably, the Zarafshan River is located approximately 2 km from the northern boundary of the proposed Solar PV Site.

The proposed Overhead Line is routed through a generally flat, intensively cultivated and irrigated agricultural landscape, with field crops including cotton

Plate 1. The prevailing agro-landscape (ridge and furrow) with associated ruderal weed flora assemblage within the Solar PV site

Plate 2. Fallow cultivated land in southern part of Solar PV site with remnant cereal crop and frequent Camelthorn

3.2.2   Protected Areas

There is one Important Bird Areas (IBAs) within a 50 km radius from the Project Site: Kattakurgan Water Reservoir IBA (approx. 15 km to the south-west)

Kattakurgan Water Reservoir IBA

Kattakurgan Water Reservoir is situated in a natural depression approximately 15 km to the south-west of the Project site at its closest point; it is a non-protected area. Tree and shrub plantations (pistachio, oleaster, acacia, maple and others) cover 2,600 ha along the southern, south-eastern and western banks. The reservoir gets its water from the Kara-darya river, which is a right branch of the Zaravshan. river. The reservoir fills in autumn, winter and spring. Water is used for irrigation from May to June. The reservoir freezes for a short time in winter. Emergent vegetation is not developed because of water level fluctuations. The phytoplankton of the reservoir is poor in species composition and numbers. A total of 115 species of birds have been recorded at the site, 61 of them breeding. There are 10 species of birds included in the National Red Book. Of these, 4 species breed: Pygmy Cormorant (*Phalacrocorax pygmaeus*), Common Pheasant (*Phasianus colchicus*), Asian Houbara (*Chlamydotis maqueenii*), and Pin-tailed Sandgrouse (*Pterocles alchata*).

This site plays an important role in the protection of the Asian Houbara and Pin-tailed Sandgrouse. The site meets several criteria for breeding and migratory species, including globally threatened and biome-restricted species, 1% or more biogeographical population, and congregations of 20,000 of more waterbirds.

In terms of non-bird biodiversity features of the IBA, the following fish species are listed in the National Red Book*: Barbus capito conocephalus*, *Capaetobrama kuschakewitschi* and *Sabanejewia aurata*. There are 11 species of reptiles, including *Varanus griseus* and *Testudo horsfieldi*. A total of 26 mammalian species have been recorded.

Consultation with Birdlife International and ornithological experts (IBA Programme since 2008) was undertaken and reported in TYPSA (2020); this highlighted that none of the species for which the IBA site was designated use the Project site, with the exception for the potential for Asian Houbara Bustard.

Flyways

A number of important flyways cross Uzbekistan with the Project site lying on the Central Asian Flyway (CAF). Uzbekistan's natural and artificial wetlands are important for migrating and overwintering waterfowl (Lanovenko 2006). More than 50 migratory waterbird species have been recorded on Uzbek wetlands, including at least nine which are globally threatened: Dalmatian Pelican, Lesser White-fronted Goose, White-headed Duck (*Oxyura leucocephala*), Ferruginous Duck, White-tailed Eagle, Red-breasted Goose (*Branta ruficollis*), Marbled Teal, Pallas's Sea Eagle (*Haliaeetus leucoryphus*) and Pygmy Cormorant. Notable migratory species potentially using the flyway in the vicinity of the project area include the IUCN Critically Endangered Sociable Lapwing (*Vanellus gregarious*).

Notable migratory species potentially using the flyway in the vicinity of the project area include Sociable Lapwing (*Vanellus gregarious*). However, The CAF is a broad front are there are no specific features within 20km of the site which could attract migrating birds. The closest feature is Kattakurgan Reservoir IBA, which is attractive to migrating waterfowl, but the project site does not contain any wetland habitat that may attract such species.

In summary, the proposed Project site is not located on a major bottle neck or geographical feature that would concentrate migrating species.

3.2.3 Habitats and Flora

The vegetation of Uzbekistan is divided into four main ecosystems (Belolipov *et al*, 2013) and the proposed Project Site is located in the adyr zone (lowlands and foothills).

The September 2021 and November 2021 surveys confirmed that the Solar PV site is a mosaic of historic (within the last 20 years) and more recent (within last 5 years) cultivated land, with ridge and furrow patterns indicative of ploughing ubiquitous throughout. Camelthorn (*Alhagi pseudoalhagi*) is a ubiquitous feature of the vegetation (abundant) and spiny cocklebur (*Xanthium spinosum*), a noxious weed, is locally abundant; the latter species is an introduced invasive species (refer to Sennikov *et al*, 2020). Isirik (*Peganum harmala*), an invasive native noxious weed, is widespread and is locally abundant. Other ruderal and weed flora components which typify this agro-ecosystem are *Papaver pavonium*, *Tribulus terrestris*, and *Sphaerophysa salsula*, with *Cynodon dactylon* and *Hordium leporinum* grasses achieving local abundance.

The agro-ecosystem and the associated weed flora assemblage which prevails within the Solar PV site is Modified Habitat as defined in PS6 (recently or currently used for agricultural/farming/pastoral activities). The transmission line route crosses intensively cultivated and irrigated farmland habitat, with cropped fields including cotton cultivation: it is Modified Habitat as defined in PS6.

The habitats of the proposed Project site and adjacent areas do not fall into Critical Habitat category (as defined in the PS6). None of the plant species recorded during the September 2021 and November 2021 field surveys are included on the Uzbekistan Red List.

3.2.4 Fauna

The following faunal species of conservation concern were recorded on surveys undertaken to inform the ESIA. Some of the species listed below are considered to be potentially present in the Project AoI and this assessment has considered known ranges of each species as well as their specific habitat requirements.

Table 5. Species of conservation concern present or possibly present on the Solar PV Site and/or Overhead Line route

English Name	Scientific Names	Global Threat Status (IUCN)	National Threat Status (URDB)	Solar PV Site	Overhead Line
Birds					
Sociable Lapwing	*Vanellus gregarious*	CR	VU:R	Not recorded but possible movements over site	
White-headed Duck	*Oxyura leucocephala*	EN	EN:1	Possible use of airspace to fly over the site	
Saker Falcon	*Falco cherrug*	EN	NT	Not recorded during surveys but likely to occur over the Project Site	
Steppe Eagle	*Aquila nipalensis*	EN	VU:D	A single overflying bird on autumn passage	
Pallas's Fish Eagle	*Halieetus leucoryphus*	EN	Not Listed	Not recorded on surveys however possible use of airspace to fly over the site	
Egyptian Vulture	*Neophron percnopterus*	EN	VU:D	Single recorded during 2020 Typsa surveys	
Little Bustard	*Tetrax tetrax*	NT	VU:D	Single bird recorded on the ground during Typsa VP surveys	
Asian Houbara	*Chlamydotis macqueenii*	VU	VU:D	Not recorded on specific surveys completed during core lekking period. Possible use of airspace flying over site	
Great Bustard	*Otis tarda*	VU	CR	Not recorded on Project Site or within the Kattakurgan Plains (southernmost core wintering area). The 2020 – 2021 surveys did however record a peak of 845 individuals within the southern foothills of the Nuratau Range with additional birds recorded in the northern foothills of Nuratua Range giving peak count of 924 Great Bustard in RUz in winter 2020-21.	
Reptiles and amphibians					

English Name	Scientific Names	Global Threat Status (IUCN)	National Threat Status (URDB)	Solar PV Site	Overhead Line
Central Asian Tortoise	*Testudo horsfieldii*	VU	VU	Present	Possible
Tartar Sand Boa	*Eryx tataricus speciosus*	Spp. not listed	NT	Possible	Possible

4   CRITICAL HABITAT ASSESSMENT

4.1   Introduction

The first stage of the CHA is to undertake a screening exercise where the species of conservation concern that have been recorded within the Project AoI or those considered to be potentially present are rapidly assessed against the thresholds for determination of CH.

CHA screening has been undertaken for all species considered present or potentially present within the Project AoI that are of global conservation concern; Critically Endangered, Endangered and Vulnerable. Species with a global conservation status of Near Threatened have been excluded from the CHA screening unless they have a significant national or regional conservation status.

The species for which the screening exercise has been completed as well as the results of the screening are shown in *Table 5* below. Those species which are considered, at the screening stage, to potentially meet the CH thresholds or are of high international conservation concern are discussed later in this section.

Table 5. CHA Screening: Species requiring detailed consideration as part of CHA process

Common Name	IUCN Status	National Status	Status	Status PS / PR 6 Criterion				
				1 / ii	2 / iii	3 / iv	4 / i	5 / v
Avifauna								
White-headed Duck	EN	EN:1	Breeding and wintering species in Uzbekistan	Global population of between 5,300 and 8,700 individuals. Project AoI does not support habitat suitable for this species however transit through AoI is possible. Not recorded on any surveys and considered that any transitory movements highly unlikely to be of significant numbers. EAAA for a migratory (wintering) species set at 50km^2 around the project site and all areas are outside of core wintering area for this species (UzRDB) Thresholds for CH not met.	Global population resulting in a large EOO so not range restricted. Criterion 2 not considered	Global population of between 5,300 and 8,700 individuals. Project AoI does not support habitat suitable for this species however transit through AoI is possible. Not recorded on any surveys and considered that any transitory movements highly unlikely to be of significant numbers. EAAA for a migratory (wintering) species set at 50km^2 around the project site and all areas are outside of core wintering area for this species (UzRDB) Thresholds for CH not met.		
Sociable Lapwing	CR	VU:R	Not recorded but possible movements over Project Site	Site is not suitable for staging. Potential for low numbers migrating over the site. In absence of any data criteria not met however species is CR and is included as PBF and monitoring required.	-	Site is not suitable for staging. Potential for low numbers migrating over the site. In absence of any data criteria not met however species is CR and is included as PBF and monitoring required.	-	-

Common Name	IUCN Status	National Status	Status	Status PS / PR 6 Criterion				
				1 / ii	2 / iii	3 / iv	4 / i	5 / v
Steppe Eagle	EN	VU:D	Single individual recorded during autumn migration	Global population of 50-75,000 meaning 250 individuals required to meet criteria. Single bird recorded over site during autumn migration and only low numbers likely to occur. EAAA population unlikely to meet trigger in any season.	-	Global population of 50-75,000 meaning 500 individuals required to meet migratory criteria. Single bird recorded over site during autumn migration and only low numbers likely to occur so will therefore not meet trigger in any season-	.	-
Pallas' Fish Eagle	EN	Not listed	Possible migration but not in core global EOO	This species is irregular in Uzbek and was not recorded on any of the survey. Project AoI does not support suitable habitat for this species, although waterbodies are present in the EAAA (50km^2 for a migratory species). Highly unlikely that irregular movement will result in significant populations of birds transiting AoI or EAAA and as such EAAA population unlikely to trigger CH in any season.	Global population resulting in a large EOO so not range restricted. Criterion 2 not considered	This species is irregular in Uzbek and was not recorded on any of the survey. Project AoI does not support suitable habitat for this species, although waterbodies are present in the EAAA (50km^2 for a migratory species). Highly unlikely that irregular movement will result in significant populations of birds transiting AoI or EAAA and as such EAAA population unlikely to trigger CH in any season.	Pallas' Fish Eagle	EN

Common Name	IUCN Status	National Status	Status	Status PS / PR 6 Criterion				
				1 / ii	2 / iii	3 / iv	4 / i	5 / v
Egyptian Vulture	EN	VU:D	Single individual recorded	Global population of 18,600-54,000 meaning 93-270 individuals required to meet criteria. Currently 135 pairs in country and not recorded breeding in Project AoI. Peak of single bird recorded on TYPSA surveys. EAAA set at 50km^2 around project site and EAAA population will therefore not meet trigger in any season.	-	Global population of 18,600 – 54,000 meaning between minimum of 46 pairs required to meet congregatory criteria (with respect to colonial breeding), and between 93 and 270 individuals to meet congregatory criteria (with respect to migration). Peak of single bird recorded over Project AoI. EAAA population will therefore not meet trigger in breeding season as AoI unlikely to be supporting breeding of this species (no suitable habitats). The species is also not recorded in significant migratory numbers, to trigger the CH level. Criterion 3 is not triggered.		
Saker Falcon	EN	NT	Not recorded during the surveys but Project AoI is considered suitable for this species.	Global Population of 12,200-29,800 individuals meaning 61 individuals or 21 pairs required to meet criteria. Not recorded on surveys but Project AoI considered suitable for this species. EAAA population will therefore not meet trigger in any season.	-	- Global Population of 12,200-29,800 individuals meaning 61 individuals or 21 pairs required to meet criteria. Not recorded in Project AoI and therefore not considered to migrate in significant numbers sufficient to trigger CH level. Threshold for Criterion 3 is not met.		

Common Name	IUCN Status	National Status	Status	Status PS / PR 6 Criterion				
				1 / ii	2 / iii	3 / iv	4 / i	5 / v
Asian Houbara	VU	VU:D	Resident (breeding and wintering)	Global population 33,000-67,000. Site potentially suitable for Asian Houbara, although presence was considered unlikely. Surveys were completed for this species during peak lekking period, and no birds were recorded. Thresholds for triggering CH would require >10% of global population to be present in EAAA and this is not considered likely. Even if this species recorded on future surveys, including operational monitoring it is not considered that even if impacts were noted the impact would be of such a level to result in the conservation status of this species being changed from VU to EN. Thresholds for CH not met.				

Common Name	IUCN Status	National Status	Status	Status PS / PR 6 Criterion				
				1 / ii	2 / iii	3 / iv	4 / i	5 / v
Great Bustard	VU	CR	Wintering and migration	Included in Screening due to National Conservation Status (Critically Endangered). Global Population 31,000 – 36,000 individuals. Central Asian Population considered to be 1,000 – 1,500 individuals. Three known core wintering sites within the Jizzakh / Samarkand region. Not recorded in the closest 'core' known winter area to the Project site, within the Kattakurgan Plains (southernmost wintering area). Surveys completed in 2020 – 2021 did however record a peak of 845 individuals within the Southern Foothill of the Nuratau Range with a further 79 individuals in the Northern Foothills. Therefore in winter 2020 – 2021 there was a maximum of 924 Great Bustards in the core wintering areas in Uzbekistan and this represents between 61.6 and 92.4% of Central Asian Population.		Included in Screening due to National Conservation Status (Critically Endangered). Global Population 43,847 – 56,695 individuals. Central Asian Population considered to be 1,000 – 1,500 individuals. Three known core wintering sites within Jizzakh region. Total of 924 Great Bustards in these core wintering areas in winter 2020-2021 although none recorded within the Project AoI. Project AoI is not suitable wintering feeding / staging habitat and is therefore not important for this species. Criterion 3 is not triggered.		

Common Name	IUCN Status	National Status	Status	Status PS / PR 6 Criterion				
				1 / ii	2 / iii	3 / iv	4 / i	5 / v
				EAAA is set at 50 km^2 for a migratory species and Project AoI is situated between two known core wintering areas; Karrakurgan Plains and the southern foothills of the Nuratau Range. Whilst peak numbers were not recorded from within the EAAA it is still possible in cold winters that birds, in significant numbers, could migrate through the EAAA. Critical Habitat is Triggered for this species under Criterion 1.				
No other bird species of global conservation concern were recorded. Species of national conservation concern recorded within the Project AoI were limited to Little Bustard (NT) and this species is identified as PBF and discussed later in this report								
Mammals								
No species of international conservation concern are considered present, or potentially present within the Project AoI.								
Reptiles								
Central Asian Tortoise	VU	VU	Max of five (three adult females and two adult males) in the northern part of the Solar PV Site. Nazarov	Based on the results of the surveys and interviews with local residents, Nazarov suggests tortoises are very rare and that the habitats with the Solar PV site are unfavourable in terms of the supporting a sustainable population for this species. Therefore, the population			-	-

Common Name	IUCN Status	National Status	Status	Status PS / PR 6 Criterion				
				1 / ii	2 / iii	3 / iv	4 / i	5 / v
			(2022) concludes that the population size is "very low" and does not exceed 0.1 individuals / hectare	density of tortoises within the Solar PV site is assessed as very low. Project AoI will not support populations that could trigger Criterion 1/ii.				
Other species of reptile of national conservation concern were recorded within the Project AoI and these are identified as PBF and are discussed later in this report								

4.2 Determination of Critical Habitat

4.2.1 General

Based on the results of the CH Screening Exercise it has been determined that Great Bustard (wintering and migrating) meets the thresholds for triggering Critical Habitat under Criteria 1; significant populations of nationally or regionally EN or CR species and under Criteria 3; significant populations of regional or nationally EN or CR species during wintering and migration. Great Bustard are likely to fly through the EAAA.

A number of PBFs have also been identified and these are discussed further in this report

Great Bustard (Otis tarda)

Determination of EAAA

There are three main wintering areas for Great Bustard in Uzbekistan and these are the Northern and Southern Foothills of the Nuratau Range and the Steppe of Karnabchul (*Figure 4*). The Project AoI is to the south-west of the Nuratau Range and to the north-east of the Steppe of Karnabchul and however does not overlap with the core wintering areas of Great Bustard. During site visits completed by a species expert, it was considered that the Project AoI does not support suitable terrestrial habitat for over-wintering or staging Great Bustard and no birds were recorded within the AoI during the winter surveys 2020 – 2021 (Typsa 2021).

The EAAA is however calculated as being the AoI plus a buffer of 50km^2 as this species is over-wintering and migratory and could therefore fly over the AoI, including the OHL.

Figure 4. EAAA for Great Bustard. Figure also shows core wintering areas / areas surveyed in 2020-2021 as reported in Typsa 2021)
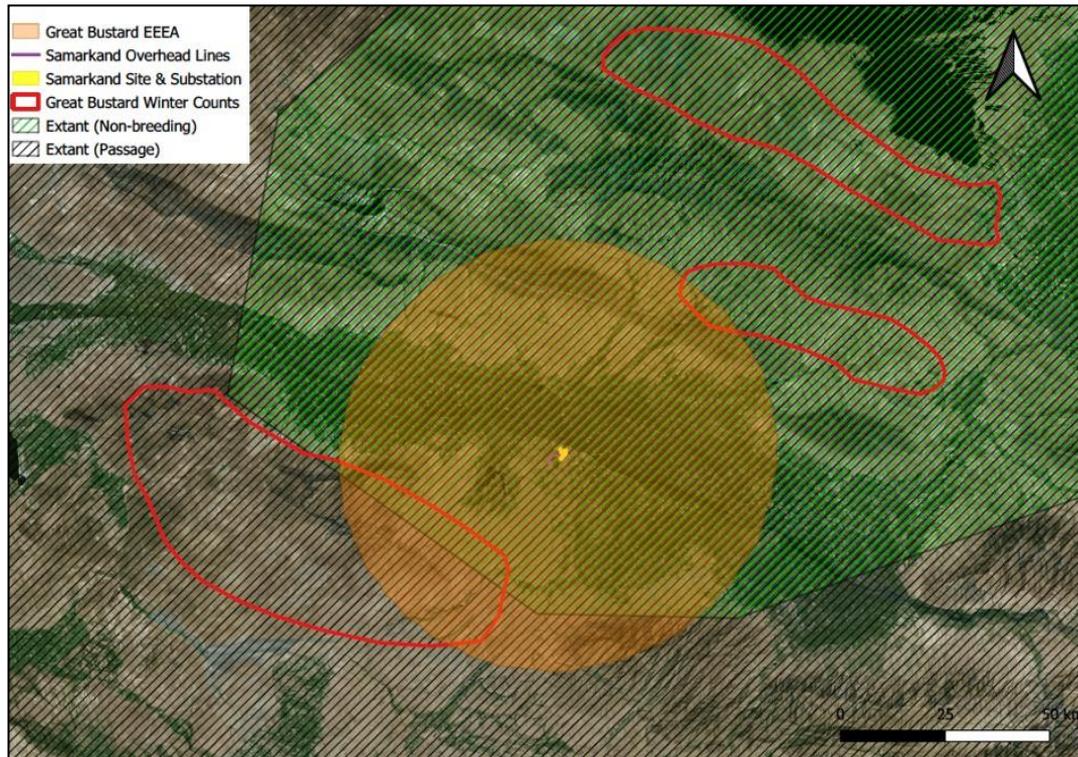
Assessment against CH Criteria

The eligible criterion for this species are Criterion 1 and 3 in relation to those species which are of national or regional conservation concern or species which aggregate for breeding, during migration or at wintering sites.

Great Bustard is listed by the IUCN as Vulnerable however it is listed as Critically Endangered on the Uzbekistan Red List. Its global population is declining due to many factors including collision with power lines and because of significant declines in recent years it is likely that its conservation status will be upgraded from Vulnerable to Endangered.

The global population of this species is between 31,000 and 36,000 individuals however the Central Asian Population is between 1,000 and 1,500 individuals. During surveys completed between December 2020 and February 2021 no birds were recorded within the Project AoI or the southernmost core wintering area. However a peak count of 845 individual Great Bustard was recorded from the southern foothills of the Nuratau Range with additional birds recorded from the northern foothills. In total an overwintering population of 924 Great Bustard were recorded in 2020/21 and this represents 61.6 to 92.4% of the Central Asian population.

The PV site and OHL route are not considered to be suitable for this species as a staging or wintering habitat and it is therefore considered that the Project AoI in unlikely to be of critical importance for wintering Great Bustard within Uzbekistan. This position is echoed in the 2021 Typsa report which states '*the Project site is likely to be situated outside the area of Critical* Habitat'. That said the airspace

of the Project AoI, including route of the OHL is likely to be used by birds moving between wintering grounds as well as migrating between wintering and breeding habitats. The EAAA is therefore likely to support significant numbers of the Central Asian population and the thresholds for Critical Habitat are met for Criterion 1. Due to the unsuitability of the terrestrial habitats within the Project AoI the thresholds for Criterion 3 are however not met.

Great Bustard are known to be highly susceptible to collision with overhead lines and the project is in an area with a significant proportion of the Central Asian population of this species. Between 10 to 15 collisions would affect 1% of the Central Asian population which would be highly significant given the species' relatively low, and declining, population.

Critical Habitat has therefore been triggered for Great Bustard and as such the Project will need to develop a Biodiversity Management Plan which will set out in further detail mitigation and off-setting measures included within the Project AoI. It is considered that off-setting will be required as the available mitigation measures (marking of over-head lines) is not very effective at reducing collisions of Great Bustards due to the apparent poor vision and migrating habitats (nocturnal flights at collision height)

As part of the package to reduce impacts as much as possible a range of BFDs will be installed on to the central 60% of each overhead line, as this is where most collisions are likely to occur. Dynamic BFDs are to be used and additional mitigation by design to be applied with the cables arranged in a horizontal plane to reduce the amount of vertical airspace occupied by cables. The mitigation package will also include detailed monitoring of the species during at least the first three years post construction to understand the impacts of the OHL. Updated surveys will also be completed in winter 2022/23 to continue the baseline survey effort along with a best international practice fatality monitoring programme along the route of the OHL. An adaptive management plan will also be in place so that in the unlikely event of impacts being recorded at a higher level the mitigation package can be updated to reduce impacts further.

In addition to potential impacts from overhead lines, poaching / illegal hunting is another significant threat within Uzbekistan which is severely limiting winter survival. Net-gain will be achieved through off-setting as set out in the ESIA however measures will include Great Bustard 'Wardens' who will be trained to undertake census surveys as well as undertaken education programmes with local communities, including hunters, to prevent killing of these birds. All off-setting works should be agreed with in-country and external stakeholders and any monitoring programmes should contribute to national or international censuses of Great Bustard.

4.3   Priority Biodiversity Features

General

All species/habitats within the background data search and recorded on site, or those considered to be potentially present, have been assessed against the PBF guidelines, which provide a qualitative approach to the assessment. All criteria were considered for each species/habitat.

Species meeting the criteria for inclusion as Priority Biodiversity Features are presented in *Table 8* and discussed in subsequent sections.

Table 8. Species considered to be Priority Biodiversity Features

Species	Status (IUCN / UzRBD)	Criterion Reached
White-headed Duck	EN/EN:D	Criterion 2
Sociable Lapwing	EN / VU:R	Criterion 2
Steppe Eagle	EN / VU:D	Criterion 2
Saker Falcon	EN / NT	Criterion 2
Pallas's Fish Eagle	EN / Not Listed	Criterion 2
Egyptian Vulture	EN / VU	Criterion 2
Little Bustard	NT / VU:D	Criterion 2
Asian Houbara	VU / VU:D	Criterion 2
Central Asian Tortoise	VU / VU:D	Criterion 2
Tartar Sand Boa	LC / NT	Criterion 2

4.3.1   Criterion 1 Threatened habitat

No habitat types or ecosystems were present or identified as being potentially present, that would be considered as priority habitats as such Criterion 1: Threatened Habitat has not been triggered.

4.3.2   Criterion 2 Vulnerable species

Plant Species

No plant species were recorded which would be considered as Priority Biodiversity Features under PBF Criterion 2.

Bird Species

Sociable Lapwing is listed as IUCN Critically Endangered and Saker Falcon, Egyptian Vulture and Steppe Eagle are listed as Endangered and whilst none of these species meet the thresholds for triggering Critical Habitat, they are all considered to be PBFs. Asian Houbara is listed as IUCN VU and an additional bird species that IUCN Near Threatened and UzRDB Vulnerable is considered to qualify as PBF under Criterion 2 and this is Little Bustard.

Mammal Species

No plant species were recorded which would be considered as Priority Biodiversity Features under PBF Criterion 2.

Reptile Species

Central Asian Tortoise was the only IUCN Vulnerable species recorded within the Project AoI and one additional species, the Tartar Sand Boa, which is listed as being of national conservation concern (UzRDB VU) are considered to be present and are identified as being PBFs.

4.3.3   Criterion 3 Significant feature as identified by stakeholders or governments

The Project AOI does not fall within any significant biodiversity features, nor is it within close proximity to nationally protected or internationally designated sites.

4.3.4   Criterion 4 Ecological structure and functions that are vital to maintaining the viability of priority biodiversity features

The Project Site does not contain areas of structure or function (e.g., major dispersal or migration corridors) vital for the maintenance of viable populations of Priority Biodiversity Features and as such Criterion 4 has not been triggered.

5   MITIGATION AND FUTURE MANAGEMENT

5.1   General

Direct impacts from the operation of the Project are likely to be limited to habitat loss within the PV site, although this is loss of modified and degraded habitat, and within the Overhead Line route as well as possible direct impacts on reptile species during the construction phase of the project.

Operational impacts of the project are likely limited to potential direct impacts on soaring species of birds (vultures and eagles) as well as collision of Great Bustard with the OHL. The whole OHL route will therefore require bird deflectors to be installed and operational monitoring will need to be completed for bird carcasses will also need to be completed along the route of the Overhead Line. It is likely that operational monitoring will need to be in place for at least the first three years of operation. All mitigation and monitoring will need to be included in a Biodiversity Action Plan which will also need to include a robust Adaptive Management Strategy should the results of monitoring indicate an impact on Great Bustard or other species of global conservation concern (e.g. Sociable Lapwing or raptors). The ESIA includes an outline Off-setting Plan which will need to be further developed and in place as the Project has triggered Critical Habitat for Great Bustard. Off-setting will be set out in the ESIA and will be developed through consultation with a finalised off-setting plan set out in the Biodiversity Action Plan.

For the bird, mammal and reptile species that qualify as PBFs, the Project will need to achieve at least no net loss for PBFs over the lifespan of the scheme and measures to achieve this will be set out in the ESIA and further developed in the Biodiversity Action Plan.

5.2   Mitigation and Monitoring

5.2.1   Biodiversity Action Plan (BAP)

All PBF species will also need to be included in the Biodiversity Action Plan (BAP). The BAP will fully detail all relevant construction mitigation measures (Construction BAP) and habitat restoration and operation mitigation and enhancement measures (Operation BAP) which will be completed during and after the construction period to achieve the objectives of Net Gain for Great Bustard and No Net Loss for PBFs.

As a minimum, for the Critical Habitat qualifying species, Great Bustard, further preconstruction surveys will be required within the known wintering areas close to site to determine the current levels of usage by this species.

5.2.2   Biodiversity Monitoring and Evaluation Program (BMEP)

The BMEP should validate the accuracy of predicted impacts and risks to biodiversity values posed by the Project, and the predicted effectiveness of biodiversity management actions and should include the following:

- Baseline: measures of the status of biodiversity values prior to the Project's impacts
- Process: monitoring of the implementation of mitigation measures and management controls
- Outcomes: monitoring of the status of biodiversity values during the life of the project, compared to the baseline.

The BMEP should include a practical set of indicators (metrics) for the biodiversity values requiring mitigation and management. Specific thresholds (e.g. KPIs) should be set for monitoring results that will trigger a need to adapt the management plan(s) to address any deficiencies in performance.

Monitoring of populations PBF species known to be present on site will be undertaken to ensure that there are no long-term negative impacts as a result of the Project. On-going monitoring and reporting will be completed throughout the construction and operation phases of the Project in accordance with the relevant monitoring plans.

6   SUMMARY

Great Bustard is the only species that occurs or possibly occurs within the Project AOI that triggers CH due to its national conservation status as well as the EAAA of this species overlapping with the Project AoI. The Project is situated within the known wintering range of this species and it is likely that this species will fly over the Project AoI. Great Bustard are of significant national conservation concern and the population is declining throughout its range for multiple reasons including being particularly susceptible to collision with OHLs. A BAP will need to be developed to detail all mitigation measures as well as setting out a robust monitoring programme for this species. The BAP should include an Off-setting Plan as well as an Adaptive Management Strategy for Great Bustard as well as other species of international conservation concern (e.g. Sociable Lapwing and raptors).

Pre-construction surveys, at appropriate times of the year, will need to be completed to establish presence/absence of reptiles of national conservation concern in proposed works areas and if found to be present in these areas or considered likely to occur in these areas during construction, additional mitigation (e.g. limited translocation to a suitable receptor site) will be required.

It is considered that the Project has met the requirements as set out in IFC PS6 Paragraph 17 and the measures detailed above will be included in the management plan and BAP documents. These documents will also set out measures designed to achieve No Net Loss for those species defined as PBFs and Net Gains for CH qualifying Great Bustard.