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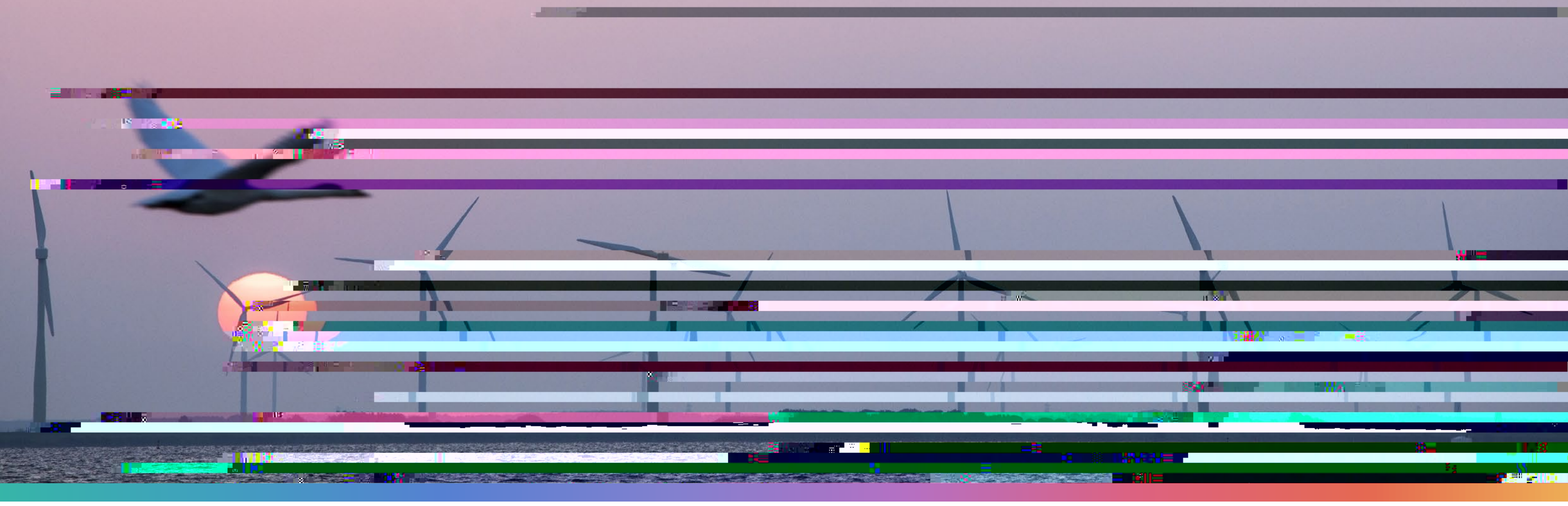
Including photovoltaic (PV), concentrated solar power (CSP) and associated infrastructure	Including turbines, sub-stations, access roads with cabling, high voltage power line and other transmission lines
• Habitat loss and alteration through fragmentation and the removal of significant quantities of vegetation and surface grading. • Habitat degradation due to changes in hydrology and water availability and quality (particularly in arid environments where solar plants can use a large proportion of available water for cleaning the panels). • Birds being singed by the concentrated solar energy at CSP plants. • Wildlife drowning in poorly-managed reservoirs for evaporation of wastewater from CSP plants.	• Habitat loss and alteration through noise and light pollution, fragmentation, clearance and displacement (as some species avoid wind farms, especially offshore). • Bird and bat collisions (and injuries) with turbines blades and/or associated transmission lines. • Bird and bat mortality through electrocution on associated distribution lines.
• Raptors and other large birds that favour elevated perches (at risk of electrocution with poorly designed distribution line pylons) . • Species with high wing loading e.g. bustards, cranes, flamingos, storks, larger game birds, waterfowl and vultures (at risk of collision due to low manoeuvrability). • Species that are vulnerable to habitat fragmentation, including migratory and nomadic species, such as desert tortoises. • N.B. Given habitat loss is the most significant impact associated with solar, potential impacts to species from solar energy are more variable and site-specific.	• Habitat loss and barrier effects through light pollution, birds exhibiting avoidance behaviours and direct displacement of birds that would have foraged in the area. • Marine mammal mortality and or injury associated with turbine collisions and behavioural effects associated with increased underwater noise (especially during construction). • Ecosystem changes through alteration of sediment movement, alteration of marine habitats and resultant trophic cascades.
	• Soaring birds, birds with limited frontal binocular vision (e.g. Gyps vultures), birds regularly flying or foraging in the rotor swept area. • Raptors and other large perching birds (at risk of electrocution with poorly designed distribution line pylons). • Species with high wing loading e.g. bustards, cranes, flamingos, storks, waterfowl and vultures (at risk of collision due to low manoeuvrability). • Skuas, pelicans, terns and gulls with high collision vulnerability. Divers, grebes, sea ducks, and auks with high displacement vulnerability. • Cetaceans.

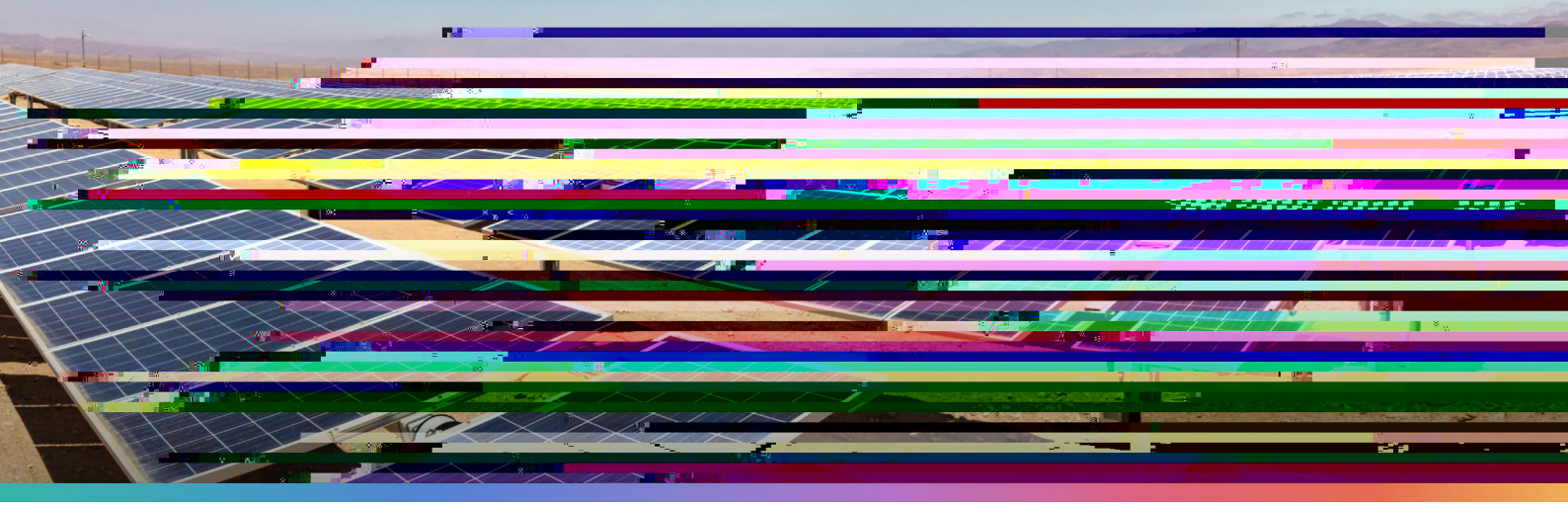
Please see the full IUCN report for appropriate mitigation measures for these potential impacts.

7 N.B. This is a non-exhaustive list of potential impacts and vulnerable species and while impacts are not limited to these groups, further research will likely identify additional species vulnerable to wind and solar technologies. It is recommended that experts with specific local knowledge are used to accurately inform impact assessments and diligence. Renewable energy projects can also directly and indirectly impact local communities through impacts on customary habits, their livelihoods, and ecosystem services, all of which require further study.



Understanding the potentially negative impacts of wind and solar energy on biodiversity allows investors to align their investments with the mitigation hierarchy[8] and avoid sensitive locations. To help inform an investor's due diligence process, it can be helpful to understand if a site corresponds with, for example, species at high risk of collision with wind turbines, protected areas or other areas of high biodiversity significance, such as Key Biodiversity Areas:

- Sensitivity mapping tools, such as the Soaring Bird Sensitivity Mapping Tool for the Rift Valley/Red Sea flyway, compile and map relevant data on vulnerable species (often alongside data on resource opportunity and constraints) and highlight the relative risk of devel [illegible]



- Has an Environmental Impact Assessment (EIA) or equivalent study been conducted for the project (and associated infrastructure)?
- Did the EIA include a Critical Habitat assessment?
- Do the findings of the EIA align with an IBAT Report in relation to Critical Habitat or the proximate threatened species, protected areas and Key Biodiversity Areas)?
- Does the EIA include appropriate biodiversity baseline surveys undertaken across seasons and with appropriate scope (e.g. bird and bat baseline surveys ideally undertaken over two years)?
- Were appropriate stakeholders and experts consulted to better understand biodiversity risks?
- Were qualified specialists brought in to collect baseline data using the correct methodologies (e.g. acoustic detection for bats), assess biodiversity risks (e.g. the extent of collision and displacement risk) and identify appropriate mitigation measures (e.g. burying on-site collector systems and cables or installing bird flight diverters on transmission lines where necessary)?
- Did the EIA account for the cumulative effects of multiple renewable energy developments (and associated infrastructure) within the wider landscape, flyway or seascape?

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