Scope of Work: Project Strategic Environmental and Social Assessment and Cumulative Impact Assessment

INTRODUCTION

The GoS has faced multiple wind developments in the last decade. The first operational wind farms in the region were those in Zaafarana, followed by the NREA "Projects", which comprises three joining wind farms (JICA 220MW, FIEM120MW, and KfW240MW).

In between them, from Zaafarana to Ras Gharib there are currently four projects at different stages: RSWE-Engie and AMEA-Amunet 500MW under construction, ACWA-Plot #1 in development and West Bakr-Lekela 250MW operational. South to Ras Gharib to Ras Shukeir there are the above mentioned NREA projects but others have been set, like RGWE 262.5mw (operational), NIAT, and another NREA 250MW project. A third step moves further from Ras Shukeir southwards, and includes the so called SWE Plot#2. There are plans from the Government extend further south of this Plot #2.

In addition to the wind resource availability, Egypt and especially the GoS lie on the Rift Valley. This is considered the second-largest flyway for migratory birds in the world, with an estimated 1.5 million birds of 37 species of large birds. Raptors, storks, pelicans, and ibises, use the flyway twice each year to migrate between their breeding areas in Europe and Western and Central Asia in spring and their wintering areas in Africa.

Wind and Migratory Soaring Birds (MSBs) overlap, as they use the same resource, the wind, a relationship which should be properly managed to avoid the main impact, as it is the collision with the turbine blades and also keep the biodiversity conservation targets. The Important Bird Areas (IBAs) are areas identified by BirdLife International, using an internationally agreed set of criteria, as being globally important for the conservation of bird populations. The Rift Valley/Red Sea (RVRS) flyway and specifically the Gebel El Zeit area is a very important migration corridor, and the narrowest point in the southern part of the Gulf of Suez with around 23 km from the Sinai Peninsula. Over 250,000 *Ciconia ciconia* and many other migrant soaring birds are funneled through this stretch of coast on both spring and autumn journeys. The area where the operational NREA projects, the planned SWE Plot #2, and small portion of AMEA-Amunet, is classified as an IBA so a careful planning and scoping is required to evaluate if a wind development is feasible and according to what conditions.

Up to now, all the wind project projects (WPP's) have been studied on single project basis, not considering neither some projects altogether nor the entire developed areas or regions as a whole (cumulative). Considering the current situation, with all the projects available and the presence of Key Biodiversity Areas, a global assessment can be conducted pooling the project-specific bird survey data. The goal is to set appropriate mitigation measures throughout the GoS region whilst keeping the biodiversity conservation targets.

1. Objectives

The main objectives of the assessment is to determine from a project perspective the following:

a. Sensitivity of Plot 2 compared to other areas within the Gebel el Zeit IBA and whether other areas within the IBA are more sensitive and important for migrating birds.

b. Determine whether Plot 2 is considered suitable for a wind farm development taking into account the sensitivity of the IBA and its conservation objectives.

c. Determine to the extent possible and feasible, the cumulative impacts of Plot 2 on the IBA with other future planned wind farm development within the identified "red-zone" of the previous strategic 2007 Decon study.

d. Identify key mitigations and recommendations required and that should be implemented to mitigate impacts on avifauna in the IBA should Plot 2 be developed.

2. Task 1: Data Gathering

As a first step, the study will collect through official channels all existing avifauna information through developers, consultancies or organizations (e.g. RCREEE). This will include but not limited to existing reports on the migration of the soaring bird species, the baseline pre-construction studies and their and the post-construction fatality monitoring (PCFM) and their associated databases of the WPP`s in the GoS. This comprises the bulk of information, as different projects have been approved along the Red Sea coast along 220 km since 2015 and even earlier, as it is the case of the NREA projects.

The backbone of the assessment will focus on the data available for the spring and autumn migration within Gebel el Zeit IBA and includes the following projects – i.e. those falling within or close to the Gebel el Zeit Important Bird Area:

- G-7 data (Red Zone)
- NREA Projects (KFW, JICA, FEIM)
- Italgen data
- SWE Plot 2 data
- SEACIA Spring and Autumn 2024 VPs data (discussed below)

There are also other studies which have analyzed the potential impacts from a wider perspective which have been the basis of key decisions by the Government or Financial Institutions. They are the DECON study (2007) and the so called SESA (2018). Currently, there is an ongoing "Strategic Environmental Assessment and Cumulative Impact Assessment focused on biodiversity for wind energy in the Gulf of Suez, Egypt" (SEACIA) which intends to update those studies from 2007 and 2018 and which will also be considered for the assessment.

All the above, include significant level of information which, if properly managed and analyzed, will assist to achieve the different goals detailed in the following section.

3. Task 2: Data Analysis

The first step under this task is the selection of those projects which will serve to address the objectives of the study. Not all projects / databases will be selected. The reason could be because they do not provide useful data (not enough information or showing some kind of biases). Secondly, and once selected, there is a need to check the existing databases and make relevant adjustments and amendments (e.g. identify real monitoring times excluding breaks, accounting for double counts of migratory birds, or properly formatting of the data filled in).

The analysis will establish which metrics to use to ensure it is representative of the work done, such as adjustment of observation times. All the projects have invested different monitoring times per year and/or season, so differences in bird numbers could have been just been by chance. Unless all data is standardized, comparisons are not possible. As an example, a metric which is comparable, is the number of birds per hour of observation, see the DECON (2007). Statistical procedures will be undertaken as they could reveal if real –not by chance- differences exist in the bird's movements depending on the area in the IBA in which the different projects are located or a wider perspective over the GoS region.

It must be pointed out that this is not an aprioristic designed study (i.e. the researcher has no prior decision on how the data collection should be made) but a post-data gathering analysis, that is mainly based on the vantage point monitoring methodology. Thus, there are unavoidable methodological limitations for a study like this which will be clearly identified in the study.

Another analysis to be undertaken is related to species. Each species has its own physical characteristics and migration times, and numbers. There are species migrating in large groups like storks or buzzards, which may mask other species. Thus, the study and analysis will be based on a species-specific basis but also on those which provide enough data to obtain a robust and representative conclusion. This analysis will consider and take into account flight heights to the extent possible.

As discussed earlier, one of the main goals of the study is to assess the sensitivity of the different areas within the IBA for the migrating birds. The robust analysis described above will respond to such a question but also help lenders and developers to undertake decisions about sensitive areas, assume or evaluate financial risks but also maintain conservation targets.

With the SWE Plot 2 project being located within the IBA, the assessment above would also consider if the site is suitable for a wind farm development considering the sensitivity of the IBA and its conservation targets. This question is related with the outcomes and results of previous analysis discussed and the considerations made. There is an additional monitoring site (plots) to consider whether it is suitable or not for wind energy developments, like a so called GoS-7 Red plot, which also falls within the southern IBA boundaries and is the target for future developments in the near future. Since 2007, this area and its surroundings have been considered as non-go as they fall under the "red-area" of the Decon 2007 study.

The ongoing SEACIA assessment extends over a large area of 222 km long, from the southern tip of the IBA up to the north of Ras Gharib near Zaafarana. A broader approach in the assessment could be undertaken to investigate the geographical differences, if they exist, according to Longitude and Latitude. It must be kept in mind that the wind development areas are not a bottleneck, but a broad area which birds may use or not depending on many factors: bird characteristics, ecology, weather conditions at the time of passage. Such conditions are not restricted to the projects themselves but related to the broader area of the Red Sea or the Sinai Peninsula.

Another key aspect that must be analyzed and investigated in relation to this question is attraction sites within the IBAs. All the projects within the GoS are thought to be "in an empty desert" without any sites of attraction for the Migratory Soaring Birds (MSBs). Birds can be attracted to potential and predictable food sources (see Martín, Garrido and Camiña 2015), like rubbish dumps along the RVRS Flyway and possibly water areas (e.g. water dams). A lack of proper management of such attraction sites may increase collision risk with turbines, as the birds tend to rest and feed at these sites during migration. The study will consider this aspect

as well based on the available data including specific monitoring data that was undertaken for such sites of attraction areas as some of the projects have found such a kind of predictable sources.

The main expected outcome is first to provide reliable robust results about the SWE Plot2 development. A much wider approach is related to the region and the integrity of the IBA for the MSBs conservation purposes, establishing those areas which would be suitable for wind development and those which should be kept as “red zones”.

4. Task 3: Cumulative Impact Assessment

Another question which arises is what are the cumulative impacts of the windfarms and developments on the IBA and migrating birds, particularly should future planned windfarm happen in the ”red-zone” (DECON 2007). The individual projects are collating extensive and quite good information which remains separate, without a cumulative global analysis of the entire area. This step will identify those species/populations of birds potentially at risk and evaluate their sensitivity (relative importance and vulnerability, and assess the cumulative effect of the WPPs on each species population. Several projects, those financed by the IFI’s, have set fatality thresholds using species-specific demographic information, CRM results, and other external stressor fatality estimates. The final report will evaluate the site-specific and joint Mitigation and Monitoring Plan (MMP) to propose adjustments when required or deviations of what the existing projects are currently doing. These questions exceed the IBA boundaries, affecting all species over the entire area. This point is closely related to the following recommendations and mitigations, serving as concluding remarks for a better conservation achievements in the entire GoS region.

5. Task 4: Recommendations and Mitigations

A final step of the analysis and conclusions will be to establish the key mitigations and recommendations that should be implemented to mitigate impacts on avifauna within the IBA and the entire region and what further studies are needed to accomplish this. This could include project specific mitigations as well as strategic mitigations such as whether the Government of Egypt must commit to other areas being kept windfarm free as corridors/landing areas, e.g. red-zone areas definition according to the study in 2007, .

Wind energy impact mitigation is well known for all of the stakeholders involved like developers, lenders or NGOs. We could cite more. For this question the review of the Post-construction Fatality Monitoring Programs (PCFM) is a must. Lessons learned from these reports could improve to clearly establish the requirements and reporting procedures for all the projects within and outside of the IBA boundaries.

6. References

- BirdLife International (2024) Important Bird Area factsheet: Gebel El Zeit (Egypt). Downloaded from https://datazone.birdlife.org/site/factsheet/gebel-el-zeit-iba-egypt on 16/09/2024.

- DECON. 2007. Annex 2.5.3. Ornithological Expert Opinion as part of the Feasibility Study for a large wind farm at Gulf of Zayt. DECON - Deutsche Energie-Consult Ingenieurgesellschaft mbH. 123 pp.