Site-Specific Environmental and Social Impact Assessment (ESIA)

Suez Wind Energy BOO Wind Power Plant 1.1 GW – SWE North (PLOT 1)

Bat Addendum Report

October 2024

DRAFT

REV-0

Client:

Regional Center for Renewable Energy and Energy Efficiency
المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة

Prepared by:

EcoConServ
12 El-Saleh Ayoub St., Zamalek Cairo, Egypt, 112111
Tel: + (2 02) 2735 9078 / 2736 4818
Fax: + (20 2) 2736 5397

ECO Consult
Jude Center, Salem Al-Hindawi Street, Shmeisani, Amman, Jordan
Tel: 962 6 569 9769
Fax: 962 6 5697264
E-mail: info@ecoconsult.jo

Prepared for:

RCREEE - Regional Centre for Renewable Energies and Energy Efficiency
Hydro Power Building, Floor 7
Block 11, Piece 15, Melsa District
Ard el Golf, Nasr City, Cairo
Arab Republic of Egypt

Issue and Revision Record:

Template Code			**Template Revision No.**	REV - 0
Version	**Date**	**Description**	**Reviewed By**	**Approved by**
REV 0	8 Oct 2024	Final Report		

Disclaimer:

This report should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) being obtained. EcoConServ and ECO Consult accepts no responsibility or liability for the consequence of this document being used for a purpose other than the purposes for which it was commissioned.

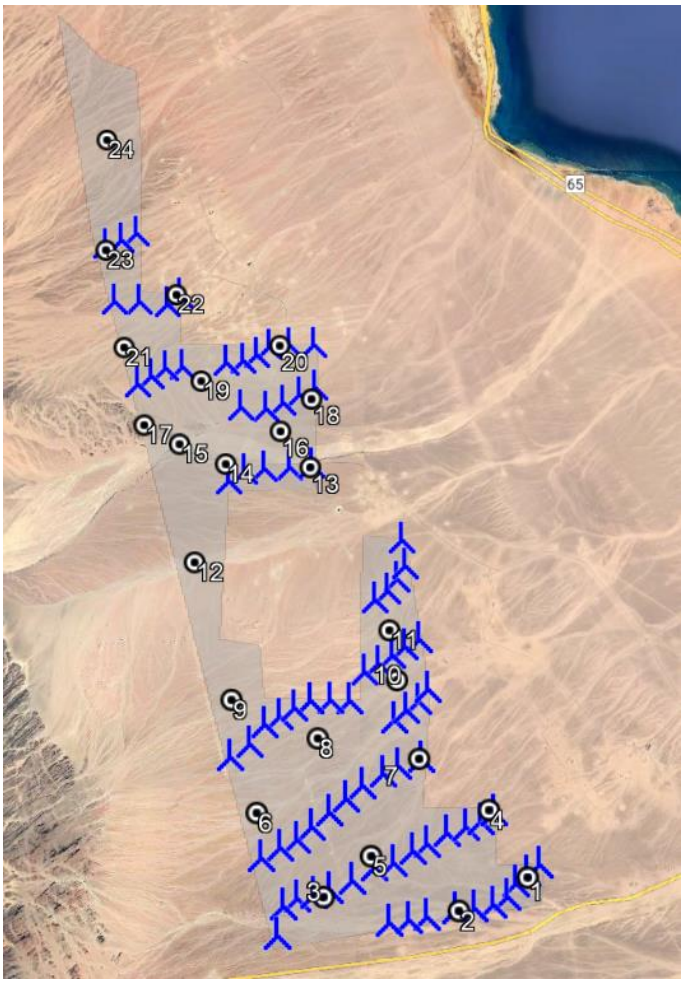
This Report is confidential to the Regional Centre for Renewable Energy and Energy Efficiency (RCREEEE) and the Consultant accepts no responsibility of whatsoever nature to third parties whom this Report, or any part thereof, is made known. Any such party relies upon this Report at their own risk.

Introduction

Bat surveys consisted of Nocturnal Acoustic Survey along with a search for suitable roosting features within the Project AoI. Due to the size of the Project AoI, and in line with best practice, it was considered that the use of static detectors would give robust data pertaining to the bat species present within the AoI, along with a reasonable estimation of the amount of flight activity.

Methods

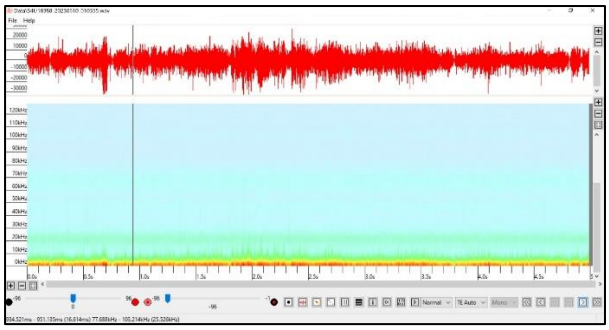
Eight Wildlife Acoustic SM4BAT detectors were deployed across 24 locations in Plot 1 (see figure below) a total of six times per location between 25th May 2023 and 20th November 2023. The survey protocol adapts methods protocols set out in guidelines published by NatureScot 2021 (formerly Scottish Natural Heritage) and Eurobats Publication 6, 2015. The detector locations were targeted largely at WTG locations as well as at locations providing useful contextual information. At the time of deployment 18 locations were at known WTG locations, four were throughout the wider AOI to ensure coverage of the whole AOI was considered and two were at features of interest (a cave and the wadi dam). The detectors were programmed to start recording 30 minutes before sunset until 30 minutes after sunrise. Data was downloaded approximately once per month and batteries changed as necessary.

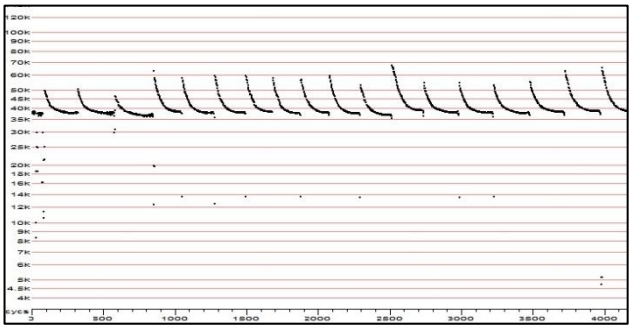


Bat Call Analysis

Wave data recorded by "Song meter SM4" was explored by a special sound analysis software (Kaleidoscope 5.6.2) a file by file to determine the presence of bat calls in a spectrum of sound frequencies ranging from 10 to 120 KHz (Figure 1).

Bat activity can be determined by the recording time by the song meter and species by the frequency and speed cycles of the calls. Figure 3 shows a bat calls analysis technique.





The total amount of recording nights completed to date, and corresponding size of data files collected are shown on the table below:

	May		June		July		August		September		October		November	
Static Location	Number of Survey Nights	Number of Files	Number of Survey Nights	Number of Files	Number of Survey Nights	Number of Files	Number of Survey Nights	Number of Files	Number of Survey Nights	Number of Files	Number of Survey Nights	Number of Files	Number of Survey Nights	Number of Files
Whole Site	7	543	120	90437	120	58799	120	64245	120	37024	128	29490	120	11910
1		-	5	1547	5	1101	5	3548	5	6124	5	532	5	70
2	7	543	5	3364	5	1793	5	4	5	1027	5	589	5	829
3		-	5	2294	5	2035	5	2026	5	2397	5	209	5	1110
4			5	8068	5	1952	5	1689	5	2472	5	322	5	129
5			5	5149	5	3526	5	6284	5	2018	5	1032	5	316
6			5	3881	5	4317	5	2524	5	594	5	711	5	85
7			5	4310	5	2698	5	5479	5	1338	5	4350	5	440
8			5	999	5	2149	5	6714	5	2990	5	711	5	4
9			5	2356	5	1184	5	5008	5	882	5	1110	5	431
10			5	1665	5	1728	5	1597	5	2246	5	269	5	104
11			5	2179	5	3203	5	5332	5	1029	5	175	5	472
12			5	6305	5	1732	5	3320	5	2246	5	475	5	307
13			5	6229	5	3930	5	1579	5	2397	5	679	5	589
14			5	2692	5	1601	5	1419	5	2400	5	1778	5	637
15			5	972	5	2093	5	864	5	1704	5	230	5	117
16			5	7410	5	651	5	2190	5	4120	5	2165	5	638
17			5	4413	5	4483	5	2456	5	132	6	1001	5	808
18			5	2748	5	0	5	0	5	96	6	851	5	830
19			5	4704	5	4072	5	3542	5	38	6	3774	5	1184
20			5	4487	5	2853	5	1916	5	93	6	1783	5	443
21			5	3810	5	3988	5	3346	5	214	6	1253	5	967
22			5	6092	5	4445	5	2637	5	154	6	637	5	577
23			5	2207	5	2063	5	364	5	4	6	189	5	523
24			5	2556	5	1202	5	407	5	309	6	4665	5	300

Constraints

Highlighted in the table above are occasions where the static detector either made no recordings, or very few. It may be that there were no recordings that night but this seems unlikely given the detectors can be triggered to record not only bat calls but environmental noise such as wind also and the assumption is therefore that there was an issue with the detector. However, this only occurred on five occasions over a six month period and around 150 separate deployments, so this is not thought to have impacted the overall dataset.

Results

There are 21 species of bat known to occur within Egypt and neighbouring countries and have the potential to occur within the Project AoI (Qumsiyeh, B., 1985).

The Project AoI consists of flat open desert with generally low suitability for bats due to the lack of suitable roosting features within the AoI and also lack of permanent waterbodies. There are no buildings or trees within the AoI nor are there bridges, culverts or wells which could support roosting bats.

Four known and two unknown species of bat were recorded across the survey period. The known bat species were Arabian Barbastelle *Barbastella leucomelas*, European Free-Tailed Bat *Tadarida teniotis*, Botta's Serotine *Epitesicus bottae* and Desert Long-Eared *Bat Otonycterus hemprichii.* The details of these records can be seen in Table 2 below:

Table 2. Species recorded throughout the survey period.

Species	Scientific Name	Location	Number of records	Record Date	Time	IUCN Conservation Status
Arabian Barbastelle	*Barbastella leucomelas*	7	1	18/07/2023	00:35:34	Least Concern
European Free-Tailed Bat	*Tadarida teniotis*	7	1	20/07/2023	00:16:34	Least Concern
European Free-Tailed Bat	*Tadarida teniotis*	2	1	16/10/2023	19:23:21	Least Concern
European Free-Tailed Bat	*Tadarida teniotis*	22	1	26/07/2023	21:46:13	Least Concern
Serotine species	*Epitesicus sp*	15	1	21/10/2023	22:47:12	-
Serotine species	*Epitesicus sp*	12	1	25/08/2023	19:27:56	-
Unknown	-	15	1	23/08/2023	22:44:40	-
Serotine species	*Epitesicus sp*	9	1	17/06/2023	00:32:33	-
Serotine species	*Epitesicus sp*	7	1	16/07/2023	21:30:33	-
European Free-Tailed Bat	*Tadarida teniotis*	6	1	19/07/2023	21:51:27	Least Concern
Unknown	-	7	1	16/09/2023	21:55:00 - 00:37:00	-
Desert Long-Eared Bat	*Otonycteris hemprichii*	16	1	22/08/2023	19:10:00 - 22:07:00	Least Concern
Arabian Barbastelle	*Barbastella leucomelas*	16	1	25/08/2023	18:49:00 - 01:11:00	Least Concern

Botta's Serotine	*Epitesicus bottae*	1	3	18/08/2023	18:06:13	Least Concern

Impact Assessment

General

All species recorded were of Least Concern, and were recorded in very small numbers with a total count of 16 recordings across a six month period.

Recordings were fairly evenly distributed across the Project Area, with the highest number of records at Static 7, in the centre of the Project Area.

No roosts were identified in buildings or trees within the site boundary so direct impacts on roosting bats are not anticipated.

Species Specific Impacts

European Free-Tailed Bat was recorded the most frequently, with four records. European Free-Tailed Bats occurs primarily in mountainous areas and forages for flying invertebrates. It has been noted as 'potentially threatened by wind farms'.

Species such as the Desert Long-Eared Bat forage close to the ground for prey (including spiders and scorpions) and is therefore less likely to be flying within range of turbine blades. Threats to this species are largely unknown (Eurobats Publication No.5).

Other species such as Serotine species and Arabian Barbastelle are primarily threatened by habitat loss.

Construction Impacts

The direct impact from construction would primarily be through habitat loss, however as there are limited linear features that would provide suitable commuting corridors for bat species this will have a limited impact.

Operational Impacts

The proposed WTGs will be constructed in areas of sub-optimal habitat for bats, with all being sited in desert areas however it is still possible that bats could be negatively affected by the operational WTGs. Due to the low numbers of bats on site, and the potential of direct impacts to low risk species (Serotine and Long Eared bats) are considered to be of low significance.

No roosts are expected to be directly impacted during construction or operation of the proposed wind farm.

Monitoring

Full operational fatality monitoring of the Project Area will be completed for at least three years post construction although with scope to continue depending upon results over those years. Post construction monitoring on site will include carcass searching, searcher efficiency trials and carcass persistence trials. The results of the post-construction fatality monitoring will be used to inform a GenEst Analysis. Such effort will be in line with the Post-construction Bird and Bat Fatality Monitoring for Onshore Wind Energy Facilities in Emerging Market Countries – Good Practice Handbook and Decision Support Tool (2023)

An adaptive management strategy will be developed, and additional mitigation will be undertaken if the results of the post-construction fatality monitoring indicate higher than predicted mortality, especially in relation to species of elevated conservation concern.

Conclusion

All species recorded were of IUCN Least Concern and were recorded in small numbers. Therefore there will be negligible likely impact on bat populations from this Project. No direct mitigation is recommended at this time. Fatality monitoring will be undertaken, and an adaptive management strategy will be used to ensure against changes to activity during operation.