



Good Practice Handbook on the Design of Post-Construction Monitoring of Bird and Bat Fatalities Wind Energy Facilities

Briefing Note for the United Nations Convention on Migratory Species
Energy Task Force

Prepared by:

David Tidhar, Natural Power & Paul Rabie, Western EcoSystems Technology, Inc.

28th July 2020



Introduction

A consultant team comprised of Western EcoSystems Technology Inc. (WEST Inc.) and Natural Power Consultants (Natural Power) are preparing a Good Practice Handbook on the Design of Post-Construction Monitoring of Bird and Bat Fatalities (the GPH) for a consortium of International Finance Institutions (the Lenders): the European Bank for Reconstruction and Development (EBRD), the International Finance Corporation (IFC), and the KfW Entwicklungsbank (KfW).

The following briefing note has been prepared for the United Nations Convention on Migratory Species (CMS) Energy Task Force (ETF) and is designed to provide the ETF with an overview of:

- The context leading to the development of the GPH;
- The purpose and objectives of the GPH;
- The content to be included in the GPH;
- A key element of the GPH, the Decision Support Tool (DST), and;
- The timescale and process for development of the GPH over the coming months.

The Lenders and the consultant team will provide a presentation of this content during a video conference meeting to be held on 3rd August 2020.

Context and background

The GPH is specifically related to direct impacts to bird and bat populations resulting from collisions. While the focus of the GPH is onshore wind projects, the methods are intended to be applicable to transmission and distribution lines. The main reasons which led the Lenders to develop the GPH are:

- The impacts of onshore wind projects on bird and bat populations are well documented in certain developed economies, but robust data is lacking in many countries and the knowledge gap between some established markets and emerging RE markets is growing. This is a function of: a) a lack of systematic monitoring; b) poor methodologies being used, or; c) no monitoring being undertaken;
- Without robust and systematic monitoring, the actual impacts on birds and bats will remain largely unknown in emerging markets and the impacts will be estimated using surrogates (often from temperate conditions and wildlife populations with differing characteristics);
- Post-construction fatality monitoring (PCFM) is the best means to assess whether predicted impacts on birds and bats (from collision risk models or using risk assessment approaches) were estimated correctly, and the best means of testing the effectiveness of mitigation measures and inform adaptive management plans, and;
- Key stakeholders have identified the importance and need for increasing the systematic monitoring of bird and bat fatalities at operating onshore wind farms.

The need for a systematic approach to monitoring bird and bat fatalities at operational wind farms has been a major concern raised during the UN CMS Energy Task Force (ETF) meetings and at other recent conferences and events on wind-wildlife impacts. For example, at the 2019 Conference on Wind Wildlife Impacts (CWW) in Stirling, Scotland and at other recent events, the Generalized Estimator for Estimating Bird and Bat Mortality at Renewable Energy Facilities or GenEst, received a lot of attention. GenEst is a tool that enables users to input (well-collected) fatality monitoring data, which then provides unbiased estimates of mortality to bird and bats. It allows meaningful comparisons of such data across time, sites and regions. Also at the CWW and at the UN CMS ETF in September '20, BirdLife

International expressed interest in developing a database where bird and bat fatality data (i.e., the output from fatality estimators, such as GenEst) could be registered globally. While GenEst provides an extremely useful tool to estimate fatalities, and BirdLife is interested in collating such data so that global trends could emerge, there is currently no guidance on PCM fatality monitoring that would enable developers and their consultants to collect meaningful data, especially not one that is applicable in emerging markets, where the majority of threatened birds are located.

Purpose and objectives

To date, no organization has considered how current practices could be adapted to emerging markets in a manner that adequately addresses the concerns of wind wildlife specialists in various regions in a practical manner. The main users of the GPH would be developers, and, more precisely, the consultants working for developers. The GPH will outline the design considerations of PCFM of bird and bat collision fatalities at onshore wind projects and provide a tool to help users determine an effective PCFM study design for their site – within an emerging markets context.

The principal objectives of the GPH are:

- To develop a practical, fit-for-purpose methodology on PCFM to select the field methods to collect standardized data on bird and bat fatalities so that accurate fatality rate estimations could be made;
- The methodology should be one that could be implemented anywhere despite the location of the project, its ground conditions and the bird and bat populations present;
- The methodology should not be overly prescriptive or onerous in markets with lower capacity. It should also allow for adaptations given the potential unique constraints of emerging market countries, and;
- To ensure that the GPH has broad buy-in from a group of relevant stakeholders.

The GPH has added value to wind energy developers, stakeholders and Lender-clients, including:

- It will enable Lenders to provide consistent guidance on this topic to clients, which has not always been the case in the past. Clients will therefore benefit from understanding and implementing approaches that meet Lenders' environmental and social (E&S) standards¹.
- It will enable clients to be better positioned to defend themselves if allegations are made of them on the number of bird and bat fatalities. Without a well-defined monitoring program, clients are exposed to criticism and reputational risk with little recourse in terms of available data to make their case.
- It will enable developers and clients to make better and smarter decisions on mitigation in a way to minimize energy loss while addressing bird and bat fatalities.

Overview of the content of the GPH

¹ These include:

- IFC's Environmental and Social Performance Standards (2012) and Guidance Notes
- WBG's EHS Guidelines for Wind Energy (2015)
- EBRD's Environmental and Social Policy (2019), relevant Performance Requirements & Guidance Notes
- KfW Development Bank's Sustainability Guideline (2019)

The organization and preparation of specific content of the GPH is currently being developed. While some aspects of the GPH may vary between now and the next date in which the ETC receives a project briefing, broadly speaking, the GPH is anticipated to contain the following:

Chapter 1: Impacts to wildlife from renewable energy and the objectives of PCFM: this chapter will introduce the topic, provide general context, but focus on collision-related impacts of onshore wind.

Chapter 2: How to use the GPH and what a reader can expect to get from it: the chapter will describe the main motivation for the GPH as providing a resource that can guide a practitioner to a good study design for PCFM, but that also teaches practitioners how to think through the design and execution of PCFM studies.

Chapter 3: Designing your PCFM Study: the objective of this chapter is to describe the main principles of a PCFM design in a manner that both new and experienced practitioners will gain insight on study design.

Chapter 4: Preparation for field work: this chapter will emphasize that how you collect data in the field will directly influence your ability to use fatality estimation software. Importance of collecting data in a manner that is compatible for analysis in GenEst.

Chapter 5: Fatality Estimation: this chapter will provide high level concepts of fatality estimation, discuss use of GenEst and Evidence of Absence.

Annex 1: PCFM Decision Support Tool (DST) for Study Design: the DST is designed to guide users to an appropriate PCFM study design based on study objectives and site characteristics. Additional information on the DST is provided below.

Annex 2. Glossary of technical terms from the text and DST

Annex 3. Reference manual for the GenEst software

Format TBD: Practical constraints and practical alternatives: A discussion of options to adjust PCFM designs to accommodate practical constraints, and how such modifications may impact on the accuracy and precision of the resulting fatality estimates will be included. Many design modifications become possible if practitioners are willing to make assumptions –discuss the appropriateness of replacing data with assumptions, the potential consequences of such assumptions and importantly, how to evaluate the consequences of such assumptions.

Overview of the content of the DST

The DST is designed to help take the user through the choices that need to be made in selecting a suitable study design. Considerations for PCFM study designs will be addressed (e.g., multiple objectives, depending on your biodiversity values) and the DST will guide the user through the decision-making process and explain what trade-offs are made by making different decisions. At this stage, we briefly outline the key logic behind the DST here, but suggest delaying further discussion on technical aspects of the DST until after the 3rd of August presentation and development of supporting material so that the ETF can have further opportunity to review forthcoming materials.

There are three principal elements of the underlying logic sitting behind the DST:

- The DST is driven by rough estimates of the expected detection probability;
- Most facilities will not have access to previous search carcass data, and;
- Simplifying assumptions is unavoidable.

Process and next steps in the development of the GPH

The GPH has been underway for roughly 12 weeks, with a focus thus far on development of the DST. The key elements to be completed over the remainder of the project timeframe are outlined in the table below:

Timeframe	Key milestones
August	Finalise stakeholder committee and peer review group
September/October/November	GPH chapters are completed and issued to Steering Committee for review
September/October	Progress update and communications to stakeholder committee
November	Draft GPH issued to Steering Committee & stakeholder committee for review
December	Presentation to ETF of Draft GPH
December/January	Peer review of GPH and DST
January/February	Finalisation of GPH Communications with stakeholder committee
March/April	Publication of GPH

Aside from the preparation and development of the GPH and DST materials, there are two key aspects of the Project of note for the ETF:

- *Peer review of the GPH:* a two-week peer review process will be undertaken following development of the Draft GPH. The peer review group will consist of subject matter experts as well as intended users of the GPH and DST. Candidates for the peer review group have been identified and it is intended to invite their participation in August. The peer review process will be completed prior to drafting the Final GPH.
- *Stakeholder Advisory Body (SAB):* the SAB is envisioned to be a small group of strategic stakeholders, including, but not limited to the ETF, as represented by BirdLife International. The Lenders and the project consultants will engage with the SAB both bilaterally and multilaterally at strategic intervals during the timescale – for example with ETF during August and December at a minimum.

We appreciate the ETF's participating in this project as a member of the SAB and we look forward to your comments and feedback during the 3rd of August presentation.