



Bajgora Wind Project

Biodiversity Management Plan (BMP)

Submitted to:

SOWI Kosovo

Submitted by:

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Acronyms

BIO Biodiversity

ESMS Environmental and Social Management System

EMP Environmental Management Plan

EBRD European Bank for Reconstruction and Development

IFC International Finance Corporation

KPI Key Performance Indicators

PR Performance Requirement (issued by EBRD)

PS Performance Standard (issued by IFC)

HSE Health, Safety and Environment

ESIA Environmental and Social Impact Assessment

EPC Engineering Procurement and Construction

ERP Emergency Response Plan

EU European Union

ESHS Environmental, Social Health and Safety

ESMP(s) Environmental and Social Management Plan(s)

MP Management Plan

WF Wind Farm

OHL Overhead line

GIIP Good International Industry Practice

OHSAS Occupational Health and Safety Assessment Scheme

BAT Best Available Technology

ISO International Organization for Standardization

Client:	SOWI (Solar & Wind) Kosovo
Project:	Wind Farm Selac 1, 2 and 3 located near the village of Bajgora in the municipality of Mitrovica, in Northern Kosovo. It includes 20 km connection powerline.
Facilities:	The project consists of 27 WTGs type GE 3.8-137 with a capacity of 3.83 MW with a hub height of 110 m and total capacity of 103.41 MW. The energy will be connected to the existing grid through an 110kV overhead line (OHL), having approximately 20 km length. The power line is considered part of the Project during its construction and will be considered an associated facility for the operation phase.
EPC Contractor:	NOTUS
Site Management:	All key managerial roles involved in the Construction Site management and in the windfarm operation, mainly referring to the SOWI personnel.

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1.0 PURPOSE AND SCOPE

This Biodiversity (BIO) Management Plan (MP) identifies and presents the framework and the strategy for implementing SOWI Environmental and Social Management System (ESMS) in relation to Biodiversity aspects.

It has been developed in accordance to SOWI policies, with the commitments undertaken in the ESIA, with Kosovo regulatory framework, with EBRD Environmental and Social Policy and Performance Requirements PR6 and IFC Performance Standards PS6 and IFC General and Sector Specific EHS Guidelines.

This BIO MP applies to both construction phase and operation phase of the Project. It provides also guidelines to the contractor in charge for the Engineering Procurement and Construction (EPC) activities of the Project for addressing Environmental and Social aspects according to the standards mentioned above.

Additional details related to the operation phase of the Project are expected to come in due course; it is therefore recommended that this plan is subject to a systematic review process before start of the operation in order to encompass and consider any information relevant to the BIO matters.

The Purpose of this MP is to define:

- Project standards for managing BIO matters during the construction phase;
- the scope and applicable interphases for the management of addressing BIO management and monitoring activities during the construction phase;
- responsibilities, commitments, operating procedures and instructions for the implementation of this MP;
- the mitigation measures applicable to the Project in relation to BIO aspects
- and manage the monitoring activities performance in relation to BIO aspects.

This MP applies to normal operating conditions during the construction and operation activities and does not specifically address any emergency situation. Emergencies are addressed in a specific Emergency Response Plan (ERP).

The overall objective of this MP is to identify the mitigation and monitoring measures in order to:

- adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize and restore impacts to the environment;
- develop and implement policies, plans and procedures to integrate environmental and social aspects within the overall project management framework throughout its lifecycle;
- establish a monitoring program to assess the effects of residual impacts on the environment;
- report the results of the periodic audits and provide for corrective actions, if necessary, in order to reach the planned objectives.

2.0 ROLES AND RESPONSIBILITIES

Principal roles and responsibilities for the implementation of this plan are in Table 1 outlined below.

Table 1: Roles and responsibilities

Role	Overall responsibilities	Specific responsibilities
Management	<ul style="list-style-type: none"> ■ Management will ensure sufficient and qualified resources are allocated on an ongoing basis to achieve effective implementation of actions, measures and monitoring activities under SOWI's responsibility ■ This will include the selection of specialized contractor(s) for specific tasks to be carried out as part of the implementation of this Management Plan such as (but not limited to) biodiversity management surveys, monitoring activities and data analysis and reporting ■ Designating specific personnel on site or at the administrative level, clearly define their roles and responsibilities within the environmental and social management system 	<ul style="list-style-type: none"> ■ Final approval of this Management Plan and subcontractors' plans/procedures for the Project ■ Taking appropriate actions to address major Non-Conformities based on audit reports, performance monitoring reports and on SOWI HSE Manager proposed approach
HSE Manager	<ul style="list-style-type: none"> ■ Ensuring that this Plan is up to date and appropriate to the nature and scale of the Project and ensuring that this Management Plan is implemented effectively ■ Programming inspections and audit activities to ensure the correct implementation of this Management Plan; and of specialized contractor(s) tasks ■ Collecting, organizing and reviewing monitoring data and performance monitoring reports provided by the specialized 	<ul style="list-style-type: none"> ■ Ensuring that action/measures and monitoring activities directly under SOWI responsibilities are carried out timely and adequately according to this Management Plan requirements ■ Addressing Non-Conformities through the definition of Preventive/Corrective actions proposing to Management, if necessary, amendments and/or updates to this Management Plan and issuing plan revisions

Role	Overall responsibilities	Specific responsibilities
	<p>contractor(s) and providing summary results of such reports to Management, to stakeholders and to the Lenders</p>	<ul style="list-style-type: none"> ■ Bringing major Non-Conformities immediately to the attention of Management
EPC contractor and subcontractors	<ul style="list-style-type: none"> ■ Effective execution of the specific tasks assigned in conformity with this Management Plan and with contractual arrangements ■ Respect of EHS requirements included in the ESMS ■ Agree with the timing and logistics of the monitoring activities 	<ul style="list-style-type: none"> ■ Provide relevant monitoring data and monitoring reports to as indicated in this plan; ■ May propose changes and integrations to the monitoring activities included in the Management Plan; the proposed changes shall be evaluated and approved by HSE Manager and by Management
All employees and contractors	<ul style="list-style-type: none"> ■ Comply with environmental management requirements ■ Report any activities which are causing unnecessary biodiversity issues 	<ul style="list-style-type: none"> ■ Give evidence that the relevant mitigation measures identified in the current biodiversity management plan are being properly considered, implemented and monitored during execution of the works

3.0 BACKGROUND POLICIES AND STANDARDS

This section includes all those policies, standards and requirements of reference for this Management Plan that are applicable to the Project during the construction phase.

This section includes references

- to applicable national laws and regulations, including those laws implementing host country obligations under international laws and treaties;
- to the applicable international standards i.e. those issued by:
 - EBRD Performance Requirements (May 2014) and related guidance documents and EU Regulatory framework (EU Regulations and Directives).
 - IFC Performance Standards (2012) and EHS general and sector specific EHS Guidelines.

The project is expected to achieve whichever is more stringent amongst national standards and EBRD Performance Requirements (including EU Regulatory framework). The IFC General EHS Guidelines will be applicable in the absence of applicable Kosovo and EU standards.

3.1 National standards and regulation

Table 2: National standards and regulations

Kosovo Reg. Gaz. Date
Law no. 03/I-025 on environmental protection
Law no. 03/I-043 on integrated prevention pollution control
Law no.03/I–233 of nature protection
Law no. 03/I-214 on environmental impact assessment
Law no.03/I –230 on strategic environmental assessment
Law no. 03/I-160 on air protection from pollution
Law no. 04/I-174 on spatial planning

3.2 International standards

Table 3: International standards

International standards
EBRD Environmental and Social Policy and Performance Requirements (PR)
EBRD Performance Requirement 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
EBRD: Guidance Note: Performance Requirement 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

International standards
Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitat Directive)
Council Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Bird Directive)
IFC Performance Standards (PS) and Guidance Notes (GN)
IFC PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
IFC Guidance Note 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources (2019)
IFC General EHS Guidelines: § 4 Construction and Decommissioning § 4.1 Environment
IFC Industry Sector Guidelines - EHS Guidelines for Wind Energy: § 1.1-1.1.3-2.1.4
IFC Industry Sector – EHS Guidelines: for Electric Power Transmission and Distribution

4.0 MITIGATION MEASURES/ACTION

4.1 Construction

Based on the ESIA the potential impacts on environmental components deriving from BIO management during the construction phase are:

- 1) vegetation and topsoil removal;
- 2) changes in local hydrology;
- 3) increase in vehicular traffic;
- 4) emission of noise and vibration;
- 5) introduction and spreading of alien species.

The following table details the environmental management and mitigation measures/actions identified for BIO management activities during construction phase. For each measure/action identified, the table shows:

- Item: the identification code of the mitigation measure/actions (ID.);
- Measure/Actions: description of the mitigation measure/ actions;
- Source document: is the reference to one or more applicable standard (i.e. National Regulation and Permits, EBRD Performance Requirements and related EU Regulations/Directives, IFC PS/Guidelines, or other GIIP);
- Timeline and frequency: frequency/timing of the measure/action;
- KPI (Key performance indicator): quantitative compliance indicator or qualitative acceptance criteria that can be used to verify the actual effectiveness of the mitigation measure/actions;
- Responsibility: resource responsible for implementing the measures/actions;

- WF/OHL: indication whether the measure/action is applicable to the Wind Farm (WF) and/or Overhead Line (OHL)

The aim of the “mitigation hierarchy” (avoidance, minimization, rehabilitation/restoration, offset) is applied for the selection of the measures to limit as far as possible negative impacts to the environment.

This process is intended as an adaptive management system of the project, so that the mitigation and management approach will be adapted based on any new findings which could arise from the monitoring program described in the following section.

Table 4: Mitigation measures/actions for construction phase

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO01	<p><u>Avoidance: micro-siting of project facilities</u></p> <ul style="list-style-type: none"> The project area of influence is characterized by different levels of degradation. The project will explore the possibility to locate project facilities, particularly the temporary facilities, in the areas with higher degradation. 	EBRD PR6 IFC PS6	During the detailed engineering phase	Final placement of project facilities.	Specialized contractors	WF
BIO02	<p><u>Minimization: pre-construction surveys - fauna</u></p> <ul style="list-style-type: none"> Before the beginning of site preparation (vegetation clearing and topsoil removal) an expert wildlife ecologist will perform pre-construction surveys in the areas to be cleared (no more than 7 days before). The survey will focus on fauna species with limited mobility that cannot move ahead of construction (e.g. reptile and amphibians). <p>If any of these species are observed, they will be collected by the ecologist and translocated to undisturbed but similar sites within the LSA.</p> <ul style="list-style-type: none"> Specific additional pre-construction surveys will be performed within the WF targeting birds and bats determining PBF and CH by an expert ecologist targeting nests and roosts. <p>Similar surveys will also be conducted along the OHL for <i>Circaetus gallicus</i>. If nests or maternity roosts are found within 100m from the planned construction sites, the construction activities will be postponed until the young are able to leave the nest/roost.</p>	EBRD PR6 IFC PS6	Before the beginning of site preparation (vegetation clearing and topsoil removal)	Fauna pre-construction survey performed in all areas to be developed	HSE Manager Specialized contractor(s)	WF OHL

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO03	<p><u>Minimization: pre-construction surveys - flora</u></p> <p>Before the beginning of site preparation (vegetation clearing and topsoil removal) an expert botanist will perform surveys of the flowering period of the species identified as triggering CH and PBF in the areas to be cleared of vegetation and its immediate surroundings.</p> <p>The data regarding date, location, population extension and number of individuals will be recorded.</p>	EBRD PR6 IFC PS6	Before the beginning of site preparation (vegetation clearing and topsoil removal)	Flora pre-construction survey performed in all areas to be developed	HSE Manager Specialized contractor(s)	WF OHL
BIO04	<p><u>Minimization: flora on-site conservation</u></p> <p>Conservation of flora species determining CH and PBF, situated in the vicinity of the Project (100 m) shall be guaranteed. These areas will be by clearly identified both on the maps and in the field as exclusion zone where soil and vegetation will be preserved, and access will not be permitted.</p> <p>According to the distribution area determined by Biomaster Ltd. during 2018 surveys within the WF:</p> <ul style="list-style-type: none"> - <i>Daphne blagayana</i>, above WTG 14 and between WTG 18 and 20. - <i>Senecio procerus</i> to the right of WTG20. - <i>Gentianella bulgarica</i> below WTG 21 and near the S11 deposit area. - <i>Echium russicum</i> below WTG 21, within the S11 deposit area between WTG 10 and 11. <p>Demarcation could be provided by highly visible wooden sticks (50 cm high) planted into the ground and /or flagging tape, while a more</p>	EBRD PR6 IFC PS6	Before the beginning of site preparation (vegetation clearing and topsoil removal)	Protection of all populations that might be indirectly affected by the project	HSE Manager Specialized contractor(s)	WF OHL

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<p>permanent fencing should be provided in areas subject to higher risk of disturbance because situate closer to active sites or downhill from ground preparation.</p> <p>If spreading of invasive species is observed, an appropriate eradication program will be developed and implemented.</p>					
<p>BIO05</p>	<p><u>Minimization: flora salvaging</u></p> <p>Flora individuals belonging to flora species determining CH and PBF, directly impacted by the project shall be identified, salvaged prior to construction and directly translocated to the appropriate sites.</p> <p>The flagging of individuals to be translocated will take place preferably during the flowering season of the species. The translocation of individuals will be preferably performed during the dormant stage in order to minimize stresses to the plant.</p> <p>The data regarding date, location, source populations and number of individuals collected and translocated will be recorded.</p> <p>A Salvaging and Translocation Plan will be prepared based on the construction schedule. Collection and translocation techniques and suitable translocation sites will also be identified within the Plan.</p> <p>According to the distribution area determined by Biomaster Ltd. during 2018 surveys within the WF:</p> <ul style="list-style-type: none"> - <i>Daphne blagayana</i>, above WTG 14 and between WTG 18 and 20. - <i>Senecio procerus</i> to the right of WTG20. 	<p>EBRD PR6 IFC PS6</p>	<p>Before the beginning of site preparation (vegetation clearing and topsoil removal)</p>	<p>Salvaging of all populations directly affected by the project</p>	<p>HSE Manager Specialized contractor(s)</p>	<p>WF OHL</p>

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<ul style="list-style-type: none"> - <i>Gentianella bulgarica</i> below WTG 21 and near the S11 deposit area. - <i>Echium russicum</i> below WTG 21, within the S11 deposit area between WTG 10 and 11. 					
BIO06	<p><u>Minimization: footprint creep</u></p> <ul style="list-style-type: none"> ■ On- site conservation areas for natural habitats adjacent to Project sites will be protected from unintentional disturbance during construction. Temporary demarcation could be provided by highly visible wooden sticks (50 cm high) planted into the ground and /or flagging tape, while a more permanent fencing could be provided in areas of particular sensitivity (e.g. wetlands) or subject to higher risk of disturbance. In this case appropriate signage will be installed to make the area recognisable by operators and to comply with H&S regulations and plans. ■ Vehicle movement will be restricted to the existing roads that connect the Project site with the surrounding areas. Off road driving will be prohibited in order to avoid any unnecessary disturbance of natural vegetation. 	EBRD PR6 IFC PS6	During construction phase	<p>No signs of footprint creep outside planned construction areas</p> <p>No signs of off-road driving</p>	HSE Manager All employees and contractors	WF OHL
BIO07	<p><u>Minimization: management of stormwater and erosion</u></p> <ul style="list-style-type: none"> ■ Stormwater flow will be managed and the presence of stagnant water within and around the construction areas will be avoided through the use of culverts/channels as appropriate. 	EBRD PR6 IFC PS6	During construction phase	No sign of erosion or flooded areas around the construction site	HSE Manager	WF

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<ul style="list-style-type: none"> <li data-bbox="275 371 1050 735">■ The springs identified during the ongoing fieldwork have been mapped and considered for fencing, thus during construction phase surveys, the risk of outflow will be identified and minimum viable flow (sensu EU Water framework) will have to be kept. Of the 40 natural springs identified, 2 (SP27, SP36) are directly impacted by the WF footprint, while 8 (SP05, SP06, SP07, SP11, SP19, SP25, SP31, SP33) are indirectly impacted within a 100m buffer and others sixteen natural springs are indirectly impacted within a 300m buffer. <li data-bbox="275 767 1050 906">■ Domestic wastewater will be treated in package wastewater treatment plant. No water will be discharged. Chemical toilets will be provided to workers and periodically emptied under a safe protocol. <li data-bbox="275 938 1050 1042">■ Changes in surface water quality, mainly due to dust from blasting or morphological changes, will be managed by keeping blasting sites as far as possible from water sources. <li data-bbox="275 1074 1050 1326">■ If erosion phenomena are observed environmental engineering techniques will be put in place to stop the erosion and ensure soil protection and the development of natural vegetation. Environmental engineering techniques will include as appropriate: erosion control mat, live crib wall, rock mattresses, hydro seeding, afforestation with appropriate species etc. 					

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO08	<p><u>Minimization: wildlife management</u></p> <ul style="list-style-type: none"> ■ Hunting and collection of wild animals, and in particular of <i>Testudo hermanni</i> (Hermann's tortoise) by employees and contractors will be strictly prohibited within the Project area. ■ Feeding of wildlife or stray cats and dogs will be prohibited on-site and organic waste will be carefully managed and disposed in order to avoid attraction of wildlife or stray cats and dogs. ■ The speed of the vehicles on site should be limited and the use of construction vehicles at night should be avoided in order to minimize the risk of traffic collisions with fauna. ■ Care will be taken to select machines and equipment with low noise emissions. ■ Rock blasting activities will be performed during the day time and at regular times to facilitate local fauna habituation to noise and avoid disturbance during critical hours for many species (dusk and dawn). ■ Night works will be avoided (from 8 pm to 6 am at least) to reduce impacts to nocturnal fauna species, especially bats. ■ If fauna species are encountered employees and contractors will wait until it moves on by itself or they will ask the assistance of the Environmental technician for its safe removal and relocation in a suitable environment. 	EBRD PR6 IFC PS6	During construction phase	Full implementation of all wildlife management actions within and around project construction sites	HSE Manager All employees and contractors	WF OHL

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO09	<p><u>Minimization: noise and vibrations</u></p> <ul style="list-style-type: none"> ■ care will be taken to select machines and equipment with low noise emissions; ■ night works will be avoided (from 8 pm to 6 am at least) to reduce impacts to nocturnal fauna species, especially bats; ■ rock blasting activities will be performed during daytime and at regular times to enhance local fauna habituation to noise and to avoid disturbance during critical hours for many species (dusk and dawn). 	EBRD PR6 IFC PS6	During construction phase	Full implementation of all noise management actions within and around project construction sites	HSE Manager All employees and contractors	WF OHL
BIO10	<p><u>Minimization: employees' awareness</u></p> <p>Awareness among employees and contractor working on site about the protected species/habitats potentially present in the area will be developed, in order to ensure constant monitoring and promote actions to be taken if wildlife is encountered</p>	EBRD PR6 IFC PS6	During construction phase	Training of all employees and subcontractors on the presence of conservation areas on site and how to behave in case of wildlife encounter	HSE Manager	WF OHL
BIO11	<p><u>Rehabilitation/Restoration:</u></p> <p>Areas cleared during construction for temporary use will be progressively restored as soon as possible, with the goal of producing a stable vegetative cover to minimize erosion, dust and spreading of invasive alien species. Restoration of areas cleared</p>	EBRD PR6 IFC PS6	At the end of the construction phase	Restore all areas temporarily used during construction	HSE Manager Specialized contractor(s)	WF OHL

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<p>during construction but not subject to the placement of permanent facilities (deposit areas and storage areas) will be carried out,.</p> <p>Vegetation and topsoil restoration activities will be performed in the Wind Farm on all 8 storage areas in order to restore their original habitat, while all 5 deposit areas will be restored as mountain pasture (E1.7).</p> <p>Access roads to the OHL will be restored at the end of the construction phase to their previous habitat.</p>					

4.2 Operation

Based on the ESIA the potential impacts on environmental components deriving from BIO management during the construction phase are:

- 1) presence of new buildings/infrastructures;
- 2) changes in local hydrology;
- 3) emission of noise and vibration;
- 4) emission of light.

The following table details the environmental management and mitigation measures/actions identified for BIO during the operation phase. For each measure/action identified, the table shows:

- Item: the identification code of the mitigation measure/actions (ID.);
- Measures/Actions: description of the mitigation measures/ actions;
- Source document: is the reference to one or more applicable standard (i.e. National Regulation and Permits, EBRD Performance Requirements and related EU Regulations/Directives, IFC PS/Guidelines, or other GIIP);
- Timeline and frequency: frequency/timing of the measure/action;
- KPI (Key performance indicator): quantitative compliance indicator or qualitative acceptance criteria that can be used to verify the actual effectiveness of the mitigation measure/actions;
- Responsibility: resource responsible for implementing the measures/actions;
- WF/OHL: indication whether the measure/action is applicable to the Wind Farm (WF) and/or Overhead Line (OHL)

The aim of the “mitigation hierarchy” (avoidance, minimization, rehabilitation/restoration, offset) is applied for the selection of the measures to limit as far as possible negative impacts to the environment.

This process is intended as an adaptive management system of the project, so that the mitigation and management approach will be adapted based on any new findings which could arise from the monitoring program described in the following section.

Table 5: Mitigation measures/actions for operation phase

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO12	<p><u>Minimization: flora on-site conservation</u></p> <p>Conservation of flora species determining CH and PBF, situated in the vicinity of the Project (100 m) shall be guaranteed including translocation areas. These areas will be protected during the operation phase by impacts other than the Project such as grazing, trampling and off-road driving. If necessary, the populations will be fenced.</p>	EBRD PR6 IFC PS6	Before the beginning of site preparation (vegetation clearing and top soil removal)	Protection of all populations that might be indirectly affected by the project	HSE Manager Specialized contractor(s)	WF OHL
BIO13	<p><u>Minimization: Emission of noise and vibration</u></p> <p>During regular operation and maintenance, keep selecting and using machines and equipment with low noise emissions (e.g. suitable mufflers on engine exhausts and compressor components; machines and equipment with low noise emissions).</p>	EBRD PR6 IFC PS6	During operation phase	No excessive noise due to poor maintenance conditions	HSE Manager All employees and contractors	WF OHL
BIO14	<p><u>Minimization: management of stormwater and erosion</u></p> <p>Maintain a suitable stormwater drainage network in correspondence to access roads, wind turbines, temporary storage/deposit areas and other relevant construction areas. Stormwater from the drainage network must be channelled to secondary hydrographic network or other suitable drainage feature and discharged in a controlled way. Appropriate measures must be adopted to protect discharge points and channels from erosion.</p>	EBRD PR6 IFC PS6	During operation phase	No sign of erosion or flooded areas around the construction site	HSE Manager	WF

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO15	<p><u>Minimization: wildlife management</u></p> <ul style="list-style-type: none"> ■ Hunting and collection of wild animals, and in particular of <i>Testudo hermanni</i> (Hermann's tortoise) by employee and contractors will be strictly prohibited within the Project area. ■ Avoid attracting wildlife by periodical removal of carcasses from the ground is key; appropriate garbage management and disposal, elimination of stagnant water. ■ Feeding of wildlife or stray cats and dogs will be prohibited on-site and organic waste will be carefully managed and disposed in order to avoid attraction of wildlife or stray cats and dogs. ■ The speed of the vehicles on site should be limited and the use of vehicles at night should be avoided in order to minimize the risk of traffic collisions with fauna. ■ During regular operation and maintenance, keep selecting and using machines and equipment with low noise emissions (e.g. suitable mufflers on engine exhausts and compressor components; machines and equipment with low noise emissions). ■ While respecting the national prescriptions it is recommended to keep the number of light sources to the minimum. ■ All lights should flash synchronously, lights should flash at around 3 seconds frequency. 	EBRD PR6 IFC PS6	During operation phase	Full implementation of all wildlife management actions within and around project construction sites	HSE Manager All employees and contractors	WF OHL

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<ul style="list-style-type: none"> ■ Preferred types of light in exterior lighting (e.g: lights on site due to security reasons) applications are: <ul style="list-style-type: none"> – Low pressure sodium lamps (SOX): orange lamps seen along roadsides – Light emitting diodes (LEDs): light source of choice, emitted more directional, warmer colour temperatures (~ 3000°K), – lights triggered by presence detectors, and lights oriented to the ground. ■ The following types of lights should be avoided: <ul style="list-style-type: none"> – mercury lamps (MBF): bluish-white lamps (attract insects and tolerant bat species) – high pressure sodium lamps (SON): brighter pinkish-yellow lamps; used as road lighting <p>If fauna species are encountered employees and contractors will wait until it moves on by itself or they will ask the assistance of the Environmental technician for its safe removal and relocation in a suitable environment.</p>					
BIO16	<p><u>Minimization: birds and bats management</u></p> <ul style="list-style-type: none"> ■ Turbines and infrastructures will not offer perching or breeding opportunities for birds and bats. ■ Free-wheeling i.e. free spinning of rotors under low wind conditions with no power generation, will be eliminated; 	EBRD PR6 IFC PS6	During operation phase	Full implementation of all wildlife management actions within and around project construction sites	HSE Manager All employees and contractors	WF

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<ul style="list-style-type: none"> ■ A minimum of 10 aluminium nest boxes will be installed on the pylons of the OHL in suitable habitats. This will offer breeding opportunities for new pairs of Common Kestrel in order to compensate for the potential loss of the population at Bajgora. The nests will be located at least at 5 km distance from the turbines. ■ Turbine specific cut-in wind speed mitigation measures will be proposed, if necessary, in correlation with meteorological parameters (wind, temperature and precipitation). Specific cut-in wind speed or alternative mitigation measures (bat deterrent) will be set for the individual turbines after the first year of monitoring based on the results of the bat activity and bat mortality monitoring. The measures will be reassessed after each year based on the new information collected. Bat deterrent will be used <i>only if deemed appropriate for the project and the species concerned and using proven technology.</i> ■ . 					
<p>BIO17</p>	<p><u>Minimization: birds and bats management</u></p> <p>In order to minimize the risk of collision, the main aim is to make lines more visible to birds, since the assumption is that birds collide with overhead cables because they cannot see them (AEWA, 2012). Such measure is particularly needed in case of potential flying corridors such as the River Sitnica. In</p>	<p>EBRD PR6 IFC PS6</p>	<p>During operation phase</p>	<p>Full implementation of all wildlife management actions within and around project construction sites</p>	<p>HSE Manager All employees and contractors</p>	<p>OHL</p>

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<p>this portion of the powerline line markers need to be installed on the earth wire (also called ground or shield wire) according to the following best practice measures suggested below.</p> <ul style="list-style-type: none"> ■ Line markers should be as large as possible, and increase the visible thickness of the line by at least 20 cm, for a length of at least 10-20 cm. ■ Spacing of devices should be not more than 5-10 m apart. ■ Line markers should incorporate as much contrast with relevant backgrounds as possible, colour is probably less important than contrast. ■ Movement of the device and markers that protrude vertically both above and below the cable are likely important. ■ Since it is suspect that many collisions may occur at night, devices that are nocturnally visible (phosphorescence, ultraviolet radiation and other means) would be advantageous. 					
<p>BIO18</p>	<p><u>Minimization: employees awareness</u></p> <p>Awareness among employees and contractor working on site about the protected species/habitats potentially present in the area will be developed, in order to ensure constant monitoring and promote actions to be taken if wildlife is encountered</p>	<p>EBRD PR6 IFC PS6</p>	<p>During operation phase</p>	<p>Training of all employees and subcontractors on the presence of conservation areas on site and how to</p>	<p>HSE Manager</p>	<p>WF OHL</p>

Item	Mitigation Measures/Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
				behave in case of wildlife encounter		
BIO19	<p><u>Minimization: bats additional conservation measures</u></p> <p>Additional conservation measures for bats species will be developed. These measures might include support to bats conservation off-site like roost protection and enhancement, and awareness raising at the local and national level in cooperation with local qualified NGOs.</p>	EBRD PR6 IFC PS6	To be determined	Depending on the measures	HSE Manger	WF

5.0 MONITORING ACTIONS

The following table details the monitoring actions identified for BIO management activities during the construction and operation phase. The aim of the monitoring actions is to verify whether the residual impacts are under control and the mitigation measures/action have been effective.

For each monitoring measure/action identified, the table shows:

- Item: the identification code of the monitoring activity (ID.);
- Monitoring Activity: description of the monitoring activity;
- Source document: is the reference to one or more applicable standard or limit value (i.e. National Regulation and Permits, EBRD Performance Requirements and related EU Regulations/Directives, IFC PS/Guidelines, or other GIIP);
- Timeline and frequency: frequency/timing of the monitoring activity;
- KPI (Key performance indicator): regulatory limit value or qualitative acceptance criteria to comply with;
- Responsibility: resource responsible for implementing the monitoring activity;
- WF/OHL: indication whether the measure/action is applicable to the Wind Farm (WF) and/or Overhead Line (OHL)

5.1 Construction

Table 6: Monitoring actions for construction phase

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO20	<p><u>Minimization: flora conservation</u></p> <p>On-site Conservation Areas identified for flora species shall be monitored periodically and any signs of direct or indirect disturbance will be noted (e.g. trampling, dust deposition, soil erosion, presence of stagnant water).</p> <p>A monitoring register will be filled in and photographic documentation will be collected at each monitoring and shared with the Specialized Contractor(s).</p>	EBRD PR6 IFC PS6	Monthly during the entire construction phase	Effective protection of all populations direct/indirect impacts	HSE Manager Specialized contractor(s)	WF OHL
BIO21	<p><u>Minimization: flora salvaging</u></p> <p>Flora translocation sites identified for flora species determining PBF and CH shall be monitored periodically for any sign of stress or disturbance.</p> <p>A monitoring register will be filled in and photographic documentation will be collected at each monitoring and shared with the Specialized Contractor(s)</p>	EBRD PR6 IFC PS6	Monthly during the entire construction phase	Creation of new self-sustaining and stable populations	HSE Manager Specialized contractor(s)	WF OHL
BIO22	<p><u>Minimization: wildlife management</u></p> <p>Accidents involving wildlife or the observation of live animal or carcasses along the access road or on the construction site will be recorded.</p> <p>Additional mitigation measures to discourage wildlife presence on site and avoid roadkill will be taken if needed.</p>	EBRD PR6 IFC PS6	During the entire construction phase Reports of incidents/observations to be presented every 3 months	No accidents involving wildlife or the observation of carcasses Register of wildlife observations from employees/contractors	HSE Manager All employees and contractors	WF OHL

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO23	<p><u>Minimization: bats management</u></p> <p>Bats activity will be monitored during construction using Static Acoustic Monitoring (fixed batlogger that will register bat activity during the entire night) with the same methodology used during the baseline study on a selection of turbine sites in all three sectors of the Project.</p>	EBRD PR6 IFC PS6 Eurobats	Six months during 2020	Bats monitoring survey results	HSE Manager, Biodiversity contractors	WF
BIO24	<p><u>Minimization: birds management</u></p> <p>Bird survey with the Vantage Point technique will be repeated for the breeding season in 2020 (40 h for each Vantage Point from March -June). This will allow to verify if the intense kestrel presence observed in 2019 is regular or not in the area.</p>	EBRD PR6 IFC PS6 SNH 2017	Six months during 2020	Vantage points survey results	HSE Manager, Biodiversity contractors	WF
BIO25	<p><u>Footprint creep and hydrology/ erosion management</u></p> <p>Indirect and direct inadvertent impacts on natural habitats present around the construction site will be monitored monthly in order to assess eventual footprint creep outside designated areas, signs of erosion or stagnant water accumulation, functioning of the water run-off management system, dust deposition on vegetation, presence of waste or hazardous substances spill</p>	EBRD PR6 IFC PS6	Monthly during the entire construction phase	No direct/ indirect impact outside project footprint	HSE Manager	WF OHL
BIO26	<p><u>Rehabilitation/Restoration:</u></p> <p>After restoration areas should be monitored to ensure the correct development of the seeded or planted species and recolonization of natural vegetation.</p>	EBRD PR6 IFC PS6	Every three months during the vegetative season (from April to	Restored areas with vegetation cover and composition similar to undisturbed areas	HSE Manager Specialized contractor(s)	WF OHL

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	Presence and spreading of invasive flora species within and around the construction site will be monitored every three months during the vegetative season (from April to September) by an expert botanist, if necessary, extirpation campaign will be put in place in order to avoid the spreading of the invasive species.		September) for the first three years after restoration			

5.2 Operation

Table 7: monitoring actions for operation phase

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
BIO27	<p><u>Minimization: flora conservation</u></p> <p>On-site Conservation Areas identified for flora species shall be monitored periodically and any signs of direct or indirect disturbance will be noted (e.g. trampling, dust deposition, soil erosion, presence of stagnant water).</p> <p>A monitoring register will be filled in and photographic documentation will be collected at each monitoring and shared with the Specialized Contractor(s)</p>	EBRD PR6 IFC PS6	Every three months during the vegetative season (from April to September) for the first 3 years of operation	Effective protection of all populations direct/indirect impacts	HSE Manager Specialized contractor(s)	WF OHL
BIO28	<p><u>Minimization: flora salvaging</u></p> <p>Flora translocation sites identified for flora species determining PBF and CH shall be monitored periodically for any sign of stress or disturbance.</p>	EBRD PR6 IFC PS6	Monthly during the first year of transplantation during the vegetative season (from April to	Creation of new self-sustaining and stable populations	HSE Manager Specialized contractor(s)	WF OHL

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	A monitoring register will be filled in and photographic documentation will be collected at each monitoring and shared with the Specialized Contractor(s)		September) and after every 3 months for the following 3 years			
BIO29	<p><u>Wildlife management and awareness</u></p> <p>Accidents involving wildlife or the observation of live animal or carcasses along the access road or on the construction site will be recorded.</p> <p>Additional mitigation measures to discourage wildlife presence on site and avoid roadkill will be taken if needed.</p>	EBRD PR6 IFC PS6	During the entire operation phase Reports of incidents/observations to be presented every 3 months	<p>No accidents involving wildlife or the observation of carcasses</p> <p>Register of wildlife observations from employees/contractors</p>	HSE Manager All employees and contractors	WF OHL
BIO30	<p><u>Birds management</u></p> <p>Common Kestrel nest boxes installed on the OHL will be monitored for occupancy and breeding success for the first 3 nesting seasons to assess impact of compensation measure.</p>	EBRD PR6 IFC PS6	During the first 3 nesting seasons	<p>Report of the survey</p> <p>Presence of nesting Common Kestrel</p>	HSE Manager All employees and contractors	OHL
BIO31	<p><u>Bat Activity Monitoring</u></p> <p>Turbines were divided in 7 different clusters based on the turbines distance from each other, aspect and habitat. Bats activity will be monitored at one turbine for each cluster using a recording device of bats calls called Batcorders (https://ecoobs.com/products/hardware/gsm-batcorder/). The clusters and suggested turbines to be monitored are presented in the table below.</p>	EBRD PR6 IFC PS6 Eurobats	During the first 2 years of operation phase	<p>Survey reports</p> <p>Calculation of specific algorithms cut-in wind speeds for each turbine to maintain an acceptable possible mortality of less than</p>	HSE Manager All employees and contractors	WF

Item	Monitoring Actions			Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	Group	Turbines in the group	Turbine with batcoder			2 dead bats per turbine		
	Group 1	I-01, I-02, I-03	I-02					
	Group 2	I-04, I-05, I-06	I-05					
	Group 3	I-07, I-08, I-09, II-10	I-09					
	Group 4	II-11, II-12, II-13, II-14	II-12					
	Group 5	II-15, II-16, II-17, II-18, III-19, III-20	II-18					
	Group 6	III-21, III-22, III-23, III-24	III-23					
	Group 7	III-25, III-26, III-27	III-26					
	<p>The Batcoders (https://ecoobs.com/products/hardware/gsm-batcoder/) will be installed on nacelles and operated every day from sunset to sunrise from April 1st to October 31st with the following settings: quality 20, threshold -36 dB, posttrigger 200 ms, and critical frequency 16 kHz. Temperature and a precipitation sensor should also be installed</p> <p>Recorded acoustic sequences will be analyzed by bcAdmin software (https://ecoobs.com/download-en/; Call filter:</p>							

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<p>Amplitude threshold 1.585, smoothness 2.00, Samples Hi 200, Min. call distance 15 ms, Min. call length 1.50 ms; Call Extraction: Min call interruption 1.10 ms, Forward MSE 0.060, Samples for regr. 8, Regression size 200 μs) and by Discriminator (Ver. 1.13, ecoObs; in combination with R 2.7.2 (R Core Team 2015) and the packages kernlab and RandomForest) to automatically identify bat calls in the batcorder recordings and also to identify species and species groups.</p> <p>The data collected during the first year of monitoring will be analysed with the software-tool ProBat (available in German and English from: http://windbat.techfak.fau.de) in order to estimate fatality rates, and calculates specific algorithms cut-in wind speeds for each turbine group based on acoustic activity data and wind speed to maintain an acceptable possible mortality of less than 2 dead bats per turbine (Behr et al., 2017). The data of the second year of monitoring will be analysed in the same way to confirm or further adjust the indications on cut-in wind speed for each turbine group.</p> <p>Bat and Birds Mortality monitoring (described below) will also influence which turbines are monitored after year one and which turbines are subject to mitigation measures.</p>					
BIO32	<p><u>Bat and Birds Mortality Monitoring</u></p> <p>Bat and Bird Mortality monitoring will have duration of three years (from April to October). The first year all turbines will be</p>	EBRD PR6 IFC PS6 Eurobats	During the first 3years of operation phase	Results of the carcass survey	HSE Manager Biodiversity contractors	WF

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<p>monitored, while the turbines to be monitored in the second and third years will be decided based on the results of the first year of monitoring.</p> <p>Based on temporal patterns of bat mortality at wind turbines detected in several European countries eg. Germany, Switzerland, Greece (Rydell et al., 2010; Leuzinger et al., 2008; Georgiakakis et al., 2012) the proposed timing of the monitoring is as follows:</p> <ul style="list-style-type: none"> ▪ 1 April - 31 May: once a week; ▪ 1 June 30 September: every three days; ▪ 1 - 31 October: once a week. <p>In case data from acoustic monitoring (BIO31) or bird monitoring (BIO24) will show clear seasonal or geographical patterns in the activity, the period and survey area of mortality monitoring could be updated.</p> <p>Dead bats and birds searches will be performed within a radius of 50 meters from the wind tower; within this area the bats and birds are searched along transects. The space between the transects is 5 meters.</p> <p>Transects will be traveled with a slow and regular step, looking for dead bats and birds on either side of the transect line. The check should be carried out possibly in the early hours of the morning (preferably an hour after sunrise), to minimize predation by diurnal scavengers.</p>					

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	<p>For every dead bat the position must be noted (GPS coordinates, direction in relation to the wind, distance from the "foot" of the tower), its apparent state (fresh, a few days, decomposing, remains, etc.), identification of the species, age and sex (when possible).</p> <p>The number of dead bats and birds that can be found under the turbines is influenced by predation (carnivores, corvids, etc.), by the efficiency of the operator and by the vegetation cover near the wind towers (Rodrigues et al. 2015). For these reasons, in order to interpret the data collected it is important to evaluate detectability of dead bats and birds and speed of removal by scavengers. Therefore, the tests below should be performed to determine the correction coefficients (coefficient of disappearance of dead bats and birds and coefficient on the effectiveness of the research), proper to the site and the observer.</p> <p>For this experiment it is preferable to use small passerines or day-old chicks as dummies, which will be placed on the ground, in each of the environments present in the area of the towers and at different distances from the paths. Dead bats and birds (or dummies) will be randomly distributed in the research area and will be searched by the operator as in a normal survey for the search of the carcasses.</p> <p>Each trial will last 10 consecutive days in order to determine how much each carcass remains on the ground. Detectability of dead bats and birds will be carried out 4 times a year so as to</p>					

Item	Monitoring Actions	Source document	Timeline and frequency	KPI	Responsibilities	WF OHL
	take into consideration the seasonal variations in the vegetation height and predation rate.					
BIO33	<p><u>Invasive species</u></p> <p>Presence and spreading of invasive flora species within and around the construction site will be monitored every three months during the vegetative season (from April to September) by an expert botanist, if necessary, extirpation campaign will be put in place in order to avoid the spreading of the invasive species.</p>	EBRD PR6 IFC PS6	Every three months during the vegetative season (from April to September) for the first three years after restoration	No spreading of invasive species	HSE Manager	WF OHL
BIO34	<p><u>Rehabilitation/Restoration:</u></p> <p>The rehabilitation of dumping areas and storage areas presence will be monitored every three months during the vegetative season (from April to September) in order to ensure the correct re-vegetation of the area and intervene in a timely manner in case of signs of erosion.</p> <p>Presence and spreading of invasive flora species within and around the construction site will be monitored every three months during the vegetative season (from April to September) by an expert botanist, if necessary, extirpation campaign will be put in place in order to avoid the spreading of the invasive species.</p>	EBRD PR6 IFC PS6	Every three months during the vegetative season (from April to September) for the first three years after restoration	Restored areas with vegetation cover and composition similar to undisturbed areas	HSE Manager Specialized contractor(s)	WF OHL

6.0 AUDIT AND REVIEW

The correct implementation of this Management Plan is verified through internal inspections and audits to be carried out according to the requirements included in section “Internal audit” of the “ESMS Manual” and in the “Audit and Non-Conformities Procedure”.

The schedule, the frequency, the scope and objectives of the audit as well as the responsible internal auditors are indicated in the Audit Program that is developed and updated by SOWI.

Internal auditing shall address:

- the correct implementation of this Management Plan
- the correct development and implementation of Contractor’s Plan
- the correct and timely implementation of an auditing and review system by the Contractor
- each of the points indicated in the tables in section 4.0 (mitigation measures/actions) and 5.0 (monitoring activities) of this plan
- the establishment of a stakeholder engagement process related to the aspects addressed by this Management Plan.

Evidences and results of the inspection and audit activities are included in the audit reports and in the “Non-Conformity and Preventive/Corrective actions” records.

SOWI Management reviews results of inspections and audits and the progress of the Preventive/Corrective actions and takes additional appropriate actions if necessary, according to the indications included in section 7 “Management Review” of the ESMS Manual.

During steady state operations, this Management Plan will be reviewed on an annual basis and any necessary revisions made to reflect the changing circumstances, operational needs or monitoring results. Revision of this Management Plan will be the responsibility of the HSE Manager, who is in charge of this Plan.

7.0 REPORTING

This section provides instructions and requirements for the reporting related to mitigation measures/actions, to monitoring activities and to internal auditing.

7.1 Reporting of the monitoring activities

Evidences and results of the monitoring activities (detailed in section 5.0) must be described in detail in appropriate monitoring reports. These monitoring reports must include the following minimum information/data (where relevant):

- analytical certificates from the laboratory/ies;
- localization of the monitoring activities (geographical coordinates in WGS84 system and elevation);
- timing of the data collection (start date and end date);
- description of the applied methodology;
- KPI (Key performance indicator): regulatory limit value or qualitative acceptance criteria to comply with;

- the responsibility for implementing the specific monitoring activities (including reference to this Management Plan and reference to the appointment of third parties eventually contracted to perform part of the activity (e.g. external laboratories and consultants);
- conclusions on compliance vs. KPI and eventual observations;
- quality control procedures applied to ensure consistency and reliability of the analyses or results.

7.2 Reporting of the auditing activities

The correct implementation of this Management Plan must be verified through internal audits to be carried out according to the requirements included in the “ESMS Manual”, the internal auditing procedure and section 6.0 “Audit and review” of this Management Plan.

Evidences of the implementation of the mitigation measures/actions (detailed in section 4.0), of the timely deployment of monitoring activities (detailed in section 5.0) and of related results are described in the audit reports. These audit reports must include the following minimum information/data:

- list of the items audited (detailed in sections 4.0 and 5.0);
- information whether the items have been implemented within the indicated timeline and frequency;
- achievement (or not) of the KPIs;
- description of non-compliances eventually identified.

7.3 Self-monitoring report

Monitoring data together with the results of the audit activities will be summarized in a Self-Monitoring Report on a quarterly basis that will be provided every quarter to the Lenders and eventually to stakeholders as further described in the “ESMS Manual”.



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