Framework Biodiversity Management Plan (BMP)

450 MW Szihalom Solar PV Power Plant and BESS Project, Hungary

PREPARED FOR
Renalfa Hungary Kft. and EBRD

DATE
23 October 2025

REFERENCE
0783259

Solar Energy Production at a New High

DOCUMENT DETAILS

The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.	
DOCUMENT TITLE	Framework Biodiversity Management Plan (BMP)
DOCUMENT SUBTITLE	450 MW Szihalom Solar PV Power Plant and BESS Project, Hungary
PROJECT NUMBER	0783259
DATE	23 October 2025
VERSION	0.1 draft
AUTHOR	Lamija Karabeg
CLIENT NAME	Renalfa Hungary Kft. and EBRD

DOCUMENT HISTORY

				ERM APPROVAL TO ISSUE		
VERSION	REVISION	AUTHOR	REVIEWED BY	NAME	DATE	COMMENTS
0.1 draft	000	Lamija Karabeg	Adam Teixeira-Leite	Adam Teixeira-Leite	21.10.2025	Draft submitted for comment

SIGNATURE PAGE

Framework Biodiversity Management Plan (BMP)

450 MW Szihalom Solar PV Power Plant and BESS Project, Hungary

0783259

[Double click to insert signature]

Lamija Karabeg
Consultant: Biodiversity

[Double click to insert signature]

Adam Teixeira-Leite
Principal Technical Consultant: Biodiversity

ERM GmbH
Brüsselerstr. 1-3
60327 Frankfurt
Germany

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

Acronym	Description
AoI	Area of Influence
BAP	Biodiversity Action Plan
BESS	Battery Energy Storage System
BMEP	Biodiversity Monitoring and Evaluation Program
BMP	Biodiversity Management Plan
CH	Critical Habitat
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EN	Endangered
ERM	Environmental Resources Management
ESR	Environmental and Social Requirement
ESDD	Environmental and Social Due Diligence
EU	European Union
GIP	Good International Practice
IAS	Invasive Alien Species

Acronym	Description
IBA	International Bird Area
IFI	International Financial Institution
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
km	Kilometer
KPI	Key Performance Indicator
LC	Least Concern
m	Meter
NG	Net Gain
NNL	No Net Loss
NT	Near Threatened
PBF	Priority Biodiversity Feature
PV	Photovoltaic
SAC	Special Areas of Conservation
VU	Vulnerable

DEFINITION OF KEY TERMS

Adaptive management:
A proactive and iterative approach to managing biodiversity that involves adjusting mitigation or monitoring measures over time in response to observed results. It ensures that actions remain effective under changing conditions and unforeseen outcomes, supporting the achievement of biodiversity objectives through ongoing evaluation and learning.

Invasive alien species (IAS):
An invasive species is an organism (plant or animal) that causes ecological or economic harm in a new environment. Invasive species may be alien or exotic (not native or indigenous to the particular area, geography or region).

Mitigation hierarchy:
A tool commonly applied in Environmental Impact Assessments (EIAs) which helps to manage biodiversity risk. The hierarchy of controls that begins with avoidance, then considers minimization or reduction of impacts, followed by restoration actions and finally compensation for biodiversity loss (e.g. through offsetting) as a last resort measure only once all other options have been considered/exhausted.

No Net Loss (of biodiversity):
An approach and goal for a development project, policy, plan or activity in which the impacts on biodiversity it causes are balanced by measures taken to avoid and minimize the impacts, to restore affected areas and finally to offset the residual impacts, so that no loss remains.

No net loss is defined as the point at which project-related biodiversity losses are balanced by gains resulting from measures taken to avoid and minimize these impacts, to undertake

on-site restoration and finally to offset significant residual impacts, if any, on an appropriate geographic scale (EBRD, 2024).

Priority biodiversity feature:
This concept replaces the previous definition of natural habitat used previously by EBRD and adopts a criterion-based approach already used for definition of critical habitat. Priority in all EBRD definitions combines consideration of irreplaceability and vulnerability. Priority biodiversity features (PBF) are a subset of biodiversity that have a high, but not the highest, degree of irreplaceability and/or vulnerability. Although a level below critical habitat in sensitivity, they still require careful consideration during project assessment and impact mitigation (EBRD, 2024).

Protected area:
EBRD adopts the IUCN definition of a protected areas, which is *"a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values"* (EBRD, 2024).

Residual Impact
Impacts on biodiversity that remain even after the application of avoidance, minimization, and restoration measures. Residual impacts are typically addressed through biodiversity offsets or long-term management and monitoring strategies.

Rehabilitation:
A management action that aims to restore a certain level of ecosystem functioning in degraded sites, to reverse negative impacts by repairing and replacing the essential or primary ecosystem structures and functions which have been altered or eliminated by disturbance.

Restoration:
The process of reclaiming habitat and ecosystem functions by restoring the lands and waters on which plants and animals depend. Differs from rehabilitation, in that the goal is to restore the ecosystem or habitat to its former state or better.

1. INTRODUCTION

1.1 BACKGROUND & PURPOSE

This document presents the Framework Biodiversity Management Plan (BMP) for the Szihalom Solar PV and Battery Energy Storage System (BESS) Portfolio Project in Hungary.

The Project is seeking financing from the European Bank for Reconstruction and Development (EBRD) and other international lenders. During the Environmental and Social Due Diligence (ESDD) undertaken by ERM in August–September 2025, the Project was reviewed against the EBRD Environmental and Social Requirements (ESR) (EBRD, 2024) and whilst the Project will be located predominantly on intensively cultivated agricultural land that represent modified habitats, the wider area includes ecological linkages forming part of Hungary's National Ecological Network (notably the Ostoros-patak Ecological Corridor that supports various bird species of conservation importance). A screening done for Critical Habitat (CH) and Priority Biodiversity Features (PBF) during the ESDD, using the EBRD criteria and thresholds for CH/PBF identification, determined that several bird species of conservation importance[1] qualify as PBF (but no CH triggered).

Given that PBF may be impacted by the Project, this requires the Project to demonstrate a commitment to achieving at least No Net Loss (NNL) of biodiversity in line with EBRD ESR6. The Framework BMP has been developed to outline the overall mitigation approach and strategy to achieve at least NNL of biodiversity for PBF identified for the Project and will serve as the overall framework to inform the development of a project-specific BMP (see Information Box 1 below).

Information Box 1. What is a BMP?

Despite renewable energy projects such as solar power plants playing an important role in moving towards a more sustainable energy sector, these relatively 'clean energy' projects can also result in often unintended negative impacts and consequences to the environment and biodiversity, unless carefully planned and managed. This includes risks and potential impacts to biodiversity, which underpins the resilience and functions of ecosystems and the flow of ecosystem goods and services.

A Biodiversity Management Plan (BMP) provide a systematic approach to biodiversity management and conservation at the project-level that can be integrated into the Renalfa Environmental & Social Management System (ESMS). The BMP is necessary to inform the management and mitigation of biodiversity risks and impacts during construction, operation and maintenance of the solar power plant and builds on the existing actions/commitments already being implemented or planned for implementation for the Project (i.e. 'embedded' mitigation measures).

[1] Seven (7) bird species qualify as PBF for the Project, in line with the criteria of EBRD ESR6 that considers the conservation and management of biodiversity and ecosystems as they are globally threatened (Vulnerable, VU and Endangered, EN) and/or listed in Annex I of the EU Birds Directive, including: Eastern Imperial Eagle (*Aquila heliaca*, VU), Lesser Spotted Eagle (*Aquila pomarina*, LC), White Stork (*Ciconia ciconia*), European Roller (*Coracias garrulus, LC*), Saker Falcon (*Falco cherrug*, EN), Peregrine Falco (*Falco peregrinus*, LC), and European Honey-buzzard (*Pernis apivorus*, LC).

1.2 PROJECT INFORMATION

Renalfa IPP GmbH is the 'Borrower' for the planned 450 MWp portfolio of solar photovoltaic (PV) power plants in Heves Country, northeastern Hungary (see map in Figure 1). The Project is called 'Szihalom PVPP Solar and BESS' and comprises five individual sub-projects [five utility-scale solar PV power plants and associated battery energy storage systems (BESS)]. All BESS units will be co-located at a central site together with a new 220/33 kV substation, providing the interface to the Hungarian national grid operated by MAVIR Zrt.

The Project is being developed by Renalfa IPP through its Hungarian subsidiary, 'Renalfa Hungary Kft'. Five individual Special Purpose Vehicles (SPVs) for each sub-project, as follows:

Sub-Project	SPV
1: Szihalom PVPP Solar I + BESS I	Zenu Solar Kft
2: Szihalom PVPP Solar II + BESS II	Holmu Solar Kft
3: Szihalom PVPP Solar III + BESS III	Urus Solar Kft
4: Szihalom PVPP Solar IV + BESS IV	Pata Solar Kft
5: Szihalom PVPP Solar V + BESS V	Egur Solar Kft

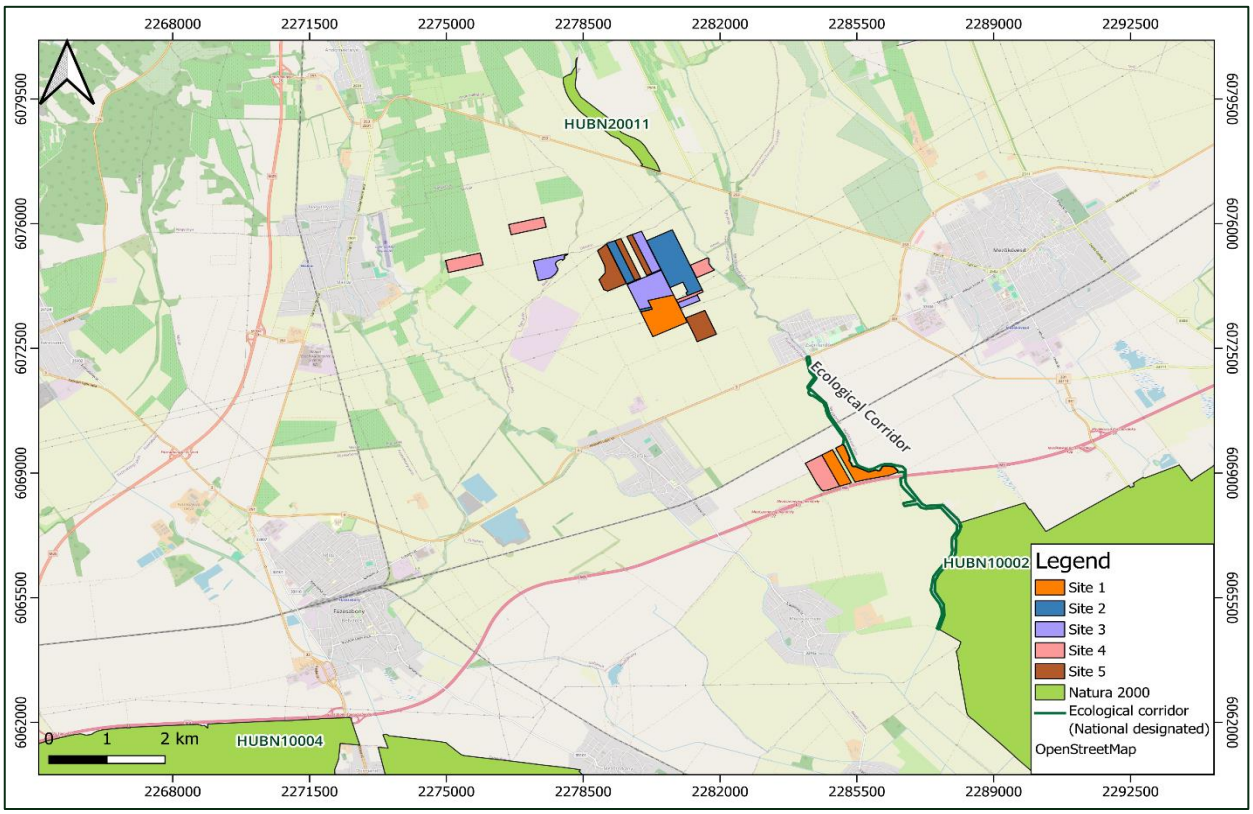


FIGURE 1-1 PROJECT LOCATION MAP

SOURCE: ERM, BASED ON DATA PROVIDED BY THE CLIENT

Additional details are as follows:

Project Sponsor: Renalfa Solarpro Group

Local Developer / Operator: Renergy Hungary Kft.

Total Portfolio Capacity: ≈ 200 MWp (Solar PV) + 20 MW (BESS)

Planned Construction Start: Q3 2026

Grid Connection Operator: MAVIR ZRt.

Primary Lender: European Bank for Reconstruction and Development (EBRD)

Environmental Oversight: Heves County Government Office and Bükk National Park Directorate (BNPI)

2. APPLICABLE LEGISLATION, STANDARDS AND GUIDELINES

2.1 LEGISLATION

The relevant legislation governing the management and conservation of biodiversity (ecosystems, habitat and species/wildlife) at the international, regional (European) and national level for Hungary apply to the BMP.

The key ones include the EU Habitats Directive and EU Birds Directive at the regional level (with Hungary as an EU member state) and at the national level, the various acts on nature conservation, wildlife protection, general rules for environmental protection and government decrees governing the management and protection of legally protected areas in terms of Natura 2000.

Further information and a more complete list of the various acts/decrees is included in **Annexure A** in Chapter 10.

2.2 APPLICABLE STANDARDS

The Project seeks to align with the E&S Requirements (ESR) of EBRD (2024), including ESR6 which addresses the management of biodiversity and ecosystems. ESR6 is therefore the 'applicable standard' that applies to the Framework BMP and also the Project-level comprehensive BMP to follow later. A summary of the key ESR6 requirements for managing biodiversity and ecosystems is presented below in **Error! Reference source not found.**, also indicating which aspects are relevant to the Project based on the ESDD (Environmental and Social Due Diligence) report findings (ERM, 2025), that being primarily:

- Priority Biodiversity Features (PBF)
- Other non-PBF biodiversity features
- Invasive Alien Species (IAS) - plants

The key ESR6 requirements for these features are:

- NNL objective for PBF at a minimum (measurable conservation outcomes achieved);
- Consideration of alternatives to avoid adverse impacts;
- Consultation with relevant stakeholders;
- Development to be legally permitted/authorized;
- Implement the mitigation hierarchy (focus on avoiding and minimizing impacts);

- Consider adaptive management practices;
- Life-cycle approach to be considered (managin impacts/risks at all relevant project phases); and
- Peventing IAS establishment, controlling spread of existing IAS at the site.

TABLE 2-1 SUMMARY OF EBRD ESR6 REQUIREMENTS FOR MANAGING BIODIVERSITY RELEVANT TO THE PROJECT

Aspect of Biodiversity	**EBRD ESR6 requirements**	**Applicable to Project?** (based on the ESDD, ERM 2025)
APPLICABLE TO PROJECT		
Priority Biodiversity Features (PBFs)	Activities are not be implemented unless: ▪ The project can demonstrate that no technically/economically feasible **alternatives** exist, ▪ **Stakeholders** are consulted, ▪ The project is **permitted legally** under relevant laws, Appropriate mitigation is implemented in accordance with the **mitigation hierarchy** to ensure **NNL and preferably NG** of biodiversity over the long term to achieve **measurable conservation outcomes**.	
Other non-CH or non-PBF biodiversity features	For other biodiversity features that don't qualify as CH or PBF: ▪ As a priority, **avoid** adverse impacts, ▪ Where avoidance is not possible, follow the **mitigation hierarchy** to minimize/mitigate adverse impacts, ▪ Only consider offsets ats a last resort measure, Adopt a precautionary approach and apply **adaptive management practices** with measures response to changing conditions and informed by the result of monitoring throughout the **project lifecycle**.	
Invasive Alien Species (IAS)	Specific requirements for IAS include: ▪ Avoid and **proactively prevent** accidental or deliberate introductions of IAS, ▪ **No intentional introduction** of IAS, ▪ Identify potential **risks, impacts and mitigation options** related to accidental transfer/release of IAS, **Control spread** of any established IAS.	
NOT APPLICABLE TO PROJECT (EXCLUDED FROM BMP)		
Protected Areas / Internationally Recognized Areas	Where the project/activity occurs in a legally protected or internationally recognised area: ▪ Identify and assess potential **project-related impacts** and apply the **mitigation hierarchy**, so that project impacts will not compromise the integrity, conservation objectives and/or biodiversity importance, ▪ Development is to be **legally permitted,** ▪ Management plans for protected areas to be reviewed and alignment with any relevant measures, ▪ **Consultation** with protected areas managers and any affected communities or other relevant stakeholders, ▪ **Promote and enhance conservation objectives** and effective management of the protected area through **additional programmes**.	 The ESDD concluded that none of the subprojects are located within nationally or internationally designated protected areas or internationally recognized areas such as KBAs/IBAs, etc.

Aspect of Biodiversity	EBRD ESR6 requirements	Applicable to Project? (based on the ESDD, ERM 2025)
APPLICABLE TO PROJECT		
Critical Habitat (CH)	**Critical habitat assessment** to be undertaken as relevant and informed by the ESIA scoping phase. No activities to take place in areas of critical habitat unless: ▪ No other **alternatives** in habitats of lesser biodiversity value, ▪ **Stakeholders** are consulted, ▪ **Legally permitted**, ▪ **No measurable adverse impacts** on critical habitat values, ▪ Project designed to **deliver Net Gains (NG)** for critical habitat, ▪ No net reduction in population of **CR/EN species,** ▪ Appropriate long-term **biodiversity monitoring and evaluation program** (BMEP) integrated into the project adaptive management program, ▪ As a **last resort, biodiversity offsets** may be considered, ▪ Mitigation strategy, including NG, to be described in a **Biodiversity Action Plan (BAP) or Biodiversity Management Plan (BMP**) where appropriate.	 The ESDD screened for critical habitat and concluded no critical habitat for the Project.

Source: EBRD ESR6 (EBRD ESP, 2024), ESDD report for the Project (ERM, 2025)

2.3 GIP GUIDELINES CONSIDERED

The Framework BMP also seeks to align with Good International Practice (GIP) for managing and mitigation biodiversity impacts for solar energy projects. International and regional (European) guidelines considered widely as being examples of GIP that were reviewed and used to inform the Framework BMP included:

1. "*Good Practices for Biodiversity Inclusive Impact Assessment and Management Planning*" (Hardner *et al*., 2015);
2. *"A cross-sector guide to implementing the Mitigation Hierarchy"* (Ekstrom *et al.,* 2015); and
3. *"Mitigating biodiversity impacts associated with solar and wind energy development. Guidelines for project developers*" (Bennun *et al.,* 2021).

3. APPROACH TO BIODIVERSITY MANAGEMENT

The recommended approach to biodiversity management for the Project, aligned with the requirements of EBRD ESR6 (described also in section 2.2: 'Applicable Standards') is as follows:

- Objective to achieve at least **NNL of biodiversity for PBF species** (7 bird species concerned);
- Ensuring that relevant **stakeholder consultation** takes place (as necessary);
- Ensuring that the Project is **legally permitted** in terms of relevant national laws in Hungary;
- Implementing the **mitigation hierarchy** with a focus on avoiding and minimizing impacts where possible before restoration (offsets/compensation as a last resort);
- Incorporating **adaptive management principles and practices** into management planning, informed by monitoring during pre-construction, cosntruction and operational phases; and
- **Controlling Invasive Alien Species (IAS**) – focused on plant species.

This approach forms the framework for developing the BMP for the Project and is described further in **Annexure B** in Chapter 10 of this Framework BMP document

4. BIODIVERSITY MANAGEMENT PRIORITIES

A brief summary of the biodiversity values associated with the Project and potential impacts related to the Project construction/operation on each of these aspects of biodiversity is provided here in Table 4-1 to contextualise the Project and identify biodiversity management priorities.

This indicates that BMP priorities would focus on the PBF bird species, however aspects of habitat restoration and invasive/alien plant species control should also be covered by the BMP.

For further information and details on the baseline information (species lists, etc.), see **Annexure C** in Chapter 10 of this Framework BMP document. *The ESDD report (ERM, 2025) should also be referred to for further information.*

In line with the **mitigation hierarchy described in the EBRD PR6 Guidance Note**, the Project is expected to **avoid** impacts on biodiversity wherever possible. Where avoidance is not feasible, the Project must **minimise**, **mitigate**, and—where necessary—**restore** and **offset** adverse effects, in accordance with **relevant legislation and Good International Practice (GIP)**.

These principles are reflected in the management approach and structured mitigation actions set out in Table 4-1, over the page.

TABLE 4-1 SUMMARY OF BIODIVERSITY MANAGEMENT PRIORITIES

Receptor	Potential Project-related Risks & Impacts	Significance	Mitigation Hierarchy Step	Existing or Embedded Mitigation / Controls[2]	Management Priority for BMP?
1 PROTECTED AREAS / INTERNATIONALLY RECOGNISED AREAS					
The nearest protected areas (Natura 2000) are located a distance of over 1.2 km from the Project and internationally recognized areas (such as IBAs) even further at >6 km distance.	None likely given the distance of the Project from protected areas/IBAs.	Negligible/none	Avoid	▪ Project located >1 km from nearest designated area, no further mitigation required.	No. Given there are no likely interactions or impacts on identified protected areas/internationally recognized areas, this will not be considered further in the BMP.
2 ECOSYSTEMS & HABITATS					
Each sub-project is located within a heavily cultivated agricultural setting comprising croplands, hayfields, and pastures, where habitats are of limited ecological value and consist mainly of altered or secondary saline grassland.	Loss of modified habitats of low ecological value and contribution to fragmentation of habitat. Likely to be of limited significance given the existing levels of degradation and fragmentation at the landscape level.	Negligible/Low	Minimize Restore	▪ Topsoil Management: Topsoil will be salvaged and reused for site restoration and final profiling. Reuse rules: topsoil must be returned as the uppermost layer, with a *maximum combined thickness of 1 m*; reuse elsewhere triggers a soilprotection fee. ▪ Unpermitted removal or mixing with subsoil is prohibited. Reuse elsewhere requires a soil-protection fee. Compaction will be mitigated through agrotechnical methods (deep loosening, disking, tilling) under optimal moisture conditions. Recordkeeping of salvaged soil volumes and enduse will be maintained for five years. ▪ Water Use and StormWater Drainage: Drainage design will ensure that runoff from panel rows, trenches, and substations does not cause flooding or waterlogging of adjacent farmland. Terrain modifications that could create surface depressions will be avoided or remediated. Transformer yards will discharge through oil separators with automatic shut-off.	No. Only modified habitats of limited ecological value will be impacted.

[2] Existing or embedded controls refer to those mitigation measures and actions for protecting biodiversity that form part of any permit conditions for the Project or agreed to with the relevant environmental authorities, as identified in the ESDD Report (ERM, 2025).

Receptor	Potential Project-related Risks & Impacts	Significance	Mitigation Hierarchy Step	Existing or Embedded Mitigation / Controls[2]	Management Priority for BMP?
				▪ Habitat and Connectivity: In accordance with Bükk NP recommendations, existing grassland, woody, and shrubby habitats along the Ostoros Stream ecological corridor will be preserved. Buffer zones and tree belts will be established along specific site boundaries to maintain ecological connectivity and provide foraging and nesting habitat.	**Yes.** Management measures to preserve connectivity and prevent further disturbance to the nearby Ecological Corridor should be included in the BMP.
3 FLORA (including Invasive and Allergenic Species)					
Only common, disturbance-tolerant/ruderal plant species of Least Concern recorded. No protected, rare, or endemic species recorded.	Localised loss of common/ruderal flora species only, resulting in a negligible significance impact.	Negligible - Low	Avoid Minimize	▪ Pest / IAS Management: Invasive and allergenic plant species will be controlled through timed mowing before seed maturation (July–August), as required by permit conditions. Herbicide use is restricted and only permitted under justified necessity. Machinery arriving on site must be cleaned to prevent seed transfer. Stockpiled topsoil will be kept free of invasive fragments and monitored during storage. ▪ Habitat Preservation: On-site trees and shrubs will be preserved in accordance with Bükk NP recommendations and permit requirements.	No. Management of native flora species is not considered a priority given the absence of conservation-important species and dominance of modified habtiats and degraded vegetation communities.
Several invasive alien species/weeds common to agricultural landscapes were identified.	Potential intorduction and spread of existing invasive alien species/weeds facilitated by disturbance and machinery operation during construction (particularly relevant to the Ecological Corridor the Ostoros stream).	Low - Medium	Avoid Minimize Restore		**Yes.** Invasive Alien Species (IAS) control and management is relevant (particualrly for the Ecological buffer Ostoros stream) and this could either be integrated into the BMP or be addressed in a seperate IAS control plan and programme for the Project.
4 FAUNA					
Birds Several species of locally common passerines (perching birds) and raptors. Seven species qualify as PBF:	Breeding bird disturbance and nest destruction, especially for ground-nesting birds such as Eurasian Skylark, which are known to adapt to less intensively cultivated farmland.	Moderate	Avoid Minimize Restore	▪ **Seasonal Restrictions:** Construction works are prohibited during the bird nesting season (February 16 – July 14). Shrub and tree removal is restricted to August 15 – March 1. These conditions apply to designated sites and land parcels as defined in the permits. ▪ **Protected Species:** Immediate suspension of work is required if any protected species are observed on site.	**Yes**. In particular, the management of PBF bird species is considered a priority for the BMP (see Chapter 5 that follows).

Receptor	Potential Project-related Risks & Impacts	Significance	Mitigation Hierarchy Step	Existing or Embedded Mitigation / Controls[2]	Management Priority for BMP?
Aquila heliaca – Eastern Imperial Eagle *Aquila pomarina* – Lesser Spotted Eagle *Ciconia ciconia* – White Stork *Coracias garullus* – European Roller *Falco cherrug* – Saker Falcon *Falco peregrinus* – Peregrine Falcon *Pernis apivorus* – European Honey-buzzard	Disturbance and nest destruction during the bird breeding season, particularly in vegetation and on utility poles. ▪ Risk of disrupting ecological connectivity along the ecological corridor, its functions and potential disturbance to strictly protected species confirmed by Bükk NP Directorate (*Corvus corax*, *Motacilla flava, Buteo lagopus*).			▪ **Habitat Measures:** Preservation of existing trees and shrubs project-wide and creation of additional tree shelterbelts along site boundaries are required under Bükk NP and permit conditions. ▪ **IAS / Groundcover Management:** Under-panel vegetation will be maintained mechanically (mowing or grazing); herbicides may only be used as a last resort and with justification. Timed mowing in disturbed areas will prevent invasive plant seed set..	
Mammals Locally common small and medium-sized mammal species that are of LC, common to agricultural areas in Europe.	Polarized light pollution acting as an ecological trap. Risk of disrupting ecological connectivity, degrading buffer functions and potential disturbance to species.	Low	Avoid Minimize	▪ Preserve areas designated as ecological corridor by minimizing disturbance and maintaining connectivity. ▪ Use solar panels with anti-reflective coating to minimize polarized light pollution that can affect wildlife. ▪ Design perimeter fencing to allow movement of protected species (e.g., amphibians, small mammals). ▪ Rescue and release any animals (particularly protected amphibians, reptiles, and small mammals) found in trenches daily and before backfilling. ▪ Install underground cables to eliminate above-ground hazards for birds. ▪ Keep excavation trenches open for the shortest possible duration. ▪ Schedule trenching activities outside the amphibian breeding season (i.e., between March 15 and May 15). ▪ Cover unattended open pits to prevent animal entrapment.	No. Management of terrestrial fauna (small mammals, amphibians) is not considered a key priority given that species recorded or expected within the Project area are of Least Concern (LC), commonly associated with agricultural landscapes, and no conservation-significant or range-restricted species have been identified.
Amphibians The recorded species (*Bufo bufo*) and other amphibian species are typically of Least Concern (LC) globally according to IUCN and may include nationally protected species.	Risk of disrupting ecological connectivity, degrading buffer functions and potential disturbance to species likely occuring on site. Potential amphibian mortality during excavation and trenching.	Low	Avoid Minimize		

Receptor	Potential Project-related Risks & Impacts	Significance	Mitigation Hierarchy Step	Existing or Embedded Mitigation / Controls[2]	Management Priority for BMP?
				▪ Develop a monitoring plan to assess the impacts of both polarized and non-polarized light pollution on local fauna (e.g., birds, bats, insects), including effects on behaviour and populations. ▪ Implement a long-term monitoring program to evaluate the environmental and ecological impacts of the solar park, involving independent experts and representatives from the national park. ▪ Use the monitoring results to inform and adapt impact mitigation strategies throughout the project lifecycle.	

5. CRITICAL HABTIAT / PBF IDENTIFICATION AND REQUIREMENTS

5.1 CH/PBF SCREENING

During the ESDD (ERM, 2025), a high-level screening was done for Critical Habitat (CH) and Priority Biodiversity Features (PBF) using the EBRD criteria and thresholds in accordance with EBRD ESR 6 and its Guidance Note 6. Among the EBRD criteria for CH and PBF considered, only *Criterion 2 – Threatened Species* is relevant for this Project, as all other criteria were screened out, as per Table 5-1 below. Importantly, the Project does not qualify as CH but only PBF.

TABLE 5-1 EBRD CRITERIA FOR CH AND PBF CONSIDERED FOR THE PROJECT

Criterion	CH	PBF	Relevant to Project?
Criterion 1: Priority ecosystems			
Threatened ecosystems	EAAA (Ecologically Appropriate Area of Analysis) is a priority habitat listed in Annex I of the EU Habitats Directive (HD)	EAAA is a habitat listed in Annex I of the EU HD or Resolution 4 of Bern Convention	No – no Annex I habitats or Res 4 habitats present, not screened further
	EAAA is an IUCN Red-list CR/EN ecosystems (>5% global extent)	EAAA is an IUCN Red-list CR/EN ecosystems (<5% global extent)	No – only modified ecosystems present and no CR/EN types, not screened further
	EAAA is a high priority ecosystem type at national level	-	No – only modified ecosystems, not screened further
Criterion 2: Priority Species and their habitats			
Threatened species	EAAA for species listed in Annex IV of EU HD	EAAA for species listed in Annex II of the EU HD, Annex I of EU Birds Directive or Resolution 6 of Bern Convention	**Yes** – several (7) bird species qualify as PBF given their listing in Annex I of EU Birds Directive and/or Res 6 of Bern (no CH triggered)
	EAAA supports globally CR/EN species (>0.5 % of global population OR <5 reproductive units	EAA supports globally CR/EN species (<0.5 % of global population OR <5 reproductive units	**Yes** – Saker Falcon (EN globally) present but only one breeding pair observed, qualifies as PBF only (not CH)
	EAAA supports globally VU species that could upgrade to EN/CR status	EAAA supports globally VU species	**Yes** – Eastern Imperial Eagle qualifies as PBF given its globally VU threat status (not CH)
	EAAA for important concentrations of Nationally or regionally listed CR/EN species	EAAA for regularly occurring nationally or regionally listed CR/EN species	No -no regional/national CR/EN species regularly occurring, not screened further
Restricted-range species	EAAA supports ≥ 10% of the global population AND >10 reproductive units of restricted-range species	EAAA for regularly occurring restricted-range species	No – no restricted-range species documented, not screened further

Criterion	CH	PBF	Relevant to Project?
Migratory and congregatory species	EAAA supports ≥ 1% of the global population of key species	EAAA recognized as an important site for migratory birds (as per Birds Directive/other process)	No – no significant migratory/ congregatory species, not a key area supporting these areas or functioning as stop-over site

Source: ERM, adapted from EBRD

Based on Table 5-1, threatened ecosystems, restricted-range species and migratory/congregatory species were not screened further as these do not apply to the Project.

In terms of criterion 2: threatened species which applies to the Project, an Ecologically Appropriate Area of Analysis (EAAA) approach was used to support the further screening of CH/PBF, in line with the EBRD ESR6 Guidance Note (GN6). The EAAAs for key species considered in the screening were delineated based on the known ecological characteristics and habitat preferences/requirements of each species, particularly during breeding and foraging periods, using best available literature and expert judgment. This is documented in Table 5-2.

The seven bird species in Table 5-2 qualify as PBF for the Project:

- Saker Falcon, *Falco cherrug*
- Peregrine Falcon, *Falco peregrinus*
- Eastern Imperial Eagle, *Aquila heliaca*
- Lesser Spotted Eagle, *Aquila pomarina*
- European Honey-buzzard, *Pernis apivorus*
- European roller, *Coracias garrulus*
- White Stork, *Ciconia ciconia*

None meet the quantitative thresholds for CH designation.

TABLE 5-2 PBF IDENTIFIED FOR THE PROJECT

#	Species	Threat Status (IUCN)	Population Size Estimates and Trend (IUCN)	Reason(s) for PBF	EAAA Considered
1	Saker Falcon *Falco cherrug*	EN globally and in Europe	Europe: 860 – 1,300 individuals Hungary: 140 - 180 (breeding pairs) Decreasing globally/Europe	Globally EN but not meeting CH thresholds Listed in Annex I of EU Birds Directive Listed in Resolution 6 of Bern Convention	Breeds in open landscapes such as steppe, semi-open agricultural mosaics, and lowland forest-edge habitats and has adapted its hunting territories to include open agricultural lands that also typically support key prey species such as ground squirrels. Consequently, a 3-5 km radius around the Project footprint was applied, consistent with the typical local movement distances for raptors such as this, and which extends to include remaining steppe as well as agricultural land also used as hunting areas (adapted). While the site's open landscape may offer suitable hunting habitat for this species, there is no known evidence that the area supports a significant or substantial portion of the Saker Falcon's European or global population. Also, given that agricultural land is readily available in the region, this should not qualify as critical habitat for this species as there are many alternatives that would also not trigger thresholds of EBRD. Consequently, the EAAA is used for PBF assessment purposes but it is not considered a key factor in determining critical habitat necessary for the long-term viability of the species.
2	Peregrine Falcon *Falco peregrinus*	LC globally and in Europe	Europe: 32,200 – 62,100 individuals Hungary: 50 – 70 (breeding pairs) Increasing globally/Europe	Listed in Annex I of EU Birds Directive Listed in Resolution 6 of Bern Convention	Typically occupies open landscapes, coastal cliffs, river valleys, urban areas (nesting on tall buildings or towers) and agricultural mosaics. It nests on high ledges, cliff-faces or man-made tall structures, and forages over open fields, wetlands and urban settings, preying on medium-sized birds. Consequently, a 3-5 km radius around the Project footprint was applied, consistent with the typical local movement distances for raptors such as this, and which extends to include remaining steppe as well as agricultural land and modified landscapes/semi-urban areas also used as hunting areas (adapted). While the Project area may offer potential nesting or foraging opportunities for the species (particularly if tall structures or open landscapes are present), there is no available evidence that this site supports a significant proportion of the species' European or global population or plays a critical role in its long-term viability. Also, given that agricultural land and other modified landscape are readily available in the region, this should not qualify as critical habitat for this species as there are many alternatives that would also not trigger thresholds of

#	Species	Threat Status (IUCN)	Population Size Estimates and Trend (IUCN)	Reason(s) for PBF	EAAA Considered
					EBRD. Therefore, although the species is present and relevant, the EAAA is not considered to be Critical Habitat for the Peregrine Falcon and is used purely for the assessment of PBF.
3	Eastern Imperial Eagle *Aquila heliaca*	VU globally, LC in Europe	Europe: 3,900-260,000 individuals Hungary: 150 – 230 (breeding pairs) Decreasing globally, Increasing in Europe	Globally VU species Listed in Annex I of EU Birds Directive Listed in Resolution 6 of Bern Convention	Associated mainly with open landscapes and agricultural mosaics with scattered mature trees, forest-steppe mosaics, woodland edges and riparian zones. It typically nests in large trees or mature woodland patches and forages over open fields, grassland, wetlands and agricultural lands within a several-kilometer radius of the nest. The EAAA is defined as a 3–5 km buffer around potential nesting and feeding habitats, representing typical territory size for the species. The species is expected to occur only in low densities within the Project's area of influence, and the EAAA is unlikely to represent a critical area for its population.
4	Lesser Spotted Eagle *Aquila pomarina*	LC globally and in Europe	Europe: 34,200-46,200 individuals Hungary: 29 – 36 (breeding pairs) Stable globally, Increasing in Europe	Listed in Annex I of EU Birds Directive Listed in Resolution 6 of Bern Convention	Breeds in mixed woodland and agricultural mosaics, nesting in trees and foraging in open meadows and grasslands. A 3–5 km buffer around potential nesting and feeding habitats is applied, reflecting the species' typical foraging and territory range. Within the Project's area of influence, the species is expected to occur sporadically rather than regularly, and the EAAA is not considered essential for sustaining its national or regional population.
5	European Honey-buzzard *Pernis apivorus*	LC globally and in Europe	Europe: 241,000 – 350,000 individuals Hungary: 800 - 1000 (breeding pairs) Stable globally/Europe	Listed in Annex I of EU Birds Directive Listed in Resolution 6 of Bern Convention	This colonial raptor breeds in open agricultural landscapes and forages over grasslands and pastures. A 5 km radius is applied as the EAAA, reflecting typical breeding colony extent and foraging ranges observed in Central and Eastern Europe. The EAAA represents an ecologically relevant area for assessing potential impacts. Based on the species population data within this range is not expected to be significant at the national or regional level.
6	European roller *Coracias garrulus*	LC globally and in Europe	Europe: 102,000 – 208,000 individuals Hungary: 1,800 (breeding pairs) Decreasing	Listed in Annex I of EU Birds Directive Listed in Resolution 6 of Bern Convention	Prefers open farmland, forest edges, and scattered trees used for nesting and foraging. A 5 km buffer from the Project is used as the EAAA, corresponding to known foraging distances around breeding territories in Central and Eastern Europe and extends to include both natural and modified habitats used by this species.

#	Species	Threat Status (IUCN)	Population Size Estimates and Trend (IUCN)	Reason(s) for PBF	EAAA Considered
7	White Stork *Ciconia ciconia*	LC globally and in Europe	Europe: 502,000 – 563,000 individuals Hungary: 4,400 – 5,100 (breeding pairs) Increasing	Listed in Annex I of EU Birds Directive Listed in Resolution 6 of Bern Convention	Occupies agricultural landscapes and pastures, nesting on elevated structures and foraging in open grasslands. A 5 km radius EAAA is applied, consistent with typical foraging ranges around breeding sites. The area provides potential feeding habitat but is not considered significant to the maintenance of the species' overall population.

Source: IUCN threatened species database (https://www.iucnredlist.org)

5.2 PBF REQUIREMENTS

For the seven PBF bird species, the ecological requirements, known threats, conservation actions and opportunities relevant to each of these species was reviewed based on the information contained in the IUCN threatened species database (https://www.iucnredlist.org) and used to inform the most appropriate management and conservation actions for the Framework BMP (Chapter 6).

These are documented comprehensively for each species in **Annexure D** in Chapter 10 of the Framework BMP, and the key ones considered most relevant and appropriate for the Project are:

1 Habitat protection, enhancement and maintenance:

- the protection and maintenance of suitable grassland habitats
- preserving traditional land use (i.e. low intensity farming)
- maintaining hedgerows
- artificial habitat creation (e.g. mosaics of native grasslands and herb-rich meadows)
- retention of artificial habitats such as ponds, ditches, canals
- maintaining and improving breeding conditions and nesting opportunities
- maintaining/improving hunting and foraging habitats (e.g. mowing of grasslands to improve food supply)
- maintaining/increasing prey availability for raptors through habitat management

2 Protection of nesting/breeding sites:

- maintaining large trees
- protection of existing and potential nest sites
- creation of buffer zones around key breeding sites
- maintaining and improving breeding conditions and nesting opportunities
- restricting disturbance-causing activities during key breeding season (May – August generally)

3 Reduction of existing pressures and threats:

- reduction of pressures from intensive farming practices
- reduction in contaminants/poison sources from the environment (e.g. pesticides)
- anti-poaching controls
- predator controls

4 Monitoring:

- monitoring of species breeding and wintering populations

The above listed bird protection/conservation opportunities and actions were considered further as part of the BMP Framework towards developing suitable mitigation and management measures to support the protection of these species and align with the Project NNL objective for PBF.

6. BMP MANAGEMENT MEASURES AND ACTIONS

A preliminary list of appropriate biodiversity management measures and actions in Table 6-1 has been proposed here for consideration and to inform preparation of the Project-specific BMP. *The Framework BMP provides high-level information regarding these preliminary measures and actions, including further actions/next steps for the BMP, responsible parties and indicative timeframes.*

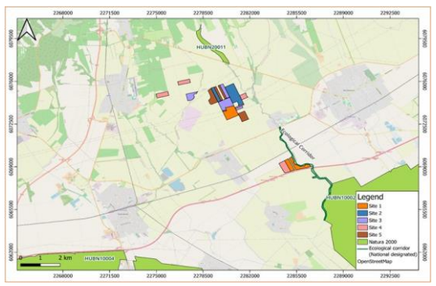
These have been informed by the overall approach to biodiversity management (Chapter 3), the management priorities identified (Chapter 4) and the requirements for PBF bird species (Chapter 5).

TABLE 6-1 PROPOSED BIODIVERSITY MANAGEMENT MEASURES AND ACTIONS

Actions	**Further Steps Required** (to be considered and further detailed during BMP preparation)	**Field Surveys Required?**	**Responsibility**	**Targeted Impacts / Biodiversity Risks[3]**	**Timeframe** (indicative)
1 Pre-construction Phase					
1a Identify existing hedgerows and trees for protection, as well as any open foraging areas habitat	➢ Identify existing PBF bird habitat including hedgerows, tree/shelter belts on site and in adjacent areas using a combination of GIS analysis based on available aerial photography/satellite imagery, analysis of existing data from project reports and supplemented by field surveys to verify these areas. ➢ Commit to the avoidance and protection of these areas in the BMP, as important habitat for nesting birds such as European Roller (PBF) for example (hedgerows, poplar trees), Saker Falcon for tall structures, and open pastures and wet meadows for White Stork (PBF). ➢ Demarcate sensitive habitats for protection as 'no-go' areas for construction on the site development plan.	Yes	External consultants (local ecologists)	Loss or disturbance of nesting habitats for PBF species such as European Roller and Saker Falcon; fragmentation of ecological corridors; destruction of tree/scrub areas used by passerines and raptors.	Prior to construction commencing
1b Conduct pre-construction wildlife (bird) surveys and checks for any nesting activity of birds	➢ Pre-construction bird surveys will need to be aligned with the breeding period for PBF bird species in particular (spring, summer typically: mid-March – end of August), acknowledging that some construction activities will commence during winter and outside of the breeding period[4]. ➢ Focus surveys on ground-nesting birds (e.g. Eurasian Skylark) within agricultural land and consider also existing shrubs/hedgerows and trees on the site and in adjacent areas for suitable perching sites or nesting sites for passerines (e.g. Eurasian Roller, PBF) and PBF raptor species. ➢ Identify any raptor/stork nests on existing powerline pylons within or near the development site and demarcate these on the site development plan, and plan to implement measures to avoid or reduce construction noise and visual disturbances/impacts near these locations where possible.	Yes	External consultants (local ecologists)	Disturbance or destruction of active bird nests, particularly during the breeding season (March–August); direct mortality; impacts to legally protected or PBF bird species present on site.	Prior to construction commencing
1c Commit to implementing Bird Flight Diverters and insulation against electrocution risk for the overhead powerline	➢ Plan to install Bird Flight Diverters (BFDs) as part of overhead powerline design in accordance with Good International Practice (GIP). ➢ Design and implement insulation of powerline components to reduce electrocution risk for raptors/storks according to GIP. ➢ *These design measures will also need to align with the specific conditions of the Building Permits.*	No	Developer External consultants	Electrocution or collision risk for raptors and storks using overhead powerlines; high mortality risk particularly for large-bodied birds.	Prior to construction commencing
1d Identify suitable areas for storing equipment, machinery and stockpiling of topsoil	➢ Identify areas for temporary works, camp sites, equipment storage/laydown areas, etc., away from sensitive bird habitat and known nesting sites. ➢ Any topsoil removed will need to be stockpiled for later use in rehabilitation and restoration of the site and habitat. *This is in alignment also with the specific conditions of the Building Permits for the sub-projects.*	Possibly	Developer External consultants (local ecologists)	Habitat degradation and disturbance due to compaction, pollution, or physical obstruction; potential indirect impact to nearby nesting birds or amphibians.	Prior to construction commencing
1e Develop plans to restore/recreate suitable habitats to support biodiversity	➢ Develop a habitat restoration and maintenance plan to inform small-scale restoration of grasslands and with the intention create a mosaic of grassland and herb-rich meadows	Yes	External consultants (local ecologists)	Long-term habitat loss or degradation of grassland and meadow habitats; loss	Prior to construction commencing

[3] The "Targeted Impacts / Biodiversity Risks" column identifies the key biodiversity-related impacts or risks that the corresponding management action seeks to mitigate, aligned with the EBRD Performance Requirement 6 (PR6) mitigation hierarchy.

[4] According to provided Project schedules, seasonal restrictions will be largely respected in the case of all PVPP Project components, with a significant portion of the works scheduled outside the bird breeding season, thereby complying with the seasonal restrictions imposed by the building permits. However, the installation of ground screws and supporting structures for the solar PV panels is currently planned between April and June 2026 which coincides with the bird breeding season and in this case pre-construction surveys and checks should be conducted by a qualified ornithologist prior to any construction activity taking place. These surveys should aim to identify the presence of ground-nesting species (such as Eurasian Skylark) and allow the expert to recommend appropriate mitigation measures to avoid disturbance during construction. Also, carrying out construction works in these areas during the currently scheduled period would constitute a deviation from the building permits and such deviations are "only allowed in particularly justified cases" and must be based on prior consultation with the Bükk National Park Directorate.



Actions	**Further Steps Required** (to be considered and further detailed during BMP preparation)	**Field Surveys Required?**	**Responsibility**	**Targeted Impacts / Biodiversity Risks[3]**	**Timeframe** (indicative)
	to support biodiversity, particularly species such as White Stork and European Honey-buzzard (PBFs). This will focus on the following: - Identify additional areas where grassland/meadow mosaic habitat may be recreated or restored, with a focus on the buffer zone area forming part of the Ecological Corridor along the Ostoros Stream in which proximity Solar I PVPP site is located. - Consult with the relevant authorities as necessary during restoration plan preparation. - Apply for any relevant authorizations/permits for undertaking restoration (where applicable). - Consider both passive and active restoration techniques, as relevant. - Avoid creating or allowing the establishment of woodland or shrubland in areas that were formerly grassland or pasture. - Incorporate tree/shrub planting where possible as part of restoration works (e.g. creation of shelter belts, protective buffer between the Project and the adjacent Ecological Corridor (specifically for the Solar I PVPP site). - Planting of native poplar trees and hedgerows would be advantageous to supporting nesting activities of European Roller (PBF bird species) for example. - Avoid backfilling and destruction of existing drainage ditches or restore these areas post-construction.			of feeding or nesting areas for PBF species like White Stork or European Honey-buzzard.	(ideally), at a minimum before the completion of construction
1e Plan to construct artificial nesting sites for PBF Raptor species at appropriate locations	➢ Identify suitable areas where artificial nesting sites for raptor species (PBF) could be implemented within the Project area and prioritizing locations along the ecological corridor and buffer zones with adequate foraging habitat. ➢ Develop a plan to install artificial nests and monitoring protocols to track actual bird usage of artificial sites, plan the installation height appropriately, orientation and spacing. ➢ Consult with the relevant authorities as necessary ➢ Apply for any relevant authorizations/permits (where applicable).	Yes	External consultants (local ecologists)	Reduced nesting success due to habitat modification or loss of natural nesting features; fragmentation of breeding habitat for falcons.	Prior to construction commencing (ideally), at a minimum before the completion of construction
1f Develop an IAS control plan and programme	➢ Develop an appropriate and site-specific plan and programme to manage Invasive Alien Species (IAS), with a focus on plants and agricultural weed species, including avoiding introduction of new plants and controlling the spread of existing species at the site. The IAS plan can be a stand-alone plan/program or form part of the Biodiversity Management Plan (BMP) for the Project. ➢ *The IAS plan/program also needs to align with the specific conditions of the Building Permits for the sub-projects.* ➢ This plan and program should include the following aspects: - Identify areas at particular risk and the associated species. - Consider species-specific control measures, aligned with EU guidelines and regulations for controlling these species. - Prioritise mechanical, non-chemical vegetation control methods for construction and operation phases. - Restrict herbicide use to essential cases only and ensure compliance with EU and national regulations. - Particular attention should be given to ecological corridor and buffer zones buffer zones (Solar I PVPP site) and adjacent grazed grasslands, since these areas are ecologically sensitive, support protected species, and contribute to the continuity of the National Ecological Network. Management practices should therefore prioritize minimizing disturbance and preventing the spread of invasive species within these zones. - Comply with authority requirements to mow IAS/allergenic plants before seed maturation (July–August). - A monitoring plan to monitor IAS pre- and post-treatment and inform further maintenance requirements is to be included.	Possibly	External consultants (local ecologists)	The introduction or spread of invasive alien plant species during construction and operation could lead to long-term degradation of native habitats, particularly in sensitive areas such as the Ostoros stream buffer zone, reducing habitat quality for protected and common species alike.	Prior to construction commencing
1g Develop and implement training plan	➢ Design and implement a plan for employee training to raise awareness around biodiversity and impacts as well as relevant management measures. ➢ This can be included as an Annex/Appendix to the BMP or integrated into other site management plans as appropriate. ➢ These can be in the form of interactive workshops, toolbox talks, field exercises, and protocols.	No	External consultants (local ecologists)	Lack of biodiversity awareness and insufficient understanding of mitigation measures among construction personnel could lead to unintentional damage to sensitive habitats, failure to implement agreed controls,	Prior to construction commencing

Actions	**Further Steps Required** (to be considered and further detailed during BMP preparation)	**Field Surveys Required?**	**Responsibility**	**Targeted Impacts / Biodiversity Risks[3]**	**Timeframe** (indicative)
				and increased risk of non-compliance with environmental commitments.	
2 Construction Phase					
2a Implement access controls, restrictions and avoidance measures	➢ In accordance with the plans and commitments for the pre-construction phase (see above), implement measures to control access, restrict activities and avoid disturbance of sensitive habitats, especially for breeding bird species. ➢ Avoid stockpiling materials, equipment and soil within adjacent natural areas, buffer zone of the corridor forming part of the Ecological Network (Solar I PVPP site).	No	EPC contractor	Uncontrolled construction access and material stockpiling near sensitive habitats could lead to habitat degradation, trampling, disturbance to breeding bird species, and the spread of invasive species within the ecological corridor buffer zones.	During construction
2b Align construction with key breeding periods for birds	➢ As far as possible, schedule noisy and intensive maintenance activities (e.g. roads maintenance or upgrades requiring earthworks or the use of noisy/heavy machinery) outside of sensitive/PBF bird breeding periods (e.g. spring, summer typically: mid-March – end of August). *This is in alignment also with the specific conditions of the Building Permits for the sub-projects that impose seasonal restrictions on construction and shrub/tree removal during the breeding season.* ➢ Activity scheduling should be considered per sub-project on a case-by-case-basis and informed by pre-construction breeding/nesting surveys for birds as well as habitat survey findings. It may be the case that restrictions apply fully or partially only to certain sub-projects like the Solar I PVPP in more sensitive areas (e.g. Ostoros Stream).	No	EPC contractor	Construction and maintenance activities conducted during the critical bird breeding season may cause nest abandonment, reduce breeding success, and disturb Priority Biodiversity Features within sensitive sub-project areas.	During construction
2c Implement Bird Flight Diverters (BFDs) and powerline insulation	➢ Implement BFDs and appropriate insulation in line with the planned design for the overhead powerline and in alignment with the Building Permit conditions.	No	EPC contractor	Overhead powerlines without mitigation pose a collision and electrocution risk to birds, particularly large-bodied and migratory species; this can lead to injury or mortality and negatively impact bird populations in the project area.	During construction
2d Implement standard GIP measures to minimise wildlife disturbance during construction activities	➢ Implement standard GIP construction measures to protect biodiversity and minimise disturbance to wildlife, including those related to other plans/ESMP and *in alignment with the Building Permit conditions,* for example (but not exclusively): - Invasive Alien Species (IAS) - Waste and wastewater management - Vehicle speed controls - Noise management - Dust control - Site inspections - Incident monitoring and reporting - Wildlife friendly fencing - Pest management - Excavation and trench management for underground powerlines - Wildlife rescue and release / shepherding protocols - Worker conduct/policy	No	EPC contractor	Without the application of standard good international practice (GIP), construction activities may result in significant noise, dust, waste, and direct harm to wildlife, increasing the risk of mortality, habitat degradation, and non-compliance with permit conditions.	During construction
3 Post-construction Phase					
3a Implement plans to restore / recreate habitats and monitor these	➢ In accordance with the habitat restoration plans and commitments prepared during the pre-construction phase (see above), implement habitat restoration at the site as soon as practically possible. ➢ Progressive rehabilitation and restoration is advisable, where possible (i.e. undertake restorative actions as works are completed for each sub-project). ➢ Develop measures for the ongoing management of restored grassland/meadow habitats through controlled grazing or mowing (to be included in overall restoration plan ideally).	No	EPC contractor External contractors External consultants	Failure to restore or recreate habitats following construction may result in long-term loss of ecological function, reduced biodiversity value, and the degradation of grassland/meadow habitats important for supporting PBF.	After construction has been completed

Actions	**Further Steps Required** (to be considered and further detailed during BMP preparation)	**Field Surveys Required?**	**Responsibility**	**Targeted Impacts / Biodiversity Risks[3]**	**Timeframe** (indicative)
	➢ Develop a plan and programme to monitor the success of restoration activities and implement adaptive management measures as needed (to be included in overall restoration plan ideally).				
4 Operational Phase					
4a Undertake bird fatality monitoring for the overhead powerline	➢ Design and implement a monitoring program to monitor the powerline for bird fatalities due to collision or electrocution. ➢ Align as far as possible with good international practice in Post-construction Fatality Monitoring (PCFM) for powerlines (e.g. IFC, EBRD and KfW, 2023). ➢ Use monitoring outcomes to inform adaptive management where required.	Yes	Operator External consultants (local ecologists)	Without systematic monitoring, bird mortality due to collisions or electrocution along the powerline may go undetected, preventing adaptive mitigation and leading to cumulative impacts on vulnerable and migratory bird species.	During first 1-2 years of operation, extended as necessary based on findings
4b Monitor restored/created habitats	➢ Monitor the success of restoration activities and implement adaptive management measures as needed based on monitoring outcomes.	Yes	Operator External consultants (local ecologists)	Lack of post-restoration monitoring may result in ineffective or failed habitat recovery, with no mechanism to trigger adaptive management if ecological conditions do not improve as intended.	During first 1-5 years of operation, extended as necessary based on findings
4c Implement monitoring for PBF bird species	➢ Confirm use of restored habitats and any recreated ones as well as artificial nests by PBF bird species through focused surveys during the breeding period (spring/summer).	Yes	External consultants (local ecologists)	Without focused monitoring, it will not be possible to verify whether PBF bird species are utilizing restored habitats or artificial nests, limiting the ability to assess conservation outcomes and adjust management strategies.	During first 1-2 years of operation, extended as necessary based on findings
4d Implement managed grazing of restored grassland/meadow habitats or artificial mowing	➢ Implement a plan for the ongoing management of restored grassland/meadow habitats through controlled grazing or mowing.	No	Operator	Inadequate management of restored habitats through grazing or mowing may lead to ecological succession, invasive species encroachment, and habitat degradation, undermining restoration objectives.	Lifetime of Project
4e Ban use of pesticides and herbicides	➢ Harmful pesticides and herbicides use is to be strictly controlled and guided by EU regulations and preferably prohibited during maintenance of habitats/vegetation.	No	Operator	Use of harmful pesticides and herbicides could negatively impact flora and fauna, reduce habitat quality, and harm pollinators or amphibian species, particularly in ecologically sensitive or restored areas.	Lifetime of Project

7. IMPLEMENTATION OF THE BMP

7.1 ROLES AND RESPONSIBILITIES

The Project is being implemented under a multi-tiered contractual structure that involves several key stakeholders, each with defined responsibilities throughout the development, construction, and operational phases.

Project Sponsor and Ownership Structure
The Project Sponsor, Szihalom Renewables EOOD, acts as the holding entity and maintains ownership of five Hungarian Special Purpose Vehicles (SPVs), which serve as the individual asset-owning companies for each sub-project:

- Zenu Solar Kft. – Szihalom PVPP Solar I and Szihalom BESS I sub-project
- Holmu Solar Kft. – Szihalom PVPP Solar II and Szihalom BESS II sub-project
- Urus Solar Kft. – Szihalom PVPP Solar III and Szihalom BESS III sub-project
- Pata Solar Kft. – Szihalom PVPP Solar IV and Szihalom BESS IV sub-project
- Egur Solar Kft. – Szihalom PVPP Solar V and Szihalom BESS V sub-project

Project Development and Management
The Project development and asset management activities across all five SPVs are coordinated by Renalfa Hungary Kft., the Hungarian subsidiary of Renalfa Solarpro Group. Renalfa Hungary Kft. acts as the local implementing entity and is responsible for ensuring regulatory compliance, stakeholder coordination, and alignment of project activities with lender and national requirements.

Engineering, Procurement, and Construction (EPC) / Operations and Maintenance (O&M)
Solarpro Technology Bulgaria (SPT), an EPC and O&M subsidiary of the Renalfa Solarpro Group, has been appointed as the EPC contractor. SPT is responsible for the engineering, procurement, and construction of the photovoltaic (PV) and battery energy storage system (BESS) components of the Project. SPT is also expected to undertake the long-term operation and maintenance (O&M) of the PV and BESS assets following commissioning.

Transmission System Operator
The Hungarian Transmission System Operator (MAVIR) is engaged under grid connection and access agreements and is responsible for implementing key elements of the grid infrastructure required for connection of the Project to the national grid network.

The key roles and responsibilities anticipated for BMP implementation are presented in **Error! Reference source not found.** and will need to be reviewed and updated as necessary during BMP preparation.

TABLE 7-1 BMP IMPLEMENTATION ROLES AND RESPONSIBILITIES

Role	**Responsibilities** (BMP-related only)
Project Manager (Renalfa Hungary Kft.)	• Ensure E&S requirements are communicated throughout business. • Responsible for providing the required resources (financial, technical and external support) to complete the required tasks and to facilitate appropriate level of company support to the Project. • Communicate the content of the BMP (including any updates) to external service providers/contractors (as relevant) and act as the focal point to promote implementation, performance monitoring and provide guidance and support. • Ultimate responsibility for ensuring implementation of required corrective actions including in response to identified biodiversity related non-compliances and incidents. • Ensuring that the BMP is kept up to date and appropriate to the nature and scale of the Project and ensuring effective implementation. • Ensure periodical review of the BMP implementation effectiveness in line with the provisions of the BMP. • Selection of specialized external contractors for specific tasks to be carried out as part of the implementation of BMP actions/measures such as (but not limited to) additional studies, specific interventions, stakeholder engagement and data analysis and reporting.
Service providers (external contractors e.g. Solarpro Technology Bulgaria)	External services providers/contractors contracted specifically by Spectris / the SPVs to develop and maintain the project (e.g. EPC contractor[5] for construction, maintenance contractors during operation) that have the following responsibilities concerning the BMP: • Ensure any relevant company specific mitigation measures/plans are appropriate and resourced with adequate budget. • Determine sequence and interaction of staff, resources and processes. • Ensure all activities on site are undertaken in accordance with the BMP, own E&S Management Plans, Procedures and Method Statements. • Responsible for the day-to-day management / compliance of the operations and activities. • Responsible for incidents reporting where relevant. • Responsible for ensuring any subcontractor performing works at the Project sites adhere to the relevant plans and procedures as well. • Responsible for maintaining site records. • Reporting the inspection and monitoring records to Project Manager and Spectris.
Specialized contractors / consultants (external)	External consultant(s) appointed by Renalfa Hungary Kft. to handle and support specific biodiversity-related matters and that have the following responsibilities concerning the BMP preparation and implementation: • Effective execution of the specific tasks assigned in conformity with the BMP action plan and according to contractual arrangements with Spectris. • Assist with developing any necessary supporting plans, programs and protocols as required (e.g. habitat restoration plans, monitoring programs). • Collaborate with local ecological NGOs (such as birdlife international, or Bükk National Park Directorate etc.) and experts particularly for carrying out monitoring and other field-based biodiversity activities. • Facilitate organization of additional studies and stakeholder engagement activity where necessary. • Inform the Project Manager about biodiversity performance and provide recommendations on mitigation measures to be implemented. • Periodical review of biodiversity management effectiveness. • Recommending adaptive measures and actions, as necessary • Support Spectris with reviews and updates to the BMP as necessary.

[5] At the stage of the due diligence completed by ERM, the EPC Contractor(s) had not yet been appointed.

Role	**Responsibilities** (BMP-related only)
	• Support with delivering training on implementation of the BMP and supporting plans and protocols. • Adhoc support onsite or remotely via phone/email as necessary.

7.2 REPORTING & COMMUNICATION

Reporting and communication allow for the developer and operator (and any external consultants/contractors) to communicate results that are appropriate and realistic, in a simple, timely and regular manner that allows for informed decision-making.

Key tasks related to reporting and communication for the BMP include:

- Finalizing the reporting and communication framework, including internal and external requirements and content;
- Ensuring competent experts are consulted to determine up-to-date requirements for reporting on external frameworks;
- Identifying timeframes;
- Identifying roles & responsibilities for internal and external reporting; and
- Establishing lines and mechanisms of communication.

There are likely to be several internal and external (third-party) reporting and communication requirements linked to different drivers that include:

- Internal reporting and communication in accordance with internal requirements and to inform BMP review and update and adaptive management based on monitoring outcomes;
- Local reporting requirements in terms of national legislation;
- Reporting required for projects financed by international financial institutions (i.e. EBRD);
- Corporate level sustainability reporting requirements relevant to the company (where relevant); and
- Any biodiversity disclosure requirements relevant to the company (where relevant)

7.3 INTERNAL REPORTING AND COMMUNICATION

Internal reporting and communication requirements and mechanisms will need to be described and defined by Renalfa Hungary Kft. (the developer/operator), together with timeframes (recommended at least annually, subject to review), and responsibilities for reporting and communication of key outcomes, towards meeting the following:

- Renalfa Renewables / SPV internal Environmental & Social Management System (ESMS) (as relevant);
- Industry-specific and/or ISO 14001 requirements (where applicable); and
- Reporting and communication to inform decision-making, BMP review and update, and adaptive management processes linked to monitoring outcomes.

7.4 EXTERNAL REPORTING AND COMMUNICATION

External (third-party) reporting and communication requirements and mechanisms will need to be described and defined, together with timeframes and responsibility for reporting and communication of outcomes, including but not necessarily limited to:

- Reporting and communications requirements for external financing (e.g. international financial institutions);
- Sustainability reporting at the corporate level (e.g. ESRS, GRI) where applicable; and
- Biodiversity disclosure requirements where relevant (e.g. TNFD).

7.5 REVIEW AND UPDATES

The BMP is intended to be a 'living document' that should be reviewed and updated as actions are developed and implemented, and as the process of adaptive management guides delivery of biodiversity outcomes in meeting the defined objectives. A regular review frequency needs to be agreed with lenders (e.g. annually during construction and for the first 2-3 years of operation), whereby BMP actions, success indicators/criteria and targets are reviewed against M&E outputs and taking into consideration also stakeholder expectations and feedback.

Urgent updates in line with the principle of 'adaptive management' can be the responsibility of the developer/operator of the solar plant Project (Renalfa Hungary Kft.), with support from external consultants, however any material changes to intervention design, the timing of monitoring activities, etc. should be made in consultation with a third-party consultant to ensure accountability.

Typically, lenders including EBRD prefer that the same consultant who authored the BMP in its original format be retained for the sake of consistency and continuity, however this is not a prescriptive requirement.

8. NEXT STEPS

Key next steps towards the planning and implementation of appropriate biodiversity management for the Project are presented below in Table 8-1, together with responsibilities and timeframes.

TABLE 8-1 NEXT STEPS TOWARDS THE IMPLEMENTATION OF THE BMP FRAMEWORK

#	Next Steps	Responsibility	Timeline
1	Develop the Project-specific BMP, informed by the Framework BMP and involving necessary stakeholder consultation	External consultant	Prior to construction commencing
2	Coordinate with local /in-country ecologists to complete supplementary pre-construction ecological surveys focused on habitats and breeding birds	Local / in-country ecologists External consultant) to coordinate	Prior to construction, aligned with breeding season in spring/summer (mid-March to end of August)
3	Implement relevant BMP measures during pre-construction, construction and operational phases	Developer EPC contractor	Pre-construction, Construction, Operation

#	Next Steps	Responsibility	Timeline
		Operator	

9. REFERENCES

European Bank for Reconstruction and Development (EBRD) (2024). Environmental and Social Policy. October 2024. https://www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html

Ekstrom, J., Bennun, L. and Mitchell, R. (2015). A cross-sector guide for implementing the Mitigation Hierarchy. The Biodiversity Consultancy Ltd with inputs from the IFC (International Finance Corporation). Cambridge, United Kingdom. Available online at: https://www.csbi.org.uk/wp-content/uploads/2017/10/CSBI-Mitigation-Hierarchy-Guide.pdf

ERM (2025). Environmental and Social Assessment Report: 450 MW Solar PV Power Plant and 250MW/1,000 MWh BESS Project, Hungary. Unpublished report for EBRD and Renalfa Hungary Kft. Capital. Draft version, September 2025.

Hardner, J., Gullison, R.E., and Anstee, S. (2015). *Good Practices for Biodiversity Inclusive Impact Assessment and Management Planning.* Inter-American Development Bank. Retrieved from: https://publications.iadb.org/publications/english/document/Good-Practices-for-Biodiversity-Inclusive-Impact-Assessment-and-Management-Planning.pdf

International Union for Conservation of Nature (IUCN). (2025) The IUCN Red List of Threatened Species. https://www.iucnredlist.org/

10. ANNEXURES

10.1 ANNEX A: RELEVANT LEGISLATION

10.1.1 EUROPEAN DIRECTIVES

EU Habitats Directive:

In terms of the EU Habitats Directive[6] (amended 2013), both habitats and species of wildlife are considered. In terms of habitats, Annex I lists habitat types of community interest, that typically requires designation of SACs (Special Areas of Conservation – in terms of Natura 2000 protected areas network essentially). These are natural habitat types that are in danger of disappearance in their natura range or have a small natural range that warrants specific conservation action and attention. 'Priority' habitat types are also assigned in Annex I for specific habitats, and these are in particular danger of disappearance and warrant the strictest conservation measures.

Species listed in Annex II include animal/plant species of community interest. As to the restrictions that apply to species and their habitats listed in Annex IV of the Habitats Directive, most notable is Article 12 concerning the protection of species listed in Annex IV, as follows:

1. Member States shall take the requisite measures to establish a system of strict protection for the animal species listed in Annex IV (a) in their natural range, prohibiting:

(a) all forms of deliberate capture or killing of specimens of these species in the wild;

(b) deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation and migration;

(c) deliberate destruction or taking of eggs from the wild;

(d) deterioration or destruction of breeding sites or resting places.

EU Birds Directive:

In terms of the EU Birds Directive[7] (amended in 2013), species listed in Annex I "*shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution*".

10.1.2 NATIONAL LEGISLATION FOR HUNGARY

Hungary's national legal framework for biodiversity and nature conservation is based on a comprehensive set of primary acts (parliamentary laws) and implementing government/ministerial decrees. These legal instruments regulate the protection of natural values, habitats, species, and the sustainable management of natural resources, as well as the implementation of EU nature directives (Birds and Habitats Directives) and international commitments.

[6] European Union. (1992). *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)*. Official Journal of the European Communities, L 206, 7–50. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0043 (Accessed: May 2025).
[7] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

The key ones relevant to biodiversity, nature and wildlife conservation/protection are as follows:

- Act LIII of 1995 on the General Rules of Environmental Protection

  Framework law establishing principles, environmental impact assessment, and cross-cutting rules for biodiversity and habitats.

- Government Decree 314/2005 (XII.25.) on Environmental Impact Assessment (EIA) and Unified Environmental Permits

  Regulates EIA and unified environment-use authorization processes, essential for assessing impacts on biodiversity.

- Act LIII of 1996 on Nature Conservation

  The main statute for nature conservation, protected areas, species protection, Natura 2000 implementation, and sanctions.

- Government Decree 275/2004 (X.8.) on Natura 2000 Sites

  Rules for designation, management, and appropriate assessment for the Natura 2000 network.

- Ministerial Decree 14/2010 (on land-parcel mapping for Natura 2000)

  Parcel identifiers and maps for Natura 2000 site boundaries.

- 269/2007. (X. 18.) Government Decree on the Management of Natura 2000 Grasslands

  Land use rules for Natura 2000 grasslands.

- Act LV of 1996 on Game Protection, Game Management and Hunting

  Rules for management and protection of wild fauna, hunting seasons and licences, relevant to wild animal conservation.

- Act XXXVII of 2009 on Forests, Forest Protection and Forest Management

  Regulates forest protection and sustainable forest management, key for forest biodiversity and habitat conservation.

- Act XXVIII of 1998 on the Protection and Welfare of Animals

  Animal welfare and protection law, including wild animal treatment and certain species-protection provisions.

- 348/2006. (XII. 23.) Government Decree on the Protection, Keeping, Utilization, and Presentation of Protected Animal Species

  Detailed rules for protected and strictly protected animal species.

- 153/2009. (XI. 13.) FVM Decree on the Implementation of the Forest Act

  Technical rules for forest management and protection.

- Act LVII of 1995 on Water Management

  Regulates protection and sustainable use of surface and groundwater, important for freshwater habitats and wetlands.

10.2 ANNEX B: APPROACH TO BIODIVERSITY MANAGEMENT

10.2.1 ACHIEVE NNL OF BIODIVERSITY FOR PBF SPECIES

This is a specific requirement of EBRD ESR6 for PBF.

EBRD ESR6 requires that mitigation be implemented to achieve at least NNL (preferably NF) for PBF that stand to be impacted by the Project. This will need to be achieved over the long-term through measurable conservation outcomes.

These conservation actions and outcomes will need to be specific to the seven bird species that qualify as PBF for the Project.

10.2.2 UNDERTAKE APPROPRIATE STAKEHOLDER CONSULTATION

This is a specific requirement of EBRD ESR6 for PBF.

The BMP to be developed based on this framework will need to first identify what further stakeholder consultation needs to take place based on the management actions and mitigation measures proposed. Inputs from key stakeholders is advisable to ensure that actions align with any national or local conservation objectives for the PBF bird species that form the focus of the BMP. This will also be useful to understand any local contexts specific to these species, including insights into any existing opportunities, constraints and limitations that could influence decisions around conservation actions for the target PBF species.

As a minimum, it is advised that the following consultation takes place:

- Bükk National Park Directorate (the relevant regional nature/protected areas management authority/body) should be consulted, and further discussions may be necessary concerning alignment of the BMP measures with the recommendations of any permits/authorisation issued pertaining to biodiversity and any other matters that the Directorate raises.
- In addition, Non-governmental Organisations (NGOs) focused on wildlife conservation in the region should be identified and consulted with as needed. Examples are likely to include the local partner of BirdLife International in Hungary (MME: Magyar Madártani és Természetvédelmi Egyesület[8]), especially given that PBFs are bird species identified for the Project. Their current level of involvement in the region and willingness to engage remains unclear at this stage and will need to be considered further during BMP preparation, at an early stage in the process.

10.2.3 CONFIRM THE PROJECT LEGAL STATUS

This is a specific requirement of EBRD ESR6 for PBF.

[8] MME (Magyar Madártani és Természetvédelmi Egyesület), is the leading NGO and nature conservation organization in Hungary and works internationally as a member of the BirdLife International Partnership. The NGO undertakes practical work to conserve Hungary's biodiversity based on sound scientific research and advocates for the effective conservation of birds and their habitats by government at a national and local level and supports this work through educational programmes and its membership. Online at: https://www.birdlife.org/partners/hungary-magyar-madartani-es-termeszetvedelmi-egyesulet-mme/

The status of the Project with respect to the required permits and authorisations needs to be confirmed upfront. This was essentially covered under the ESDD completed by ERM (2025), with the following being key findings:

- The Project has secured all essential building and cable rights permits required for its implementation, while permitting for the BESS components is still ongoing.
- All permits were issued in July 2024 by the Heves County Government Office, in line with Hungarian legal requirements, and include environmental and biodiversity-related conditions set by the relevant authorities. Separate construction and easement permits were issued between December 2024 and January 2025 for the electrical cables. These include permits for cable installation, public utility connections, and adjustments to local low- and medium-voltage lines. The building permitting process for the BESS component has not yet been completed (expected by end of 2025). However, the BESS site was included in the environmental assessment carried out for the PV power plant component as part of the Preliminary Environmental Assessment prepared for the Project.
- According to Hungarian spatial planning regulations, development is strictly limited in ecological corridors and buffer zones to protect natural and semi-natural habitats and maintain ecological connectivity.

As a result, the permitting process incorporates biodiversity safeguards, and all required permits, are in place. The project's approach demonstrates compliance with both national environmental law and biodiversity conservation requirements.

10.2.4 APPLY THE MITIGATION HIERARCHY

This is a requirement of EBRD ESR6 for both PBF and non-PBF biodiversity features.

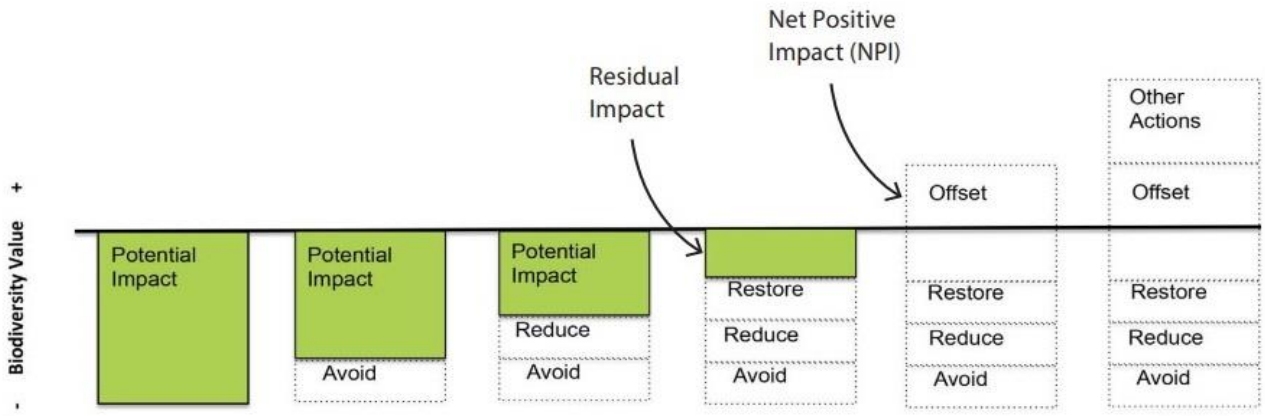
To align with EBRD ESR6, the Project is expected to integrate the mitigation hierarchy into all stages of development and operation. This requires the Developer to consider options to avoid impacts before considering minimization of impacts and restoration to address residual impacts. *Offsets as a means of compensating for 'significant' residual impacts are only to be considered as a last resort measure, after other measures have first been investigated in full.*

The mitigation hierarchy is a necessary and fundamental approach to managing biodiversity impacts to be addressed by the BMP, with the measures and actions reflecting due consideration of the mitigation hierarchy of controls, which seeks to avoid and mitigate impacts on biodiversity first, before considering restoration options, and with offsets only implemented as a last resort measure (i.e. once other options have been first considered and exhausted and where residual impacts remain that require compensation). See Table 10-1 and Figure 10-1.

TABLE 10-1 MITIGATION HIERARCHY

Mitigation Step	Description
Avoid	Measures taken to prevent irreplaceable loss of biodiversity or associated ecosystem services. Alternatives include site selection, design and scheduling.
Minimize / Reduce	Reduce or minimize the duration, intensity and/or extent of any impact that are not feasibly avoidable. Alternatives include physical controls, operational controls and abatement controls.
Remediate / Restore	Where disturbance to biodiversity or ecosystem services has occurred, remediation may be possible in the form of rehabilitation and restoration. Alternatives include re-establishing habitat types, re-establishing biodiversity values and re-establishing ecosystem services.
Offset	Offset or compensate for any residual impacts that cannot be avoided, minimized, or remedied on site. These include restoration offsets and averted loss offsets.

Source: adapted from Hardner *et al*. (2015)



Source: Hardner *et al*. (2015)

FIGURE 10-1 DIAGRAM ILLUSTRATING THE IMPACT MITIGATION HIERARCHY

10.2.5 ADOPT AN ADAPTIVE MANAGEMENT APPROACH

This is a requirement of EBRD ESR6 for both PBF and non-PBF biodiversity features.

Biodiversity and natural ecosystems can be inherently dynamic systems that may not always respond predictably to management measures, rehabilitation or restoration actions.

Given the complexity in predicting impacts and the effectiveness of mitigation measures for biodiversity over the long term, EBRD ESR6 requires an adaptive management approach, whereby mitigation and management measures are responsive to changing conditions and the results of monitoring throughout the Project lifecycle. Adaptive management informed by Monitoring and Evaluation (M&E) will therefore need to be integrated into the Project-specific BMP.

The early identification of any important issues, challenges, constraints to implementation of management/mitigation measures, failures of key actions and changes in the environment,

through an appropriately designed Monitoring and Evaluation (M&E) program, allows adaptive management solutions to be identified and tailored to the Project.

Adaptive management relies on a clear process of gathering data, evaluating the data and responding according to what the results indicate, as shown in Figure 10-2. *This approach is not limited to modifying previous approaches to the management of biodiversity but aims to produce a plan which contributes to new knowledge and learnings that can improve future management, alongside best short-term outcomes based on present knowledge.*

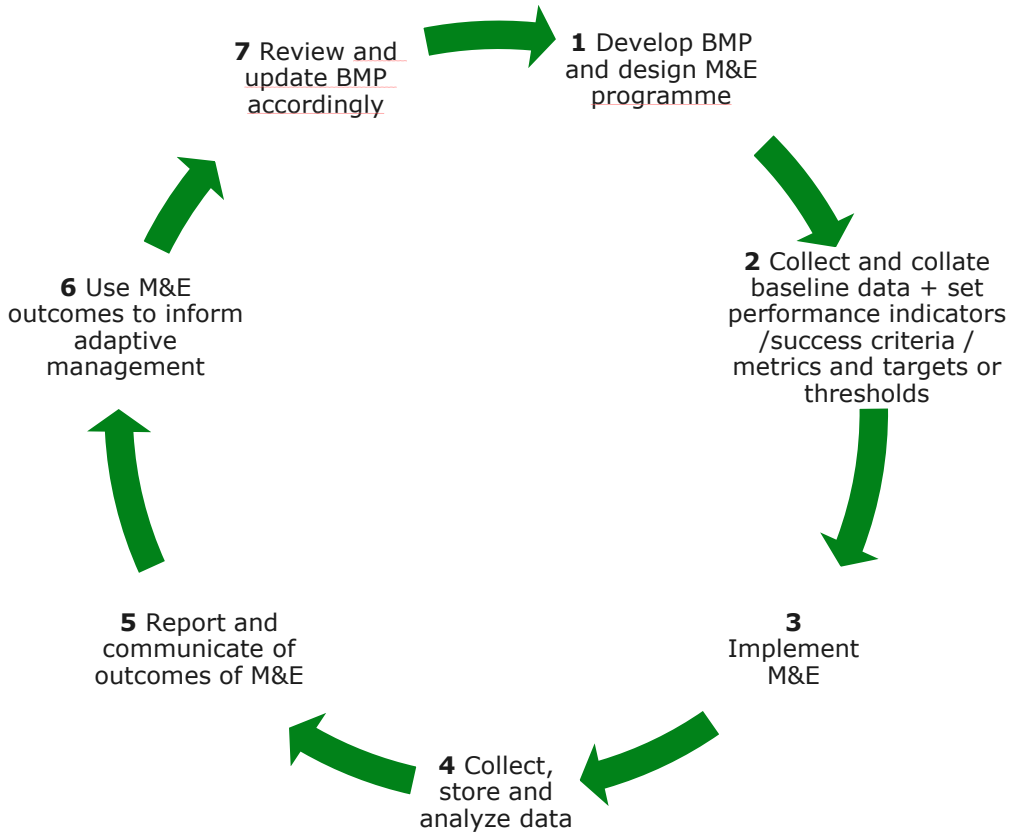


FIGURE 10-2 DIAGRAM SHOWING THE 'ADAPTIVE MANAGEMENT CYCLE'

Source: ERM (unpublished)

Adaptive management informed by M&E would focus on the following aspects in the BMP:

- Recording information to track performance of implementation of the BMP measures and establish relevant controls;
- Recommend the use of dynamic mechanisms (e.g. internal inspections, self-verification exercises, external audits) to verify compliance and progress toward desired management objectives and outcomes;
- Identify any discrepancies between success criteria, targets and actual performance;
- Implement adaptative management using a 'Plan-Do-Check-Act' approach to modify actions or implement new approaches to close gaps, as necessary;

- Update the BMP to reflect the outcome of ongoing regular M&E so that management actions and measures reflect the current understanding of impacts, success of implementation and progress of outcomes; and
- Monitoring actions are also to be reviewed and adjusted according to performance experience and actions.

The BMP is ultimately intended to be a 'living document' that should be reviewed and updated as actions are developed and implemented, and as the process of adaptive management guides delivery of biodiversity/conservation outcomes in meeting the defined NNL objective for PBF. A regular review frequency needs to be agreed to with lenders (e.g. annually during construction and for the first 2-3 years of operation, then modified as needed), whereby BMP actions, indicators/success criteria and targets are reviewed against M&E outputs and taking into consideration also stakeholder expectations and feedback.

Essentially the question that should be answered is:

> How successful has implementation of the BMP actions and measures been and what needs to or could be adjusted or improved and how*?*

A periodic review of performance indicators/success criteria and any related targets to achieving NNL will be important to check if these are being met and if these are indeed realistic in the first case. This should lead to an understanding of causes and corrective actions needed to ensure BMP objectives are being met.

There is also a component of 'management of change' which an adaptive management approach would achieve, by allowing for updates to the BMP as needed and as changes in the project and environment could change under various scenarios that cannot be easily identified or predicted at this early stage in the process:

- Any major amendments to the BMP that affect its application will be undertaken in consultation with the appropriate regulatory authorities, lender's and/or other key interested/affected stakeholders.
- Any fundamental changes to the Project could potentially result in a material change to the BMP, specifically with regards to the final layout of the Project infrastructure.
- Changes in the Project may occur due to unanticipated situations. Adaptive changes may also occur during the course of the project life cycle. Any fundamental changes to the project/operation that could potentially result in a material change to the BMP need to be considered, specifically with regards to the design, layout and activities involved. The BMP will be regularly reviewed and updated after any change in the context in which the Project operates and during the construction phase.
- New biodiversity risks or impacts may appear that require to be addressed over the life-cycle of the project and this will typically require a review and update of the BMP as necessary.

10.2.6 ADOPT A LIFE-CYCLE APPROACH

This is a requirement of EBRD ESR6 for both PBF and non-PBF biodiversity features.

Aligned with EBRD ESR6, the BMP must take a life-cycle approach to biodiversity management for the Project, by addressing all phases of the projects (entire life-cycle from design/planning,

construction, commissioning, operation, decommissioning, closure and, where applicable - post-closure). For the take of simplicity and given the nature of the Project, this has been taken to include construction, operation and decommissioning phases.

Decommissioning and closure would need to be addressed in future updates to the BMP, or a separate BMP for this particular phase may need to be developed prior to this phase in future (see further commentary in the text box below).

Recommendations regarding decommissioning of the Project in future

In future, the BMP will also need to be reviewed and updated prior to the decommissioning phase to ensure that relevant impacts/risks are accounted for in the BMP or alternatively a specific decommissioning phase BMP can be developed to inform site decommissioning and closure, or alternatively repowering.

As this is still decades away and uncertain, and site conditions and biodiversity requirements and procedures are likely to change (possibly significantly) over this period, developing such a plan or integrating these phases into the BMP to be developed in the short-term is not recommended. Instead, it is suggested that at least one year prior to decommissioning is planned, the operational BMP be reviewed and updated comprehensively and any necessary plans for repowering or decommissioning (e.g. site decommissioning, closure and rehabilitation/restoration plans) be developed timeously prior to decommissioning taking place. *The alternative would be to develop a new and entirely separate BMP specific to the decommissioning phase.*

10.2.7 INVASIVE ALIEN SPECIES MANAGEMENT

Where there is a risk of invasive alien species (plant species for this particualr Project) being introduced through the Project-related activities, or the Project constributing to the spread of exisitng IAS at the development site, it is required to include relevant management controls, and it is recommended that this be integrated into the BMP (unless addressed in another relevant management plan, or standalone IAS management plan).

For the Project, the ESDD (ERM, 2025) findings highlight the risk of invasive/alien plant species sptreasing at the site (based on the presence of existing undesirable invasive plant species) and recommends that an invasive species control protocol into the BMP), aligned with permit requirements, with consideration of the following:

- Implement control measures during construction to prevent the import of soil, materials, or equipment containing seeds or propagules of invasive alien species;
- Establish and enforce protocols for regular mowing of disturbed areas, timed before seed maturation (e.g. July–August), to prevent seed dispersal and reestablishment.
- Prioritize mechanical or non-chemical vegetation control methods for both construction and operational phases;
- Limit herbicide use to essential cases only, ensuring application is fully compliant with national and EU chemical use regulations;
- Pay particular attention in the southern Solar I PVPP site bordering the ecological corridor; and
- At the operational stage include avoidance of herbicide and pesticides use as conditions in the tendering and contracting documents with the vegetation control (e.g. weed and invasive species control) services providers.

10.3 ANNEX C: BASELINE SUMMARY FOR BIODIVERSITY

A summary of the key baseline conditions and biodiversity receptors (including protected areas, ecosystems, habitats, flora, and fauna) is presented here, based on the findings of the ESDD report (ERM, 2025). Summaries are provided for each of the five sub-projects, as follows: Szihalom Solar I–V and associated BESS facilities.

10.3.1 PROTECTED AREAS / INTERNATIONALLY RECOGNIZED AREAS

None of the sub-projects are located within nationally or internationally designated protected areas. The nearest protected areas are:

- *HUBN20011 Ostoros-patak menti erdőspuszta* (Forest-Steppe along the Ostoros Stream) SCI, located approximately 1.2 km north of the Project.
- *HUBN10002 Borsodi-sík* (Borsod Plain) SPA, located approximately 1.5 km southeast of the Project.
- *HUBN10004 Hevesi-sík* (Heves Plain) SPA, located approximately 6 km southwest of the Project.

Ecological Corridor: The southern Solar I PVPP and eastern Solar IV PVPP sites border an Ecological Corridor along the Ostoros Stream, part of Hungary's National Ecological Network:

- The corridor comprises a mosaic of semi-natural habitats that connect larger conservation areas and support ecological connectivity.
- It is used as a foraging area by several strictly protected bird species, including Eastern Imperial Eagle (*Aquila heliaca*), European Roller (*Coracias garrulus*), Saker Falcon (*Falco cherrug*), Peregrine Falcon (*Falco peregrinus*), Lesser Spotted Eagle (*Clanga/Aquila pomarina*), and European Honey-buzzard (*Pernis apivorus*).
- The corridor also supports protected plant species, such as *Clematis integrifolia* and *Phlomis tuberosa*.

In ERM's opinion, given the Project's distance from Natura 2000 sites and the nature of its activities, the potential for direct or indirect impacts on the conservation objectives of these areas is **low to negligible**. The proximity to the ecological corridor, however, warrants continued monitoring and management through the BMP.

10.3.2 ECOSYSTEMS, FLORA AND HABITATS

The Project area is located within a modified agricultural landscape characterized by arable fields, fragmented shrublands, and small-scale planted woodlands.

The dominant vegetation types recorded within the Project parcels include:

- Annual weed communities typical of disturbed arable land (*Caucalion lappulae*, *Hibisco–Eragrostietum minoris*);
- Shrublands dominated by *Prunus spinosa* and *Crataegus monogyna*;
- Planted woodlands and shelterbelts primarily composed of *Robinia pseudoacacia*, occasionally interspersed with *Fraxinus excelsior*; and

- Closed grasslands along field margins and under scattered trees, containing disturbance-tolerant species such as *Bromus sterilis*, *Avena fatua*, *Stellaria media*, and *Poa pratensis*.

These habitats are highly fragmented, with ecological value concentrated mainly in the linear shelterbelts that divide agricultural plots. Although artificial in origin, these belts - typically 10–12 meters wide - play an important ecological role (although limited in terms of supply) in terms of providing buffering, refugia for disturbance-tolerant flora and small fauna, providing corridors for species movement and supporting ecosystem services, such as beekeeping and pollinator activity.

The ground flora largely consists of ruderal, adventive, and disturbance-tolerant native species. The broader landscape retains small remnants of Pannonian steppe vegetation and several protected or regionally significant plants have been documented in the wider area; however none of these are considered globally or regionally threatened, being classified as Least Concern (LC) or not evaluated by the IUCN.

Given the highly modified and agricultural nature of the Project area, along with the limited extent and ecological value of the existing vegetation, impacts on habitats and ecosystems are expected to be **low**. The remaining semi-natural features, such as linear shelterbelts and field margins, retain some local ecological importance and should be preserved where it is feasible to maintain connectivity and small-scale biodiversity functions.

10.3.3 FAUNA

The Project area is situated within an intensively modified agricultural landscape, offering limited habitat diversity and supporting mainly disturbance-tolerant and generalist fauna. Faunal diversity within the Project parcels is relatively low, as the area functions primarily as a foraging and transit zone, with few opportunities for breeding or long-term residency.

Avifauna

Despite the degraded condition of local habitats, the broader region supports a rich avifauna and according to the Bükk National Park Directorate (BNPI), more than 130 bird species have been recorded in the surrounding area, including several strictly protected raptors and Annex I species under the EU Birds Directive. Key species of conservation interest include:

- Saker Falcon (*Falco cherrug*) – *Endangered (EN) globally and in Europe.* One active artificial nest box is present on a 400 kV transmission pole approximately **100 m east of the Solar I PVPP site**.
- Eastern Imperial Eagle (*Aquila heliaca*) – *Vulnerable (VU) globally; strictly protected in Hungary.* A known nest is located **2.8 km southwest of Project parcel 071/12**, indicating potential foraging use of the area.
- Lesser Spotted Eagle (*Aquila pomarina*) – *Endangered (EN) regionally; strictly protected in Hungary.* The species has been observed regionally and likely uses the broader area for foraging.
- Peregrine Falcon (*Falco peregrinus*) – *Least Concern (LC); strictly protected in Hungary.* Uses tall structures for nesting and hunts birds in open airspace. May traverse the area during migration or foraging flights; no confirmed nesting within the Project area.

- European Honey-buzzard (*Pernis apivorus*) – *Least Concern (LC); Annex I of EU Birds Directive.* May use the site during migration; no nesting confirmed.
- European Roller (*Coracias garrulus*) – *Least Concern (LC); Annex I of EU Birds Directive; strictly protected in Hungary.* Likely foraging species; may nest in nearby tree cavities or old structures.
- Common Kestrel (*Falco tinnunculus*) – *Protected in Hungary.* Often nests on pylons or buildings near agricultural land.

Other commonly recorded and nationally protected species include Eurasian Buzzard (*Buteo buteo*), Common Raven (*Corvus corax*), Yellow Wagtail (*Motacilla flava*), Eurasian Skylark (*Alauda arvensis*), European Bee-eater (*Merops apiaster*), and Barn Swallow (*Hirundo rustica*). Several of these species are likely to breed in the wider agricultural landscape, although no active nests were found within the Project footprint.

The Heves Plain SPA (HUBN10004), located to the south of the Project, functions as a core breeding and foraging area for many of these raptors and steppe bird species, indicating that the Project lies within their wider ecological range.

Mammals

Mammalian fauna recorded or expected in the Project area are common generalist species typical of disturbed agricultural and edge habitats (such as European Mole, Hare and Roe Deer) All of these species are of **Least Concern (LC)** globally and regionally. They primarily use the site for foraging and movement between more suitable habitats.

Amphibians

Amphibian diversity is low due to the lack of natural wetland or waterbody habitats within the Project parcels. The Common Toad (*Bufo bufo*) was noted in the area and is likely to breed in small wetland remnants or agricultural drainage ditches near the Ostoros Stream.

Invertebrates

The invertebrate community is dominated by disturbance-tolerant generalist species that include several butterflies. The nearby ecological corridor also provides valuable foraging habitat for pollinators and prey species supporting local food webs.

Overall, the Project area supports a moderate to low level of faunal diversity, dominated by common and disturbance-tolerant species. However, the presence and foraging use of the area by strictly protected raptors and other Annex I species (particularly the Saker Falcon and Eastern Imperial Eagle) highlight the regional ecological importance of maintaining open landscapes and ecological connectivity along the Ostoros Stream corridor.

Given the absence of nesting within the Project footprint and the modified nature of habitats, potential impacts on fauna are assessed as low to modified, provided that appropriate mitigation and monitoring measures outlined in the BMP are implemented.

10.4 ANNEX D: REQUIREMENTS, THREATS AND CONSERVATION ACTIONS FOR PBF SPECIES

TABLE 10-2 KEY THREATS, EXISTING/KNOWN CONSERVATION ACTIONS AND ECOLOGICAL REQUIREMENTS FOR PBF BIRD SPECIES

Common Name	Latin Name	Ecological Requirements (IUCN)	Known Threats (IUCN)	Conservation Opportunities (IUCN)
1 Saker Falcon	*Falco cherrug*	▪ Resident species in Hungary ▪ Prefers open steppe, semi-desert, and agricultural areas with low vegetation and abundant small mammal prey (such as European Ground-squirrel) ▪ Prefers nests in upper part of trees, old raptor nests on trees, cliffs, pylons, or ground ▪ Hunts over a variety of open habitats including steppe and agricultural lands	▪ Habitat loss and degradation (mainly due to agricultural expansion intensification) ▪ Reduction of nesting sites ▪ Landscape reversion following abandonment of agriculture in Hungary* due to decline in prey ▪ Reduction in prey availability ▪ Hunting/trapping ▪ Persecution/poisoning ▪ Falconry ▪ Agricultural and forestry effluents, pesticides	▪ Management of steppe/grassland ▪ Habitat protection ▪ Maintain foraging grounds ▪ Maintain ecologically and socially sustainable grazing systems ▪ Increasing prey availability through habitat management ▪ Ensuring nest site availability ▪ Reducing pesticide impacts ▪ Anti-poaching controls ▪ Raise public awareness ▪ Controls/regulations on falcon trade ▪ Monitoring of breeding populations
2 Peregrine Falcon	*Falco peregrinus*	▪ Resident species in western parts of Hungary and breeding in the whole territory ▪ Migratory ▪ Inhabits a wide range of habitats: cliffs, coasts, open countryside, and urban areas ▪ No nests built, uses depressions in rock faces for laying eggs ▪ Feeds primarily on other small and medium-sized birds hunted in flight (pigeons, doves primarily)	▪ Disturbance and habitat destruction near nesting sites ▪ Agricultural effluents, pesticides ▪ Hunting/trapping ▪ Persecution/poisoning ▪ Falconry ▪ Wind energy development (collision risk, displacement)	▪ Management of grassland and forest habitats ▪ Maintain large trees ▪ Continued monitoring and protection of nesting sites ▪ Prevent electrocution on powerlines ▪ Maintain foraging grounds by preserving traditional land use ▪ Increasing prey availability through improved habitat management ▪ Awareness and education to reduce persecution ▪ Monitoring of breeding and wintering populations

Common Name	Latin Name	Ecological Requirements (IUCN)	Known Threats (IUCN)	Conservation Opportunities (IUCN)
3 Eastern Imperial Eagle	*Aquila heliaca*	▪ Resident species in Hungary ▪ Breeds in lowland forest, steppe and agricultural mosaics with scattered large trees (also transmission line pylons) ▪ Wetlands are the preferred wintering grounds ▪ Feeds on small to medium-sized mammals, birds, reptiles, carrion ▪ Hunts over a variety of open habitats including steppe, open farmland and meadows	▪ Habitat loss through logging, urbanization, and agricultural expansion (mainly due to forestry and shortage of native trees) ▪ Alteration of foraging habitats ▪ Shortage of prey (ground squirrels) ▪ Human disturbance of breeding sites ▪ Hunting/trapping ▪ Persecution and nest disturbance Poisoning (rodenticides and carcass baiting) ▪ Electrocution and collision on powerlines	▪ Management of grassland and forest habitats ▪ Maintain large trees ▪ Protection and restoration of nesting trees ▪ Prevent electrocution on powerlines (insulation, underground cabling) ▪ Maintain foraging grounds by preserving traditional land use ▪ Increasing prey availability through habitat management ▪ Creation of buffer zones around breeding sites ▪ Raise public awareness to prevent poisoning ▪ Monitoring of breeding and wintering populations ▪ Long-term monitoring of known breeding territories
4 Lesser Spotted Eagle	*Aquila pomarina*	▪ Resident breeding species in Hungary ▪ Migratory ▪ Relies on soaring flight ▪ Usually observed singly or in pairs, migrates in flocks ▪ Favors mixed forest-agricultural mosaics, often nesting in forest patches near meadows and pastures ▪ Feeds on mammals, birds, reptiles, amphibians ▪ Requires large open hunting areas including steppe and agricultural lands	▪ Habitat loss and degradation (mainly draining of wet forests and meadows, deforestation) ▪ Electrocution on powerlines ▪ Climate-related shifts affecting migration ▪ Hunting/trapping ▪ Wind energy development (collision risk, displacement)	▪ Management of grassland and forest habitats ▪ Maintenance of traditional low-intensity farming ▪ Increasing prey availability through habitat management ▪ Creation of protected ecological corridors ▪ Protect major migratory roosting sites ▪ Powerline mitigation and marking ▪ sites ▪ Monitoring of migratory populations

Common Name	Latin Name	Ecological Requirements (IUCN)	Known Threats (IUCN)	Conservation Opportunities (IUCN)
5 European Honey-buzzard	*Pernis apivorus*	▪ Resident species in Hungary ▪ Migratory ▪ Mostly solitary, except during migration (flocks) ▪ Fly by soaring primarily ▪ Prefers mixed deciduous and coniferous forests interspersed with open farmland, pastures, and meadows ▪ Also uses open areas and cultivated lands for hunting ▪ Nests built preferentially in deciduous woodlands (trees) ▪ Nests in mature trees, often reusing old raptor nests. ▪ Feeds mainly on flying insects ▪ (wasp and bee larvae), also small reptiles and amphibians ▪ Migratory species wintering in sub-Saharan Africa ▪ Requires undisturbed nesting areas and sufficient prey abundance	▪ Habitat loss and degradation from logging and forest fragmentation. ▪ Disturbance during breeding from forestry work and recreation, causing nest abandonment ▪ Decline of insect prey due to pesticide use and intensive agriculture ▪ Illegal shooting and trapping along migration routes ▪ Powerline collision/electrocution risk ▪ Wind energy development (collision risk, displacement)	▪ Promote low intensity agriculture and forestry ▪ Protect mature and mixed forests used for nesting ▪ Restrict forestry activities during the breeding season (May–August) ▪ Reduce pesticide use to restore prey abundance ▪ Ban illegal hunting ▪ Prevent electrocution on powerlines ▪ Safeguard major migration bottlenecks (Balkans, Bosporus, Malta). ▪ Promote satellite tracking and population monitoring to guide conservation actions
6 European roller	*Coracias garrulus*	▪ Resident species in Hungary ▪ Prefers lowland open habitats including natura forest, woodland, mixed farmland ▪ Breeds in abandoned cavities in poplar trees in riparian forests usually ▪ Forage for insects, mainly in agricultural fields and meadows ▪ Winters in Africa	▪ Habitat loss and degradation ▪ Loss of breeding habitat, especially hedgerows and riparian forest in Europe ▪ Pesticides ▪ Reduction of nesting sites ▪ Hunting/trapping	▪ Habitat protection and management ▪ Maintenance/provision of nest sites ▪ Reduction of pesticide impacts ▪ Continued population monitoring
7 White Stork	*Ciconia ciconia*	▪ Resident species in Hungary ▪ Open areas associated with wetlands, lakes and arable land ▪ Affinity for drier grasslands, steppe and cultivated fields during winter (avoids dense vegetation cover) ▪ Breeds/nests solitarily or in loose colonies, usually near foraging areas ▪ Varied diet including small mammals, herpetofauna,	▪ Habitat alteration including drainage of wetlands/wet meadows ▪ Conversion of foraging areas ▪ Human development ▪ Intensification of agriculture ▪ Pesticides/poisoning ▪ Collision and electrocution risk associated with powerlines ▪ Hunting	▪ Management of grazing practices (intensive grazing, unfertilised grassland) ▪ Traditional livestock farming ▪ Mowing of grasslands to increase food supply ▪ Creating mosaics of native grasslands and herb-rich meadows ▪ Retention or creation of artificial habitats (e.g. ditches, ponds, lakes) ▪ Mitigation for powerlines (burial or visible marking of cables)

Common Name	Latin Name	Ecological Requirements (IUCN)	Known Threats (IUCN)	Conservation Opportunities (IUCN)
		▪ Migrates south during European autumn/winter		▪ Monitoring of populations

Source: IUCN threatened species database (https://www.iucnredlist.org)

ERM HAS OVER 140 OFFICES ACROSS THE FOLLOWING COUNTRIES AND TERRITORIES WORLDWIDE

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
Denmark
France
Germany
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
Netherlands
New Zealand
Panama
Peru
Poland
Portugal
Romania
Singapore
South Africa
South Korea
Spain
Switzerland
Taiwan
Thailand
UAE
UK
US
Vietnam

ERM GmbH
Brüsselerstr. 1-3
60327 Frankfurt
Germany

www.erm.com