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Biodiversity Management Plan (BMP)

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Kelme Wind Farm Project, Lithuania

Biodiversity Management Plan (BMP)

0779257

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LIST OF ACRONYMS & ABBREVIATIONS

Name	Description
AoI	Area of Influence
BAP	Biodiversity Action Plan
BICS	Bird Identification and Control System
BMP	Biodiversity Management Plan
BMEP	Biodiversity Monitoring and Evaluation Programme
CH	Critical Habitat
CHA	Critical Habitat Assessment
CORPI	Coastal Research and Planning Institute
CR	Critical Endangered (species threat status, according to IUCN)
DD	Data Deficient (species threat status, according to IUCN)
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EN	Endangered (species threat status, according to IUCN)
ERM	Environmental Resources Management Ltd.
ESAP	Environmental and Social Action Plan
ESMS	Environmental and Social Management System
EU	European Union
GIP	Good International Practice
GN	Guidance Note
IAP	Invasive Alien Plant
IAS	Invasive Alien Species
IBA	Important Bird and Biodiversity Area
IFC	International Finance Corporation
IFI	International Finance Institution
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
KPI	Key Performance Indicator

Name	Description
kV	Kilo Volt
LC	Least Concern (species threat status, according to IUCN)
M&E	Monitoring and Evaluation
MW	Mega Watt
NG	Net Gain (of biodiversity)
NNL	No Net Loss (of biodiversity)
NT	Near Threatened (species threat status, according to IUCN)
O&M	Operations and Maintenance
PBR	Potential Biological Removal
PBF	Priority Biodiversity Feature
PCFM	Post-construction Fatality Monitoring
PR	Performance Requirement
RSZ	Rotor Swept Zone
VU	Vulnerable (species threat status, according to IUCN)
WF	Wind Farm
WT	Wind Turbine
WTG	Wind Turbine Generator

DEFINITIONS OF KEY TERMS

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, 2019).

Natural habitat:
Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition (IFC, 2012).

Critical habitat:
Critical habitat is typically defined as the most sensitive biodiversity features and the definitions varies somewhat between different International Financial Institutions (IFIs). Typically, though, this relates to habitat important for supporting globally/regionally threatened species, endemic and/or restricted-range species, migratory and/or congregatory species, threatened or unique ecosystems/habitats and ecological / evolutionary processes.

EBRDs definition of Critical Habitat (which comprises one of the following): *(i) highly threatened or unique ecosystems;*
(ii) habitats of significant importance to endangered or critically endangered species;
(iii) habitats of significant importance to endemic or geographically restricted species;
(iv) habitats supporting globally significant migratory or congregatory species; and/or
(v) areas associated with key evolutionary processes (EBRD, 2019).

Priority biodiversity features:
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, 2019).

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, 2019).

Net Gain (of biodiversity):
An approach and goal for a development project, policy, plan or activity in which the impacts on biodiversity it causes are outweighed by measures taken to avoid and minimize the impacts, to restore affected areas and finally to offset the residual impacts, so that natural environment is left in a measurably better state than it was beforehand.

Net gains refer to measurable improvements in the condition or extent of biodiversity values for which Critical Habitat was identified. These gains can be achieved either by implementing a biodiversity offset or, if offsets are not required, through on-the-ground actions that enhance habitats and support the protection and conservation of biodiversity in the same area (EBRD, 2019).

Invasive alien species:
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).

(Biodiversity) Offset:
Conservation activities or actions that aim to compensate for the lasting impacts of development on species, habitats and ecosystems that persist even after other mitigation measures have been applied.

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.

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

Environmental Resources Management (ERM) was appointed by Ignitis Renewables (referred to hereafter as "Ignitis" or "the Client") to provide supplementary information concerning the Kelme Wind Farm in Lithuania (the "Project"), in support of the Project seeking finance from the European Bank for Reconstruction and Development (EBRD).

The Project will need to align with the environmental and social (E&S) standards of EBRD (2019), including Performance Requirement 6 (PR6) which deals with the management of risks and impacts of development projects on biodiversity and ecosystems. In order to align with EBRD PR6, ERM has prepared an Operational Biodiversity Management Plan (BMP) to manage potential risks and impacts on biodiversity for the operational phase of the Project (since construction has been completed). The preparation and implementation of a BMP for the operational phase of the Project was also a key recommendation made in the Environmental and Social Due Diligence (ESDD) conducted by ERM in 2025.

This document contains the **BMP for the operation phase only** (since construction is now completed), and its main purpose is to detail the necessary and relevant mitigation and management measures focused on biodiversity, for this particular Project phase.

1.2 PURPOSE

Despite renewable energy projects such as wind power 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, 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.

This document presents the operational Biodiversity Management Plan (BMP) for the Project, which aims to provide a systematic approach to biodiversity management and conservation that can be integrated into Ignitis' existing Environmental & Social Management System (ESMS). The BMP is necessary to inform the management and mitigation of biodiversity risks and impacts during operation and maintenance of the wind farm and builds on the existing actions already implemented for the Project, arising from the national Environmental Impact Assessment (EIA) undertaken already to meet national requirements and the conditions of the Environmental Decision through the Environmental Protection Agency (EPA) in Lithuania.

Based on the recommendations and findings of the various different biodiversity-related assessments undertaken by ERM and other local consultants for the Project, there are certainly biodiversity values that could incur direct and/or indirect negative impacts during operation (including avian species: birds & bats, and important habitats).

Given that construction of the Project has been completed and the wind farm is entering the operational phase, a construction BMP is no longer relevant to the Project, and the BMP therefore covers the operation of the wind farm (including maintenance). However, where post-construction residual impacts to semi-natural habitats have been identified (see the findings of the post-construction 'Habitat Residual Impact Assessment' and 'Critical Habitat

Assessment' – both reports by ERM, 2025), these are addressed in the Biodiversity Action Plan (BAP) prepared by ERM (2025) which recommends that a habitat restoration/compensation strategy and plan be developed for the Project to address residual post-construction impacts to semi-natural habitat.

1.3 BMP STRUCTURE

The BMP has been structured as follows:

Chapter 1 Introduction containing background information that includes:

- Purpose of the BMP;
- Information on applicable legislation, standards and guidelines used;
- Key documents and references used;
- Scope of the BMP.

Chapter 2 Project location, background and status.

Chapter 3 The approach and general principles followed in developing the BMP.

Chapter 4 Summary of baseline conditions.

Chapter 5 Project operational risks and impacts to biodiversity.

Chapter 6 Operational management of biodiversity, including priorities, objectives and management actions/measures.

Chapter 7 Monitoring and adaptive management.

Chapter 8 Implementation of the BMP, including:

- identification of key roles and responsibilities for delivering the actions set out in the plan;
- reporting and communication requirements; and
- requirements for review and updates of the BMP.

1.4 APPLICABLE LEGISLATION, STANDARDS AND GUIDELINES

1.4.1 LEGISLATION

1.4.1.1 EUROPEAN DIRECTIVES

EU Habitats Directive:

In terms of the EU Habitats Directive[1] (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

[1] 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).

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[2] (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*".

1.4.1.2 NATIONAL LEGISLATION FOR LITHUANIA

The Project is in compliance with Lithuania's national environmental legislation, which governs environmental protection, impact assessment, and biodiversity conservation. Key national legislation of Lithuania relevant to the Project, and biodiversity, includes:

- *Law No. I-2223 on Environmental Protection* – This is the foundational environmental law in Lithuania, establishing general environmental protection principles. It sets requirements for emissions control, hazardous waste management, natural resource use, and the protection of environmentally sensitive areas.
- *Law on Environmental Impact Assessment of Proposed Economic Activities (No. VIII-3166, consolidated version valid as of 2021)* – Transposes EU Directive 2014/52/EU and outlines procedures for evaluating the environmental impact of public and private sector projects.
- *Law on Protected Areas (No. XII-1784, last amended in 2015)* – Governs the establishment, management, and protection of natural reserves, parks, and Natura 2000 sites in Lithuania. It ensures alignment with the EU Habitats and Birds Directives.

1.4.2 APPLICABLE STANDARDS

The Project seeks to align with the E&S standards of EBRD (2019), including Performance Requirement 6 (PR6) which deals with the management of biodiversity and ecosystems. EBRD PR6 is therefore the 'applicable standard' that applies to this BMP.

A summary of the key PR6 requirements for managing biodiversity and ecosystems is presented below in Table 1-1.

[2] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

TABLE 1-1 SUMMARY OF EBRD PR6 REQUIREMENTS

Aspect of Biodiversity	EBRD PR6 requirements
Protected Areas / Internationally Recognized Areas	▪ 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.
Critical Habitat (CH)	▪ Critical habitat 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 integrated into the project adaptive management program. ▪ Mitigation strategy, including NG, to be described in a Biodiversity Action Plan (BAP) or Biodiversity Management Plan (BMP) where appropriate. ▪ As a last resort, biodiversity offsets may be considered.
Priority Biodiversity Features (PBFs)	▪ Demonstrate that no technically/economically feasible alternatives exist. ▪ Stakeholders consulted. ▪ Project permitted legally. ▪ Appropriate mitigation in accordance with the mitigation hierarchy. ▪ Ensure NNL and preferably NG of biodiversity.
Ecosystem Services	▪ Maintain ecosystem services. ▪ Adverse impacts to be avoided. If unavoidable, measures to minimize impacts and/or restore biodiversity and ecosystem services to be implemented.
Invasive Alien Species (IAS)	▪ 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 release of IAS to the environment. ▪ Control spread of any established IAS.

Source: EBRD PR6 (2019)

1.4.3 GIP GUIDELINES CONSIDERED

The BMP has sought to also align with Good International Practice (GIP) for managing and mitigation biodiversity impacts for wind energy projects. International and regional (European) guidelines considered widely as being examples of GIP that were reviewed and used to inform the 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);
3. *"Mitigating biodiversity impacts associated with solar and wind energy development. Guidelines for project developers"* (Bennun *et al.,* 2021);
4. *"Post-construction Bird and Bat Monitoring for Onshore Wind Energy Facilities in Emerging Market Countries: Good Practice Handbook and Decision Support Tool"* (IFC, EBRD and KfW, 2023);
5. *"EUROBATS No. 6: Guidelines for Consideration of bats in wind farm Projects"* (Rodrigues et al., 2015); and
6. *"Bats and onshore wind turbines: Survey, assessment and mitigation"* (NatureScot, 2021).

1.5 REFERENCES TO OTHER SUPPORTING PLANS AND DOCUMENTS

The BMP should be read in conjunction with the following supporting management and monitoring plans developed for the Project:

- ERM, 2025a. Biodiversity Action Plan (BAP) for the Kelme Wind Farm.
- ERM, 2025b. Operational Environmental and Social Management Framework (OESMF) for the Kelme Wind Farm.
- ERM, 2025c. Operational Environmental & Social Management Plan (OESMP) for for the Kelme Wind Farm.
- CORPI, 2023. Wind Power Park in Kelme District Municipality (Kelme I): Bird and Bat Monitoring Program. November 2023.
- CORPI, 2022. Wind Power Park in Kelme District Municipality (Kelme II): Bird and Bat Monitoring Program. December 2022.

In addition to those described above, the following Project-specific reports that relate to the assessment and management of biodiversity informed the development of the BMP and are referenced here:

- Coastal Research and Planning Institute (CORPI), 2025a. Report on Bird and Bat Surveys in the Wind Farm in Kelme District Before Commissioning (Kelme I). March, 2025.
- CORPI, 2025b. Report on Bird and Bat Surveys in the Wind Farm in Kelme District Before Commissioning (Kelme II). March 2025.
- ERM, 2025d. Habitat Residual Impact Assessment for Kelme Wind Farm.
- ERM, 2025e. Critical Habitat Assessment (CHA) for the Kelme Wind Farm.
- ERM, 2025f. Bird and Bat Monitoring Summary for the Kelme Wind Farm.
- ERM, 2025g. Ecosystem Services Assessment for the Kelme Wind Farm.
- UAB Ekosistema, 2019. Screening Information for Environmental Impact Assessment Kelme I.
- UAB Ekosistema, 2021-2022. Environmental Impact Assessment Kelme II.

1.6 SCOPE OF THE BMP

Spatially, the BMP covers the direct footprint of the now operational wind farm facility (including all infrastructure: turbines, access roads, transmission lines installed below ground, etc.) and extends to the Area of Influence (AoI) determined for assessing direct and indirect impacts on biodiversity considered in the CHA report (see map in Figure 1-1). This essentially extends to a 5 km buffer around the wind farm turbines (for impacts to volant/fluing species – i.e. birds and bats) and a 700 m buffer around all components (turbines, roads and underground transmission line) for non-volant (non-flying) species such as land mammals, etc. *For further information on the AoI defined, the reader is referred to Chapter 2: section 2.1 of the CHA report (ERM, 2025).*

Temporally, the BMP intends to cover the post-construction and operational phase of the Project, as construction has been completed and the wind farm has now entered the operational phase. The focus is now clearly on managing **operational risks and impacts** on biodiversity (ecosystems, habitats and species).

Note that the BMP is also designed to be a 'living document' that will need to be regularly reviewed (recommended to review annually for at least the first three years of operation) and updated in line with an adaptive management approach recommended for the Project that focuses on long-term monitoring outputs to inform the implementation and/or refinement of appropriate biodiversity management actions and mitigation measures.

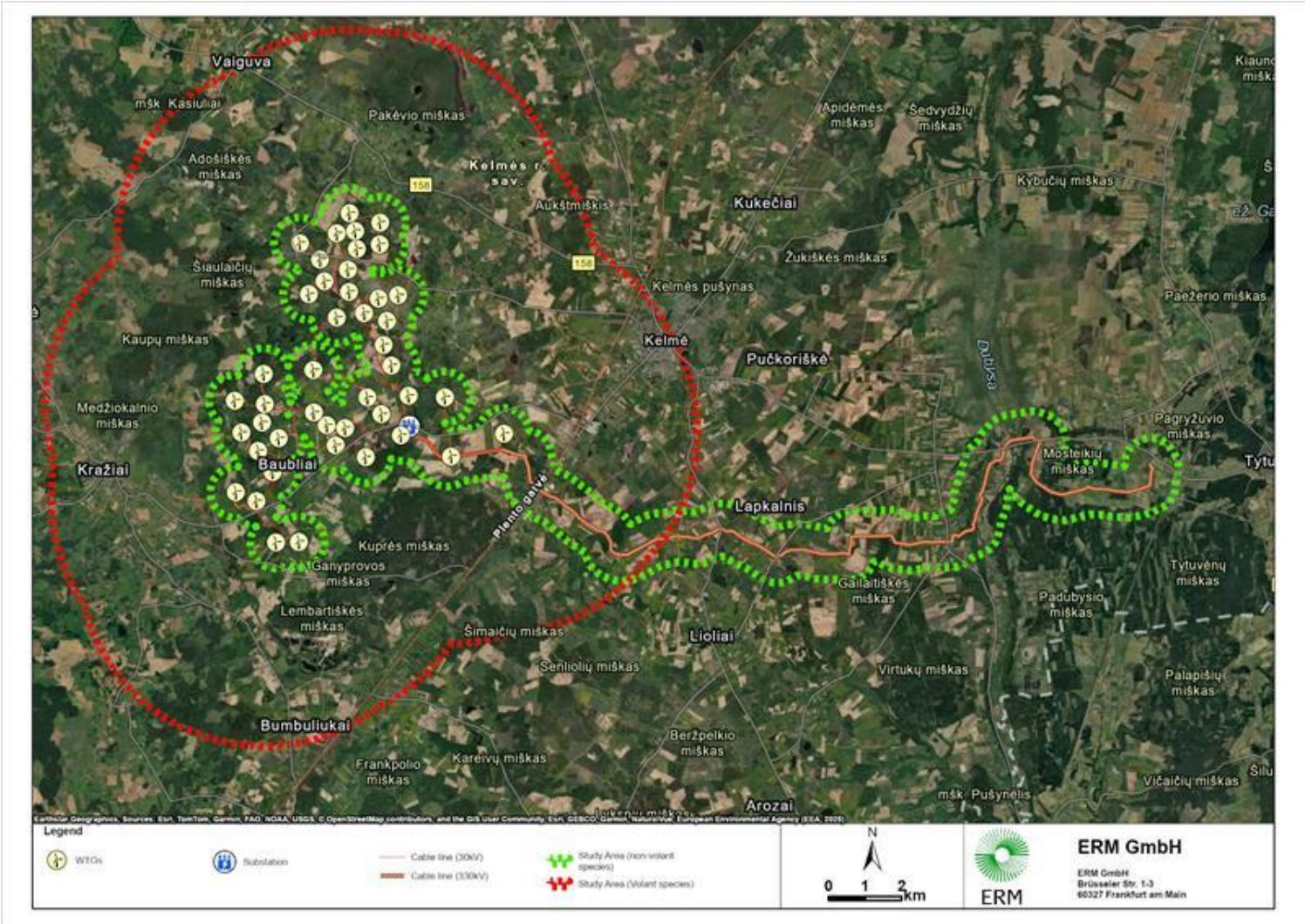


FIGURE 1-1 AREA OF INFLUENCE DEFINED FOR VOLANT/FLYING ('RED' OULINE) / NON-VOLANT/NON-FLYING ('GREEN' OUTLINE) SPECIES

Source: ERM, using Client data

2. PROJECT BACKGROUND

2.1 LOCATION

The Kelme Wind Farm is situated in the Kelmė District Municipality, a predominantly rural area in northwestern Lithuania (see map in Figure 2-1). The region is characterized by a landscape of expansive agricultural fields, interspersed with patches of forest and pastureland. The area currently supports a variety of land uses, including grain cultivation, vegetable farming, and livestock grazing.

FIGURE 2-1 PROJECT LOCATION MAP

Source: ERM, based on data provided by Ignitis

2.2 PROJECT COMPONENTS

The Kelme Project comprises two sub-projects, Kelme I and Kelme II, with a power generation capacity of 105 MW and 195 MW, respectively. Kelme I includes 16 wind turbines (WTs), whilst Kelme II includes 28 WTs. The Project is expected to generate approximately 914.7 GWh annually (P50), with a capacity factor of 34.3% at P50

The Project comprises of the following infrastructure components:

- The Kelmė Wind Farm consists of 44 Nordex N163 6.X turbines, with 16 in Phase I and 28 in Phase II;
- The WTs are located at elevations between 134 m and 168 m above sea level, with a minimum distance of 3.1 times the rotor diameter (3.1D) between the turbines;
- The individual WTs are connected via a network of 33 kV underground transmission line cables to a new 110/33 kV substation (also containing the control room for the WF and offices), to be in the northwestern part of the wind farm site;
- The Project also includes a 28.8 km length underground high voltage (330 kV) transmission line connecting the wind farm to the grid.

The Project infrastructure layout plan is shown in Figure 2-2.

2.3 PROJECT STATUS

In line with Lithuanian environmental permitting requirements, the Project underwent environmental assessment procedures between 2019 and 2022. For Kelme I, a screening assessment was conducted and documented by the national consultancy UAB Ekosistema in 2019. For Kelme II, a full Environmental Impact Assessment (EIA) was completed by UAB Ekosistema in 2022.

Following acquiring the relevant environmental authorisations and permits to commence with construction of the wind farm, construction commenced in May 2023. Construction of both Kelme I and II has since been completed and currently both sub-projects are undergoing test operations. Commercial operations for Kelme I are anticipated to start between Q1 and Q2 of 2025, while Kelme II is expected to begin operations later, between Q3 and Q4 of 2025.

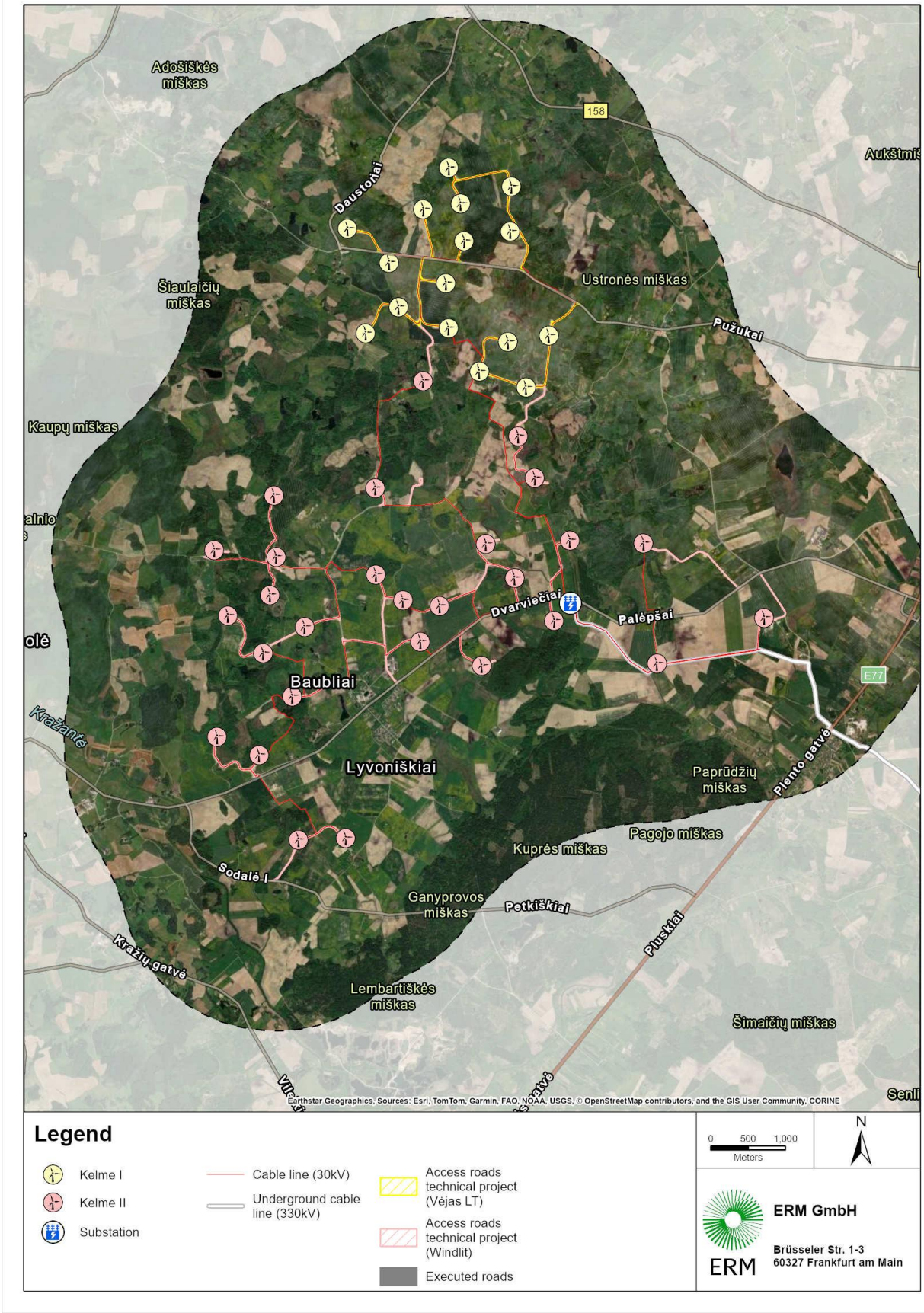


FIGURE 2-2 PROJECT INFRASTRUCTURE LAYOUT PLAN

Source: ERM, based on layout data provided by Ignitis

3. APPROACH AND PRINCIPLES FOLLOWED

This section presents the principles that were followed in developing the BMP, which include:

- Application of the mitigation hierarchy,
- Adaptive management and monitoring, and
- Life-cycle approach.

3.1 APPLICATION OF THE MITIGATION HIERARCHY

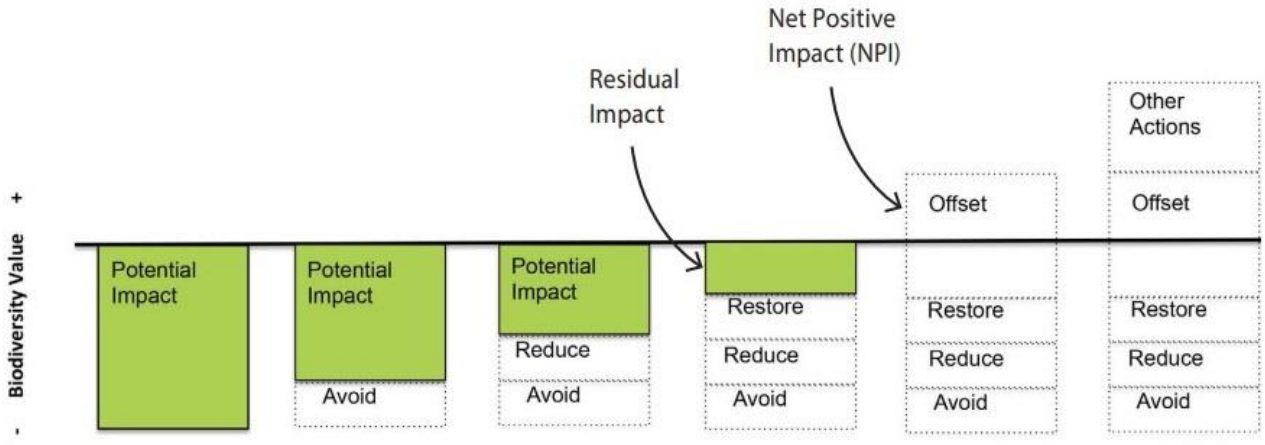
To align with EBRD PR6, the Project is expected to integrate the mitigation hierarchy (see Table 3-1 and Figure 3-1) at all stages. EBRD PR6 requires developers to prioritize the avoidance of impacts on biodiversity in the first place. In essence, this requires the Developer to consider options to avoid 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 has been considered a necessary and fundamental approach to managing biodiversity impacts 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, with offsets as a last resort measure only.

Given that construction has been completed, additional avoidance and reduction measures for construction risks/impacts are no longer possible, beyond what was agreed to as part of the national EIA and permitting process. This mitigation is documented in the EIA report (UAB Ekosistema, 2022). That being said, there is still an opportunity to restore or compensate for residual impacts to biodiversity post-construction and of course to mitigate operational risks and impacts.

TABLE 3-1 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: Hardner et al. (2015)

FIGURE 3-1 DIAGRAM ILLUSTRATING THE IMPACT MITIGATION HIERARCHY

3.2 ADAPTIVE MANAGEMENT AND MONITORING

Biodiversity and natural ecosystems can be inherently dynamic systems that may not always respond predictably to management measures, rehabilitation or restoration actions. Given this uncertainty, monitoring is an extremely useful means for evaluating the state and functioning of ecosystems, habitats and species over time to refine management controls and mitigation as necessary. It can also be crucial to identifying potential unforeseen problems during implementation, which if left uncorrected, could undermine overall project success, and for developing adaptive measures to manage such unforeseen consequences.

EBRD PR6 acknowledges how essential monitoring is with regards to biodiversity management and require that an 'adaptive management' approach to the management of biodiversity be integrated into planning, informed by long-term monitoring of biodiversity (with a focus on CH and PBF). This includes:

- Recording information to track performance and establishing relevant operational controls;
- Recommend the use of dynamic mechanisms (e.g. internal inspections and audits) to verify compliance and progress toward desired outcomes;
- Monitoring is to be adjusted according to performance experience and actions;
- Given the complexity in predicting impacts on biodiversity over the long term, EBRD PR6 requires an adaptive management approach: mitigation and management measures are responsive to changing conditions and the results of monitoring throughout the project's lifecycle;
- External experts with appropriate regional experience to assist with mitigation hierarchy design and to verify the implementation of those measures through appropriate monitoring; and
- For CH particularly, a long-term biodiversity monitoring and evaluation program (BMEP) is required to be integrated into the company's ESMS.

Adaptive management has therefore been integral in terms of the design and approach for biodiversity management for this Project.

3.3 LIFE-CYCLE APPROACH

Aligned with EBRD PR, the BMP takes a life-cycle approach to 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. *As mentioned above under 3.1, given that construction has been completed, additional avoidance and reduction measures for construction risks/impacts, beyond what was agreed to as part of the national EIA and permitting process. The focus of the BMP is therefore on managing operational risks/impacts.*

Decommissioning and closure would need to be addressed in future updates to the plan, or a separate BMP for this particular phase may be developed prior to this phase in future.

4. SUMMARY OF BASELINE CONDITIONS

4.1 CLIMATE & AIR QUALITY

The Project is located in a moderately cold temperate climate zone, typical for Lithuania's Central Lowland region (Mūša-Nevėžis sub-area), with a climate characterized by snowy winters, moderate summers, and precipitation evenly distributed throughout the year. Key climatic features include:

- An average annual temperature of +6.8°C, with summer highs around +17.8°C and winter lows near -3.4°C;
- Average annual precipitation of approximately 620 mm;
- Around 1,840 hours of sunshine per year and total solar radiation of 3,350 MJ/m²;
- Average wind speeds of 2.9 m/s, relevant for wind turbine operation and efficiency;
- Soil frost depth reaching an average of 34 cm.

Based on available information, there is no dedicated ambient air quality monitoring station within the immediate vicinity of the Project area in the Kelmė district. Consequently, air quality data for this region are typically derived from the nearest monitoring stations located in larger urban centers. For instance, real-time air quality data from nearby cities such as Šiauliai and Kaunas indicate that pollutant concentrations, including PM10, PM2.5, NO_2, SO_2, and O_3, generally fall within the 'Good' category according to the Air Quality Index (AQI) standards.

The Kelmė district is characterized by a rural landscape setting, low population density, and minimal industrial activity, factors that collectively contribute to its relatively clean/good air quality. However, local air quality can still be influenced by agricultural practices, vehicular emissions, and meteorological conditions such as wind patterns and temperature inversions.

4.2 TOPOGRAPHY, GEOLOGY AND SOILS

The Kelmė district is located on the southwestern margin of the East European Craton (EEC), underlain by Proterozoic crystalline basement rocks such as granite and gneiss. These are overlain by a thick Phanerozoic sedimentary cover, including shales, marls, clays, and sandstones, with sediment thickness exceeding 2 km in parts of Lithuania. Regionally, the area is influenced by structural units like the Baltic Syneclise and the Mazury–Belarus High. The sub-Quaternary surface is shaped by glacial and post-glacial processes, with paleoincisions and gently rolling terrain[3].

The area of the planned economic activity is mainly composed of medium-value agricultural lands, no significant forest or highly sloped terrain noted. Kelmė, being part of central Lithuania with low slope values, is in a low erosion-risk zone, meaning less dependency on sediment retention by vegetation. For the WF located on a relatively flat to slightly undulating landscape, soil erosion risk is likely to be limited.

[3] Lithuanian Geological Survey (LGT), "Geological Structure of Lithuania and Adjacent Territories," accessed May 2025, https://lgt.lrv.lt/en/about-lithuanian-geology/pre-quaternary/

4.3 NATURAL HAZARDS

The hazard levels for the Kelmė region are based on data provided by the ThinkHazard[4] tool and online platform, which utilizes global and regional datasets to evaluate the likelihood and severity of natural disaster risks. The only perceivable risk that could be noteworthy relates to a moderate risk for wildfires that may cause infrastructure damage and risk to human health:

- **Wildfire:** 'medium' risk. *While not frequent, environmental conditions such as extended dry periods and local vegetation cover can contribute to localized wildfire events, particularly in rural and semi-natural areas.*
- **Water Scarcity:** 'low' risk. *This reflects a relatively stable water regional supply, with a limited chance of drought or long-term water stress in the short to medium term. Local water sources (including groundwater boreholes) are expected to meet community and operational needs.*
- **Extreme Heat:** 'low' risk. *Extreme heat stress events in the Kelmė district are low in likelihood, suggesting that while warm summers are typical, heatwaves of a severity that would disrupt operations or cause a significant problem for human health are likely to be rare.*
- **River Flood:** 'very low' risk. *This implies that there is a very low likelihood of damaging river floods occurring at least once in the next 10 years. Flood hazard need not be explicitly considered in project planning.*
- **Urban Flood:** 'very low' risk*. This indicates that flood-related impacts in built-up areas are infrequent and relatively minor in severity. Nonetheless, stormwater management systems should still be properly maintained.*
- **Earthquake:** 'very low' risk. *Seismic risk is considered to be very low as the area is not known for tectonic activity, and no significant seismic events have been recorded historically.*
- **Landslide:** 'very low' risk. *The predominantly flat to gently rolling topography combined with stable soil conditions minimizes the potential of slope failures and mass wasting.*

4.4 BIODIVERSITY BASELINE

A brief summary overview of the baseline for biodiversity (ecosystems, habitats, species) is included below in Table 4-1.

Further details are included as Annexure A (section 10.1) at the back of the BMP.

TABLE 4-1 SUMMARY OF BIODIVERSITY BASELINE CONDITIONS

Biodiversity Aspect	Summary
Protected areas & internationally recognized areas	▪ The Project area is not located within any nationally or internationally recognized protected area. The closest protected area to the WF lies approximately 2.7 km to the northwest of the Project. ▪ The 330 kV underground cable/transmission line (TL) is located in close proximity to the Natura 2000 site 'Dubysos vidurupis ir žemupys', located to the east of the WF.
Ecosystem services	▪ The assessment concluded that no 'priority' ecosystem services are identified for the Project and which the Project or local communities could impact on or be highly dependent on. ▪ The only ES considered Moderate priority relates to 'Global/local climate regulation', for which both the Project and community has an expected level of dependency/demand and for which there are limited alternatives available to replace this service. However, the Project has no significant influence or control over this service.
Flora	▪ There are no sensitive, threatened or protected species of flora (plants) associated with the Project that could be impacted.

[4] ThinkHazard! (n.d.). Hazard Report: Šiaulių, Lithuania. Retrieved May 17, 2025, from https://www.thinkhazard.org/en/report/19149-lithuania-siauliu-kelmes-raj

Biodiversity Aspect	Summary
	▪ Several nationally important/protected plant species (aquatics) have been identified within wetland habitats adjacent to the wind farm but remain unaffected.
Birds	▪ 134 species of birds recorded, with several common species of raptors, waterfowl and passerines recorded using the Project area. ▪ Several species of raptors and waterbirds are globally threatened species of conservation important, including Red-footed falcon, Northern Lapwing and Eurasian Curlew. Multiple species are nationally threatened species in Lithuania, being predominantly raptors, storks, cranes and waterfowl. ▪ The site is not considered important for congregatory or migratory species. ▪ The heterogeneity and diversity of habitats contributes to bird activity and the use of various habitats for foraging, resting and breeding, with a variety of breeding birds present in the study area as a result. Most are not vulnerable to wind farm impacts, however several nests of raptors vulnerable to collision with turbines (Eurasian Buzzard, Lesser Spotted Eagle and Western Marsh-harrier) were found to be relatively numerous in the wind farm area and adjacent patches of forest. ▪ Black Kite qualifies as CH. ▪ Several birds qualify as PBF.
Bats	▪ 13 species of bats were recorded, being mainly common species of LC. ▪ Several species of global/regional conservation importance recorded, most notably the regionally VU and globally NT Barbastelle Bat and Pond Bat. ▪ Bat activity varied between species and temporally between months of sampling. However, on average bats were observed to be most active during the spring migration period (May) and breeding season peaking in summer (July). ▪ Bat activity was also highest approximately 2 hours after sunset on average, peaking at this time and with activity lasting for roughly 5 hours. ▪ Results suggest that the study area is used by bats unevenly. ▪ All bat species qualify as CH.
Other animals	▪ No other threatened species of land animals are likely to occur or be affected by the Project. ▪ Therefore the focus has been on documenting and describing impacts to avian species (birds, bats).
Habitat (general)	▪ Characterized by a mosaic of agricultural land, fragmented woodlands, and patches of natural forest, typical of the rural landscape. ▪ There are several habitat types of EU Community Importance as per their listing in Annex I of the EU Habitats Directive, including aquatic habitats (lakes, ponds, peat wetlands/bogs), various grassland and meadow types and forest/woodland types.
Critical Habitat (CH)	▪ Several habitat types qualify as CH as they are listed as Annex I of the EU Habitats Directive as 'priority' habitat types. ▪ Only one species of bird, Black Kite is considered to qualify as CH. ▪ 13 bat species qualify as CH.
Priority Biodiversity Features (PBF)	▪ Remaining habitats listed in Annex I of the EU Habitats Directive that are NOT 'priority' habitat types or EN types regionally. ▪ 69 species of birds (including several species of raptors, storks, cranes, waterfowl, passerines) qualify as PBF.

Sources of information:

- Habitat Residual Impact Assessment for Kelme Wind Farm (ERM, 2025)
- Bird and Bat Monitoring Summary for the Kelme Wind Farm (ERM, 2025)
- Biodiversity Action Plan (BAP) for the Kelme Wind Farm (ERM, 2025)
- Ecosystem Services Assessment for the Kelme Wind Farm (ERM, 2025)

Note that the detailed baseline with regards to biodiversity and ecosystems is presented in the reports compiled by ERM covering Habitat Residual Impact Assessment, Critical Habitat Assessment (CHA), Ecosystem Services Assessment and the Bird and Bat Summary Report which forms part of the supplementary package for the Kelme Wind Farm Project. This has not been repeated here in detail and the reader is referred to the referenced reports for further information.

5. SUMMARY OF OPERATIONAL RISKS AND IMPACTS ON BIODIVERSITY

A summary of the operational risks and impacts on different aspects of biodiversity has been provided below in Table 5-1, that includes the following:

- Protected Areas / Internationally Recognized Areas (excluded from BMP, no risks/impacts predicted)
- Ecosystem Services (excluded from BMP, no risks/impacts predicted)
- Habitats (included in BMP)
- Species (birds and bats focus) (included in BMP)
- CH and PBF species/habitats (included in BMP)

Several sources of information have been used to develop this qualitative assessment, including:

- The EIA report
- The Bird and Bat Summary Report
- The Habitat Residual Impact Assessment (post-construction)
- The Critical Habitat Assessment (CHA) Report
- The Biodiversity Action Plan (BAP)

TABLE 5-1 SUMMARY OF PROJECT OPERATIONAL RISKS AND IMPACTS ON BIODIVERSITY

Component of biodiversity	Potential operational risks and impacts	Included or Excluded from BMP?	Description
Protected Areas / Internationally Recognized Areas	None anticipated.		▪ No protected areas / internationally recognized areas of biodiversity value are located in or near to the Project area, with no direct or indirect impacts expected. ▪ Not included in BMP.
Ecosystem Services	None anticipated.		▪ No 'priority' ecosystem services are identified for the Project and which the Project or local communities could impact on or be highly dependent on. ▪ The only ES considered Moderate importance/priority relates to 'Global/local climate regulation', for which both the Project and community has an expected level of dependency/demand and for which there are limited alternatives available to replace this service. However, the Project has no significant influence or control over this service and therefore this is not included in the BMP.
Physical Habitats (forest, shrubland, woodland, wetland,	Accidental destruction / disturbance of physical natural habitat and flora		▪ There is the possibility, although rare/unlikely, that intentional or accidental events could occur that may lead to the destruction or disturbance of natural forest, woodland, shrubland, riverine and wetland habitats in the Project area, by teams involved in maintenance and upgrades to access

Component of biodiversity	Potential operational risks and impacts	Included or Excluded from BMP?	Description
riverine) and flora Note that this includes habitats qualify as CH or PBF.			▪ roads, turbine maintenance, etc., unless there are access restrictions and controls in place. ▪ Several nationally protected flora species of conservation-importance are associated with wetland habitats. Several habitats qualify as CH or PBF based on their listing in Annex I of the EU Habitats Directive. Any unforeseen disturbance to these habitats during maintenance activities could affect flora species of importance. ▪ Habitats and flora are therefore included in BMP.
Birds Note that Black Kite qualifies as CH and several raptors are PBF.	Turbine collision risk leading to possible mortality Disturbance and displacement. Loss of breeding sites/nests.	✓	▪ One of the most well-known impacts of wind farms on birds is the risk of collision with the wind turbine blades during operation. Birds may not perceive the fast-moving blades as barriers and can inadvertently collide with them, resulting in injury or mortality in the worst-case. ▪ The risk is especially high for birds that fly at similar heights as the rotating blades or during migration when large numbers of birds pass typically can transit through wind farms. Whilst Collision Risk Modelling (CRM) has not been undertaken specifically for the Project, discussions with the authors of the bird monitoring report (ornithologists representing CORPI) highlighted the fact that it is quite obvious from the monitoring data and interpretation thereof, that there is a high enough potential risk in terms of raptor and stork collision to warrant the installation of a smart turbine shut-down system covering the entire wind farm, without the need for a CRM to validate this risk further. ▪ Based on an analysis of Potential Biological Removal (PBR) for nationally threatened species, based on national population estimates, this suggests that mortalities of even a few individuals of these particular species (including Black Kite, Lesser Spotted eagle and White-tailed Sea-Eagle), will be potentially impactful on the national populations, and in all likelihood a 'zero fatality threshold' would probably be appropriate for these species in alignment with Good International Practice to protect these vulnerable populations. This is particularly relevant for Black Kite (*Milvus migrans*) with a PBR of only 2 birds/annum and the proportion of flights at collision risk height being estimated at ~72% for the Project. ▪ Note that since the Project does not comprise any overhead powerlines (only underground transmission lines), the risk of collision and/or electrocution of birds with overhead powerlines does not require consideration. ▪ Birds are therefore included in BMP.
Bats Note that all bats qualify as CH for the Project.	Turbine collision risk leading to possible mortality. Disturbance and displacement.	✓	▪ Bats are also susceptible to collision with wind turbine blades, often leading to fatalities. As bats are typically long-lived and have exceptionally low reproductive rates in general, fatalities of significant bat numbers could affect local populations of recorded species. ▪ The majority of species killed by turbines are high-flying species that are typically adapted for foraging insects in open spaces, high above the ground and far from vegetation. Based on the bat survey data collected, the majority of bats recorded belong to 'high' and 'medium' sensitivity groups in terms of collision risk (according to EUROBATS – Rodrigues et al., 2015[5]), ▪ Overall, the Project risk level in terms of collision potential for bats was assessed by CORPI (2025) as 'moderate', and risk will be particularly relevant during the migration period in August when bat activity peaked and the largest number of collisions can be expected.

[5] Rodrigues et al., 2015. EUROBATS No. 6: Guidelines for Consideration of bats in wind farm Projects.

Component of biodiversity	Potential operational risks and impacts	Included or Excluded from BMP?	Description
			▪ It is however worth mentioning at this stage that since local bat activity can change after construction, pre-construction studies have consistently proven to be poor predictors of the scale and magnitude of bat fatality impacts at species and population levels for wind energy projects (e.g. Hein et al., 2013[6] ; Lintott et al., 2016[7]). Although early indications are that bat exposure to the Project is relatively limited both in terms of numbers and distribution, given the constraints in determining bat fatality impacts prior to operation, it will be necessary to undertake further operational monitoring to validate operational risks and to inform adaptive management as required. ▪ Bats are therefore included in BMP.

[6] Hein et al. (2013). Relating Pre-construction Bat Activity and Post-construction Bat Fatality to Predict Risk at Wind Energy Facilities: A Synthesis.

[7] Lintott et al. (2016). Ecological impact assessments fail to reduce risk of bat casualties at wind farms.

6. OPERATIONAL BMP

6.1 PRIORITIES AND OBJECTIVES

Biodiversity management priorities and objectives are presented here in Table 6-1 that considers the ecological receptors and outcomes of the appraisal of operational impacts described in Chapters 4 and 5. This serves to guide the BMP in terms of which aspects of biodiversity will be the focus of management actions and measures, which were decided to include the following:

- Physical habitats and flora, including those that qualify as CH / PBF
- Birds and bats (including CH and PBF species)

TABLE 6-1 SUMMARY OF BIODIVERSITY MANAGEMENT PRIORITIES AND OBJECTIVES, ALIGNED WITH EBRD PR6 REQUIREMENTS

Aspect of Biodiversity	Priority for inclusion in the BMP?	BMP: Management Objectives
Protected Areas / Internationally Recognized Areas	EXCLUDED: No protected areas / internationally recognized areas of biodiversity value are located in or near to the Project area, with no direct or indirect impacts expected.	Not relevant.
Ecosystem Services	EXCLUDED: Typically no priority ecosystem services (ES) to be impacted by the Project. The only ES considered Moderate priority relates to 'Global/local climate regulation', for which both the Project and community has an expected level of dependency/ demand and for which there are limited alternatives available to replace this service. However, the Project has no significant influence or control over this service.	Not relevant.
Habitats	INCLUDED: Several important natural forest, wetland, riverine habitats are located in close proximity to the Project infrastructure and should be managed during operation to avoid any further risk of impact.	➢ **Avoidance** of any additional impacts to natural habitats during operations. ➢ **Restoration** of any intentional or accidental impacts to natural habitats.
Flora	INCLUDED: Addressed above under habitats.	➢ **Avoidance** of any additional impacts to habitats and flora species during operations.
Species	INCLUDED: Based on the baseline and risk/impact assessment (Chapter 4 and 5), the focus of management and monitoring during operation shall be on avian species including both birds and bats at risk of collision / disturbance.	➢ **Avoid and/or minimize** operational impacts on birds and bats associated with potential collision risk from operating turbines. ➢ **Minimize** the risk of disturbance /displacement of species, especially breeding populations, during maintenance activities.
Critical Habitat (CH)	INCLUDED: CH identified (bird and bat species and physical habitats) which is at risk of being impacted by the Project.	➢ At least Net Gain (NG) for CH and No Net Loss (NNL) of biodiversity to be achieved as a minimum for PBF, through application of the mitigation hierarchy to **avoid, minimize, restore and finally compensate for residual impacts (as per the BAP).** ➢ **Compensation and restoration** actions are addressed through the BAP; however, avoidance and minimization are included in the BMP actions for operations for habitats, birds and bats that qualify as CH/PBF.
Priority Biodiversity Features (PBFs)	INCLUDED: PBF identified (bird species and physical habitats) which is at risk of being impacted by the Project.	

6.2 LINK TO OTHER SUPPORTING PLANS

Several other plans or programs have been developed for the Project (or are still under development at the time of writing of this BMP) and several plans/programs cover E&S risk/impact management, mitigation and monitoring. Some of these have a bearing on biodiversity management and monitoring, either directly or indirectly.

A list of these plans is provided in Table 6-2 that shows the link to the BMP.

In most cases, to avoid duplication of actions and efforts in the BMP and other plans, where aspects of biodiversity management/monitoring are addressed in other plans/programs that exist or are in the process of being compiled, this is made clear in Table 6-2.

TABLE 6-2 BMP LINK TO OTHER SUPPORTING PLANS/PROGRAMS

#	Plan / Program Name	Author	Purpose	Link to BMP
1	**Biodiversity Action Plan (BAP)**	ERM, 2025	Provides high-level management actions to address residual impacts on CH and PBF, above the measures/actions considered in the BMP, with a focus on the last two steps of the mitigation hierarchy: restoration and compensation/offset.	Additional actions to address residual impacts on CH/PBF covered by BAP and not BMP. A key action is the development and implementation of a Habitat Restoration and Compensation Strategy, Plan and Program for addressing residual post-construction impacts on physical wetland, shrubland and meadow habitat. These actions are not duplicated in the BMP.
2	**Operational Environmental & Social Management Plan (OESMP)**	ERM, 2025 (still under development)	Overarching E&S management plan for the operational wind farm, designed to provide the management approach and measures for contractors involved with maintenance of the wind farm. Includes the following relevant aspects: • Access and security • Pollution control / spill management • Operational noise management • Emergency preparedness and response	The OESMP that is being developed will include several measures to manage operational E&S risks, and some of these relate to biodiversity (e.g. noise management, pollution/spills, emergency response). These measures are not duplicated in the BMP.
3	**Biodiversity Monitoring and Evaluation Programme (BMEP)**	ERM, 2025 (still under development	Post-construction and operational monitoring and evaluation (M&E) program specific to biodiversity, to cover the following: • BAP actions, including addressing residual impacts to habitats impacted during construction • Operational biodiversity management (as per BMP) • Operational monitoring of birds and bats (as per #4 and #5 below	The BMEP that is being developed has a direct link to the BMP (as well as the BAP and monitoring program for birds and bats). The BMEP provides for the implementation and reporting on M&E required to inform the successful implementation of BMP actions and measures, and aligned with an adaptive management approach whereby monitoring outcomes inform opportunities to adjust or improve management measures. The BMP therefore does no cover monitoring in detail, as this is addressed specifically by the BMEP.
4	**Bird and Bat Monitoring Program (Kelme I sub-project)**	CORPI, 2023	Monitoring program for birds and bats monitoring during the pre-operational (baseline and operational phases, including Post-construction Fatality Monitoring (PCFM) to inform management response during operations. Specifically for Kelme I sub-project.	BMP provides a cross-reference to this monitoring program but does not duplicate the content of this program. However, an adaptive management framework that includes typical adaptive management responses to monitoring outcomes is included in the BMP.
5	**Bird and Bat Monitoring Program (Kelme II sub-project)**	CORPI, 2022		

6.3 SUMMARY OF CONDITIONS OF THE ENVIRONMENTAL DECISION

The Environmental Decision (ED) pertains to the 'Decision on the EIA of the Economic Activity Planned by UAB "Windlit" – installation of a wind power park in Kelme district municipality' (i.e. Kelme II sub-project), which is issued in the letter from the Environmental Protection Agency (EPA) in Lithuania, dated May 2022.

In particular, section 6 (numbers 6.9, 6.11 – 6.14) of the ED for Kelme II provides a sequence of measures and conditions to mitigate negative impacts on the environment during operation, including several that relate to the management of biodiversity during the WF operational phase. These are presented below in Table 6-3 together with their current implementation status. These have been considered in the BMP.

TABLE 6-3 REQUIREMENTS/CONDITIONS SPECIFIC TO BIODIVERSITY CONTAINED IN THE ENVIRONMENTAL DECISION FOR KELME II

#	Description	Implementation Status	References
6.9	*A bird and bat monitoring program will be prepared, which will include the assessment of the possible impact of wind turbines one year before the start of wind turbine operations, and three years after the start of wind turbine operations, with studies repeated every five years.*	COMPLETED: Plan has been developed by CORPI in 2022/23	• Bird and Bat Monitoring Summary Report (ERM, 2025) • Bird and Bat Monitoring Program for Kelme I & II (CORPI, 2022/23
6.11	*If the monitoring reveals an impact on bats, measures to reduce the impact on risk-increasing wind turbines will be used: 1) increasing the start-up speed of wind turbines from the factory-set speed to 5.5-6 m/s from sunset to sunrise during the period from June to September 15th; 2) evaluating bat migration activity with stationary detectors throughout the planned wind farm area, as close to the planned wind turbines and as high as possible to select the most suitable impact reduction measures.*	FUTURE ACTION INFORMED BY MONITORING: Adaptive management measures to be included in operational BMP and BMEP	-
6.12	*Before the start of construction, 100 bat boxes will be installed in specially designated places away from the wind farm.*	COMPLETED: Implemented by Ignitis	-
6.13	*If further ornithofauna studies register a significant negative impact of the wind farm on bird and bat nesting habitats, feeding sites, migrations, or record the deaths of protected bird and bat species due to the impact of wind turbines, additional measures (both compensatory and technological) to reduce the negative impact will be proposed and applied.*	FUTURE ACTION INFORMED BY MONITORING: Adaptive management measures to be included in operational BMP and BMEP	-
6.14	*It is planned to locate and identify the nests of birds of prey in the surrounding areas, monitor the abundance of bird nesting until the wind farm starts operating and while the wind farm is operational. Detailed studies of local sensitive bird species to wind turbine impacts and protected nesting species will be conducted in the wind farm area and surrounding areas using telemetry devices and visual observations.*	COMPLETED: Implemented by CORPI in 2024	• Bird and Bat Monitoring Summary Report (ERM, 2025) • Report on Bird and Bat Surveys in the Wind Farm in Kelme District Before Commissioning (Kelme I and II) (CORPI, 2025)

Source: ERM, adapted from the letter from the Environmental Protection Agency (EPA) in Lithuania, dated May 2022

Note that for the Kelme I sub-project which was not subject to an EIA (only screening), there is no ED however the EAP issued a letter containing the 'Screening Conclusion' (dates 28 October 2019) which mentions that no EIA is required for the sub-project. This letter also mentions, in section 6, several operational mitigation requirements to avoid/prevent significant environmental impacts, and these typically align with those in the ED for Kelme II (Table 6-3 above), including:

- *6.3: Due to the potential impact on birds and bats the planned economic activity developer contacted the Society and commissioned to prepare a bird and bat monitoring program. According to this program, if significant negative impacts on birds or bats are identified during the research before the start of operations or while operating the wind turbine park, measures to mitigate the negative impact would be proposed.*

- *6.8: If it becomes apparent during the activity that the environmental impact is greater than the indicators provided in the screening information or established by legislation, the activity operator must immediately implement additional measures to reduce the environmental impact or reduce the scope of activities/cease activities.*

6.4 MANAGEMENT ACTIONS FOR BIODIVERSITY

Table 6-4 provides the management plan for biodiversity that addresses operational risks/impacts.

This has been grouped under:

- Habitat management
- Wildlife management (fauna)

Specific actions and sub-actions/mitigation measures are defined, with information on howe these are to be implemented, when and by whom.

The following guide has been developed to assist the reader in interpreting the action plan for biodiversity in Table 6-4:

Guide to interpreting the BMP action table (Table 6-4)

- **Main Actions:** Provides a description of the main management measure/action.
- **Category:** According to the mitigation hierarchy (avoid, minimise, restore, offset).
- **Sub-actions / Mitigation:** Details the various sub-actions and measures required to be implemented (where applicable).
- **Key Performance Indicator (KPI)**: A quantitative compliance indicator or qualitative acceptance criteria used to assess the effectiveness of the management measure/action.
- **Cross Reference to Specific Plan(s):** Provides the cross-reference to a specific plan or program that has been developed or will be developed to fulfill the relevant management measure/action.

- **Responsibility**: The individual or team responsible for implementing the management measure.
- **Timeline and frequency**: The timing and frequency for implementing the measure/action.
- **Status:** Indicates the status towards completion of the management action.

TABLE 6-4 BIODIVERSITY MANAGEMENT PLAN FOR THE OPERATIONAL PHASE OF KELME WIND FARM

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
	1 HABITAT MANAGEMENT							
1.1	**Access control and restrictions**	Avoid Minimise	▪ Strictly control and restrict any and all activities or access to areas outside of the wind farm area, especially natural forest/woodland, wetland and riverine areas. ▪ Use only the existing access roads to the wind farm. No new temporary roads or paths are to be created. ▪ Any road maintenance or upgrades required during the operational phase must be carried out in a sensitive manner to avoid impacts to adjacent habitats including forests, wetlands, woodland patches and riverine areas. ▪ No additional clearance of vegetation and habitat to be permitted beyond that which has been formally approved for the Project as per the EIA and ED. ▪ Do not cut or disturb any native trees or plants, unless authorised to do so by the operator and environmental manager from Ignitis, and only where permits have been acquired as needed. ▪ Where maintenance requires any natural vegetation, shrubs or trees to be disturbed or removed, permission must be obtained from the operator and environmental manager from Ignitis. ▪ Only the vegetation that is necessary to be removed for maintenance purposes may be cleared, and where possible cut vegetation to ground level instead of stripping areas entirely. ▪ Where possible avoid any earthworks and other noisy maintenance activities during	Access controls in place Natural habitats avoided No trees cut without permits Noisy/intensive maintenance works avoided during bird breeding season	-	Ignitis All personnel accessing the site All external contractors (service providers)	During operational phase, when maintenance take place	To be implemented during operation

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			the main bird breeding season, particularly for any confirmed breeding birds in the Project area that are listed in Annex I of the EU Birds Directive (breeding season for species is typically the spring months to early summer, from April - June).					
1.2	**Site rehabilitation / restoration**	Restore	Where land will be returned to agricultural production after any road maintenance, no further requirements are recommended beyond soil reinstatement and basic landscaping to return the surface to an appropriate and acceptable condition. However, where any natural habitats are disturbed for any reason (intentional or accidental), site rehabilitation and habitat restoration and other remedial activities will likely need to be implemented under the supervision of biologist/habitat restoration expert. This would typically include the following: ▪ Develop a Habitat Restoration Plan, guided by the advice of a biologist/habitat restoration expert. ▪ Any temporary excavations, fences or stockpiles of soil and materials required during road or transmission line maintenance must be closed/removed from the site once works are complete and the site must be restored. ▪ Undertake progressive rehabilitation/restoration for any habitats temporarily disturbed/affected, such that as works are completed, the affected areas are rehabilitated and restored as necessary. ▪ Maintain the original soil layering and do not mix topsoil and subsoil layers.	Basic rehabilitation and site restoration completed for agricultural areas Habitat restoration plan developed (where necessary) for natural habitats impacted Natural habitats restored in accordance with the plan (see above)	Habitat Restoration Plan (to be developed only if necessary where impacts to natural habitat occur)	Maintenance contractors (service providers) External consultant (botanist / habitat restoration expert)	During operational phase, as needed	To be implemented during operation (only where necessary)

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			▪ Ensure that topsoil is returned and used in rehabilitation/habitat restoration as close to the site where it was originally removed (i.e., within a distance of 200 m or less) and not transported to and used in another location. ▪ Soil erosion features to be stabilised via backfilling as appropriate ▪ Avoid compaction of soils, for example though excessive vehicle tracking, and rip soils where compacted to allow for vegetation regrowth. ▪ The burning of any vegetation (both cleared and in-situ) is strictly prohibited. ▪ Where Invasive Alien Plans (IAPs) colonise areas disturbed by road/transmission line maintenance, implement a suitable invasive species control programme. ▪ Protect the reinstated bare soil surface with a physical barrier, such as a thin layer of mulch or geotextile/erosion control matting. ▪ Allow for natural recovery to take place, unless the botanist/habitat expert identifies areas where active planting may be needed. In this case, identify indigenous species for planting and suitable sources for seed and plants as appropriate (preferably using seed of local origin as far as possible, and only supplement with other seed where locally sourced seed is unavailable). Identify commercial sources of seed/plants from local nurseries for example. ▪ Encourage rapid re-vegetation through re-seeding using rapid growing, indigenous runner grasses that will form a secondary grassland habitat (meadow or pasture), with species selection using native/indigenous plants only (no exotic					

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			species) and using only a compatible species mix informed by the local soil and climate characteristics. ▪ Direct seeding by broadcasting seed or hydro-seeding is recommended to immediately stabilise areas that are bare of vegetation cover within two months of the completion of works in these areas. ▪ Care must be taken to utilise appropriate species for revegetating trenches where cables/pipelines have been buried (avoid selecting deep rooting plants/trees for example that could damage buried cables/pipes). ▪ Avoid creating or allowing the establishment of woodland or shrubland in areas that were formerly grassland or pasture prior to development. ▪ Implement adaptive measures in line with the habitat restoration actions as needed and informed by routine monitoring.					
2 WILDLIFE MANAGEMENT (FAUNA)								
2.1	**Avoidance of sensitive habitats for species**	Avoid Minimise	▪ 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 bird breeding periods (spring, early summer) or using noise barriers.	Noisy/intensive maintenance works avoided during bird breeding season Human presence minimised near bird nest sites No handling/ disturbance of bird nests/eggs/yound Protective ecological buffer zone for bird nests maintained	-	Maintenance contractors (service providers)	During operational phase, when maintenance takes place	To be implemented during operation

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			▪ *As to the above management requirement, there may be situations where urgent or emergency repairs or upgrades are needed for example that cannot be delayed. Seasonal restrictions may not be possible in such cases, and it is recommended that the opinion and advice of an expert ornithologist be sought prior to maintenance works taking place and that specific mitigation be considered on a case-by-case basis as appropriate to the works required to minimise disturbance to breeding birds.* ▪ During maintenance activities, minimize extended human presence near known sites for nesting birds (identified during pre-operational phase surveys) and protect sensitive habitat areas adjacent to work areas with temporary barriers or temporary barriers/fencing to limit human foot-traffic. ▪ Bird nests, any eggs or young birds are not to be handled/removed or relocated. Only trained specialists with the relevant permits in place beforehand may undertake such work, if applicable. *There may for example be instances where adult birds are killed or displaced and eggs may not survive without parent. In such cases, a bird expert would be consulted to remove the eggs and care for these (in an incubator for example) until the eggs hatch and the young cared for until they can be released back into the wild.*					

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			▪ It is recommended to maintain a protective ecological buffer (set-back distance) to avoid or minimise potential impacts on breeding birds during the main breeding season (spring, early summer). Maintaining a conservative buffer distance of 200 – 500 m from known/active nests is recommended (aligned with Tolvanen et al., 2023 and NatureScot, 2022). Maintenance activities for the wind farm are to be restricted as far as possible within this buffer zone. *Note that this excludes current/ongoing agricultural activities by other external landowners and farmers that cannot be restricted by this Project-specific BMP.*					
2.2	**Wildlife controls**	Avoid Minimise	▪ Reduce the suitability of any open work areas for animals, such as earthen embankments, bare slopes and temporary topsoil stockpiles, by covering or containing piles of soil, fill, brush, rocks and other loose materials and covering or hydroseeding soil stockpiles and slopes that are to be left temporarily open/exposed for an extended period of time (e.g., exceeding one week). ▪ Prevent the establishment of active nests during the primary bird nesting season (spring/summer) on standing plant and temporary facilities and structures by closing opening and vents and checking equipment before operation. ▪ Any excavations associated with maintenance activities are not to be left open overnight, alternatively they will need to be securely covered or a means of escape for any animals that may become trapped will be provided, such as a wooden board or earthen ramp.	Wildlife controls implemented (as and where relevant) Animal carcasses removed timeously (where relevant) Crop spill onto turbine pads avoided/ minimised Water accumulation on turbine pads avoided/minimised	-	Ignitis Maintenance contractors (service providers)	During operational phase	To be implemented during operation

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			▪ All open excavations are to be checked for the presence of animals each morning and immediately prior to backfilling of open excavations/trenches. ▪ Any injured animals identified are to be transported carefully but efficiently to a local vet for treatment as soon as possible. ▪ If any animal carcasses are found within the Project area, their carcasses will be promptly removed to prevent the attraction of scavengers. Carcass removal will be done within 48 hours of discovery to prevent creating an attraction point for other animals and to reduce the risk of disease transmission. Carcass removal and final disposal will be in accordance with local regulations under the supervision of a qualified wildlife biologist. ▪ Certain species of animals that may be considered pests (e.g., snakes, frogs, field mice, certain birds, and bees) must not be killed or injured as these could be important species from a biodiversity conservation perspective and could be potentially poisonous/dangerous if handled inappropriately. ▪ Avoid crop spill on the wind turbine platform (to avoid attracting prey animals such as rodents). ▪ Prevent the accumulation of surface water (pooling, creation of puddles after rainfall that can attract insects/bats) near the turbines by ensuring a level turbine pad surface is created and maintained.					
2.3	**Fencing and barriers**	Avoid Minimise	▪ Avoid placing impermeable fences, except temporarily to protect reptiles/small mammals from entering active work areas during road/transmission line maintenance.	Temporary fencing/barrier removed once works completed	-	All external contractors (service providers)	During operational phase, when maintenance take place	To be implemented during operation

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			▪ Temporary fences must be removed once maintenance works are completed. ▪ Where more permanent fencing may be required, install permeable fencing to allow for unimpeded movement by small mammals and reptiles for example. ▪ Maintain the integrity of fences. ▪ If operation monitoring results show that any site fences present a physical barrier to faunal movements, consider measures to improve permeability of fencing, such as the use of tunnels, or replacement of fencing in strategic positions using other materials with appropriate spacing.	Permanent fencing is permeable Fences are maintained in good condition				
2.4	**Vehicle restrictions**	Avoid Minimise	▪ 30 km/hour vehicle speed limit to be enforced on all internal access roads at the site for all vehicles accessing the site. ▪ Restrict traffic on access roads as far as possible to daytime hours when visibility is good to reduce risk of vehicle collisions with wildlife. ▪ Limit workers and vehicle access to the authorized areas where maintenance activities will take place. ▪ Restrict vehicles to the use of only authorized access roads.	Vehicle restrictions are in place and communicated to service providers	-	All external contractors (service providers)	During operational phase	To be implemented during operation
2.5	**Worker conduct**	Avoid	▪ Good conduct to be implemented through company policy and relevant training, and enforce regulations to prevent hunting, trapping, or disturbing wildlife. ▪ A site-wide prohibition on illegal activities such as hunting of wildlife or collecting of natural animal/plant species is to be enforced and discussed with service providers, with appropriate penalties/disciplinary actions in place for such illegal activities.	Worker conduct is enforced through policy and communicated to service providers	-	Ignitis All external contractors (service providers)	During operational phase	To be implemented during operation

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
2.6	**Noise management**	Avoid Minimise	Noise management will be covered in detail in the Operational E&S Management Plan: OESMP which is being prepared at the time of compiling this BMP. Specific aspects related to mitigating impacts on biodiversity (fauna) shall include: ▪ Use noise minimizing technology where possible during maintenance activities. ▪ Monitor and keep in proper working condition all installed equipment, devices and work resources. ▪ Any maintenance related equipment which is not being used must be turned off. ▪ No blasting is to take place (unless under permit and authorisation and avoiding the bird breeding season).	OESMP in place and measures implemented	Operational E&S Management Plan: OESMP (ERM, 2025) (under development)	All external contractors (service providers)	During operational phase, when maintenance take place	To be implemented during operation
2.7	**Waste management**	Avoid Minimise	Waste management will be covered in detail in the Operational E&S Management Plan: OESMP which is being prepared at the time of compiling this BMP. Specific aspects related to mitigating impacts on biodiversity (fauna) shall include: ▪ Collect and remove waste products and litter from maintenance work areas that could attract wildlife to these areas. ▪ Use storage/bins that are closed and so animals cannot access these containers for waste. ▪ Dispose of any waste using approved means only (no burial of waste, burning of waste or dumping into the environment).	OESMP in place and measures implemented	OESMP (ERM, 2025) (under development)	All external contractors (service providers)	During operational phase	To be implemented during operation
2.8	**Spill management**	Avoid Minimise Restore	Spill management relates to the management to avoid spills of hydrocarbons (fuels, oils) and any hazardous substances/chemicals, etc. necessary for maintenance activities, and emergency cleanup measures to be implemented should spills occur.	OESMP in place and measures implemented	OESMP (ERM, 2025) (under development)	All external contractors (service providers)	During operational phase, when maintenance take place	To be implemented during operation

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
			This aspect will be covered in detail in the Operational E&S Management Plan: OESMP which is still being prepared at the time of compiling this BMP.					
2.9	**Artificial lighting management**	Avoid Minimise	Lighting will also be covered in further detail in the Operational E&S Management Plan: OESMP which is being prepared at the time of compiling this BMP. However, aspects of lighting that relate specifically to mitigating impacts on biodiversity (fauna) shall include: ▪ Restrict maintenance activities to daytime hours as far as possible, unless for emergency situations where delays are not possible. ▪ Use low intensity lights where possible during maintenance activities that take place at night. ▪ Aim lights away from any adjacent sensitive habitats such as forest, woodland and wetlands. ▪ Make use of directional lighting to reduce light spill and prevent light increases in adjacent sensitive habitats such as bushes and wooded habitats.	OESMP in place and measures implemented	OESMP (ERM, 2025) (under development)	All external contractors (service providers)	During operational phase	To be implemented during operation
2.9	**Implement BICS (Bird Identification and Control System)**	Avoid Minimise	▪ Design and implement a Project-wide 'Bird Identification and Control System' or BICS[8]. ▪ Operate, monitor and maintain the BICS for the duration of wind farm operation.	BICS implemented and maintained for the duration of wind farm operations	-	Ignitis External contractor (ProTecBird)	Throughout operational phase, constantly	IMPLEMENTED: system is installed

[8] Ignitis has already taken action in response to the local consultants/ornithologists recommendations (CORPI) and has opted to implement a Project-wide 'Bird Identification and Control System' ("BICS") at Kelme WF. Ignitis has contracted ProTecBird (https://www.protecbird.com), an industry-leading German technology firm that specializes in bird protection through innovative solutions. The BICS will make use of ProTecBird's AVES Wind Anti-Collision System ("ACS") which provides a fully automated and real-time bird detection, identification and tracking system and Artificial Intelligence (AI)-based anti-collision system that uses reliable Artificial Intelligence (AI) and accommodates for various light and weather conditions (day, twilight, night and inclement/harsh weather). The system has been shown to work well and efficiently and has been validated with a 97% detection rate and a 98% identification rate for target bird species over a range of 400-600 meters. The BICS has been designed and installed at the wind farm already. *In terms of the technical design details for the BICS, this has been detailed in Annexure B – refer to section 10.2 of the BMP.*

#	Main Actions	Category	Sub-actions / Mitigation Measures	KPIs	Cross Reference to Specific Plan(s)	Responsibility	Timeline and frequency	Status
2.10	**Adaptive management measures for birds / bats**	Avoid Minimise Monitor	▪ Implement the existing bird and bat monitoring program[9] during operations (CORPI, 2022/23) with a focus on Post-construction Fatality Monitoring (PCFM). ▪ Develop and implement an adaptive management framework[10], with appropriate measures to be considered based on PCFM outcomes. *See specifically Chapter 7 of the BMP: Adaptive Management, Monitoring & Evaluation.*	PCFM implemented during operation as per monitoring program schedule and timing specifics Adaptive management framework and measures in place (and implemented where necessary)	Bird and Bat Monitoring Program (CORPI, 2022/23) Biodiversity Monitoring and Evaluation Program: BMEP (ERM, 2025) (under development)	Ignitis External consultant: biodiversity expert (bats, birds)	Throughout operational phase, informed by bird/bat monitoring outcomes	Included in BMP, to be implemented during operation

[9] Ignitis developed two Birds and Bats monitoring programs, one for Kelme I and a second for Kelme II. These are essentially the same in terms of approach and methods, just the area covered is different (specific to the turbines for each sub-project). These have been prepared in response to the Environmental Decision of the EPA (Environmental Protection Agency) concerning the Project, which requires that 'a bird and bat monitoring program must be prepared and implemented before and during the operation of the wind farm, and if a significant impact on birds or bats is determined, impact mitigation measures must be proposed and applied'.
The monitoring programs include Post-construction Fatality Monitoring (PCFM) which will be achieved through bird/bat carcass searches beneath turbines, supported by bias correction trials (searcher efficiency, scavenger removal).

[10]The existing bird/bat monitoring program (CORPI, 2022/23) presents fatality thresholds for birds. Results of fatality estimations will be compared against these thresholds gauge the level of impact of the operational wind farm on bird species and to inform adaptive management/mitigation requirements as necessary. Adaptive measures will be developed and refined over time to respond to monitoring outcomes and evolving project conditions.

7. ADAPTIVE MANAGEMENT, MONITORING AND EVALUATION

7.1 ADAPTIVE MANAGEMENT APPROACH

Given the complexity in predicting impacts on biodiversity over the long term, EBRD PR6 requires an adaptive management approach, whereby mitigation and management measures are responsive to changing conditions and the results of monitoring throughout the Project lifecycle.

The early identification of any important issues, challenges, constraints to management/mitigation measures implementation, failures of key actions and changes in the environment, through an appropriately designed Monitoring and Evaluation (M&E) programme, allows adaptive management solutions to be identified and tailored to the wind power projects.

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 7-1. *This approach is not limited to modifying previous approaches to the management of biodiversity as per the BMP 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.*

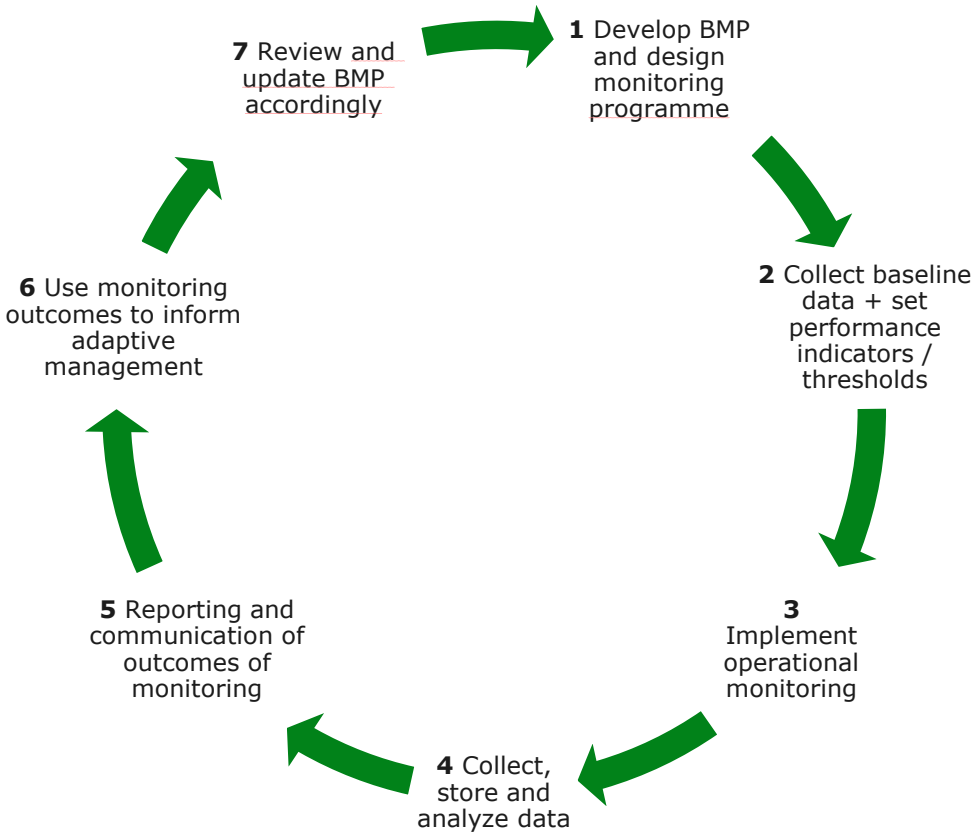


FIGURE 7-1 DIAGRAM SHOWING THE 'ADAPTIVE MANAGEMENT CYCLE'

Source: ERM (unpublished)

The following guidelines apply regarding implementing an 'adaptive' approach to biodiversity management:

- Identify discrepancies between targets and performance.
- Implement adaptative management using a 'Plan-Do-Check-Act' approach to modify actions or implement new approaches to close gaps, as necessary.
- Update relevant plans (e.g. BAP, BMP, OESMP, operational bird/bat monitoring plan, etc.) to reflect the outcome of ongoing regular monitoring and evaluation so that management plans for biodiversity reflect the current understanding of impacts, success of implementation and progress of outcomes.
- Support from biodiversity experts should be sought before adapting any management plans. Firstly, seek advice on potential explanations for trends observed in monitoring (to determine if changes are random, result of management interventions or asset operations). Secondly, this is important to identify best possible adaptations to ensure improvement in the management of biodiversity at the Project site.
- Trends identified from monitoring that are (a) statistically significant and (b) require management action, will lead to adaptive management.
- The extent to which monitored biodiversity indicators align with agreed targets must be evaluated, and potential adaptations may occur to set more realistic targets or alter biodiversity actions as needed.
- Monitoring required to identify new or changing risks that can arise during the operational life-time of the Project may need to be considered.
- Review cycles must be established, at a suitable frequency, or as directed by new data with the principles of adaptive management and continuous improvement.

7.2 MONITORING AND EVALUATION FRAMEWORK

In aligning with the requirements and recommendations of EBRD PR6, these acknowledge how essential monitoring is with regards to biodiversity management and for informing adaptive management. *In particular, where CH has been identified and there is a potential for negative impacts thereon for example, a robust and long-term biodiversity monitoring and evaluation program (BMEP) is required, in order to assess the status of CH and integrated into an adaptive management program for the project (EBRD PR6, 2019).*

Monitoring essentially forms the basis for evaluating performance of biodiversity management plans and actions as follows:

- More accurately defines the actual level of impact of Project-related activities on biodiversity;
- Allows for the evaluation of the level of success of impact management and mitigation measures prescribed.

The following recommendations apply to the M&E process for the BMP (aligned with EBRD PR6 requirements):

- Long-term biodiversity monitoring is necessary to validate predicted impacts and risks to biodiversity and the predicted effectiveness of management actions and interventions;
- The M&E programme should include the following: (i) baseline; (ii) monitoring of the implementation of mitigation measures and management controls; and (iii) monitoring of the status of biodiversity values during the life of the project compared to the baseline;
- Performance thresholds or triggers should be set for monitoring results that will trigger a need to adapt management plans;
- New findings may arise from monitoring or independent sources and should be used to continually improve on the existing management of biodiversity; and
- The results of the monitoring program should be reviewed regularly, if they indicate management actions are not being implemented as planned, the reasons for failure need to be identified and rectified.

ERM is developing a separate **BMEP (Biodiversity Monitoring and Evaluation Program)** for the Project that will link to both the BAP and BMP**.**

What is key however to the operational phase of this Project is the monitoring program for birds and bats during operation that has already been developed by CORPI (2022/23) which includes Post-construction Fatality Monitoring (PCFM). Two separate Birds and Bats monitoring programs, one for Kelme I and a second for Kelme II. These are essentially the same in terms of approach and methods, just the area covered is different (specific to the turbines for each sub-project). These have been prepared in response to the Environmental Decision of the EPA (Environmental Protection Agency) concerning the Project, which requires that '*a bird and bat monitoring program must be prepared and implemented before and during the operation of the wind farm, and if a significant impact on birds or bats is determined, impact mitigation measures must be proposed and applied'*.

The monitoring programs include PCFM which will be achieved through bird/bat carcass searches beneath turbines, supported by bias correction trials (searcher efficiency, scavenger removal).

In terms of the monitoring period, this is as follows:

- For three years after the start of operation of the wind farm (including bird/bat carcass monitoring); and
- After the initial three-year operational period, one-year surveys are to be repeated every five years for the duration of operation.
- Carcass searches are to be carried out at all turbines positions every five days during the periods of intensive seasonal bird and bat migration: March–October.

The results of PCFM will be essential for informing adaptive management for birds and bats, as described below under section 7.3.

7.3 ADAPTIVE MANAGEMENT FRAMEWORK: BIRDS & BATS

Adaptive management informed by operational monitoring outcomes will be particularly important for managing collision and mortality risks/impacts to birds and bats. For this purpose, a Project-specific adaptive management framework has been developed.

Informed by the outputs of PCFM implemented for birds and bats, an adaptive management response framework has been developed to guide the responsive course of action that follows. The adaptive response framework shown in Figure 7-2 and Table 7-1 relies on information from carcass monitoring and the thresholds set for birds/bats to inform relevant response actions.

In essence, carcass monitoring during operation phase is used to inform the estimation of annual fatality rate (taking into account bias correction factors) which is then compared with the Fatality Threshold (FT) for species, with exceedances of thresholds being the trigger for further actions (see box below for information on FTs).

Fatality Thresholds (FT) for Birds and Bats

Adopting an annual Fatality Threshold (FT) approach informed by relevant 'Limits of Acceptable Change' (LAC) provides a conservation marker to guide decision-making and provide assurance to wind farm operators and stakeholders. This aligns with the concepts and criteria underpinning European frameworks such as "Favourable Conservation Status" (EU Habitats Directive) and "Optimal Sustainable Population Size". This requires the determination of the maximum level of human impact that a species can sustain without incurring significant population consequences. Once the annual FT is exceeded, adaptive management measures are triggered in an attempt to return the risk to acceptable levels.

The current recommended approach to FT setting contained in the PCFM good practice handbook and decision support tool developed by IFC, EBRD and KfW (2023), is as follows:

- Where there are national or regional fatality thresholds or guidance, developers should adhere to these.
- In the absence of the above, techniques to estimate threshold include population matrix modelling, Population Viability Analysis (PVA) and Potential Biological Removal (PBR).

FTs for bats:

For the Kelme WF Project, FTs for bats have been provided in the Bird & Bat Monitoring Program (CORPI, 2022/23) and the proposed FT of **two (2) individuals per WTG is recommended** to be considered a significant impact and triggering further action.

FTs for birds:

For the Kelme I sub-project, FTs for birds have been provided in the Bird & Bat Monitoring Program (CORPI, 2022/23) and the recommendation is that if **one (1) or more individuals of a rare breeding or migratory species** is killed over a three-year period of monitoring, that this be considered a significant impact and triggering further action.

For the Kelme II sub-project, actual species-specific FTs are defined based on the Order of the Minister of the Environment of the Republic of Lithuania "*On Detailed Criteria for Significant Negative Impact of Wind Power Plants on Protected Species, Application of Measures for the Prevention and Elimination of Damage to Birds and Bats and Requirements for Research*". These are included below as reference for individual species recorded during pre-operational surveys:

Common Name	Latin Name	FT
Northern Goshawk	*Accipiter gentilis*	≥ 2 in 3 years
Eurasian Sparrowhawk	*Accipiter nisus*	≥ 3 in 3 years
Mallard	*Anas platyrhynchos*	≥ 10 in 1 year
Greater White-fronted Goose	*Anser albifrons*	≥ 10 in 1 year
Greylag Goose	*Anser anser*	≥ 2 in 1 year

Great White Egret	*Ardea alba*	≥ 5 in 3 years
Grey Heron	*Ardea cinerea*	≥ 5 in 3 years
Tufted Duck	*Aythya fuligula*	≥ 10 in 1 year
Common Goldeneye	*Bucephala clangula*	≥ 5 in 1 year
Eurasian (Common) Buzzard	*Buteo buteo*	≥ 3 in 3 years
Black Tern	*Chlidonias niger*	≥ 2 in 1 year
White Stork	*Ciconia ciconia*	≥ 5 in 3 years
Black Stork	*Ciconia nigra*	≥ 2 in 3 years
Western Marsh-harrier	*Circus aeruginosus*	≥ 3 in 3 years
Hen Harrier	*Circus cyaneus*	≥ 2 in 3 years
Montagu's Harrier	*Circus pygargus*	≥ 2 in 3 years
Lesser Spotted Eagle	*Clanga (Aquila) pomarina*	≥ 2 in 3 years
Common Wood Pigeon	*Columba palumbus*	≥ 5 in 1 year
Rook	*Corvus frugilegus*	≥ 10 in 1 year
Tundra Swan	*Cygnus columbianus*	≥ 1 in 1 year
Whooper Swan	*Cygnus cygnus*	≥ 3 in 1 year
Mute Swan	*Cygnus olor*	≥ 5 in 1 year
Eurasian Hobby	*Falco subbuteo*	≥ 2 in 3 years
Common Kestrel	*Falco tinnunculus*	≥ 2 in 3 years
Eurasian Coot	*Fulica atra*	≥ 25 in 1 year
Common Snipe	*Gallinago gallinago*	≥ 2 in 1 year
Common Crane	*Grus grus*	≥ 6 in 3 years
White-tailed Sea-eagle	*Haliaeetus albicilla*	≥ 2 in 3 years
European Herring Gull	*Larus argentatus*	≥ 5 in 1 year
Mew (Common) Gull	*Larus canus*	≥ 10 in 1 year
Black-headed Gull	*Larus ridibundus*	≥ 5 in 1 year
Eurasian Wigeon	*Mareca penelope*	≥ 10 in 1 year
Black Kite	*Milvus migrans*	≥ 2 in 3 years
Eurasian Curlew	*Numenius arquata*	≥ 1 in 1 year
Osprey	*Pandion haliaetus*	≥ 2 in 3 years
European Honey-buzzard	*Pernis apivorus*	≥ 2 in 3 years
Great Cormorant	*Phalacrocorax carbo*	≥ 25 in 1 year
Eurasian Golden Plover	*Pluvialis apricaria*	≥ 5 in 1 year
Great Crested Grebe	*Podiceps cristatus*	≥ 5 in 1 year
Common Tern	*Sterna hirundo*	≥ 2 in 1 year
Northern Lapwing	*Vanellus vanellus*	≥ 5 in 1 year

Source: Bird & Bat Monitoring Program (CORPI, 2022)

SPECIAL NOTE: It should be noted that there is justification to set a 'zero' FT for certain bird species based on PBR calculations:

- *White-tailed Sea-eagle, Haliaeetus albicilla, PBR = ~ 4 birds/annum*
- *Black Kite, Milvus migrans, PBR = ~ 2 birds/annum*

For these two species in particular, mortalities of even a few individuals of these particular species will be potentially impactful on the national populations, and in all likelihood a 'zero fatality threshold' would be appropriate for these species in alignment with Good International Practice to protect these vulnerable populations.

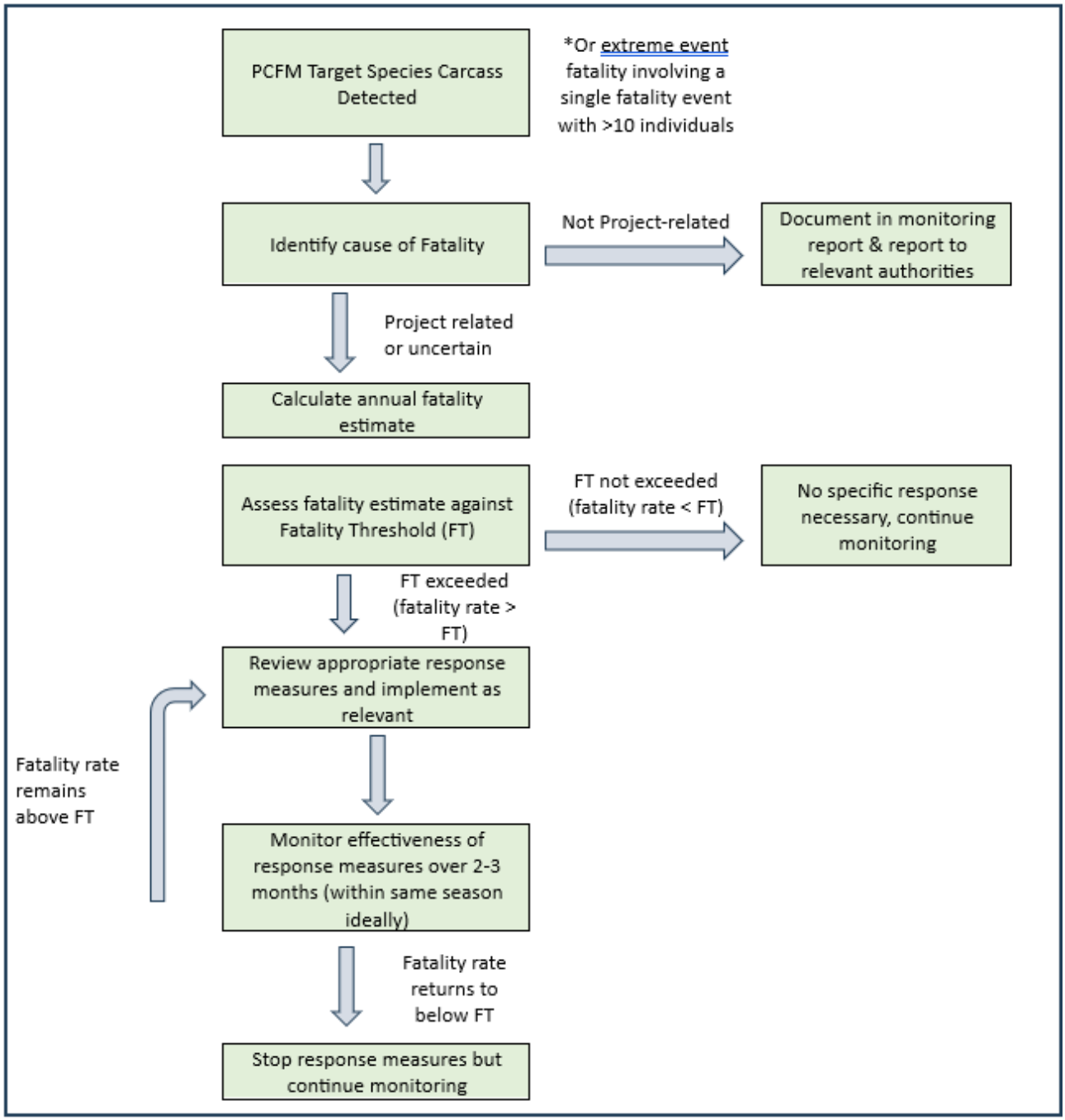


FIGURE 7-2 ADAPTIVE MANAGEMENT RESPONSE FRAMEWORK AND DECISION-TREE FOR BIRDS AND BATS MANAGEMENT DURING WF OPERATION

Source: ERM (unpublished)

TABLE 7-1 ADAPTIVE MANAGEMENT RESPONSE FRAMEWORK FOR BIRDS AND BATS

#	Actions	Details
1	**Investigate and respond to carcass find**	▪ Report bird/bat carcass find and document date, time and location (turbine number) and estimated distance from turbine tower as well as compass direction relative to the wind turbine. ▪ Identify carcass (bird/bat) to species or at least genus level. ▪ Investigate factors contributing to the fatalities which will include considering both Project operation and other local or regional events (e.g., meteorological conditions, farm management practices on adjacent agricultural holdings, etc.). ▪ If the wind farm is the most feasible cause, or if the cause cannot be determined, the actions below will be implemented. If other causes are responsible, no further action is required. ▪ Determine if the carcass belongs to a listed PCFM target species.
2	**Determine if FTs are exceeded**	▪ Determine if the FTs have been met or exceeded, either by this find or cumulatively over the annual reporting period. ▪ If FTs are exceeded, the severity of impact must also be considered in determining the most appropriate response measure(s) as presented in Table 7-2. ▪ Note that for 'zero fatality threshold' species, any fatality will trigger an adaptive management response. ▪ If thresholds are not met, ensure carcass finding is appropriately reported and accounted for in future threshold evaluations.
3	**Implement relevant mitigation/management response measures**	▪ Where PCFM target species carcasses are identified, the external consultant undertaking PCFM is to determine the cause of death onsite. ▪ Where the cause of death cannot be determined onsite through inspection of the carcass and based on its location relative to wind turbine positions, this warrants the need for further investigations into cause of death, if possible. ▪ If the wind farm is the most feasible cause, or if the cause cannot be determined with certainty, the actions below will be implemented. If other causes (other than the wind farm) are responsible for mortalities with a high level of certainty, no further action is required other than documenting the carcass finding in the annual monitoring report. ▪ If following site level investigations, the fatality is deemed to be a once-off occurrence or ongoing risk is unlikely to be significant, at a population level, further action will probably be unnecessary. Note that this does not apply to species for which 'zero fatality thresholds' have been set, for which immediate investigation into the cause and evaluation of adaptive management measures will be necessary. ▪ If the cause of death is not clear, further onsite investigations of risk behaviours for the bird species in question will be needed, through ongoing seasonal PCFM observation monitoring for birds/bats. Where the next round of PCFM suggests that the species activity may be considered risky in terms of flights at collision risk height, this may be interpreted that fatalities onsite are likely to be due to turbine collisions and appropriate steps are to be taken to manage this risk (see further recommendations below). ▪ If investigations suggest that the impact trigger may be a regular occurrence, species-specific monitoring may be required, following a review and assessment of adaptive management/mitigation options (as presented in Table 7-2) to determine the most appropriate response measure(s). ▪ Implement response measures and monitor to determine effectiveness, for a set period: o If mitigation measures are successful, continue implementation. o If measures are not successful, re-evaluate options and implement further actions and monitoring to address collisions. This shall include a review of the best available technology and

#	Actions	Details
		mitigation practices at the time, and consultation with species experts.
4	**Evaluate site utilization data**	▪ Review site utilization data (species, numbers, locations, etc.), including trends over time. ▪ If changes are observed, review potential causes including considering both wind farm operation and other local or regional events (e.g., meteorological conditions, farm management practices on adjacent agricultural holdings, etc.). ▪ If the wind farm is the most feasible cause of fatalities, or if the cause cannot be determined the actions below will be implemented. If other causes are responsible and can be confirmed with certainty (not due to the wind farm), no further actions are required. ▪ Review monitoring protocols and determine if additional sites or monitoring events are required. ▪ Collate and evaluate data from other wind farms (where available) to evaluate trends and opportunities for collaborative responses (if required). This will only be possible where there is up-to-date monitoring data from nearby wind farm projects that coincide with the period of PCFM for the Project. ▪ Consult with species experts and regulators to determine if additional responses are required and if so, the most appropriate course of action. This must include a review of the best available technology and mitigation practices at the time.
5	**Regulator engagement**	▪ Report carcass findings and responses to regulators for PCFM target species (and in particular nationally/internationally protected species, globally/nationally threatened species (CR, EN, VU), endemic species, restricted-range species, for example). ▪ If significant impact thresholds are met, engage with regulators to determine the appropriate compensation/offset response as needed.
6	**Review PCFM design**	▪ Review the PCFM design against the results of operation phase monitoring for bats and birds. ▪ Are the fatality estimates derived from annual monitoring sufficiently precise to assess thresholds? If not, consider what actions are needed to improve precision (e.g., bias corrections to be reevaluated, PCFM design may need to be relooked at, increasing monitoring effort for a certain season, etc.). ▪ Where the risk profile of the Project (in terms of collision risk for birds/bats) has changed, does the PCFM design need to be modified? ▪ Are there any additional species (e.g., migrants, threatened species, endemic or restricted-range species, species listed in terms of the EU Birds Directive, etc.), that could qualify as PCFM target species? Does the PCFM plan need to be updated to include these additional species as PCFM target species?
7	**Update the Monitoring Plan**	▪ Where additional PCFM species are identified through monitoring, the PCFM plan will need to be updated to reflect these species and fatality thresholds will also need to be developed for these additional species. ▪ Where there is a change in risk profile, adapt plans to account for the changes and consider any necessary revisions to the mitigation actions/responses. ▪ Where new data on species occurrences, appreciable changes in population sizes, changes in national or global IUCN Red List status, etc., review FTs and update the PCFM plan as necessary.

Source: ERM, informed by Good International Practice Guidelines including the PCFM Handbook by IFC, ERBD & KfW (2023)

Based on the results of operation phase bats and birds monitoring, the adaptive mitigation/management measures in Table 7-2 will need to be considered[11]. These measures have been successful at other similar projects and/or comprise industry good practice, and where possible tailored to the Project area.

The particular measures implemented will still need to be vetted and depend on individual circumstances and further guidance is provided about when particular measures may be most useful. The most appropriate measure to adopt will be determined as part of the adaptive management framework and in response to adaptive management triggers. This includes consultation with relevant experts and stakeholders, as required.

Note that appropriate adaptive mitigation measures should be prepared only if a cause, or causes, of ecologically significant impacts on the relevant species of birds/bats is known. Potential causes of heightened collision risk for this Project may include the following:

- Possible seasonal attraction of bats to turbines;
- Seasonal nesting or roosting in proximity of turbines; and
- Periodic environmental conditions such as localized high densities of natural food sources (such as insects) or availability of surface water.

If a cause is not readily apparent, then investigations into the causes for the impact must be undertaken prior to any formal proposal of an adaptive mitigation strategy. Advice from the Project Operator will be sought with regards to the implementation of any such investigations and of an ultimate mitigation strategy, if required. Any mitigation strategy will be tailored to the needs of the particular species affected and will be formulated if and when the nature and cause(s) of the impact are known.

TABLE 7-2 ADAPTIVE MANAGEMENT ACTIONS FOR BIRDS AND BATS

TRIGGER EVENT	RECOMMENDED MANAGEMENT RESPONSES	TIMEFRAME
A particular turbine or suite of turbines are contributing to loss of threatened birds or bats, as identified during collision monitoring and/or review and analysis of carcass data sheets	▪ Conduct a full investigation of the BICS and ensure that the system is working correctly and correct any problems that may have occurred with the system, including replacing any malfunctioning systems/detectors. ▪ For threatened bird species: implement shut-down-on-demand procedure where bird FT is exceeded, subject to further monitoring and risk assessment before operations can resume.	Immediately following detection of threatened species

[11] Note that it is not intended for the measures in Table 7-2 to be exhaustive and it is acknowledged that management of turbine collisions is an evolving field. The suite of management measures will be reviewed and updated with each review of the BMP. The periodic review of this management plan will also allow for the inclusion of proven effective mitigation measures and any innovations identified within the wind energy sector. Alternative measures may also be employed if they are considered to be the most effective in addressing a particular issue.

TRIGGER EVENT	RECOMMENDED MANAGEMENT RESPONSES	TIMEFRAME
High bird/bat mortality rate or species-specific FT exceeded	▪ For bats: implement turbine curtailment measures (i.e., raising cut-in speeds, feathering of blades as examples during known/predicted periods of peak bat activity) to reduce collision risk for bats. In alignment with the Monitoring Plan recommendations (CORPI, 2022/23) and Environmental Decision (EPA, 2022): *If the monitoring reveals an impact on bats, measures to reduce the impact on risk-increasing wind turbines will be used: 1) increasing the start-up speed of wind turbines from the factory-set speed to 5.5-6 m/s from sunset to sunrise during the period from June to September 15th; 2) evaluating bat migration activity with stationary detectors throughout the planned wind farm area, as close to the planned wind turbines and as high as possible to select the most suitable impact reduction measures.* ▪ Providing auditory deterrents where high bird/bat mortality rate has been identified. ▪ Install reflectors / light reflecting devices to repel birds. ▪ Drainage of land reclamation ditches. ▪ Erection of additional artificial nesting sites / bat boxes away from the Project area. ▪ Implement additional nesting sites protection measures. ▪ Consider installing ultrasonic detectors linked to the SCADA. ▪ Examine meteorological data to identify weather patterns that might explain changes in bird/bat behaviour leading to their increased mortality. ▪ Inform operators of any nearby wind farms about the heightened risk of bird/bat mortality.	Immediately following record of trigger, until mortality rate returns to below FT
Near-miss incidents (e.g., failure to implement shut-down or other response protocols in a timely manner but did not result in PCFM target bird/bat species mortality)	▪ Near miss incidents shall be based on the regular monitoring (visual point counts/transects) where the external consultant will identify potential near miss incidents and report these, for the PCFM target species, as well as where the wind power plant operator identified a large flock of migratory birds for example that were flying at possible collision risk height but managed to avoid any collisions. ▪ Record details of chain of action and report the incident. ▪ Review response protocol. ▪ Review and revise observer or communication protocols where necessary.	Immediately following record of trigger (near-miss incident)
Raptor nests identified within 200 m of wind turbines (it is possible that raptors may build nests within 200 m of a turbine during the operational life of the Project)	▪ Reduce species interactions with turbines by discouraging nesting behaviour. This may mean maintenance of vegetation within the wind farm and surrounds to reduce suitability for nesting raptor species (it must be acknowledged though that this can be a lengthy process of permitting through the relevant Environment Authority, that may make such measures difficult to implement in the short-term, and these need to be managed and the feasibility considered on a case-by-case basis).	At appropriate times, following strikes to PCFM target raptor species, during normal operational checks/ maintenance activities

TRIGGER EVENT	RECOMMENDED MANAGEMENT RESPONSES	TIMEFRAME
	▪ Wind farm operations and maintenance workers to be instructed on the potential for raptors to nest on the Project area and given specific instruction on what to do if they notice raptors preferentially nesting on the ground or in trees, on fences or powerlines/pylons near to the Project, based on chance observations during normal operations/maintenance. This will involve reporting the perching activity by notifying the Project Operator and recording the location of nesting activity/taking a photograph, etc., where possible. ▪ If a potential raptor nest is detected within 200 m of a turbine (new nest, not previously recorded through pre-operational monitoring already completed), a qualified ornithologist will be called in to confirm identity of the nesting species and to determine whether the nests location represents a heightened risk to a threatened species. ▪ If this is the case, a strategy to reduce risk will be determined. ▪ Investigate the need for habitat enhancement for bats (e.g., creation of pools, small forest patches, etc.) and provision of bat-boxes in adjacent areas away from wind turbines, which may serve to reduce the number of birds/bats in the Project area and therefore reduce collision risks[12].	
Favoured raptor perch site identified within 200 m of wind turbines (it is possible that raptors may frequent perch sites within 200 m of a turbine during the operational life of the Project)	▪ Wind farm operations and maintenance contractors to be instructed on the potential for raptors to perch on the site and given specific instruction on what to do if they notice raptors preferentially perching on trees and/or infrastructure (e.g., fences, powerlines, etc.) near to the Project based on chance observations during normal operations/maintenance. This will involve reporting the perching activity by notifying the Project Operator and recording the location of perching activity/taking a photograph, etc., where possible. ▪ If a potential favoured perch site for raptors is detected within 200 m of a turbine, a qualified ornithologist will be called in to confirm identity of the nesting species and to determine whether the perch site location represents a heightened risk to a threatened species. ▪ If this is the case, a strategy to reduce risk will be determined. ▪ Removal of the perch site may be considered if there is a reasonable likelihood of reducing risk by doing so. ▪ Investigate the need for habitat enhancement for bats (e.g., creation of pools, small forest patches, etc.) and provision of bat-boxes in adjacent areas away from wind turbines, which may serve to	At appropriate times, following strikes of PCFM target raptor species, during normal operational checks/ maintenance activities

[12] Note that whilst in theory this could work, there is a concern regarding the need for specific permissions to undertake such work which will need to be investigated, private land ownership will also limit what can be achieved, and perhaps the biggest limitation will be where several existing wind farms may be in adjacent and nearby areas and numerous others are in various stages of planning and approval. It is therefore unlikely that such a measure could be implemented in practice, and therefore this mitigation intervention should rather be investigated, if necessary, as part of the adaptive management plan informed by operational monitoring results.

TRIGGER EVENT	RECOMMENDED MANAGEMENT RESPONSES	TIMEFRAME
	reduce the number of birds/bats in the Project area and therefore reduce collision risks.	

Source: ERM, informed by Good International Practice Guidelines including the PCFM Handbook by IFC, ERBD & KfW (2023)

8. IMPLEMENTATION OF THE BMP

8.1 ROLES AND RESPONSIBILITIES

The ultimate responsibility for implementing the BMP rests with the wind farm operator, that being Ignitis Renewables.

Ignitis will procure the services of several individual services providers that will be contracted for the duration of operations of the wind park under the following service agreements:

- **WTG Manufacturer (Nordex) Service Agreement** – covering wind turbine remote monitoring and response, preventative and corrective maintenance (repairs and replacement) and spare parts management.
- **eBoP Service Agreement** – covering high voltage infrastructure (HV cabling and substation) monitoring and response, preventative and corrective maintenance (repairs and replacement), spare parts management and switching & dispatching.
- **Auxiliary Services Agreements** – to cover the civil balance of the wind power plant (civil and grounds maintenance) and secondly security at the site (including CCTV installation and monitoring).

The individual service providers will be responsible for applying the relevant environmental and social (E&S) mitigation measures, including those recommended in the BMP, during their operations and maintenance (O&M) work and activities.

Specific technical tasks and measures as per the BMP will likely need to be delegated to contractors / independent experts with the relevant expertise in the implementation of specific actions and monitoring.

Key roles and responsibilities for BMP implementation are presented in Table 8-1 below.

TABLE 8-1 BMP IMPLEMENTATION ROLES AND RESPONSIBILITIES

Role	Responsibilities (BMP related only)
Environmental and Permitting Project Manager (Ignitis)	• 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 Group-level support to the Project. • Ultimate responsibility for ensuring implementation of required corrective actions including in response to identified E&S non-compliances and incidents. • Communicate the content of the BMP (including any updates) to service providers (as relevant) and act as the focal point to promote implementation, performance monitoring and provide guidance and support. • 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 contractor(s) 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.
Biodiversity Expert (external)	• Assist with developing supporting plans, programs and protocols as required.

Role	Responsibilities (BMP related only)
	• Facilitate organization of additional studies and stakeholder engagement activity where necessary. • Assist with developing Scope of Works / Terms of Reference for management actions and monitoring implementation. • Periodical review of biodiversity management effectiveness. • Support Ignitis with reviews and updates to the BMP as necessary. • Support with delivering training on implementation of the BMP and supporting plans and protocols.
Service providers (external contractors)	• Responsible for delivery of operational activities including routine and non-routine maintenance works. • Ensure any relevant mitigation measures/plans are appropriate and resourced with adequate budget. • Determine sequence and interaction of staff, resources and processes. • Oversee the implementation of own internal E&S Management Plans, Procedures and Method Statements provisions (where available or relevant) in accordance with the Ignitis PSMP. • Ensure communication and reporting in line with own internal E&S Management Plans, Procedures and Method Statements (where available or relevant). • Ensure inductions and training are completed in accordance with the own E&S Management Plans, Procedures and Method Statements provisions (where available or relevant). • Ensure E&S records are maintained where relevant. • Responsible for the day-to-day management / compliance of the operations and activities. • Responsible for identifying all E&S risks associated with O&M works. • Responsible for implementing the E&S Management Plans, Procedures and Method Statements provisions (where available or relevant). • Ensure all activities on site are undertaken in accordance with the OESMP, BMP, own E&S Management Plans, Procedures and Method Statements. • Responsible for E&S 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 E&S records. • Reporting the inspection and monitoring records to Project Manager and Ignitis.
Specialized contractors / consultants (external) See further details on external support functions in Table 8-2 below	• External consultant(s) appointed by Ignitis to handle and support with specific biodiversity-related matters. • Effective execution of the specific tasks assigned in conformity with the BMP action plan and according to contractual arrangements with Ignitis. • Lead the development and implementation of any other key biodiversity-related plans, monitoring programs and key actions (as needed). • Collaborate with local ecological NGOs (such as birdlife international, etc.) and experts particularly for carrying out operational bird and bat monitoring and other field-based biodiversity activities. • Inform the Environmental and Permitting Project Manager about biodiversity performance and provide recommendations on mitigation measures to be implemented. • Undertaking carcass monitoring (surveys), fatality estimations and reporting • Recommending adaptive measures and actions, as necessary • Adhoc support onsite or remotely via phone/email as necessary.

8.2 REPORTING AND COMMUNICATION

Reporting and communication allow for the wind farm 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. 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).

8.2.1 INTERNAL REPORTING AND COMMUNICATION

Internal reporting and communication requirements and mechanisms will need to be described and defined by 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:

- Ignitis' internal Environmental Management System (EMS) (where relevant);
- ISO 14001 requirements (where relevant);
- Reporting and communication to inform decision-making, BMP review and update and adaptive management processes linked to monitoring outcomes.

8.2.2 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); and
- Biodiversity disclosure requirements (where relevant: e.g. TNFD).

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.

8.3 BMP REVIEW AND UPDATE

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 (e.g. annually) needs to be agreed, whereby BMP actions, KPIs 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 KPIs and targets will be important to check if these are being met and if targets are indeed realistic. 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 to offset implementation 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.
- Urgent updates in line with the principle of 'adaptive management' can be the responsibility of the Ignitis' internal biodiversity expert, 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.*

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 at this stage 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 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 specific BMP for the decommissioning phase.

9. REFERENCES

Behr, O., Brinkmann, R., Hochradel, K., Mages, J., Korner,Nievergelt, F., Niermann, I., Reich, M., Simon, R., Weber, N., and Nagy, M. (2017). Mitigating Bat Mortality with Turbine-Specific Curtailment Algorithms: A Model Based Approach. In: Köppel, J. (eds) Wind Energy and Wildlife Interactions. Springer, Cham. https://doi.org/10.1007/978-3-319-51272-3_8

Coastal Research and Planning Institute (CORPI), 2025. Report on Bird and Bat Surveys in the Wind Farm in Kelme District Before Commissioning (Kelme I). March, 2025.

CORPI, 2025. Report on Bird and Bat Surveys in the Wind Farm in Kelme District Before Commissioning (Kelme II). March 2025.

CORPI, 2023. Wind Power Park in Kelme District Municipality (Kelme I): Bird and Bat Monitoring Program. November 2023.

CORPI, 2022. Wind Power Park in Kelme District Municipality (Kelme II): Bird and Bat Monitoring Program. December 2022.

Dillingham, P.W. and Fletcher, D. 2008. Estimating the ability of birds to sustain additional human caused mortalities using a simple decision rule and allometric relationships. Biological Conservation. 141: 1783-1792. July 2008. DOI: 10.1016/j.biocon.2008.04.022

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

European Bank for Reconstruction and Development (EBRD), 2019. Performance Requirements. Available online at: https://www.ebrd.com/home/who-we-are/ebrd-values/ebrd-environmental-social-sustainability/reports-and-policies/ebrd-performance-requirements.html

European Union (EU) (2016). European Red List of Habitats: Part 2. Terrestrial and freshwater habitats. Luxembourg: Publications Office of the European Union, 2016. SBN 978-92-79-61588-7. doi: 10.2779/091372

ERM, 2025a. Biodiversity Action Plan (BAP) for the Kelme Wind Farm. Unpublished report by ERM.

ERM, 2025b. Operational E&S Management Framework (OESMF) for Kelme Wind Farm. Unpublished report by ERM.

ERM, 2025c. Operational Environmental & Social Management Plan (OESMP) for Kelme Wind Farm. Unpublished report by ERM (*still under development*).

ERM, 2025d. Habitat Residual Impact Assessment for Kelme Wind Farm. Unpublished report by ERM.

ERM, 2025e. Critical Habitat Assessment (CHA) for Kelme Wind Farm. Unpublished report by ERM.

ERM, 2025f. Bird and Bat Monitoring Summary for Kelme Wind Farm. Unpublished report by ERM.

ERM, 2025g. Ecosystem Services Assessment for the Kelme Wind Farm. Unpublished report by ERM.

ERM, 2025h. Biodiversity Monitoring and Evaluation Program (BMEP) for Kelme Wind Farm. Unpublished report by ERM (*still under development*).

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

Hein, C. D., Gruver, J. C., and Arnett, E. B. (2013). Relating pre-construction bat activity and post-construction bat fatality to predict risk at wind energy facilities: a synthesis. Bat Conservation International.

IFC, KFW and EBRD, 2023. Post-construction bird and bat fatality monitoring for onshore wind energy facilities in emerging market countries: Good Practice handbook and decision support tool.

Lithuanian Geological Survey (LGT, 2025. *Geological Structure of Lithuania and Adjacent Territories.* Retrieved from: https://www.lgt.lt

Lintott, P. R., Minderman, J., Matthews, S., and Park, K. J., 2016. *Can pre-construction surveys predict bat activity at proposed wind farms?* Ecological Applications, 26(3), 530–539.

Rodrigues, L., Bach, L., Dubourg-Savage, M. J., Karapandža, B., Kovac, D., Kervyn, T., ... & Collins, J., 2015. *Guidelines for consideration of bats in wind farm projects – Revision 2015.* EUROBATS Publication Series No. 6, UNEP/EUROBATS Secretariat, Bonn, Germany. Available online at: http://www.eurobats.org/sites/default/files/documents/publications/publication_series/pubseries_no6_english.pdf

UAB Ekosistema, 2019. Screening Information for Environmental Impact Assessment Kelme I.

UAB Ekosistema, 2021-2022. Environmental Impact Assessment Kelme II.

10. ANNEXURES

10.1 ANNEXURE A: BIODIVERSITY BASELINE CONDITIONS SUMMARY

The detailed baseline with regards to biodiversity and ecosystems is presented in the ERM reports covering Habitat Residual Impact Assessment, Critical Habitat Assessment (CHA), Biodiversity Action Plan (BAP), Ecosystem Services Assessment and the Bird and Bat Summary Report which forms part of the supplementary package for the Kelme Wind Farm Project. This has not been repeated here in detail and the reader is referred to the referenced reports for further information:

- Habitat Residual Impact Assessment for Kelme Wind Farm (ERM, 2025)
- Bird and Bat Monitoring Summary Report for the Kelme Wind Farm (ERM, 2025)
- Biodiversity Action Plan (BAP) for the Kelme Wind Farm (ERM, 2025)
- Ecosystem Services Report for the Kelme Wind Farm (ERM, 2025)

A summary has been provided and the most important aspects relevant to the BMP are presented under the sub-sections that follow below.

10.1.1 PROTECTED AREAS AND OTHER IMPORTANT AREAS OF BIODIVERSITY VALUE

The Project area is not located within any nationally or internationally recognized protected area[13]. According to the Environmental Impact Assessment (EIA) report (UAB Ekosistema, 2019), the closest protected area in terms of the Natura 2000 network of sites is 'Paginskiai Village' (BAST code 1000000000457; EU code LTKEL0023), which lies approximately 2.7 km to the northwest of the Project area. Two other Natura 2000 sites are also nearby: 'Pakevis Forest' (BAST code 1000000000229; EU code LTKEL0001), about 2.8 km to the north, and 'Pamedziokalnis Forest' (BAST code 1000000000449; EU code LTKEL00248), roughly 5.4 km to the southwest.

The 330 kV underground cable/transmission line (TL) is located in close proximity to the Natura 2000 site 'Dubysos vidurupis ir žemupys', located to the east of the Project area (see map in Figure 10-1). This site is designated under the EU Habitats Directive for the protection of 16 habitat types, including grasslands, wetlands, and forests, as well as 10 species of conservation importance that are mainly aquatic species (including freshwater fish, aquatic invertebrates, and semi-aquatic mammals – otter). Notably, it provides habitat supporting the Eurasian otter (*Lutra lutra*), a species classified as Near Threatened (NT) both globally and in Europe. Construction of the transmission line in this area has already been completed.

[13] 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, 2019).

The Project is also not located within or near any internationally recognized areas of biodiversity value, in accordance with the EBRD PR6 definition[14] thereof:

- There are no nearby Ramsar sites identified;
- No UNESCO natural world heritage sites are located nearby;
- There are no Alliance for Zero Extinction (AZE) sites in Lithuania;
- Additionally, the Project lies outside any Key Biodiversity Areas (KBAs), with the closest, 'Tyruliai State Nature Reserve' and 'Dubysa River (Lyduvenai settlement & its valley)', located more than 18 km away. Direct impacts of the Project to KBAs will not result, and given the large distance, impacts on qualifying/trigger species (particularly breeding waterbirds and raptors) are highly unlikely; and
- The nearest Important Bird and Biodiversity Area (IBA), which overlaps with the Dubysa River KBA, is also over 18 km from the Project site, making any potential impact from the Project on the IBA conservation values (i.e. relevant breeding birds) highly unlikely due to the significant distance.

[14] Other internationally recognized areas are exclusively defined by EBRD as including but not limited to UNESCO Natural World Heritage Sites, UNESCO Man-and-Biosphere Reserves, Key Biodiversity Areas (KBAs), Alliance for Zero Extinction (AZE) sites and wetlands designated under the Ramsar Convention on Wetlands of International Importance (EBRD, 2019).

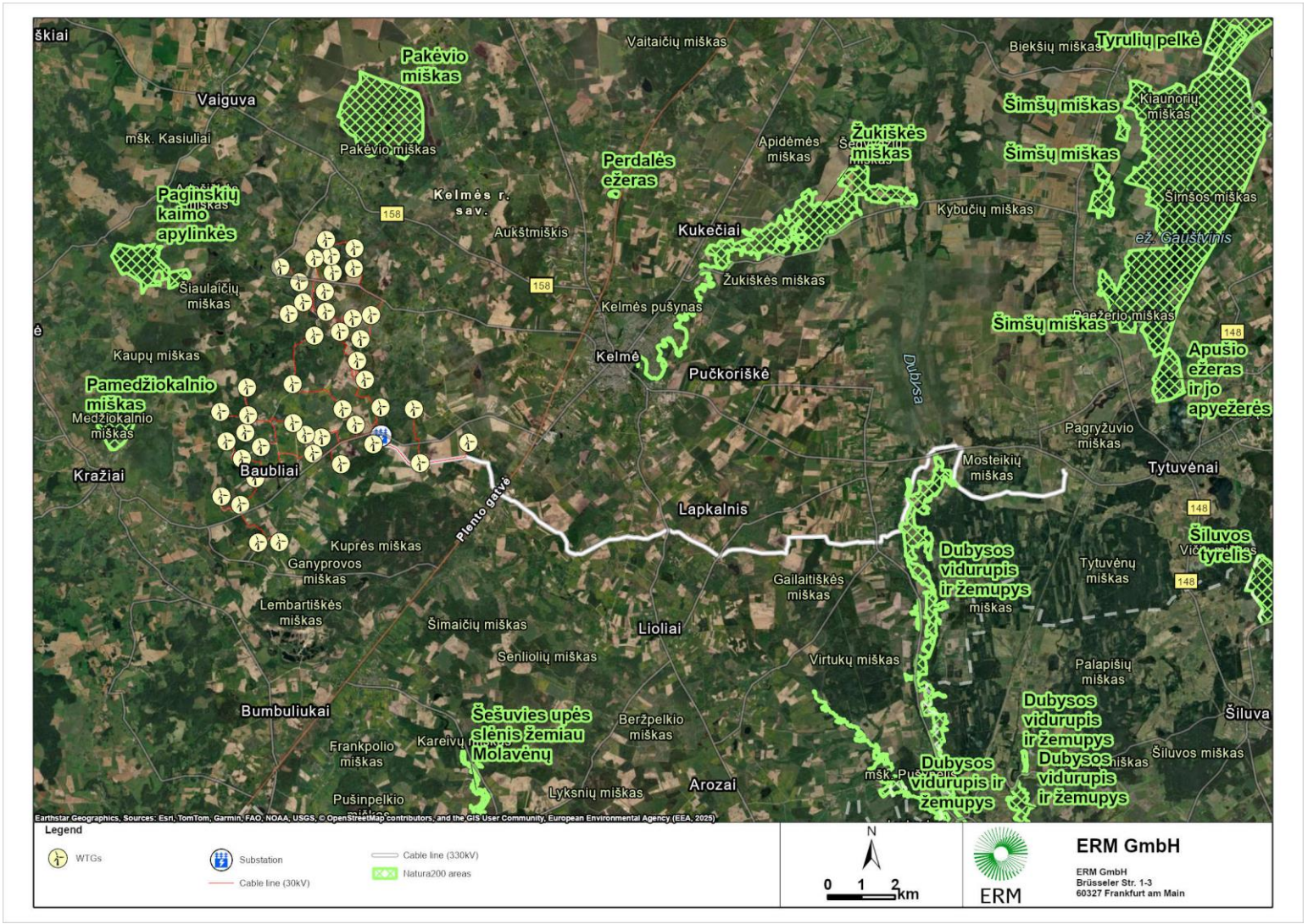


FIGURE 10-1 MAP SHOWING PROTECTED AREAS IN TERMS OF NATURA 2000 IN RELATION TO THE KELME WF PROJECT

Source: ERM, based on data provided by Ignitis, Natura 2000 coverage (European Environment Agency, 2021)

10.1.2 ECOSYSTEMS AND HABITATS

The Project area is characterized by a mosaic of agricultural land, fragmented woodlands, and patches of natural forest, typical of the rural landscape surrounding villages such as Pliuškiai, Bielskiai, and Pupenai in northwestern Lithuania. The landscape predominantly consists of expansive farmlands used for cultivating grains, vegetables, and pasture, interspersed with scattered forest patches and small wetlands, contributing to the region's ecological diversity.

There are several habitat types of EU Community Importance as per their listing in Annex I of the EU Habitats Directive, including aquatic and dryland habitats (wetland, forests, woodlands, meadows, grasslands, etc.). Several are 'priority' habitats listed in Annex I of the EU Habitats Directive and several are also threatened types (Endangered, EN) regionally according to the EU Red List of Threatened Ecosystems (Janssen *et al.*, 2016[15]). These are indicated in Table 10-1 and shown on the maps in Figure 10-2 and Figure 10-3.

Surveys of residual impacts on habitats were conducted during the pre-operational phase in 2025 by CORPI and a report developed by ERM based on these surveys. *For a detailed summary of results and the approach/methodologies used, the reader is referred to the 'Habitat Residual Impact Assessment Report' (ERM, 2025).* The results of these additional surveys indicate that whilst several wetlands, forest and woodland patches, shrubland and riverine habitats have been identified in proximity to wind farm infrastructure that has been constructed (i.e. access roads, underground transmission line installation, turbine pads), no habitat types of EU community importance (in terms of listing in Annex I of the EU Habitats Directive) have been impacted by the Project construction. However, there are residual impacts to other natural / semi-natural habitats that were identified in the 'Habitat Residual Impact Assessment' which are worth noting, despite these habitats not qualifying as CH or PBF. This includes disturbance of the following semi-natural habitats:

- Wet scrubland with grassland fragments
- Woodland patch
- Natural wetland
- Shrub wetland
- Shrubland
- Meadow

[15] Janssen *et al.* (2016). European Red List of Habitats: Part 2. Terrestrial and freshwater habitats. European Union (2016).

TABLE 10-1 SUMMARY OF ANNEX I HABITATS

Habitat Classification: Annex I of the EU Habitats Directive	Annex I Priority Habitat Type?	EUNIS Habitat Type and Code (2012)	Revised EUNIS Habitat Type and Code (2021)	EU Terrestrial Habitat Red List: Code and Name	EU Red List Status (2016)
3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	No	C1.2 Permanent mesotrophic lakes, ponds and pools	-	C1.2a Permanent oligotrophic to mesotrophic waterbody with Characeae	VU
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition — type vegetation	No	C1.3 Permanent eutrophic lakes, ponds and pools	-	C1.2b Mesotrophic to eutrophic waterbody with vascular plants	NT
3160: Natural dystrophic lakes and ponds	No	C1.4 Permanent dystrophic lakes, ponds and pools	-	C1.4 Permanent dystrophic waterbody	NT
*6120 Xeric sand calcareous grasslands	Yes	E1.9 Open non-Mediterranean dry acid and neutral grassland, including inland dune grassland	R1P Oceanic to subcontinental inland sand grassland on dry acid and neutral soils	E1.9a Oceanic to subcontinental inland sand grassland on dry acid and neutral soils	EN
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites)	No	E1.2 Perennial calcareous grassland and basic steppes	R1A Semi-dry perennial calcareous grassland (meadow steppe)	E1.2a Semi-dry perennial calcareous grassland	VU
*6230 Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	Yes	E1.7 Closed non-Mediterranean dry acid and neutral grassland	R1M Lowland to montane, dry to mesic grassland usually dominated by Nardus stricta	E1.7 Lowland to submontane, dry to mesic Nardus grassland	VU
*6270 Fennoscandian lowland species-rich dry to mesic grasslands	Yes	E2.2 Low and medium altitude hay meadow	R22 Low and medium altitude hay meadow	E2.2 Low and medium altitude hay meadow	VU
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	No	E3.5 Moist or wet oligotrophic grassland	R37 Temperate and boreal moist or wet oligotrophic grassland	E3.5 Temperate and boreal moist or wet oligotrophic grassland	EN
6450: Northern boreal alluvial meadows	No	E3.4 Moist or wet eutrophic and mesotrophic grassland	R35 Moist or wet mesotrophic to eutrophic hay meadow	E3.4a Moist or wet mesotrophic to eutrophic hay meadow	LC
6510: Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	Yes	E2.2 Low and medium altitude hay meadows	R22 Low and medium altitude hay meadow	E2.2 Low and medium altitude hay meadow	EN
*7110 Active raised bogs	Yes	D1.1 Raised bogs	-	D1.1 Raised bog	EN
7140 Transition mires and quaking bogs	No	D2.2 Poor fens and soft-water spring mires	-	D2.2a Poor fen	VU
7160 Fennoscandian mineral-rich springs and springfens	No	D2.2 Poor fens and soft-water spring mires	-	D2.2c Intermediate fen and soft-water spring mire	VU
*9010 Western Taïga	Yes	G1.9 Non-riverine woodland with birch, aspen or rowan	T1C Temperate and boreal mountain Betula and Populus tremula forest on mineral soils	G1.9a Temperate and boreal mountain Betula and Populus tremula forest on mineral soils	LC
*9020 Fennoscandian hemiboreal natural old broad-leaved deciduous forests (Quercus, Tilia, Acer, Fraxinus or Ulmus) rich in epiphytes	Yes	G1. A Meso- and eutrophic oak, hornbean, ash, sycamore, lime, elm and related woodland	T1E Carpinus and Quercus mesic deciduous forest	G1. Aa Carpinus and Quercus mesic deciduous woodland	NT
9050 Fennoscandian herb-rich forests with Picea abies	No	G3.A Spruce taiga woodland	T3F Dark taiga	G3.A Picea taiga woodland	NT

Habitat Classification: Annex I of the EU Habitats Directive	Annex I Priority Habitat Type?	EUNIS Habitat Type and Code (2012)	Revised EUNIS Habitat Type and Code (2021)	EU Terrestrial Habitat Red List: Code and Name	EU Red List Status (2016)
*9080 Fennoscandian deciduous swamp woods	Yes	G1.4 Broadleaved swamp woodland not on acid peat	T15 Broadleaved swamp forest on non-acid peat	G1.4 Broadleaved swamp woodland on non-acid peat	VU
9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	No	G1. A Meso- and eutrophic oak, hornbean, ash, sycamore, lime, elm and related woodland	T1E Carpinus and Quercus mesic deciduous forest	G1. Aa Carpinus and Quercus mesic deciduous woodland	NT
*9180 Tilio-Acerion forests of slopes, screes and ravines	Yes	G1.A Meso- and eutrophic oak, hornbean, ash, sycamore, lime, elm and related woodland	T1F Ravine Forest	G1. Ab Ravine woodland	NT
*91D0 Bog woodland	Yes	G3.D Boreal bog conifer woodland	T3J Pinus and Larix mire forest	G3. Da Pinus mire woodland	VU
*91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	Yes	G1.1 Riparian and gallery woodland, with dominant alder, birch, poplar or willow	T11 Temperate Salix and Populus riparian forest	G1.1 Temperate and boreal softwood riparian woodland	NT

Table key:

EU Red List threat status: EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern

CH = Critical Habitat, PBF = Priority Biodiversity Feature

*asterix indicates priority habitats in terms of Annex I of the EU Habitats Directive

Source: Critical Habitat Assessment (ERM, 2025), Geoportal for Lithuania (https://www.geoportal.lt) EUNIS classification, EU Habitats Directive, European Red List of Habitats for terrestrial and freshwater ecosystems (Janssen et al., 2016)

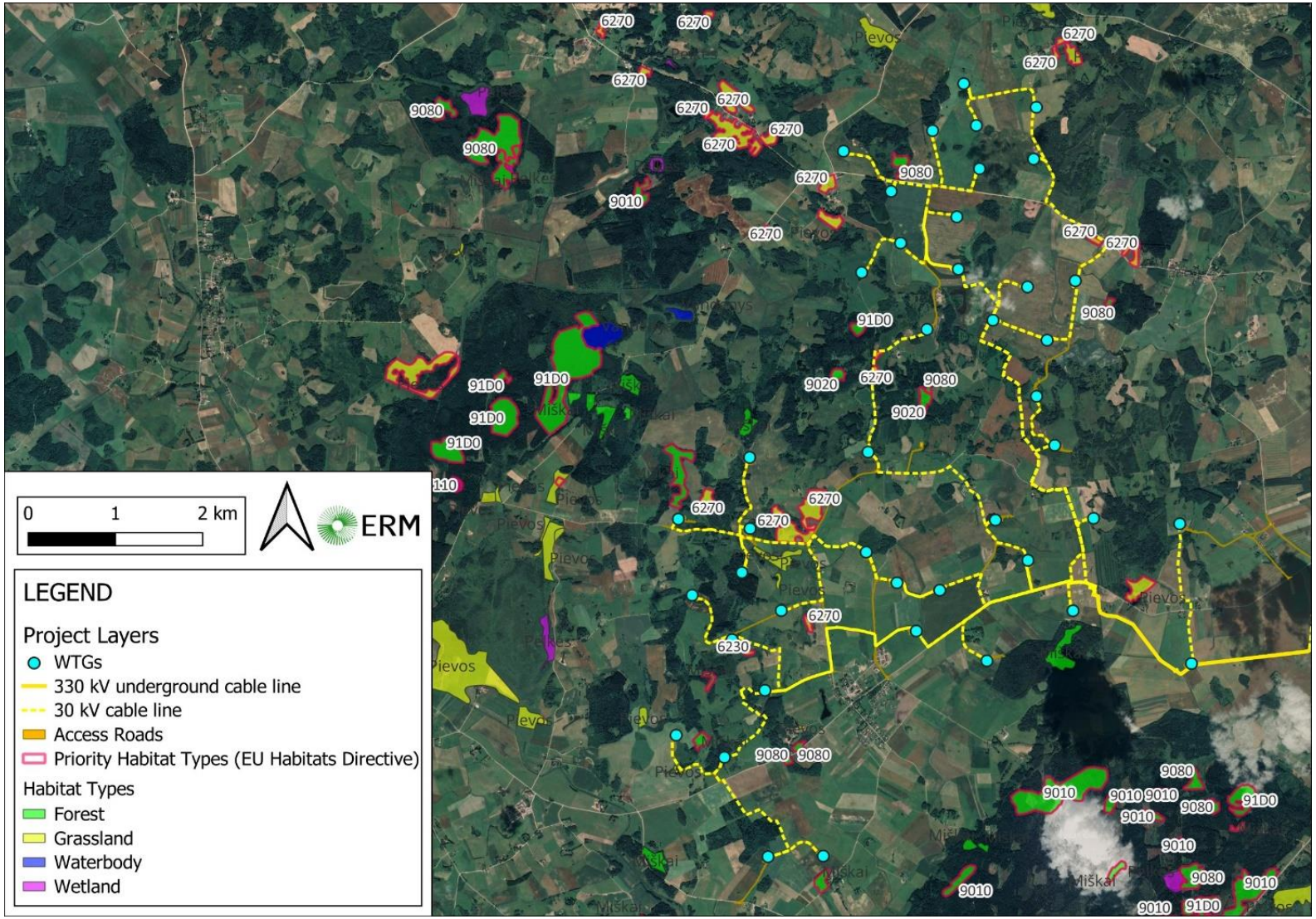


FIGURE 10-2 ANNEX I HABITAT TYPES IN RELATION TO THE WIND FARM LAYOUT

Source: ERM, Lithuanian Geoportal.lt database online at: https://www.geoportal.lt/map/

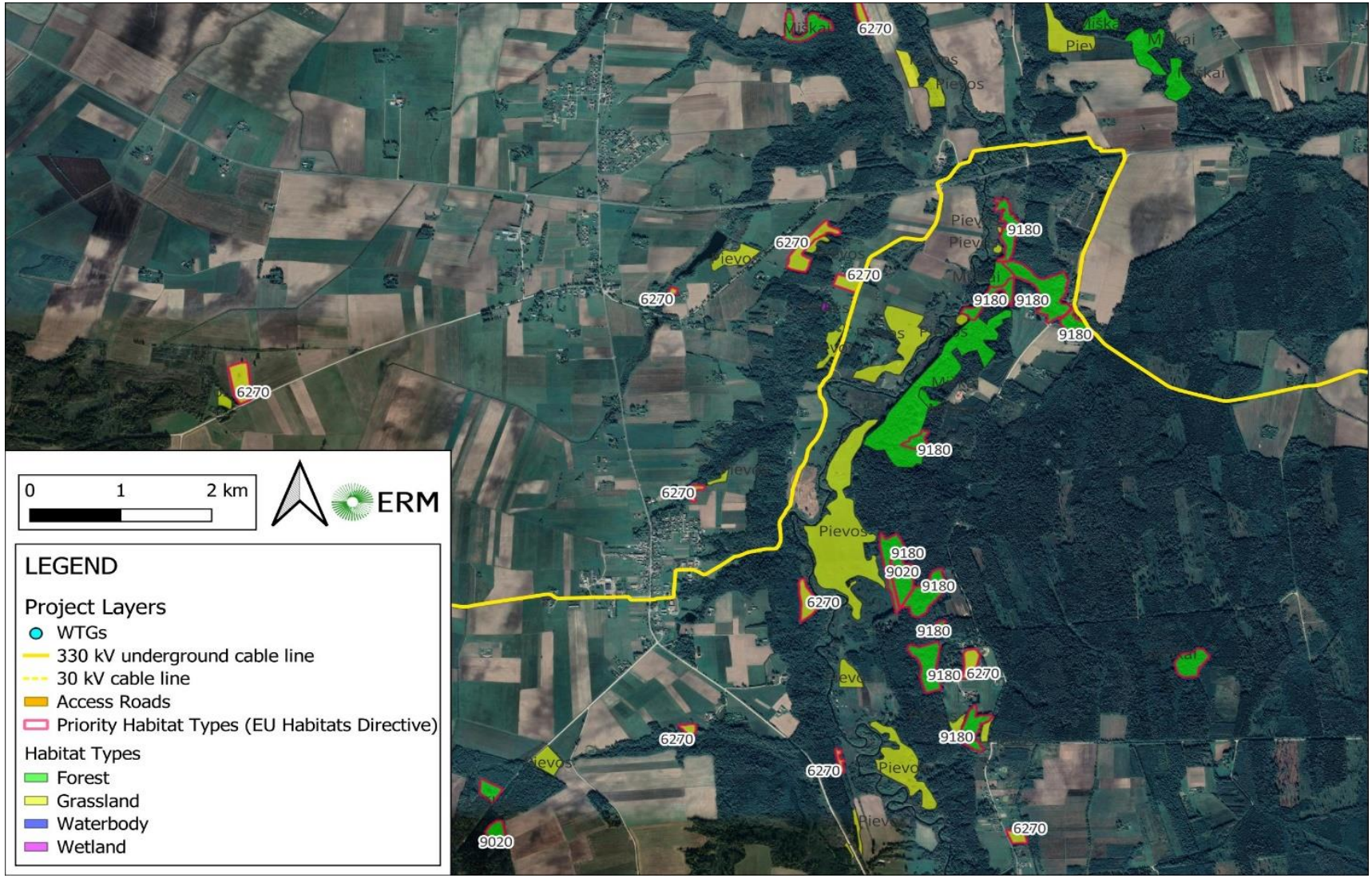


FIGURE 10-3 ANNEX I HABITAT TYPES IN RELATION TO THE 330 KV TRANSMISSION LINE

Source: ERM, Lithuanian Geoportal.lt database online at: https://www.geoportal.lt/map/

10.1.3 FLORA

There are no sensitive, threatened or protected species of flora (plants) associated with the Project.

According to the EIA, one plant species of conservation concern (Lady's Slipper Orchid, *Cypripedium calceolus*) which is Near Threatened (NT) in Europe was found near to the Project site but is considered unlikely to be impacted based on its location being away from the infrastructure developed for the Project.

Surveys undertaken to inform the 'Habitat Residual Impact Assessment' (ERM, 2025) revealed that cconservation-important (threatened, rare, protected) plant species were generally absent from the habitat types assessed, except for wetland areas associated with the focal areas #26 and #29, where the following plant species that are protected nationally in Lithuania were identified:

- *Krūmynuose rasta*
- *Neottia (Listera) ovata* (Common Twayblade) – LC globally
- *Platanthera bifolia* (Lesser Butterfly Orchid) – LC globally
- *Platantera chlorantha* (Greater Butterfly Orchid) – LC globally

However, these wetlands and their flora remain unaffected by the Project.

10.1.4 FAUNA

In terms of fauna, one land mammal and semi-aquatic species, the Eurasian Otter (*Lutra lutra,* globally and regionally NT) was considered based on potential evidence of its occurrence (based on historic records) as highlighted in the EIA report for Kelme II. The species was however not confirmed through field surveys.

The EIA report for Kelme II mentions that no other threatened species of land animals are likely to occur or be affected by the Project, and therefore the focus has been on documenting and describing impacts to avian species (birds, bats).

ERM did however conduct a rapid screening of the Project area using the IUCN online database of threatened species (https://www.iucn.org), considering threatened species (Critically Endangered: CR, Endangered: EN, Vulnerable: VU) globally and in Europe that could potentially occur in the broader area of the Project based on their known or modelled geographical/distributional ranges. The findings indicate the following:

- The majority of threatened species globally and for Europe include various species of birds (namely raptors, waterbird and several passerines) as well as several species of bats. These are well covered in terms of the pre-operational bird and bat monitoring completed in 2024 (CORPI. 2025).
- In terms of land mammals, only the European Mink (*Mustela lutreola*) (CR globally and in EU) is considered however this species is known to be regionally extinct.
- Several threatened (EN, VU) terrestrial and aquatic invertebrate species potentially occur, and most are likely to be associated with forest habitats that have been largely avoided during construction. Surveys of this faunal group would probably not be of

much added value given the status of the Project now (entering operation), where impacts to this group are unlikely to be of much significance.

- Two threatened fish species, Atlantic Sturgeon (*Acipenser oxyrinchus*) (CR in EU, VU globally) and European Eel (*Anguilla anguilla*) (CR globally and in EU), with the former likely to be extinct regionally and European Eel could potentially occur in streams/rivers associated with the Project. However, the Project is unlikely to have an effect on aquatic biodiversity (ongoing impacts are unlikely as construction of road/powerline infrastructure across watercourses has now been completed and a method of burial below the watercourses was implemented so as to avoid impacts on aquatic habitat and associated fauna).
- In terms of flora, the large majority of globally EN/VU species are fungi and species of moss that typically require older growth/mature forest habitats. At the regional level for Europe, there are several VU aquatic plant species and mosses that are known from forests, deciduous woodlands and wetlands (peat bogs).

For the operational phase of the Project, the focus of management will be with regards to avian species (birds and bats) most at risk of impact. These faunal groups were therefore considered further.

Surveys of birds and bats were conducted during the pre-operational phase in 2024 by CORPI. *For a detailed summary of results and the approach/methodologies used, the reader is referred to the 'Bird and Bat Monitoring Summary Report' (ERM, 2025).* Only the key findings are presented here:

Birds

Surveys of resident, migratory and breeding birds carried out in 2024 determined the following:

- The total of 95,131 counts of individual birds with a combined total of 134 species of birds were recorded.
- In terms of species abundance, the most commonly recorded species included locally common (species of Least Concern: LC) generalist species and water birds that typically migrate in large flocks:
    - Common Starling, *Sturnus vulgaris* - with ~22% contribution based on the count of individual birds (20,640 counts)
    - Tundra Bean Goose, *Anser serrirostris* – with ~14% contribution
    - Greater White-fronted Goose, *Anser albifrons* – with ~11% contribution
    - Common Crane, *Grus grus* - with ~10% contribution
    - Northern Lapwing, *Vanellus Vanellus* (only NT species) - with ~5% contribution
- The majority of species recorded are classified as being of LC globally, regionally and nationally. A total of 48 species of birds are considered to be of conservation importance, based on species threat status (global, regional, national) and listing in Annex I of the EU Birds Directive. Conservation important species account for an estimated 42% of the contribution to overall bird numbers and this comprised a

significant portion of raptors, waterfowl and storks - groups that are known to be particularly vulnerable to collision risk with wind turbines.

  - One species is globally Vulnerable (VU) according to the IUCN, Red-footed Falcon (*Falco vespertinus*), and two species are Near Threatened (NT) globally including Northern Lapwing (*Vanellus vanellus)* and Eurasian Curlew (*Numenius arquata*). These species constitute a very small contribution to overall abundance based on number of counts of individuals.
  - Six species are VU at the regional level for Europe and five are NT. These species comprise a very small contribution to overall abundance based on number of counts of individuals.
  - Nationally, there are 12 species that are threatened in terms of their listing in the Red Data List for Lithuania (including CR, EN and VU) and these are predominantly raptors, storks and cranes and waterbirds. These species comprise a very small contribution to overall abundance.
  - 37 species are listed in Annex I of the EU Habitats Directive and are of conservation importance and protected status regionally in Europe.

- The majority of bird flights were recorded during autumn 2024 and passerines were the most abundant group observed flying over the area and comprising typically common small perching birds that are largely insensitive to the effects of wind farms (from a turbine collision perspective), with storks/cranes and raptors accounting for a minor share. In terms of flocking activity, flocks observed consisted mainly of Anseriformes (waterfowl) and Passerines, which is typical for these groups.
- Permanent congregatory / aggregation sites for birds were not observed, due to the predominantly hilly terrain and the lack of large areas of cultivated land.
- The majority of bird flights were recorded during autumn 2024, with most flights being from Anseriformes (waterfowl) and Passerines (smaller perching birds), with storks/cranes and raptors accounting for a minor share.
- Birds of prey (raptors) were observed during the entire period of study (March – December 2024), with peak activity recorded in June 2024 (breeding season) and during autumn migration (August – September 2024). Raptors were also highly active in the study area, where hunting was observed taking place on the cultivated fields and meadows adjacent to the WTs. The southern and south-eastern portions of the WF Project area showed the highest levels of bird activity relatively, with large numbers of Passerines and intensive flights of Lesser Spotted Eagle.
- Several raptors were observed only occasionally and randomly in small numbers (for example Osprey, Pallid Harrier, Merlin); however, many were found to be active and frequently occurring in the area, including Eurasian Sparrowhawk, European Honey-buzzard, Rough-legged Buzzard, White-tailed Sea-eagle, and with the most frequently observed being Lesser Spotted Eagle, Western Marsh-harrier and Eurasian (Common) Buzzard.
- The area is considered to be relatively diverse in terms of habitat, with numerous wetlands (marsh habitat), fragmented forest patches, meadows and agricultural land.

This heterogeneity and diversity of habitats contributes to bird activity and the use of various habitats for foraging, resting and breeding, with a variety of breeding birds present in the study area as a result.

- Birds that are not considered typically vulnerable to wind turbine collision were recorded breeding throughout the wind farm area. The highest levels of breeding activity was typically for the following species:
    - Common Crane – 28 breeding pairs
    - Red-backed Shrike – 22 breeding pairs
    - Whooper Swan – 20 breeding pairs
    - Black Woodpecker – 20 breeding pairs
    - Corn Crake – 13 breeding pairs
    - Hazel Grouse – 6 breeding pairs
    - Nesting activity of several passerines was also observed (between 1 – 4 breeding pairs depending on the species).

- Occupied nests and breeding activity were identified for several species considered vulnerable to the effects of wind farms, including a number of raptors and White Stork. White Stork nests were found to be the most numerous within the study area, mainly clustered in the central wind farm area as well as surrounding farms and settlements to the south-west and north. Raptor (Eurasian Buzzard, Lesser Spotted Eagle and Western Marsh-harrier) nests in the wind park area were also found to be relatively numerous in the wind farm area and adjacent patches of forest. Several breeding pairs of these key species are predicted for the area. Several unoccupied nests were also observed, mainly in the forest patches inspected.
- The breeding territories for raptors and storks were estimated based on the survey information collected and analysis and were found to vary in terms of size depending on species, however collectively these encompass both the entire area of the wind farm and surrounding areas. Breeding territories of Western Marsh-harrier and Lesser Spotted Eagle were found to be the largest and intersects strongly with the wind farm area.

Bats

Surveys of bats carried out in 2024 determined the following:

- 13 species were recorded in total. The most abundant species was Northern Bat (*Eptesicus nilssonii*), followed by Lesser Noctule (*Nyctalus leisleri*) and Common Noctule *(Nyctalus noctula)*. The majority of species are of global and regional LC according to the IUCN, including several locally common generalist species.
- Several species of global/regional conservation importance were recorded, most notably the regionally VU and globally NT Barbastelle Bat (*Barbastella barbastellus*) and Pond Bat (*Myotis dasycneme*), both of which are also nationally important, are listed in Annex II of the EU Habitats Directive as well as their listing in revised Resolution 6 of the Bern Convention (further emphasizing their conservation importance and protection status in Europe especially). These species were, however, recorded at very low levels during surveys. All species of microbats are listed as regionally protected in terms of Annex IV of the EU Habitats Directive.

- Bat activity varied between species and temporally between months of sampling. However, on average bats were observed to be most active during the spring migration period (May) and breeding season peaking in summer (July). Bat activity was also highest approximately 2 hours after sunset on average, peaking at this time and with activity lasting for roughly 5 hours, during which time the most intense flights were recorded. Typically, a second peak at roughly 5-6 hours after sunset was identified for several species.
- Results also suggest that the study area is used by bats unevenly.

10.1.5 ECOSYSTEM SERVICES

Ecosystem services had not been addressed in the EIA for the Project, therefore ERM undertook a supplementary rapid assessment of ecosystem services for the Project, aligned with the requirements of EBRD PR6. Reference is made to the 'Ecosystem Services Assessment Report' (ERM, 2025). Based on the joint consideration of Project and community demand for ecosystem services and factoring in replaceability for the services concerned, the relative importance of a variety of relevant ecosystem services was rated at a high level and used to identify 'priority' ecosystem services.

The assessment concluded that no 'priority' ecosystem services are identified for the Project and which the Project or local communities could impact on or be highly dependent on. The only ES considered Moderate priority relates to 'Global/local climate regulation', for which both the Project and community has an expected level of dependency/demand and for which there are limited alternatives available to replace this service. However, the Project has no significant influence or control over this service.

Through the mitigation and management actions for social and biodiversity aspects of the Project, it is unlikely that the Project will impact negatively on ES in general, particularly those where local communities show low to moderate levels of dependency (no high levels of dependency identified). As such, the ES assessment and management requirements of para. 9 of EBRD PR6 described above are considered to have been satisfied for the Project.

10.1.6 CRITICAL HABITAT (CH) AND PRIORITY BIODIVERSITY FEATURES (PBF)

A summary of the main findings of the Critical Habitat Assessment (CHA) has been included below. *For further detailed information, the reader is referred to the Executive Summary and Chapters 3, 4 and 5 of the CHA report (ERM, 2025).*

CH has been identified for the following:

- Several habitat types qualify as CH due to their regional Endangered (EN) threat status and/or listing in Annex I of the EU Habitats Directive as 'priority' habitat types (see Table 10-2 for details and the maps in Figure 10-4 and Figure 10-5);
- Based on the EBRD PR6 Criterion 2, only one species of bird, Black Kite (*Milvus migrans)* is considered to qualify as CH due to its nationally EN threat status, rarity and low population estimates for Lithuanian; and

- 13 bat species qualify as CH given their listing in Annex IV of the EU Habitats Directive (see Table 10-3 for details).

PBF has been identified as follows:

- Remaining habitats listed in Annex I of the EU Habitats Directive that are NOT 'priority' habitat types or EN types regionally (see Table 10-2 for details and the maps in Figure 10-4 and Figure 10-5); and
- 69 species of birds (including several species of raptors, storks, cranes, waterfowl, passerines) due to their listing in Annex I of the EU Birds Directive, Annex II of the EU Habitats Directive and/or Resolution 6 of the BERN convention (see Table 10-3 for details).

TABLE 10-2 SUMMARY OF POTENTIAL PROJECT RISK TO ANNEX I HABITATS THAT QUALIFY AS CH OR PBF

Habitat Classification: Annex I of the EU Habitats Directive	Annex I Priority Habitat Type?	EU Red List Status (2016)	CH or PBF?	Residual Impact due to Project
3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	No	VU	PBF	None
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition — type vegetation	No	NT	PBF	None
3160: Natural dystrophic lakes and ponds	No	NT	PBF	None
*6120 Xeric sand calcareous grasslands	Yes	EN	CH	None
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites)	No	VU	PBF	None
*6230 Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	Yes	VU	CH	None
*6270 Fennoscandian lowland species-rich dry to mesic grasslands	Yes	VU	CH	None
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	No	EN	PBF	None
6450: Northern boreal alluvial meadows	No	LC	PBF	None
6510: Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	Yes	EN	CH	None
*7110 Active raised bogs	Yes	EN	CH	None
7140 Transition mires and quaking bogs	No	VU	PBF	None
7160 Fennoscandian mineral-rich springs and springfens	No	VU	PBF	None
*9010 Western Taïga	Yes	LC	CH	None
*9020 Fennoscandian hemiboreal natural old broad-leaved deciduous forests (Quercus, Tilia, Acer, Fraxinus or Ulmus) rich in epiphytes	Yes	NT	CH	None
9050 Fennoscandian herb-rich forests with Picea abies	No	NT	PBF	None
*9080 Fennoscandian deciduous swamp woods	Yes	VU	CH	None
9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	No	NT	PBF	None

Habitat Classification: Annex I of the EU Habitats Directive	Annex I Priority Habitat Type?	EU Red List Status (2016)	CH or PBF?	Residual Impact due to Project
*9180 Tilio-Acerion forests of slopes, screes and ravines	Yes	NT	CH	None
*91D0 Bog woodland	Yes	VU	CH	None
*91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	Yes	NT	CH	None

Table key:

EU Red List threat status: EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern

CH = Critical Habitat, PBF = Priority Biodiversity Feature

*asterix indicates priority habitats in terms of Annex I of the EU Habitats Directive

Source: Critical Habitat Assessment (ERM, 2025), Geoportal for Lithuania (https://www.geoportal.lt) EUNIS classification, EU Habitats Directive, European Red List of Habitats for terrestrial and freshwater ecosystems (Janssen et al., 2016)

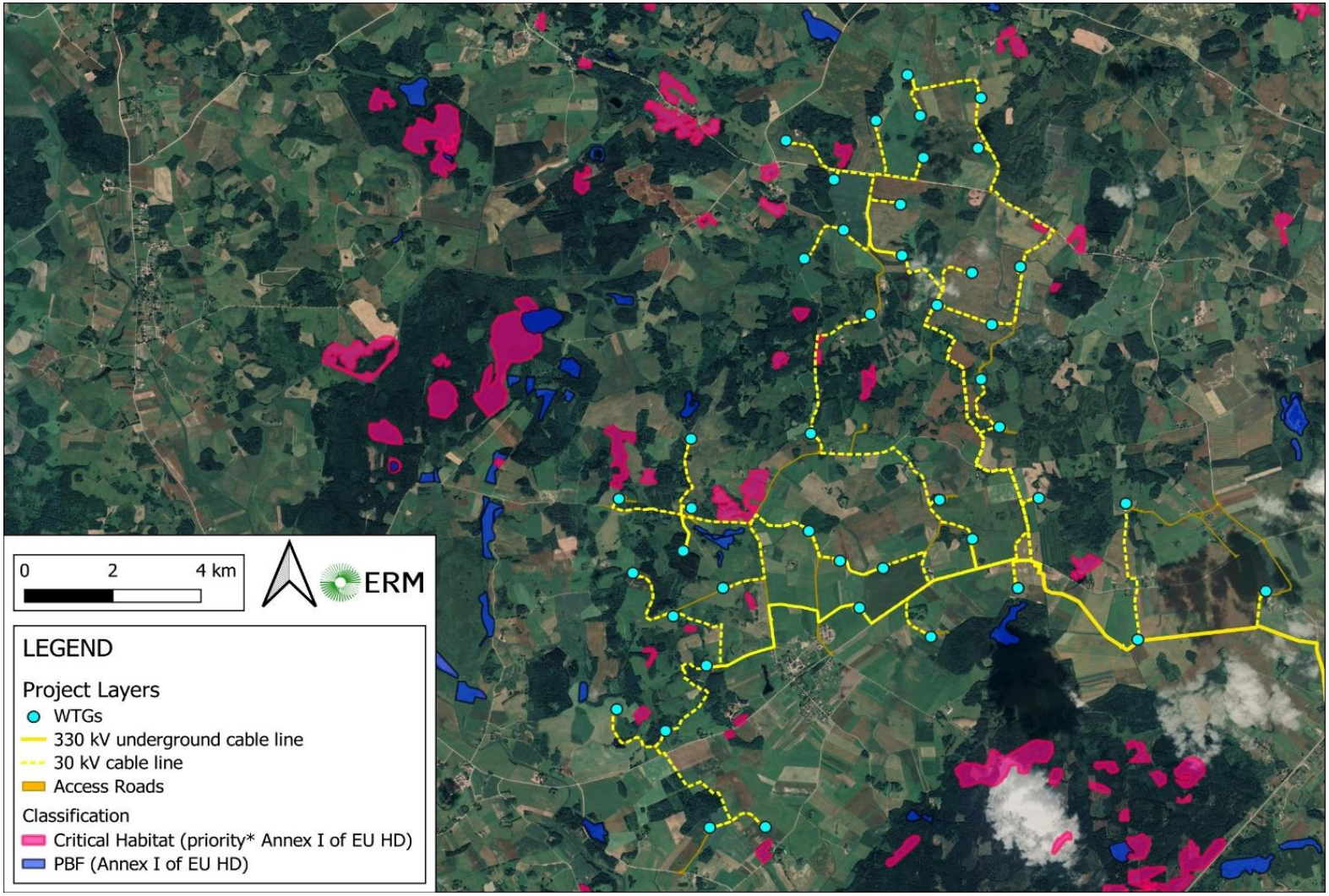


FIGURE 10-4 MAP SHOWING CH AND PBF CLASSIFICATION FOR ANNEX I HABITATS IN RELATION TO THE WIND FARM INFRASTRUCTURE LAYOUT

Source: ERM, Lithuanian Geoportal.lt database online at: https://www.geoportal.lt/map/

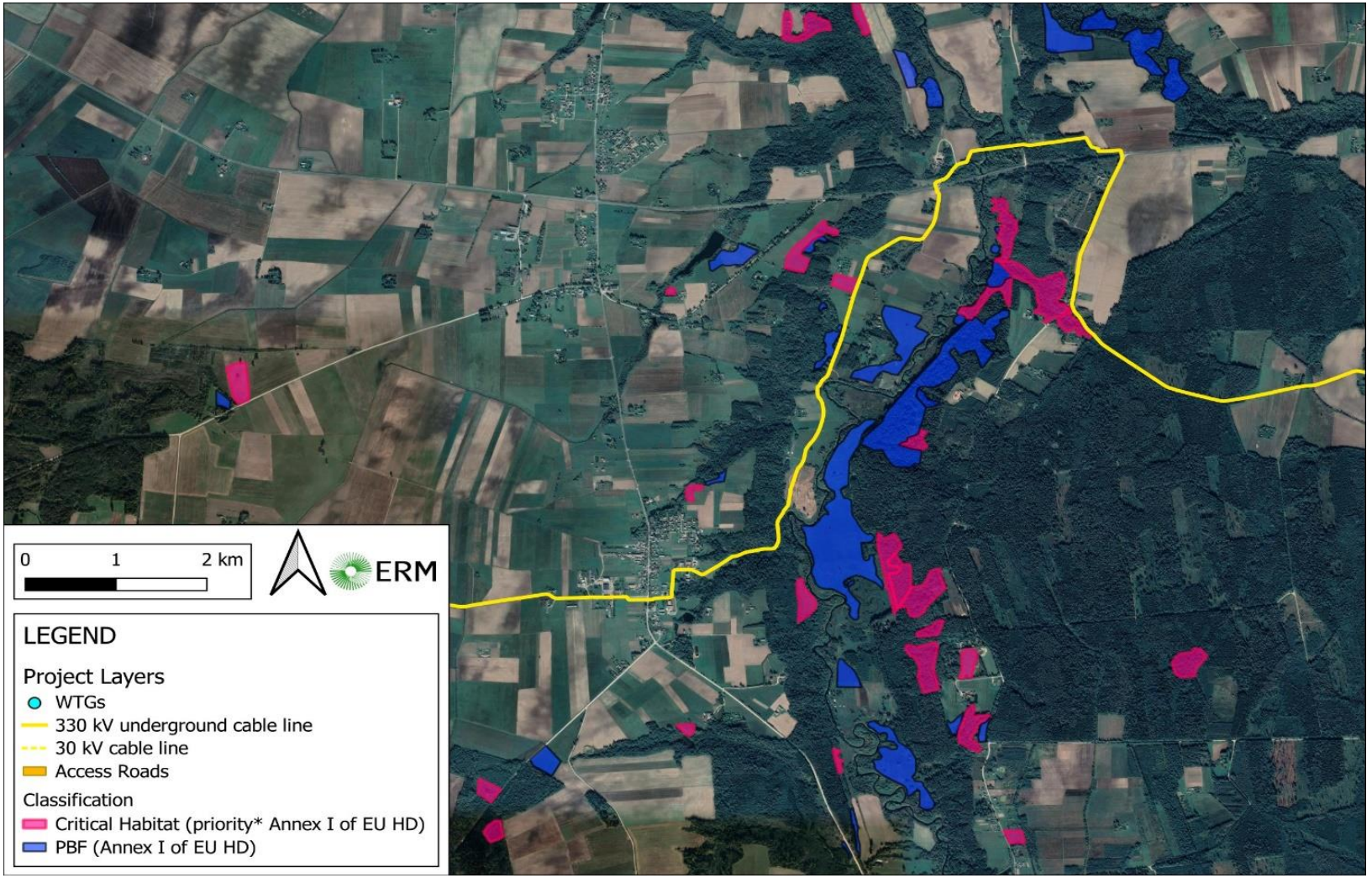


FIGURE 10-5 MAP SHOWING CH AND PBF CLASSIFICATION FOR ANNEX I HABITAT TYPES IN RELATION TO THE 330 KV TRANSMISSION LINE

Source: ERM, Lithuanian Geoportal.lt database online at: https://www.geoportal.lt/map/

TABLE 10-3 SUMMARY OF POTENTIAL PROJECT RISK TO AVIAN SPECIES THAT QUALIFY AS CH OR PBF

Common Name	Species Name	Type	Project Operational Risk
BIRDS			
Bean Goose	*Anser fabalis*	PBF	NO: Not at risk of collision based on high avoidance rates and observed behavior (migratory overflights).
Black Kite	*Milvus migrans*	CH	YES: Potentially impacted due to potential collision risk (72% of flight time at collision risk height) and given very low PBR (2 birds/annum).
Black Stork	*Ciconia nigra*	PBF	NO: Unlikely to be impacted based on very low numbers recorded during field surveys and low collision risk (0% of flight time at collision risk height).
Black Tern	*Chlidonias niger*	PBF	NO: Not at risk of collision based on avoidance rates and observed behavior (migratory overflights).
Black Woodpecker	*Dryocopus martius*	PBF	NO: Not at risk of collision.
Black Headed-Gull	*Larus ridibundus*	PBF	NO: Not at risk of collision.
Canada Goose	*Branta canadensis*	PBF	NO: Not at risk of collision based on very low numbers recorded and high avoidance rates and observed behavior (migratory overflights).
Caspian Gull	*Larus cachinnans*	PBF	NO: Unlikely to be impacted based on very low numbers recorded during field surveys and not vulnerable to collisions.
Common Blackbird	*Turdus merula*	PBF	NO: Not at risk of collision.
Common Crane	*Grus grus*	PBF	NO: Low collision risk (20% of flight time at collision risk height).
Common Goldeneye	*Bucephala clangula*	PBF	NO: Unlikely to be impacted based on very low numbers recorded during field surveys.
Common Greenshank	*Tringa nebularia*	PBF	NO: Unlikely to be impacted based on low numbers recorded during field surveys.
Common Kingfisher	*Alcedo atthis*	PBF	NO: Not at risk of collision and very low numbers recorded.
Common Snipe	*Gallinago gallinago*	PBF	NO: Not at risk of collision.
Common Starling	*Sturnus vulgaris*	PBF	NO: Not at risk of collision.
Common Moorhen	*Gallinula chloropus*	PBF	NO: Unlikely to be impacted based on low numbers recorded during field surveys.
Common Tern	*Sterna hirundo*	PBF	NO: Not at risk of collision.
Common Wood Pigeon	*Columba palumbus*	PBF	NO: Not at risk of collision.
Eurasian Bullfinch	*Pyrrhula pyrrhula*	PBF	NO: Not at risk of collision and very low numbers recorded.
Eurasian Chaffinch	*Fringilla coelebs*	PBF	NO: Not at risk of collision.
Eurasian Collared Dove	*Streptopelia decaocto*	PBF	NO: Not at risk of collision and very low numbers recorded.
Eurasian Coot	*Fulica atra*	PBF	NO: Not at risk of collision and very low numbers recorded.
Eurasian Curlew	*Numenius arquata*	PBF	NO: Not at risk of collision.
Eurasian Golden Plover	*Pluvialis apricaria*	PBF	NO: Not at risk of collision.
Eurasian Jay	*Garrulus glandarius*	PBF	NO: Not at risk of collision.
Eurasian Magpie	*Pica pica*	PBF	NO: Not at risk of collision.
Eurasian Skylark	*Alauda arvensis*	PBF	NO: Not at risk of collision.
Eurasian Sparrowhawk	*Accipiter nisus*	PBF	NO: Low collision risk (26% of flight time at collision risk height).
Eurasian Woodcock	*Scolopax rusticola*	PBF	NO: Not at risk of collision.
Eurasian Wren	*Troglodytes troglodytes*	PBF	NO: Not at risk of collision.
European Herring Gull	*Larus argentatus*	PBF	NO: Not at risk of collision.
European Honey-buzzard	*Pernis apivorus*	PBF	YES: Potentially impacted due to potential collision risk (56% of flight time at collision risk height) and given low PBR (298 birds/annum).
Fieldfare	*Turdus pilaris*	PBF	NO: Not at risk of collision.
Great Spotted Woodpecker	*Dendrocopos major*	PBF	NO: Not at risk of collision.
Great White Egret	*Ardea alba*	PBF	NO: Low collision risk (5% of flight time at collision risk height).
Greater White-fronted Goose	*Anser albifrons*	PBF	NO: Not at risk of collision based on high avoidance rates and observed behavior (migratory overflights).

Common Name	Species Name	Type	Project Operational Risk
Grey Partridge	*Perdix perdix*	PBF	NO: Not at risk of collision.
Grey-headed Woodpecker	*Dendropicos spodocephalus*	PBF	NO: Not at risk of collision.
Greylag Goose	*Anser anser*	PBF	NO: Not at risk of collision based on high avoidance rates and observed behavior (migratory overflights).
Hen Harrier	*Circus cyaneus*	PBF	NO: Low collision risk (15% of flight time at collision risk height).
Jackdaw	*Corvus monedula*	PBF	NO: Not at risk of collision.
Lesser Black-backed Gull	*Larus fuscus*	PBF	NO: Not at risk of collision.
Lesser Spotted Eagle	*Clanga (Aquila) pomarina*	PBF	YES: Potentially impacted due to potential collision risk (59% of flight time at collision risk height) and given low PBR (29 birds/annum).
Mallard	*Anas platyrhynchos*	PBF	NO: Not at risk of collision based on observed behavior and low numbers recorded during field surveys.
Merlin	*Falco columbarius*	PBF	NO: Very low numbers recorded and very ow collision risk (0% of flight time at collision risk height).
Mew (Common) Gull	*Larus canus*	PBF	NO: Not at risk of collision.
Middle Spotted Woodpecker	*Leiopicus medius*	PBF	NO: Not at risk of collision, very low numbers recorded.
Mistle Thrush	*Turdus viscivorus*	PBF	NO: Not at risk of collision.
Montagu's Harrier	*Circus pygargus*	PBF	NO: Low collision risk (4% of flight time at collision risk height).
Mute Swan	*Cygnus olor*	PBF	NO: Not at risk of collision based on high avoidance rates and observed behavior (migratory overflights).
Northern Goshawk	*Accipiter gentilis*	PBF	NO: Very low numbers recorded.
Osprey	*Pandion haliaetus*	PBF	NO: Very low numbers recorded.
Pallid Harrier	*Circus macrourus*	PBF	NO: Very low numbers recorded and very ow collision risk (0% of flight time at collision risk height).
Red Kite	*Milvus milvus*	PBF	NO: Very low numbers recorded and low collision risk (29% of flight time at collision risk height).
Red-backed Shrike	*Lanius collurio*	PBF	NO: Not at risk of collision.
Red-footed Falcon	*Falco vespertinus*	PBF	NO: Very low numbers recorded and very low collision risk (0% of flight time at collision risk height).
Redwing	*Turdus iliacus*	PBF	NO: Not at risk of collision.
Rock Dove (Domestic Pigeon)	*Columba livia*	PBF	NO: Not at risk of collision.
Rook	*Corvus frugilegus*	PBF	NO: Not at risk of collision based on observed behavior
Ruff	*Calidris pugnax*	PBF	NO: Not at risk of collision and very low numbers recorded.
Song Thrush	*Turdus philomelos*	PBF	NO: Not at risk of collision.
Stock Dove	*Columba oenas*	PBF	NO: Not at risk of collision.
Tufted Duck	*Aythya fuligula*	PBF	NO: Not at risk of collision and very low numbers recorded.
Tundra Swan	*Cygnus columbianus*	PBF	NO: Not at risk of collision based on high avoidance rates and observed behavior (migratory overflights).
Western Marsh-harrier	*Circus aeruginosus*	PBF	NO: Low collision risk (11% of flight time at collision risk height).
White Stork	*Ciconia ciconia*	PBF	YES: Potentially impacted due to potential collision risk (42 % of flight time at collision risk height) and with a moderate number of birds recorded during field surveys (PBR: 2,472 birds/annum).
White-tailed Sea-eagle	*Haliaeetus albicilla*	PBF	YES: Potentially impacted due to potential collision risk (53% of flight time at collision risk height) and given low PBR (4 birds/annum).
Whooper Swan	*Cygnus cygnus*	PBF	NO: Not at risk of collision based on high avoidance rates and observed behavior (migratory overflights).
Wood Sandpiper	*Tringa glareola*	PBF	NO: Not at risk of collision and very low numbers recorded.
Woodlark	*Lullula arborea*	PBF	NO: Not at risk of collision and very low numbers recorded.
BATS			
Barbastelle bat	*Barbastella barbastellus*	CH	YES: Relatively low occurrence / abundance based on field survey data. May be impacted during operation due to Medium collision risk (EUROBATS: Rodrigues at el., 2015).

Common Name	Species Name	Type	Project Operational Risk
Brown Long-eared Bat	*Plecotus auritus*	CH	NO: Relatively low occurrence / abundance based on field survey data. Low collision risk (EUROBATS). Unlikely to be significantly affected by operation.
Common noctule	*Nyctalus noctula*	CH	YES: Relatively abundant based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Common Pipistrelle	*Pipistrellus pipistrellus*	CH	YES: Low occurrence / abundance based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Daubenton's bat	*Myotis daubentonii*	CH	No: Relatively low occurrence / abundance based on field survey data. Low collision risk (EUROBATS). Unlikely to be significantly affected by operation.
Kuhls Pipistrelle	*Pipistrellus kuhlii*	CH	YES: Relatively frequent occurrence / moderate abundance based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Leisler's Bat	*Nyctalus leisleri*	CH	YES: Relatively frequent occurrence / high abundance based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Nathusius`Pipistrelle	*Pipistrellus nathusii*	CH	YES: Relatively frequent occurrence / moderate abundance based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Natterer's bat	*Myotis nattereri*	CH	NO: Low occurrence / abundance based on field survey data. Low collision risk (EUROBATS). Unlikely to be significantly affected by operation.
Northern bat	*Eptesicus nilssonii*	CH	YES: Relatively frequent occurrence / high abundance based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Parti-colored Bat	*Vespertilio murinus*	CH	YES: Relatively low occurrence / abundance based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Pond bat	*Myotis dasycneme*	CH	NO: Low occurrence / abundance based on field survey data. Low collision risk (EUROBATS). Unlikely to be significantly affected by operation.
Serotine	*Eptesicus serotinus*	CH	YES: Relatively low occurrence / abundance based on field survey data. May be impacted during operation due to High collision risk (EUROBATS).
Soprano Pipistrelle	*Pipistrellus pygmaeus*	CH	YES: Relatively low occurrence / abundance based on field survey data. Unlikely to be significantly affected by operation.

Table key:

CH = Critical Habitat, PBF = Priority Biodiversity Feature

Source: Critical Habitat Assessment (ERM, 2025)

10.2 ANNEXURE B: BIRD DETECTION AND COLLISION PREVENTION SYSTEM

Ignitis has contracted ProTecBird (https://www.protecbird.com), an industry-leading German technology firm that specializes in bird protection through innovative solutions, to implement the required Bird Identification and Control System (BICS).

AVES System:

The BICS will make use of ProTecBird's AVES Wind Anti-Collision System (ACS) which provides a fully automated and real-time bird detection, identification and tracking system and Artificial Intelligence (AI)-based anti-collision system that uses reliable AI and accommodates for various light and weather conditions (day, twilight, night and inclement/harsh weather).

The system has been shown to work well and efficiently and has been validated with a 97% detection rate and a 98% identification rate for target bird species over a range of 400-600 meters.

In terms of the technical design and parameters, these are summarized as follows:

- Highly durable PTZ cameras are installed at a low height (10 m)
- Existing WT infrastructure is used through plug-and-play magnetic installations to keep installation costs low
- Maintenance is quick and easy to ensure minimal downtime through quick replacement technology for defective components that ensures also long-term system reliability
- Each camera provides for 360° detection and is capable of detecting and tracking over 250 individual birds simultaneously using military-grade software to track bird speed, altitude, direction and distance
- Cameras can detect birds up to 1000 m distance range during the day using e cameras pan, tilt and zoom functions, reduced to 400m at night, with detection zone width of 536 m and height of 297 m
- The Adaptive Interface Module manages individual WT curtailment/shut-down on demand based on real-time collision risk
- The system allows for dynamic monitoring as the cameras cycle through pre-defined sections to allow for continuous coverage, with the maximum time any detection zone remains unmonitored being a mere 4 seconds
- The AVES AI is designed for species recognition, initially classifying birds by size through wingbeat frequency measurement which is unique for each species (i.e. smaller songbirds/passerines have significantly higher wingbeat frequencies that larger raptors for example), with this preliminary step designed to eliminate smaller non-target bird species such as passerine. During the next step, the AI considers specific parameters such as size, colour and feather characteristics to refine the recognition until it reaches a near-definitive species identification. Once the bord is identified as a target species, the system continues to track and identify it approximately 30 times per second.

Deployment of the system at Kelme WF:

At Kelme WF, the AVES system will be deployed at 28 of the 44 WTs through 84 AVES Wind ACS units that will cover 324 detection zones.

The interconnected camera systems with 260-degree protection will allow for complete coverage of the WF without the need to equip all WTs, ensuring state-of-the-art bird protection and a smart shut down system that seeks to also maintain efficient wind energy production.

The maps in Figure 10-6 and Figure 10-7 show the planned deployment of the AVES system to 28 pre-selected WTs to ensure complete coverage of the wind farm and the raptor territories and vulnerable breeding bird locations, respectively.

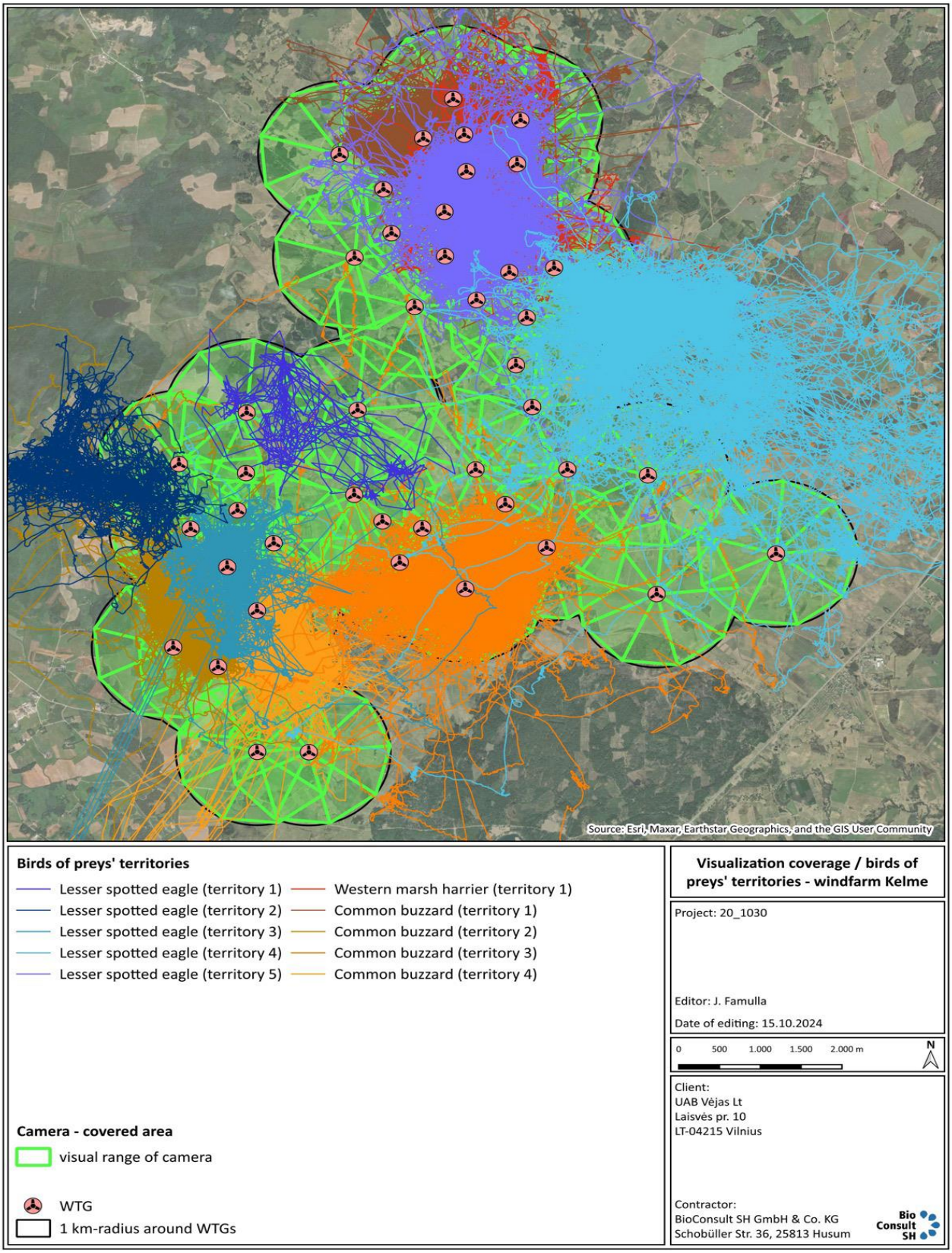


FIGURE 10-6 MAP SHOWING THE PROPOSED BICS IMPLEMENTATION AT SELECTED WT POSITIONS TO ENSURE COVERAGE OF THE KELME WF AND RAPTOR TERRITORIES

Source: Ignitis Renewables

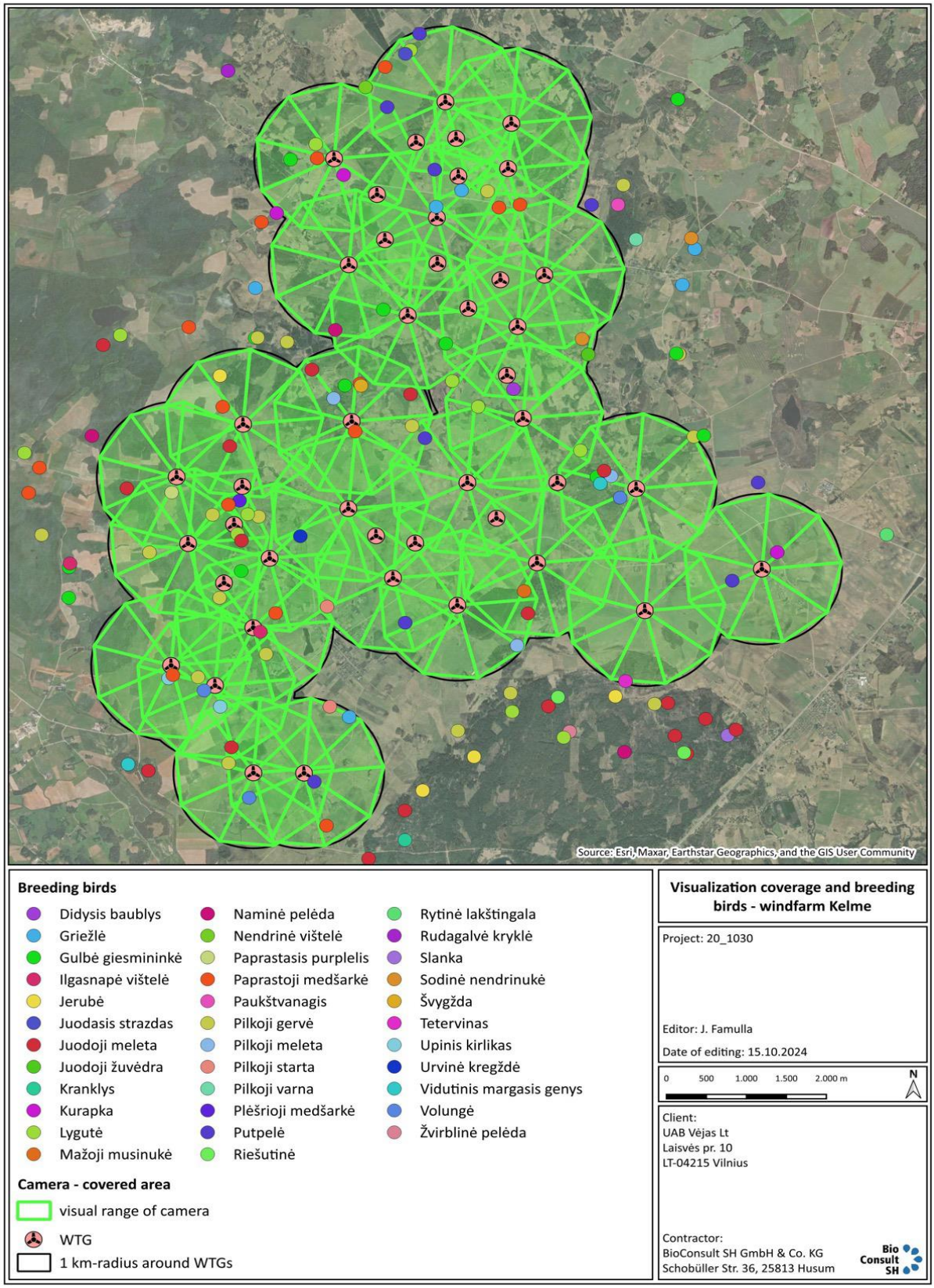


FIGURE 10-7 MAP SHOWING THE PROPOSED BICS IMPLEMENTATION AT SELECTED WT POSITIONS TO ENSURE COVERAGE OF THE KELME WF AND VULNERABLE BREEDING BIRD LOCATIONS

Source: Ignitis Renewables

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

Argentina
Australia
Belgium
Brazil
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China
Colombia
Denmark
France
Germany
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
Netherlands
New Zealand
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